

68156-6

7-14-2003

1/87



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

JUL 14 2003

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Mr. Steve A. McMaster  
Regulatory Manager  
Dintec Agrichemicals  
9330 Zionsville Rd.  
Indianapolis, IN 46268-1054

Dear Mr. McMaster:

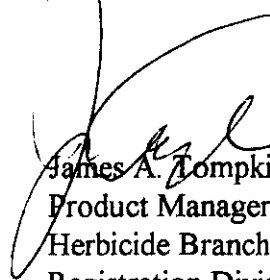
Subject: Dintec Ipimethalin-L  
EPA Registration Number 68156-6  
Application Dated 1/07/2003

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act as amended is acceptable, provided you make the following changes before you release the product for shipment.

1. The restricted entry interval (REI) should be changed back to 24 hours, instead of 12, per the RED from June 1997.
2. All supplemental labels are required to be incorporated into the master label within 18 months of the date of this letter.

Submit three (3) copies of final printed labeling incorporating the above changes before you release the product for shipment. Amended labeling will supercede all previously accepted ones. A stamped copy of labeling is enclosed for your records.

Sincerely,



James A. Tompkins, haj  
Product Manager 25  
Herbicide Branch  
Registration Division (7505C)

2/8/01

# Ipimethalin-L

EPA Reg. No. 68156-6

## Registration Notes:

**Source label text** based on EPA accepted copy dated May 27, 1999, with conditions of acceptance and Notification coded "I9A / Ipimethalin-L Notif / 09-14-99".

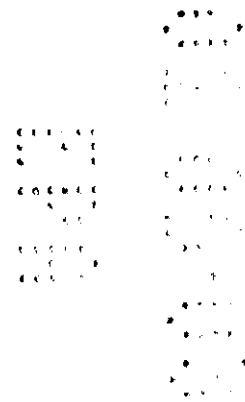
### Proposed changes by amendment:

1. Revised First Aid statements in accordance with PR Notice 2001-1.
2. Updated referral statements to refer to **Terms and Conditions of Use and Limitations of Liability and Damages**.
3. Added Terms and Conditions of Use section.

### Additional Changes based on EPA-accepted label for Prowl® 3.3 EC herbicide (EPA Reg. No. 241-337) dated July 8, 1998 and notification dated November 6, 2000.

4. Revised the REI in the Ag Use Requirements box from 24 to 12 hours (see PR Notice 93-7, Supplement 3A).
5. Added use on Peas from EPA-accepted supplemental labeling for Ipimethalin-L dated May 25, 2000 supplemental labeling entitled "For Weed Control in Peas (English, Dry Garden, Dwarf, Green, Pigeon, Edible Pod, and Lentils)". This supplemental labeling is based on final printed supplemental labeling for Prowl 3.3 EC herbicide dated 06-05-95.
6. Minor editing for clarity.
7. Substitution for Dual Magnum, Dual II Magnum and Bicep Magnum for Dual, Dual II and Bicep, respectively throughout. Also adjusted rates to account for resolved isomer of metolachlor.
8. Deleted reference to tank mixes with Blade, Extrazine, Frontier, and Guardsman herbicides since these products are no longer marketed.
9. Added tank mix references for Guardsman Max, Outlook and Clarity herbicides

[Editor's note: Added text is underlined and deleted text is denoted by strikethrough.]



3/87

(Base Label):

(logo) Dintec Agrichemicals

ACCEPTED  
with COMMENTS  
in EPA Letter Dated  
JUL 14 2003

# Ipimethalin-L

## For Use in Selected Crops

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.  
68156-6

Active Ingredient:

pendimethalin: N-(1-ethylpropyl)-3,4-dimethyl- 2,6-dinitrobenzenamine .....	37.4%
Inert Ingredients † .....	62.6%
Total .....	100.0%

† Contains aromatic naphtha  
Contains 3.3 pounds of pendimethalin per gallon.

### Keep Out of Reach of Children **CAUTION      PRECAUCION**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

---

#### Precautionary Statements

---

##### Hazards to Humans and Domestic Animals

**Causes Moderate Eye Irritation • Harmful If Swallowed Or Absorbed Through The Skin.**

**Avoid contact with skin, eyes or clothing.**

##### Personal Protective Equipment (PPE):

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category G on an EPA chemical resistance category selection chart.

##### Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as Barrier Laminate or Viton ≥14 mils
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

##### Engineering Controls

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240)(d)(4-6), the handler PPE requirements may be reduced or modified as specified in the WPS.

##### User Safety Recommendations:

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

4/87

- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

### First Aid

**If in eyes:** ~~Flush eyes with plenty of water. Call a physician if irritation persists. Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.~~

**If swallowed:** ~~Call a doctor or get medical attention. Do not induce vomiting. Do not give anything by mouth to an unconscious person. Avoid alcohol. Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.~~

**If on skin or clothing:** ~~Wash with plenty of soap and water. Get medical attention. Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.~~

**Note to physician:** Because of increased risk of chemical pneumonia or pulmonary edema caused by aspiration of the hydrocarbon solvent, vomiting should be induced only under professional supervision.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

### Environmental Hazards

This product is toxic to fish. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent aquatic sites. Do not contaminate water when disposing of equipment washwaters.

### Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

**Refer to label booklet for Directions for Use, including Storage and Disposal.**

**Notice:** Read the entire label. Use only according to label directions. **Before buying or using this product, read "~~Warranty Disclaimer~~" Terms and Conditions of Use and Limitations of Liability and Damages and "Limitation of Remedies" inside at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994. If you wish to obtain additional product information, visit our web site at [www.dowagro.com](http://www.dowagro.com).

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. 68156-6

EPA Est. No. \_\_\_\_\_

Dintec Agrichemicals • Indianapolis, IN 46268 U.S.A.

# Herbicide

Net Contents \_\_ gal

5/87

(Label Booklet)

(logo) Dintec Agrichemicals

# Ipimethalin-L

## For Use in Selected Crops

Active Ingredient:

pendimethalin: N-(1-ethylpropyl)-3,4-dimethyl- 2,6-dinitrobenzenamine .....	37.4%
Inert Ingredients † .....	62.6%
Total .....	100.0%

† Contains aromatic naphtha  
Contains 3.3 pounds of pendimethalin per gallon.

**Keep Out of Reach of Children**

## CAUTION      PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

### **Agricultural Use Requirements**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

**Refer to inside of label booklet for additional precautionary information including Personal Protective Equipment (PPE), User Safety Recommendations and Directions for Use including Storage and Disposal.**

**Notice:** Read the entire label. Use only according to label directions. **Before buying or using this product, read "Warranty Disclaimer" "Terms and Conditions of Use and Limitations of Liability and Damages" and "Limitation of Remedies" inside at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994. If you wish to obtain additional product information, visit our web site at [www.dowagro.com](http://www.dowagro.com).

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. 68156-6

EPA Est. No. \_\_\_\_\_

Dintec Agrichemicals • Indianapolis, IN 46268 U.S.A.

## Herbicide

Net Contents \_\_ gal

6/87

(Page 1 through end):

Table of Contents	Page
Ingredients	-
First Aid Statement	-
Precautionary Statements	-
Environmental Hazards	-
Directions for Use	-
Agricultural Use Requirements	-
Non-Agricultural Use Requirements	-
Storage and Disposal	-
Use in Agricultural Crops	-
General Information	-
General Use Precautions	-
Mixing Directions	-
General Application Directions	-
Spray Volume	-
Rates	-
Soil Textures	-
Chemigation	-
Weeds Controlled	-
Spraying Directions	-
Incorporation Directions	-
Application with Liquid	-
Application with Dry Bulk Fertilizers	-
Cultural Practices Following Application	-
Follow Crop Restrictions	-
Specific Use Directions by Crop	-
Field Corn	-
General Directions and Precautions	-
Application Methods and Timings	-
Application Rates in Field Corn	-
Tank Mix and Sequential Programs in Field Corn	-
Ipimethalin-L plus Accent or Accent SP herbicide	-
Ipimethalin-L plus Accent or Accent SP plus Beacon herbicide	-
Ipimethalin-L plus atrazine herbicide	-
<del>            Ipimethalin-L plus atrazine plus Bladex herbicide</del>	-
Ipimethalin-L plus Banvel herbicide	-
<del>            Ipimethalin-L plus Banvel plus Bladex herbicide</del>	-
Ipimethalin-L plus Beacon herbicide	-
Ipimethalin-L plus Bicep or Bicep II <u>Magnum</u> herbicide	-
<del>            Ipimethalin-L plus Bladex herbicide</del>	-
Ipimethalin-L plus Buctril + Atrazine herbicide	-
Ipimethalin-L plus Dual <u>Magnum</u> or Dual II <u>Magnum</u> herbicide	-
<del>            Ipimethalin-L plus Dual <u>Magnum</u> plus Bladex herbicide</del>	-
<del>            Ipimethalin-L plus Extrazine II herbicide</del>	-
<del>            Ipimethalin-L plus Frontier herbicide</del>	-
Ipimethalin-L plus FulTime* herbicide	-
Ipimethalin-L plus Guardsman <u>Max</u> herbicide	-
Ipimethalin-L plus Harness herbicide	-
Ipimethalin-L plus Harness Xtra herbicide	-
Ipimethalin-L plus Keystone* herbicide	-
Ipimethalin-L plus Lariat or Bullet herbicide	-
Ipimethalin-L plus Lasso herbicide	-

7/87

Ipimethalin-L plus Marksman herbicide	-
<del>    Ipimethalin-L plus Marksman plus Bladex</del>	<del>-</del>
<del>    Ipimethalin-L plus Outlook herbicide</del>	<del>-</del>
Ipimethalin-L plus Surpass <u>EC</u> herbicide	-
<del>    Ipimethalin-L plus Surpass 100 herbicide</del>	<del>-</del>
<del>    Ipimethalin-L plus TopNotch* herbicide</del>	<del>-</del>
Directions for use on SR Sethoxvdim resistant Field Corn	-
Postemergence Incorporated Application	-
Sweet Corn	-
General Directions and Precautions	-
Application Methods and Timings	-
Application Rates in Sweet Corn	-
Tank Mixes in Sweet Corn	-
Ipimethalin-L plus atrazine herbicide	-
<del>            Ipimethalin-L plus atrazine plus Bladex herbicide</del>	<del>-</del>
<del>            Ipimethalin-L plus Bicep or Bicep II <u>Magnum</u> herbicide</del>	<del>-</del>
<del>            Ipimethalin-L plus Bladex herbicide</del>	<del>-</del>
Ipimethalin-L plus Dual <u>Magnum</u> or Dual II <u>Magnum</u> herbicide	-
<del>            Ipimethalin-L plus Extrazine II herbicide</del>	<del>-</del>
Ipimethalin-L plus Lariat or Bullet herbicide	-
Ipimethalin-L plus Lasso herbicide	-
Cotton	-
General Directions and Precautions	-
Application Methods and Timings	-
Application Rates in Cotton	-
Tank Mixes and Sequential Programs in Cotton	-
Ipimethalin-L plus fluometuron (i.e. Cotoran herbicide)	-
Ipimethalin-L plus prometryn (i.e. Caparol herbicide)	-
Ipimethalin-L plus diuron (i.e. Karmex herbicide)	-
Ipimethalin-L plus Zorial herbicide	-
Preplant Incorporated Application for Control of Rhizome Johnsongrass	-
Edible Beans [Dry, Lima, Snap, Chickpeas (Garbanzo beans), Southern Peas (Cowpeas)] and Sweet Lupines	-
General Directions and Precautions	-
Use Methods and Timings	-
Application Rates in Edible Beans	-
Tank Mixes in Edible Beans	-
Ipimethalin-L plus Dual <u>Magnum</u> herbicide	-
Ipimethalin-L plus Eptam herbicide	-
Ipimethalin-L plus Lasso, MicroTech or Partner WDG herbicide	-
Forage Legumes	-
General Directions and Precautions	-
Application Methods and Timings	-
Application Rates in Forage Legumes	-
Garlic, Dry Bulb Onions and Shallots	-
General Directions and Precautions	-
Use Directions for Mineral Soils	-
Use Directions for Muck Soils (Onions Only)	-
Grain Sorghum	-
Postemergence Incorporated Application	-
Early Postemergence Application	-
Nonbearing Fruit and Nut Crops and Vineyards	-
General Directions and Precautions	-
Application Methods and Timings	-

8/87

Application Rates in Nonbearing Fruit and Nut Crops and Vineyards	-
Tank Mixes in Nonbearing Fruit and Nut Crops and Vineyards	-
Peanuts	-
General Directions and Precautions	-
Application Methods and Timings	-
Application Rates in Peanuts	-
Tank Mixes in Peanuts	-
Ipimethalin-L plus Pursuit herbicide	-
Ipimethalin-L plus Dual <u>Magnum</u> herbicide	-
Ipimethalin-L plus Vernam herbicide	-
Peas (English, Dry Garden, Dwarf, Green, Pigeon, Edible Pod, and Lentils)	-
General Directions and Precautions	-
Application Methods and Timings	-
Broadcast Application Rates	-
Potatoes	-
General Directions and Precautions	-
Application Methods and Timings	-
Application Rates in Potatoes	-
Tank Mixes in Potatoes	-
Ipimethalin-L plus Eptam herbicide	-
Ipimethalin-L plus Lorox L herbicide	-
Ipimethalin-L plus Sencor/Lexone herbicide	-
Ipimethalin-L plus Eptam plus Sencor/Lexone herbicide	-
Ipimethalin-L plus Matrix herbicide	-
Rice	-
General Directions and Precautions	-
Early Postemergence Applications in Dry Seeded Rice	-
Ipimethalin-L plus Arroso or Propanil herbicide	-
Ipimethalin-L plus propanil plus Londax herbicide	-
Ipimethalin-L plus Facets 75 DF herbicide	-
Delayed Preemergence Applications	-
Ipimethalin-L alone	-
Ipimethalin-L plus Facet 75 DF herbicide	-
Ipimethalin-L plus glyphosate herbicide	-
Ipimethalin-L plus Bolero 8EC herbicide	-
Mixing Directions	-
Spraying directions	-
Soybeans	-
General Directions and Precautions	-
Application Methods and Timings	-
Application Rates in Soybeans	-
Tank Mix and Sequential Programs in Soybeans	-
Ipimethalin-L plus Pursuit herbicide	-
Ipimethalin-L plus Scepter herbicide	-
Ipimethalin-L followed by Scepter O.T. herbicide	-
Ipimethalin-L plus Command herbicide	-
Ipimethalin-L plus Canopy herbicide	-
Ipimethalin-L plus Dual <u>Magnum</u> herbicide	-
Ipimethalin-L plus Lasso herbicide	-
Ipimethalin-L plus Lorox herbicide	-
Ipimethalin-L plus Lorox Plus herbicide	-
Ipimethalin-L plus Preview herbicide	-
Ipimethalin-L plus Sencor/Lexone herbicide	-
Special Weeds	-



9/87

- Shattercane and Woolly Cupgrass -
- Red rice and Itchgrass -
- Rhizome Johnsongrass -
- Sugarcane (except Hawaii) -
- General Directions and Precautions -
- Application Methods and Timings -
- Application Rates -
- Tank Mixes in Sugarcane (Except Hawaii) -
- Sugarcane (for Hawaii) -
- General Directions and Precautions -
- Application Methods and Timings -
- Application Rates -
- Tank Mixes in Sugarcane (For Use in Hawaii) -
- Sunflowers -
- General Directions and Precautions -
- Application Methods and Timings -
- Application Rates in Sunflowers -
- Ipimethalin-L plus Eptam -
- No-Till Sunflowers -
- Tobacco -
- General Directions and Precautions -
- Application Methods and Timings -
- Application Rates in Transplanted Tobacco -
- Regional Map for Rate Determination -
- Use in Turfgrasses, Ornamentals, Landscape and Grounds Maintenance -
- Programs, Noncropland Areas and Total Vegetative Control -
- General Information and Precautions -
- Mixing Directions -
- Spraying Directions -
- Weed Controlled -
- Landscape and Grounds Maintenance Programs -
- General Directions and Precautions -
- Application Methods and Timings -
- Application Rates in Landscape and Grounds Maintenance Programs -
- Noncropland Areas (Including Tree Plantations) -
- General Directions and Precautions -
- Application Methods and Timings -
- Use Rates in Noncropland Areas (Including Tree Plantations) -
- Tank Mixes in Noncropland Areas (Including Tree Plantations) -
- Ornamentals -
- General Directions and Precautions -
- Recommended Ornamental Species -
- Application Methods and Timings -
- Application Rates in Ornamentals -
- Tank Mixes in Ornamentals -
- Turfgrasses -
- General Directions and Precautions -
- Application Methods and Timings -
- Tank Mixes in Turfgrasses -
- Application on Industrial (Unimproved) Turf -
- Total Vegetative Control -
- General Directions and Precautions -
- Terms and Conditions of Use -
- Limitations of Liability and Damages -

10/87

---

**Precautionary Statements**

---

**Hazards to Humans and Domestic Animals**

---

**CAUTION**

**Causes Moderate Eye Irritation • Harmful If Swallowed Or Absorbed Through The Skin.**

**Avoid contact with skin, eyes or clothing.**

**Personal Protective Equipment (PPE):**

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category G on an EPA chemical resistance category selection chart.

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as Barrier Laminate or Viton  $\geq 14$  mils
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**Engineering Controls**

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240)(d)(4-6), the handler PPE requirements may be reduced or modified as specified in the WPS.

**User Safety Recommendations:**

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**First Aid**

if in eyes: Flush eyes with plenty of water. Call a physician if irritation persists. Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

if swallowed: Call a doctor or get medical attention. Do not induce vomiting. Do not give anything by mouth to an unconscious person. Avoid alcohol. Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

if on skin or clothing: Wash with plenty of soap and water. Get medical attention. Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

**Note to physician:** Because of increased risk of chemical pneumonia or pulmonary edema caused by aspiration of the hydrocarbon solvent, vomiting should be induced only under professional supervision.

11/87

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

### Environmental Hazards

This product is toxic to fish. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent aquatic sites. Do not contaminate water when disposing of equipment washwaters.

### Directions for Use

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

Observe all cautions and limitations in this label and the labels of products used in combination with Ipimethalin-L herbicide. The use of Ipimethalin-L not consistent with this label can result in injury to crops, animals, or persons. Keep containers closed to avoid spills and contamination.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide protection.

### Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24-12 hours.

**Exception:** If the product is soil injected or soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical resistant gloves, such as Barrier Laminate or Viton > 14 mils
- Shoes plus socks

### Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for Agricultural Pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

**Entry Restrictions for Non-WPS Uses:** For applications to turfgrasses (except sod farms), ornamentals (except nurseries), landscape and grounds maintenance, non-cropland areas and total vegetation control, do not enter or allow others to enter the treated area until sprays have dried.

12/87

**Storage and Disposal**

Do not contaminate water, food, or feed by storage or disposal.

**Storage:** Do not store below 40°F. Extended storage at temperatures below 40°F can result in the formation of crystals on the bottom of the container. If crystallization does occur, store the container on its side at room temperature (70°F) and rock occasionally until crystals re-dissolve.

**Pesticide Disposal:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**Container Disposal**

**For Five Gallons and Under:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**For Bulk and Mini-Bulk:** Return empty container to point of purchase for repackaging or recycling.

---

**Use in Agricultural Crops**

---

**General Information**

Ipimethalin-L herbicide provides control of most annual grasses and certain broadleaf weeds as they germinate. Ipimethalin-L does not control established weeds. Before applying Ipimethalin-L, destroy all existing weeds (except as recommended in specific postemergence combination treatments). Certain weather conditions such as unusually cold, excessively wet, or extremely hot or dry conditions that can delay germination or extend germination over a long period of time may also reduce weed control.

Ipimethalin-L is labeled for Use on Cotton, Dry Bulb Onions, Dry Bulb Shallots, Edible Beans, Field Corn, Forage Legumes, Garlic, Grain Sorghum, Nonbearing Fruit, Nut Crops and Vineyards; Peanuts, Peas, Potatoes, Rice, Soybeans, Sugarcane, Sunflowers, Sweet Corn, Sweet Lupines, and Tobacco.

Ipimethalin-L should be used in accordance with the directions in this booklet and in supplemental labels (for those registered uses that are not included in this booklet) which are available for Dow AgroSciences or at point of purchase. Read all directions carefully before using.

Observe all cautions and limitations in this label and the labels of products used in combination with Ipimethalin-L. The use of Ipimethalin-L not consistent with this label can result in injury to crops, animals, or persons. Keep containers closed to avoid spills and contamination.

Read all label precautions, directions for use, and general information sections before referring to specific crop use.

**Uses with Other Products (Tank Mixes):** When tank mixing this product with other herbicides, all applicable directions, restrictions, and precautions for the additional herbicides must be followed. Use the most restrictive limitations stated on the product labels. Before initiating full tank mix application, the physical compatibility of the proposed mixture should be evaluated on a small scale of recommended spray mixture concentrations. Also, such mixtures should be evaluated for vegetation control before expanding commercial use.

13/87

## General Use Precautions

When applied according to label directions and under normal growing conditions, Ipimethalin-L or Ipimethalin-L tank-mix combinations will not cause crop injury. Over-application, however, may cause crop stand loss, crop injury, or soil residues.

Uneven application or improper soil incorporation can reduce weed control or cause crop injury. Soil incorporation deeper than the recommended levels can reduce weed control.

An increased possibility of crop damage and weakened seedlings and plants from Ipimethalin-L can result from seedling diseases, cold weather, excessive moisture, shallow or deep planting, low or high soil pH, high soil salt concentration, or drought. Under these conditions, crop yields can be reduced.

Using Ipimethalin-L herbicide in accordance with label directions should produce normal growth of rotational crops in most situations. However, various environmental and agronomic factors make it impossible to eliminate all risks associated with the use of this product and, therefore, rotational crop injury is always a possibility.

Naturally occurring biotypes<sup>†</sup> of some of the weeds listed on this label may not be effectively controlled by this and/or other products with the mitotic inhibiting mode of action. Other herbicides with the mitotic inhibiting mode of action include other dinitroaniline herbicides such as Treflan<sup>®</sup> herbicide, TRI-4 herbicide and Sonolan<sup>®</sup> herbicide. If naturally occurring mitotic inhibiting resistant biotypes are present in a field, Ipimethalin-L should be tank-mixed or applied sequentially with an appropriate registered herbicide that has a different mode of action to ensure control.

<sup>†</sup> A weed biotype is a naturally occurring plant within a given species that has a slightly different, but distinct, genetic makeup from other plants.

See your Dow AgroSciences representative for additional information.

## Mixing Directions

1. Fill tank one-half to three-quarters full with clean water or liquid fertilizer. Agitate. Before mixing Ipimethalin-L or Ipimethalin-L tank mixtures with liquid fertilizer, refer to appropriate label sections (see table of contents for page number) for recommended uses in liquid fertilizer, application directions, and compatibility determinations.
2. **Ipimethalin-L Alone:** When using Ipimethalin-L alone, while agitating add Ipimethalin-L to the partially filled tank. Then fill the rest of the tank with water or liquid fertilizer.
3. **Ipimethalin-L Tank Mixtures:** Add the tank mixture ingredients in the order listed below before adding Ipimethalin-L. (For tank mixtures with Butyrac 200 herbicides, Gramoxone Extra herbicide or Roundup herbicide, refer to mixing directions at the end of this section):
  - (a) **Wettable powder formulations:** Make a slurry of the wettable powder in water (1 part WP + 2 parts water). While agitating add the slurry slowly to the partially filled tank. If tank mixing more than one wettable powder formulation, while agitating, add the first one. Continue agitation and add second wettable powder only after complete mixing of the first wettable powder has occurred ~~add second wettable powder~~.
  - (b) **Dry flowable/water dispersible granule formulations:** While agitating, add the granules to the partially filled tank. Make a slurry of the granules in water before adding to liquid fertilizer.
  - (c) **Flowable formulations:** While agitating, add the flowable to the partially filled tank.
  - (d) **Water soluble concentrate formulations:** While agitating, add the water-soluble concentrate to the partially filled tank.
  - (e) **Emulsifiable concentrate formulations:** While agitating, add the emulsifiable concentrate to the partially filled tank.

14/87

**After complete mixing, add Ipimethalin-L to the tank.**

- (f) **NOTE (For tank mixes that contain Butyrac, Gramoxone Extra or Roundup herbicide):** After complete mixing of Ipimethalin-L, continue filling the sprayer with water and add Butyrac or Gramoxone Extra or Roundup to the tank near the end of the filling process.

If Gramoxone Extra is included in the tank mixture, add 8 fl oz of Ortho X-77 spreader or similar nonionic surfactant per 100 gallons of total spray mixture as the last ingredient in the tank.

**While agitating, fill the remainder of the tank with water or liquid fertilizer.**

4. **Continuous agitation must be maintained while adding herbicides and until spraying is completed.** If the spray mixture is permitted to settle for any period of time, thorough agitation is necessary to resuspend the mixture before spraying is resumed. Continue agitation while spraying.

## General Application Directions

### ~~Spray Volume~~

**With Ground Equipment:** Uniformly apply recommended Ipimethalin-L or Ipimethalin-L tank mixture treatments in 10 or more gallons of water or 20 or more gallons of liquid fertilizer per acre. Use higher gallonage for fields that have heavy weed infestations or excessive crop residues. Refer to Applications with Liquid Fertilizers section (see table of contents for page number) for liquid fertilizer recommended uses, application directions and compatibility determinations. Refer to Applications with Dry Bulk Fertilizers section (see table of contents for page number) for Ipimethalin-L /dry bulk fertilizer applications.

**With aircraft:** Apply in 5 or more gallons of water per acre. Refer to Spraying Directions section (see table of contents for page number) for instructions. ~~Refer to Applications with Dry Bulk Fertilizers section (see table of contents for page number) for Ipimethalin-L /dry bulk fertilizer applications.~~

### Rates

Follow all recommendations in the crop-specific use directions of this label regarding rates per acre of Ipimethalin-L and herbicides used in combination with Ipimethalin-L. Unless otherwise indicated in the crop-specific use directions, when a rate range is recommended, the high rate of the range should be used if heavy weed populations are expected or if extensive crop residues were present before seedbed preparation.

### Soil Textures

The rate tables for the recommended crop-specific Ipimethalin-L treatments refer to coarse, medium, and fine soils. Soil type should be determined because the use rates for Ipimethalin-L treatments vary with soil texture. The following table lists soil types for coarse, medium and fine soils:

Coarse	Medium	Fine
sands	sandy clay loams †	silty clay loams †
loamy sands	sandy clays	silty clays
sandy loams	loams	clay loams
	silt loams	clays
	silts	

† Sometimes considered transitional soils and may be classified as either medium or fine textured soils.

Ipimethalin-L is not recommended for use on peat or muck soils, unless otherwise specified.

15/87

## Chemigation

Ipimethalin-L may be applied through sprinkler irrigation systems in cotton, field corn, grain sorghum, peanuts, potatoes, soybeans and sunflowers. Follow all label recommendations for these crops regarding application rates per acre, timing of application, special directions, and precautions.

Apply this product only through a sprinkler system, including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move irrigation systems. Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.

The system must be properly calibrated (with water only) to ensure that the amount of Ipimethalin-L applied corresponds to the recommended use rate.

Apply Ipimethalin-L in  $\frac{1}{2}$  to  $\frac{3}{4}$  inches of water during the first sprinkler set. When application is complete, flush the system with water.

If you have any questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts.

### Special Precautions for Chemigation

1. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
2. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
3. The system must be free of leaks and clogged nozzles.
4. The pesticide must be supplied continuously for the duration of the aqueous application. Uneven application of the pesticide may cause crop injury or poor weed control.
5. Agitation must be maintained in the nurse tank.
6. The sprinkler-chemigation system must contain a functional check valve, vacuum relief valve, and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
7. The pesticide injection pipeline must contain a functional, automatic, quick closing check valve to prevent the flow of fluid back toward the injection pump.
8. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
9. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
10. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
11. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
12. Do not apply when wind speed favors drift beyond the area intended for treatment.

16/87

**Chemigation Systems Connected to Public Water Systems**

1. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3. All chemigation systems connected to public water systems must also follow restrictions listed in the preceding section titled "Chemigation".

**Weeds Controlled**

Ipimethalin-L treatments control the following grasses and broadleaf weeds in all registered crops at the rates recommended for each soil texture in the respective crop-specific use directions:

<b>Grass Weeds Controlled</b>	<b>Broadleaf Weeds Controlled</b>
Barnyard grass	Bugloss, small
Crabgrass	Carpetweed
Crowfootgrass	Florida pusley
Field Sandbur	Kochia
Foxtail (giant)	Lambsquarters, common
Foxtail (green)	Lambsquarters, slimleaf
Foxtail (yellow)	Pigweed ( <i>Amaranthus</i> spp.)
Goosegrass	Purslane
Johnsongrass, seedling	Smartweed, Pennsylvania <sup>2</sup>
Panicum, fall	Spurge, annual
Panicum, Texas (Buffalograss)	Velvetleaf <sup>2</sup>
Signalgrass <sup>1</sup>	
Witchgrass	

<sup>1</sup> Signalgrass: In cotton and soybeans, effective management is achieved by using a program that involves application of Ipimethalin-L as a preplant incorporated treatment followed by a labeled postemergence grass product. For effective control, signalgrass populations should be managed in all crop rotations.

<sup>2</sup> Reduced competition only.

In addition to controlling the weeds listed above, Ipimethalin-L (when applied as directed) will control the weeds in the crops in accordance with the following table:

<b>Grass Weeds Controlled</b>	<b>Crop</b>
Bluegrass, annual	Nonbearing fruit and nuts and vineyards
Guineagrass	Sugarcane
Itchgrass (Raoulgrass)	Soybeans <sup>1</sup> Sugarcane <sup>2</sup> (not Hawaii)
Johnsongrass, rhizome	Cotton <sup>1</sup> Soybeans <sup>1</sup>
Junglerice	Nonbearing fruit and nuts and vineyards Rice Sugarcane
Lovegrass	Nonbearing fruit and nuts and vineyards
panicum, Browntop	Nonbearing fruit and nuts and vineyards



17/87

	Sugarcane
Red Rice	Soybeans <sup>1</sup>
Shattercane	Field Corn <sup>3</sup> Grain Sorghum <sup>3</sup> Soybeans <sup>1</sup>
Sprangletop ( <i>Leptochloa</i> spp.)	Rice Nonbearing fruit and nuts and vineyards
Swollen fingergrass	Sugarcane
Volunteer Sorghum	Cotton <sup>6</sup>
Wild Proso Millet	Field <sup>4</sup> and Sweet Corn Grain Sorghum <sup>3</sup>
Woolly cupgrass	Field <sup>5</sup> and Sweet Corn Nonbearing fruit and nuts and vineyards Soybeans <sup>1</sup>
<b>Broadleaf Weeds Controlled</b>	<b>Crop</b>
Carpetweed	Sunflowers, no-till
Chickweed, common	Nonbearing fruit and nuts and vineyards
Fiddleneck	Nonbearing fruit and nuts and vineyards
Henbit	Nonbearing fruit and nuts and vineyards
Knotweed, prostrate	Nonbearing fruit and nuts and vineyards
London rocket	Nonbearing fruit and nuts and vineyards
Smartweed, Pennsylvania	Field and Sweet Corn Nonbearing fruit and nuts and vineyards
Puncturevine	Nonbearing fruit and nuts and vineyards
shepherd's purse	Nonbearing fruit and nuts and vineyards
Stinging nettle	Potatoes
Velvetleaf	Field and Sweet Corn Nonbearing fruit and nuts and vineyards

- <sup>1</sup> **Cotton/Soybeans (Rhizome Johnsongrass):** Control or reduced competition (refer to appropriate section for use directions (see table of contents for page number).
- <sup>2</sup> **Sugarcane (Not Hawaii) (Itchgrass):** Ipimethalin-L must be applied at the 7.2 pint/acre broadcast rates for itchgrass control. Surface application (no mechanical incorporation) will provide partial itchgrass control. An additional application of 4.8 to 7.2 pints/acre may be made at layby.
- <sup>3</sup> **Field Corn/Grain Sorghum (Shattercane):** Control with postemergence incorporated applications only. Refer to appropriate section for use directions (see table of contents for page number).
- <sup>4</sup> **Field Corn (Wild Proso Millet):** Ipimethalin-L controls wild proso millet when applied as a postemergence incorporated application. Ipimethalin-L reduces the competition of wild proso millet when applied preemergence. Effective management of wild proso millet can be achieved with a program that involves herbicide applications and mechanical cultivation to eliminate weed escapes. Ipimethalin-L plus Accent SP, ~~Bladex or Extrazine II~~ applied early postemergence (no later than when corn is in the 4-leaf stage) treatments have provided the most consistent suppression of wild proso millet because of the following: (1) early postemergence treatments provide a burn-down of the initial germination flush of wild proso millet; and, (2) early postemergence treatments provide residual activity later during the growing season.
- <sup>5</sup> **Field Corn (Woolly Cupgrass):** Effective management of woolly cupgrass can be achieved with a program that involves herbicide applications and mechanical cultivation to eliminate weed escapes. Ipimethalin-L plus Accent, ~~Bladex or Extrazine II~~ applied early postemergence (no later than when corn is in the 4-leaf stage) treatments have provided the most consistent control of woolly cupgrass because of the following: (1) early postemergence treatments provide a burn-down of the initial germination flush of woolly cupgrass; and, (2) early postemergence treatments provide residual activity later during the growing season.

18/87

- <sup>6</sup> **Cotton (Volunteer Sorghum):** Use the high rate for each soil texture. Apply broadcast to flat land and mechanically incorporate (two passes at an angle to one another) prior to bedding up.

## Spraying Directions

### Ground Applications

Use sprayers with appropriate nozzles that provide uniform spray distribution and minimize drift. Keep the bypass line on or near the bottom of the tank to minimize foaming. Nozzle and in-line screens must be no finer than 50 mesh. **Do not** apply Ipimethalin-L during periods of gusty winds. As with all herbicides, windy conditions can cause uneven applications.

**Broadcast Treatment:** Uniformly apply in 10 or more gallons of water or 20 or more gallons of liquid fertilizer as specified in the appropriate sections of this booklet.

**Band Treatment:** Uniformly apply the broadcast equivalent rate and volume per acre. To determine these, use the following calculations:

$$\frac{\text{Band width (in inches)}}{\text{Row width (in inches)}} \times \text{Broadcast RATE per acre} = \text{Band RATE per acre}$$

$$\frac{\text{Band width (in inches)}}{\text{Row width (in inches)}} \times \text{Broadcast VOLUME per acre} = \text{Band VOLUME per acre}$$

### Aerial Applications

Uniformly apply in 5 or more gallons of water per acre. Use caution to minimize drift. **Do not** apply during periods of gusty winds or when wind conditions favor drift. Spray drift can cause injury to sensitive crops. Use a flagman or an automatic mechanical flagging unit on the aircraft to avoid overlap and possible crop injury.

### Spray Drift Management

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed  $\frac{3}{4}$  the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they should be observed.

The applicator should be familiar with and take into account the information covered in the following "Aerial Drift Reduction Advisory".

### Aerial Drift Reduction Advisory

**Information on Droplet Size:** The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and

19/87

control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

**Controlling Droplet Size:**

- **Volume** – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of nozzles** – Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** – Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

**Boom Length:** For some use patterns, reducing the effective boom length to less than  $\frac{3}{4}$  of the wingspan or rotor length may further reduce drift without reducing swath width.

**Application Height:** Applications should not be made at a height greater than 10 feet above the top of the largest plant unless greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

**Swath Width:** When applications are made with a crosswind, the swath will be displaced downward. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.)

**Wind:** Drift potential is lowest between wind speeds of 2-10 mph. However, many factors include droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

**Temperature:** When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

**Temperature Inversions:** Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes suspended small droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitudes and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversion conditions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

20/87

**Sensitive Areas:** The pesticide should only be applied when the potential for drift to adjacent sensitive area (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

## Incorporation Directions

Use tillage, if necessary, to break up soil clods prior to preplant incorporated application.

### 1. Flat-Planted Crop

Ipimethalin-L should be incorporated prior to planting and within 7 days of application. When Ipimethalin-L is applied to flat land that will not be bedded, it should be mechanically incorporated into the top 1 or 2 inches of soil. Mechanical incorporation of Ipimethalin-L into the top 1 or 2 inches of soil can be achieved by the following methods:

- Disk harrow set to cut 3 to 4 inches deep and operated in two different directions at 4 to 6 mph. The second pass should be made at an angle to the first.
- PTO-driven equipment (tillers, cultivators, hoes) set to cut 2 inches deep and operated one time at 4 mph or less.
- Rolling cultivator set to cut 2 to 3 inches deep and operated two times at 6 to 8 mph. The second pass should be made at an angle to the first. Use only on coarse and medium textured soils.
- Field cultivator set to cut 3 inches deep operated two times at more than 5 mph. The second pass should be made at an angle to the first. Equipment must have 3 or 4 rows of sweeps, spaced at intervals of 7 inches or less and staggered so that no soil remains unturned. Do not use chisel points.
- Lely-Roterra equipment set and operated according to the manufacturer's directions to thoroughly incorporate Ipimethalin-L to a depth of 1 to 2 inches.
- Do-All set and operated according to the manufacturer's directions to thoroughly incorporate Ipimethalin-L to a depth of 1 to 2 inches.

**NOTE:** Ipimethalin-L can be incorporated in a single pass when the soil is of good tilth with moderate moisture and is relatively free of clods and trash. Implements must be properly set up to thoroughly incorporate Ipimethalin-L into the top 1 or 2 inches of soil. Recommended implements include the following: (1) C-shank or S-shank field cultivators equipped with flextime drag or rolling basket attachment and (2) the combination disk/field cultivator implement equipped with flextime drag or rolling basket attachment. Field cultivators must have 3 or 4 rows of sweeps, spaced at intervals of 7 inches or less and staggered so that no soil remains unturned. Implements must be operated at 6 to 8 miles per hour and set to cut 3 to 4 inches deep.

### 2. Bedded Crop: - Application over Beds

Ipimethalin-L is to be incorporated prior to planting and within 7 days of application. When Ipimethalin-L is applied over beds, it should be mechanically incorporated into the top 1 or 2 inches of soil. Mechanical incorporation of Ipimethalin-L into the top 1 or 2 inches of soil can be achieved by the following methods:

- Rolling cultivator set to cut 2 to 3 inches deep and operated two times at 6 to 8 mph. Use only on coarse and medium textured soils.
- PTO-driven equipment (tillers, cultivators, hoes) set to cut 2 inches deep and operated one time at 4 mph or less.
- Bed conditioner set to cut 2 to 3 inches deep and operated one time at 4 to 6 mph.

During planting, or if beds will be reshaped prior to planting, avoid tillage that will bring untreated soil to the surface or expose untreated soil in the seedbed or in the furrow.

2/1/87

**3. Bedded Crop: - Application Prior to Bedding**

Ipimethalin-L is to be incorporated prior to planting and within 7 days of application. When Ipimethalin-L is applied to flat land prior to bedding, it should be mechanically incorporated at a sufficient depth so that bedding does not bring up untreated soil. Mechanical incorporation of Ipimethalin-L can be achieved by the following methods:

- Disk harrow set to cut 4 to 6 inches deep and operated in two different directions at 4 to 6 mph. The second pass should be made at an angle to the first.
- PTO-driven equipment (tillers, cultivators, hoes) set to cut 3 to 4 inches deep and operated one time at 4 mph or less. During planting, or if beds must be reshaped prior to planting, avoid tillage that will bring untreated soil to the surface or expose untreated soil on the seedbed or in the furrow.

**Application with Liquid Fertilizers**

Ipimethalin-L alone or in tank mix combinations with wettable powders (WP), dry flowables (DF), flowables (F), water soluble concentrates (S) or emulsifiable concentrates (EC) may not combine properly with some liquid fertilizer materials. Always test small quantities before full scale mixing. To determine compatibility and if a compatibility agent is needed, follow the testing procedure provided below.

Follow all label recommendations for Ipimethalin-L regarding registered crops, use rates per acre, application timing, special directions and precautions. Apply treatments in 20 or more gallons of liquid fertilizer per acre with ground equipment. **Do not** apply Ipimethalin-L postemergence in liquid fertilizers.

All individual state regulations relating to fluid fertilizer mixing, registration, labeling and application are the responsibility of the individual and/or company selling the Ipimethalin-L / liquid fertilizer mixture.

**Liquid Fertilizer Compatibility Determinations**

If liquid fertilizer/herbicide(s) mixture separates in the spray tank, clogged equipment and uneven application can result, which can cause crop injury and poor weed control. Always predetermine the compatibility of Ipimethalin-L alone or with other herbicides in the specific liquid fertilizer to be used according to the following directions:

1. Add 1 pint of fertilizer to a quart jar.
2. Add 1 to 4 teaspoon(s) of the DF, WP, AS, F or L formulation (depending on mixing ratio required) to the liquid fertilizer. The number of teaspoons of the formulation to be added can be determined by the following formula:

$$\frac{\text{lb or pt of product/acre}}{\text{Gallons of fertilizer/acre}} \times 11.4 = \begin{array}{l} \text{number of teaspoons of herbicide} \\ \text{to add to 1 pint of fertilizer.} \end{array}$$

3. Close the jar and agitate until the herbicide(s) are evenly dispersed in the liquid fertilizer. If the materials do not disperse well, it may be necessary to slurry the chemicals in water before adding to the fertilizer.
4. After dispersing the materials (step 2) add appropriate number of teaspoons of Ipimethalin-L (see formula in step 2) to the jar and shake well. Add water soluble concentrate herbicides to the mixture last and agitate. Let the mixture stand for 30 minutes and then observe the results. Look for signs of separation, an oily layer or globules, sludge, flakes or other precipitates.
5. Determine compatibility.
  - (a) If the herbicide(s) and liquid fertilizer mixture does not separate, use this mixture in your spray tank.

22/87

- (b) If the mixture separates, but mixes readily with shaking, the mixture can be used if good agitation is maintained in the spray tank.
- (c) If separation of the mixture occurs and agitation does not correct this problem, a compatibility agent † is needed.

6. If the need for a compatibility agent † is demonstrated, follow this procedure:  
 Use a clean quart jar and repeat step one above. Add ½ teaspoon of the compatibility agent to the liquid fertilizer. Mix well and repeat steps 2, 3 and 4. If separation or precipitation occurs with the compatibility agent, **do not** use Ipimethalin-L with that specific liquid fertilizer.

An effective compatibility agent will cause the mixture to remain uniformly dispersed with little or no separation (oil rising to the surface) for one-half hour or longer. If slight separation occurs, 2 to 3 inversions of the jar should be sufficient to redisperse the mixture uniformly.

Use a clean jar for each test. A compatible mixture will have a uniform appearance, and it will be relatively easy to redisperse with gentle agitation of the jar.

† Compex-Kalo Laboratories Incorporated, Kansas City, MO; Sponto 168-D-Witco Chemical Company, Houston, TX; Unite-Hopkins Agricultural Chemical Company, Madison, WI, or other comparable adjuvants.

### Application with Dry Bulk Fertilizers

Ipimethalin-L may be impregnated on dry bulk fertilizers. When applied as directed, Ipimethalin-L/dry bulk fertilizer mixtures provide weed control equal to that provided by the same rates of Ipimethalin-L applied in water.

Follow all label recommendations for Ipimethalin-L regarding rates per acre, registered crops, incorporation, special directions and precautions. Ipimethalin-L/dry bulk fertilizer mixtures should only be applied with ground equipment.

All individual state regulations relating to dry bulk fertilizer blending, registration, labeling, and application are the responsibility of the individual and/or company selling the Ipimethalin-L/dry bulk fertilizer mixture.

A minimum of 200 pounds of dry bulk fertilizer impregnated with the recommended amount of Ipimethalin-L must be applied per acre.

**Do not** impregnate Ipimethalin-L onto coated ammonium nitrate or limestone because these materials do not absorb the herbicide. Dry fertilizer blends containing mixtures of ammonium nitrate or limestone may be impregnated with Ipimethalin-L. A minimum of 200 pounds of impregnated dry bulk fertilizer, excluding the weight of ammonium nitrate or limestone, must be applied per acre.

Refer to appropriate crop-specific use directions in the Ipimethalin-L herbicide booklet to determine the rate of Ipimethalin-L per acre. Use the following table to determine the amount of Ipimethalin-L to be impregnated on a ton of dry bulk fertilizer based on the rate of fertilizer that will be applied per acre.

**Rate Chart for Impregnation of Dry Bulk Fertilizers: Table values are pints of Ipimethalin-L per ton of fertilizer for the indicated per acre rates of fertilizer and Ipimethalin-L.**

Fertilizer Rate (!b/acre)	Ipimethalin-L (Rate per Acre (recommended rate for crop and soil texture)				
	1.2 pint	1.8 pint	2.4 pint	3.0 pint	3.6 pint

23/87

<b>200</b>	12 pt/ton	18 pt/ton	24 pt/ton	30 pt/ton	36 pt/ton
<b>250</b>	9.6 pt/ton	14.4 pt/ton	19.2 pt/ton	24 pt/ton	28.8 pt/ton
<b>300</b>	8 pt/ton	12 pt/ton	16 pt/ton	20 pt/ton	24 pt/ton
<b>350</b>	6.9 pt/ton	10.3 pt/ton	13.7 pt/ton	17.1 pt/ton	20.6 pt/ton
<b>400</b>	6 pt/ton	9 pt/ton	12 pt/ton	15 pt/ton	18 pt/ton
<b>450</b>	5.33 pt/ton	8 pt/ton	10.66 pt/ton	13.33 pt/ton	16 pt/ton

For rates not listed in the table, use the following formula to calculate the pints of Ipimethalin-L to be impregnated on a ton of dry bulk fertilizer:

$$\frac{2000}{\text{Pounds of dry fertilizer per acre}} \times \begin{array}{l} \text{Pints of} \\ \text{Ipimethalin-L} \\ \text{per acre} \\ \text{(recommended} \\ \text{rate for crop and} \\ \text{soil texture)} \end{array} = \begin{array}{l} \text{pints of} \\ \text{Ipimethalin-L} \\ \text{per ton of} \\ \text{fertilizer} \end{array}$$

To impregnate Ipimethalin-L on bulk fertilizer, use a closed rotary-drum mixer or other commonly used dry bulk fertilizer blender equipped with suitable spray equipment. Spray nozzles must be placed to provide uniform coverage of Ipimethalin-L onto the fertilizer during mixing.

Apply the Ipimethalin-L/dry bulk fertilizer mixture with an accurately calibrated dry fertilizer spreader. The Ipimethalin-L/dry bulk fertilizer mixture must be spread uniformly on the soil surface. Uneven spreading can result in crop injury and poor weed control.

Refer to Incorporation Directions section (see table of contents for page number) for incorporation directions.

### Cultural Practices Following Application

If weeds develop, a shallow cultivation or rotary hoeing will generally result in better weed control. Ipimethalin-L treatments may be followed by any registered herbicide to control weeds that are not listed on the label for Ipimethalin-L.

### Follow Crop Restrictions

1. Land that has been treated with Ipimethalin-L may be planted with other crops the following year. Note the restrictions given below for sugar beets, red beets, and spinach.

#### 2. Winter Wheat, Winter Barley

Winter wheat and winter barley may be planted in the fall 4 months after an application of Ipimethalin-L to any registered crop. Winter wheat and winter barley may be planted in the fall 3 months after a postemergence incorporated application of Ipimethalin-L in irrigated field corn or grain sorghum. The treated crop must grow to maturity and be harvested before planting wheat or barley.

In areas where irrigation is necessary to produce the crop treated with Ipimethalin-L, **do not** plant winter wheat or winter barley as follow crops if crop failure and/or destruction occurs and land is fallowed during the summer, otherwise crop injury may result.

**Do not** plant winter wheat or winter barley as follow crops until the next growing season in treated land if Ipimethalin-L is applied at 4.8 pints or higher.

**Do not** feed forage or graze livestock for 75 days after planting wheat or barley in treated land.

24/87

### 3. Sugar Beets, Red Beets, Spinach

To prevent crop injury, do not plant sugar beets, red beets or spinach for 12 months following an Ipimethalin-L application. To insure thorough mixing of soil, land should be plowed using a moldboard plow to a depth of 12 inches prior to planting these crops.

4. When Ipimethalin-L is used in tank-mix or sequential combinations, refer to the label(s) of other herbicides for additional follow crop restrictions.

Use of Ipimethalin-L herbicide in accordance with label directions is expected to result in normal growth of rotational crops in most situations; however, various environmental and agronomic factors make it impossible to eliminate all risks associated with the use of this product and, as a result, rotational crop injury is always a possibility.

---

## Specific Use Directions by Crop

---

### FIELD CORN

#### General Directions and Precautions

- Ipimethalin-L may be applied in conventional, minimum or no-till systems as a preemergence, early postemergence, or postemergence incorporated treatment in field corn.
- **Do not apply as a preplant incorporated treatment** or serious corn injury can occur.
- **Do not apply Ipimethalin-L in no-till systems in California.**
- With the exception of minimum or no-tillage systems (see below), plant into a firm seedbed that is free of clods and trash. Use only where adequate tillage is practiced to provide good soil coverage of the corn seed. **Plant corn at least 1.5 inches deep. Completely cover corn seed with soil.**
- Ipimethalin-L or Ipimethalin-L tank mix combination treatments will control weeds most effectively when adequate rainfall or overhead irrigation is received within 7 days after application. If cultivation is necessary because of soil crusting, soil compaction or weed germination before rain or irrigation, use shallow tillage (such as rotary hoe), and confirm that corn seeds are below the tilled area.
- If Ipimethalin-L is used alone and corn loss occurs as a result of weather conditions, corn or any crop registered for Ipimethalin-L preplant incorporated use can be replanted the same year without adverse effects. If corn is replanted, seeding depth must be below re-tilled area or crop injury may occur.
- **Do not** exceed the maximum labeled rate for any soil type.
- Ipimethalin-L is not recommended for use on peat or muck soils.
- **Field Corn Grown in Minimum or No-Tillage Systems:** Ipimethalin-L alone and Ipimethalin-L tank mixtures may be used in field corn in minimum or no-tillage systems. **Plant corn at least 1.5 inches deep. Completely cover corn seed with soil.** Using no-till planters under conditions that do not allow good soil coverage of the corn seed can result in reduced crop stand or injury if Ipimethalin-L comes into contact with the germinating corn seed. Check equipment to ensure good seed coverage.

#### Use Methods and Timings

**Preemergence Application:** Apply Ipimethalin-L after planting, but before weeds and crop emerge. Apply Ipimethalin-L tank mixes and sequential programs as specified under the tank mix section.

**Early Postemergence Application:** Apply Ipimethalin-L tank mixes postemergence according to corn height and weed size specified under the tank mix section. Ipimethalin-L alone will not control emerged weeds. For maximum effectiveness, wait at least 7-10 days before cultivating early postemergence treatments



25/87

**Postemergence Incorporated Application:** Apply Ipimethalin-L alone or Ipimethalin-L plus atrazine when corn is at least 4 inches tall until layby (last cultivation). Refer to "Postemergence Incorporated Application" section of this label for complete directions.

**Do not apply as a preplant incorporated treatment** or serious corn injury can occur.

### Application Rates in Field Corn

Use rates recommended for Ipimethalin-L alone and in tank mix or sequential applications are given in the following table.

#### Broadcast Application Rates: Preemergence or Early Postemergence Application in Field Corn

Soil Texture	Ipimethalin-L (pt/acre) †		
	<1.5 % Organic Matter	1.5 - 3.0% Organic Matter	>3.0% Organic Matter
<b>Coarse</b>	1.8 to 2.4	2.4 to 3.6	3.6
<b>Medium</b>	2.4 to 3.6	3.6	3.6 to 4.8
<b>Fine</b>	2.4 to 3.6	3.6 to 4.8	3.6 to 4.8

† Use the high rate for each soil classification when using Ipimethalin-L alone.

### Tank Mixes and Sequential Programs in Field corn

Ipimethalin-L may be applied in a tank mix with Accent SP, Accent plus Beacon, atrazine, ~~atrazine plus Bladex~~, ~~Banvel~~, ~~Banvel plus Bladex~~, ~~Basis Gold~~, Beacon, ~~Bicep~~, ~~Bicep II~~ Magnum, ~~Bladex~~, ~~Buctril + atrazine~~, Bullet, Clarity, Dual Magnum, Dual II Magnum, Extrazine II, ~~Frontier~~, ~~Fultime~~, Guardman Max, Harness Plus, Keystone, Lariat, Lasso, Marksman, ~~Marksman plus Bladex~~, Outlook, Surpass EC or ~~Surpass 400~~ TopNotch herbicides. Refer to the label(s) of companion herbicide product(s) for weeds controlled in addition to Ipimethalin-L alone.

When using tank mixtures or sequential applications with Ipimethalin-L, always read the labels of companion product(s) to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions including state and local use restrictions that may apply to specific products. Always follow the most restrictive label directions.

### Restrictions for Early Postemergence Applications

To avoid serious crop injury with early postemergence applications observe the following restrictions:

- ~~Do not~~ apply Ipimethalin-L plus ~~Bladex 90DF~~ or Ipimethalin-L plus ~~Extrazine II DF~~ if a 5th corn leaf is visible.
- ~~Do not~~ use ~~Bladex 4L~~ or ~~Extrazine II 4L~~ as a postemergence treatment on corn.
- ~~Do not~~ apply Ipimethalin-L plus ~~Bladex 90DF~~ or Ipimethalin-L plus ~~Extrazine II DF~~ under extended cold (below 50°F), wet weather conditions, or when cold, wet conditions are predicted, because ~~Bladex~~ or ~~Extrazine~~ injury can occur under these conditions.
- **Do not** apply in liquid fertilizer.

### Follow additional use directions in this table for Ipimethalin-L tank mixes.

(Refer to the application rate table "Broadcast Application Rates: Preemergence or Early Postemergence Application in Field Corn" to determine the appropriate use rate for Ipimethalin-L.)

Ipimethalin-L alone or Ipimethalin-L tank mixes may be used with paraquat (Gramoxone Extra) or glyphosate (Glyphomax Plus or Roundup herbicides), after planting but before crop emergence, to kill existing vegetation. Refer to these labels for specific use recommendations, rates and weeds controlled.

26/87

Ipimethalin-L Plus:	Tank Mix Use Directions																								
<p>Accent or Accent SP (1/3 to 2/3 oz/acre)</p>	<p><b>Preemergence Application Followed By Early Postemergence Application:</b> Apply Ipimethalin-L after planting, but before weeds or crops emerge. Apply Accent herbicide early postemergence at 1/3 to 1/2 ounce per acre to corn up through the 6-leaf (4<sup>th</sup> collared leaf) stage and before barnyardgrass, giant foxtail, green foxtail, seedling johnsongrass, shattercane and wild proso millet exceed a height of 3 inches. Or apply at 2/3 ounce per acre before the corn exceeds 24 inches tall and weeds exceed the height on the label for Accent.</p> <p><b>Early Postemergence Application:</b> Apply tank mix at 1/3 to 1/2 ounce per acre of Accent to corn through the 6-leaf (4<sup>th</sup> collared leaf) stage and before barnyardgrass, giant foxtail, green foxtail, seedling johnsongrass, shattercane, and wild proso millet exceed a height of 3 inches. Or apply at 2/3 ounce per acre of Accent to 6-leaf (4<sup>th</sup> collared leaf) stage corn and before weeds exceed the height recommended on the label for Accent.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the label for Accent.</u></li> <li>• <u>Barnyardgrass, giant Foxtail, green foxtail, seedling johnsongrass, shattercane, and wild proso millet are the only weeds controlled early postemergence by Accent when applied at 1/3 to 1/2 ounce per acre and before the weeds exceed a height of 3 inches.</u></li> <li>• <u>Atrazine, Banvel, Buctril, Buctril + atrazine, Clarity, Exceed, Marksman, Permit, or Scorpion* III herbicides may be tank mixed with Ipimethalin-L plus Accent for improved broadleaf weed control.</u></li> <li>• <u>For early postemergence applications of Accent or Ipimethalin-L plus Accent, add a nonionic surfactant (NIS) at 0.25% vol/vol (1 quart per 100 gallons of spray solution) or a Crop Oil Concentrate (COC) at 1.0% vol/vol (1 gallon per 100 gallons of spray solution). The addition of a liquid nitrogen fertilizer solution (28% nitrogen at 2 - 4 quarts/acre) or spray grade ammonium sulfate (2-4 lb/acre) may improve the weed control of certain emerged species by Accent. When used with an additional broadleaf herbicide, select adjuvants based on the adjuvant limitations of the herbicide.</u></li> <li>• <u>Banded applications of Counter CR systemic insecticide-nematicide can be used with Ipimethalin-L and Accent treatments. Refer to the labels for Counter CR and Accent for use directions, precautions and restrictions.</u></li> <li>• <u>Do not apply Accent through any type of irrigation system.</u></li> </ul>																								
<p>Accent or Accent SP (1/3 oz/acre) plus Beacon (0.38 oz/acre)</p> <p><b>Do not</b> use in California</p>	<p><b>Preemergence Application Followed By Early Postemergence Application:</b> Apply Ipimethalin-L after planting, but before weeds or crops emerge. Apply Accent plus Beacon herbicides postemergence before the corn exceeds 20 inches in height and the weeds exceed the height limitations given below.</p> <p><b>Early Postemergence Application:</b> Apply tank mix to corn through the 6-leaf (4<sup>th</sup> collared leaf) stage and before weeds exceed the height limitations given below.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the labels for Accent and Beacon.</u></li> <li>• <u>Weeds Controlled and height (inches):</u> <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Fall Panicum (2-4)</td> <td style="width: 33%;">Shattercane (4-12)</td> <td style="width: 33%;">Giant ragweed (2-6)</td> </tr> <tr> <td>Giant foxtail (2-4)</td> <td>Sorghum alnum (4-12)</td> <td>Jimsonweed (1-4)</td> </tr> <tr> <td>Green foxtail (1-4)</td> <td>Cocklebur (1-4)</td> <td>P. Smartweed (1-2)</td> </tr> <tr> <td>Quackgrass (4-8)</td> <td>Common ragweed (2-6)</td> <td>Redroot pigweed (1-4)</td> </tr> <tr> <td>S. johnsongrass (4-12)</td> <td>Eastern black nightshade (1-4)</td> <td>Sunflowers (1-4)</td> </tr> </table> </li> <li>• <u>Weeds Suppressed and height (inches):</u> <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Lambsquarters (&lt;1.5)</td> <td style="width: 33%;">Velvetleaf (1-4)</td> <td style="width: 33%;">Woolly cupgrass (1-4)</td> </tr> <tr> <td>Morningglory (&lt;1.5)</td> <td>Wild proso millet (1-4)</td> <td>Yellow foxtail (1-4)</td> </tr> <tr> <td>Sandbur (1-3)</td> <td></td> <td></td> </tr> </table> </li> </ul>	Fall Panicum (2-4)	Shattercane (4-12)	Giant ragweed (2-6)	Giant foxtail (2-4)	Sorghum alnum (4-12)	Jimsonweed (1-4)	Green foxtail (1-4)	Cocklebur (1-4)	P. Smartweed (1-2)	Quackgrass (4-8)	Common ragweed (2-6)	Redroot pigweed (1-4)	S. johnsongrass (4-12)	Eastern black nightshade (1-4)	Sunflowers (1-4)	Lambsquarters (<1.5)	Velvetleaf (1-4)	Woolly cupgrass (1-4)	Morningglory (<1.5)	Wild proso millet (1-4)	Yellow foxtail (1-4)	Sandbur (1-3)		
Fall Panicum (2-4)	Shattercane (4-12)	Giant ragweed (2-6)																							
Giant foxtail (2-4)	Sorghum alnum (4-12)	Jimsonweed (1-4)																							
Green foxtail (1-4)	Cocklebur (1-4)	P. Smartweed (1-2)																							
Quackgrass (4-8)	Common ragweed (2-6)	Redroot pigweed (1-4)																							
S. johnsongrass (4-12)	Eastern black nightshade (1-4)	Sunflowers (1-4)																							
Lambsquarters (<1.5)	Velvetleaf (1-4)	Woolly cupgrass (1-4)																							
Morningglory (<1.5)	Wild proso millet (1-4)	Yellow foxtail (1-4)																							
Sandbur (1-3)																									

27/87

	<ul style="list-style-type: none"> <li>• <u>If application is made during cool (&lt;50°F), dry weather or to weeds hardened by cold or drought, the "controlled weeds" may only be suppressed.</u></li> <li>• <u>Banvel, Buctril or Clarity herbicides may be tank mixed with Ipimethalin-L plus Accent plus Beacon for improved broadleaf weed control.</u></li> <li>• <u>For early postemergence applications of <del>Accent plus Beacon</del> or Ipimethalin-L plus Accent plus Beacon, add a non-ionic surfactant (NIS) at 0.25% vol/vol (1 quart per 100 gallons of spray solution) or a Crop Oil Concentrate (COC) at 1.0% vol/vol (1 gallon per 100 gallons of spray solution). The addition of a liquid nitrogen fertilizer solution (28% nitrogen at 2-4 quarts/acre) or spray grade ammonium sulfate (2-4 lb acre) may improve the weed control of certain emerged species by Accent plus Beacon. When used with an additional broadleaf herbicide, select adjuvants based on the adjuvant limitations of the herbicide.</u></li> <li>• <u>Mixing order:</u> Add the ingredients to water in the following order with the agitator running: Accent, Beacon, Ipimethalin-L and adjuvant(s). Thoroughly mix each ingredient before adding another.</li> <li>• <u>Do not apply Accent or Beacon through any type of irrigation system.</u></li> </ul>
Atrazine (1.0 to 2.0 lb ai/acre)	<p><b>Preemergence Application:</b> Apply after planting, but before weeds or crops emerge.</p> <p><b>Early Postemergence Application:</b> Apply from spike through the 4-leaf (2<sup>nd</sup> collared leaf) stage and before weeds exceed one inch in height (except for Texas panicum, which must be no larger than the 2-leaf stage).</p> <p><b>Postemergence Incorporated Application:</b> Refer to the "Postemergence Incorporated Application" section in this label for application directions.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the label for atrazine.</u></li> <li>• <u>Do not exceed 1.2 lb ai/A of atrazine for postemergence incorporated applications.</u></li> </ul>
Atrazine (0.4 to 0.8 lb A.I./acre) plus Bladex 90DF (0.45 to 1.78 lb/acre) or Bladex 4L (0.4 to 1.6 qt/acre)	<p><b>Preemergence Application:</b> Apply after planting, but before weeds or crops emerge.</p> <p><b>Early Postemergence Application:</b> Apply from spike through the 4 leaf (2<sup>nd</sup> collared leaf) stage and before weeds exceed one inch in height (except for Texas panicum, which must be no larger than the 2 leaf stage).</p> <p><del>Read and strictly follow all precautions and directions on the labels for atrazine and Bladex.</del></p> <ul style="list-style-type: none"> <li>• <del>Do not apply tank mixture postemergence under extended cold (&lt;50°F), wet weather conditions, or when cold, wet conditions are predicted because Bladex injury can occur under these conditions.</del></li> <li>• <del>Do not use this combination on sands or loamy sands with less than 1% organic matter.</del></li> <li>• <del>Do not apply Bladex 4L postemergence.</del></li> <li>• <del>Do not apply Bladex by air.</del></li> </ul>
Banvel/Clarity (0.5 to 0.75 pt/acre)	<p><b>Preemergence Application:</b> Apply after planting but before weeds or crops emerge. When applying this tank mixture at planting, the spray nozzles must be far enough behind the planter to avoid contact of the spray mixture with the seeds to avoid crop injury. Do not use on furrow irrigated corn.</p> <p><b>Early Postemergence Application:</b> Apply from spike through the 4-leaf (2<sup>nd</sup> collared leaf) stage and before weeds exceed one inch in height. This tank mix will not control emerged grasses.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the label for Banvel.</u></li> <li>• <u>Apply only on level planted corn.</u></li> <li>• <u>Do not use on sands, loamy sands, or sandy loams.</u></li> <li>• <u>Do not use on medium or fine textured soils containing less than 2% organic matter.</u></li> <li>• <u>Apply in water with ground equipment only.</u></li> <li>• <u>Avoid drift of this mixture to soybeans or other sensitive crops.</u></li> </ul>

28/8/1

	<ul style="list-style-type: none"> <li>• <u>Do not</u> apply this tank mixture by aircraft.</li> </ul>
<p>Banvel (0.5 to 1.0 pt/acre) plus Bladex 90DF (1.0 to 2.22 lb/acre) or Bladex 4L (1.0 to 2.0 qt/acre)</p>	<p><b>Preemergence Application:</b> Apply after planting, but before weeds or crops emerge. Do not use on furrow irrigated corn.</p> <p><b>Early Postemergence Application:</b> Apply from spike through the 4 leaf (2<sup>nd</sup> collared leaf) stage and before weeds exceed one inch in height (except for Texas panicum, which must be no larger than the 2-leaf stage).</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and directions on the labels for Banvel and Bladex.</li> <li>• Apply only on level planted corn.</li> <li>• <u>Do not</u> apply this tank mixture preemergence on any soils with less than 2% organic matter.</li> <li>• <u>Do not</u> use this tank mixture postemergence on any soils with less than 1% organic matter.</li> <li>• <u>Do not</u> apply this tank mixture by air. Avoid drift of this mixture to soybeans or other sensitive crops.</li> <li>• <u>Do not</u> apply postemergence under extended cold (&lt;50° F) and wet weather conditions, or when cold, wet conditions are predicted or serious crop injury can result. Bladex injury can occur under these conditions.</li> <li>• <u>Do not</u> apply through any type of irrigation system.</li> <li>• <u>Do not</u> apply Bladex 4L postemergence on corn.</li> </ul>
<p>Basis Gold (14 oz/acre)</p>	<p><b>Preemergence followed by Early Postemergence:</b> Apply Pendimax 3.3 after planting, before weeds emerge. Apply basis Gold postemergence before corn exceeds 12 inches tall, or exhibiting up to 5 collared leaves, whichever is more restrictive.</p> <p><b>Early Postemergence:</b> Apply tank mix to corn up to 12 inches tall or exhibiting up to 5 collared leaves, whichever is most restrictive.</p> <ul style="list-style-type: none"> <li>• Applications of Basis Gold to corn under stress may result in crop injury. Read and strictly follow all precautions and instructions on the label for Basis Gold.</li> <li>• Applications of Basis Gold or Basis Gold plus Pendimax 3.3 must include crop oil concentrate (COC) at 1% vol/vol (1 gallon per 100 gallons spray solution). COC at 2% vol/vol should be used under arid conditions. The addition of a liquid nitrogen fertilizer solution (28% nitrogen at 2-4 qt/acre) is recommended to improve the weed control of certain emerged species by Basis Gold.</li> <li>• <u>Do not</u> apply Basis Gold through any type of irrigation system.</li> </ul>
<p>Beacon (0.38 or 0.76 oz/acre)</p> <p><b>Do not</b> use in California</p>	<p><b>Preemergence Application Followed By Early Postemergence Application:</b> Apply Ipimethalin-L after planting, before weeds or crops emerge. Apply Beacon herbicide postemergence before corn exceeds 20 inches in height and the weeds exceed the height limitations on the label for Beacon.</p> <p><b>Early Postemergence Application:</b> Apply tank mix to corn through the 6-leaf (4<sup>th</sup> collared leaf) stage and before weeds exceed the height recommended on the label for Beacon.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and directions on the label for Beacon.</li> <li>• Banvel, Buctril, Clarity or 2,4-D may be tank mixed with Ipimethalin-L for improved broadleaf weed control.</li> <li>• For early Postemergence applications of Beacon or Ipimethalin-L plus Beacon, add a non-ionic surfactant (NIS) at 0.25% vol/vol (1 quart per 100 gallons of spray solution) or a Crop Oil Concentrate (COC) at 1.0% vol/vol (1 gallon per 100 gallons of spray solution). With NIS, the addition of a liquid nitrogen fertilizer solution (28% nitrogen at 2-4 quarts/acre) or spray grade ammonium sulfate (2-4 lb/acre) may improve the weed control of certain emerged species by Beacon. <u>Do not</u> use COC in combination with liquid fertilizer or ammonium sulfate. When used with an additional herbicide, select adjuvants based on the adjuvant limitations of the</li> </ul>

29/87

	<p>herbicide.</p> <ul style="list-style-type: none"> <li>• <b>Do not</b> apply Beacon through any type of irrigation system.</li> </ul>
<p><del>Bicep or Bicep II Magnum</del> (1.5 to 3.0 qt/acre) (1.3 to 2.6 qt/acre)</p> <p><b>Do not</b> use in California</p>	<p><b>Preemergence Application:</b> Apply after planting, but before weeds or crops emerge. Preemergence applications may be made through center pivot irrigation systems.</p> <p><b>Early Postemergence Application:</b> Apply from spike through the 4-leaf (2nd collared leaf) stage and when weeds are no larger than the 1-2 leaf growth stage. For best results, destroy emerged weeds by cultivation prior to application. Do not apply Bicep II Magnum postemergence.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the label for Bicep II Magnum.</u></li> <li>• <u>Add Ipimethalin-L to the spray tank prior to the addition of Bicep II Magnum.</u></li> </ul>
<p><del>Bladex 90DF</del> (1.11 to 2.67 lb/acre) or <del>Bladex 4L</del> (1.0 to 2.4 qt/acre)</p>	<p><b>Preemergence Application:</b> <del>Apply Bladex herbicide after planting, but before weeds or crops emerge.</del></p> <p><b>Early Postemergence Application:</b> <del>Apply from spike through the 4 leaf (2<sup>nd</sup> collared leaf) stage and before weeds exceed one inch in height (except for Texas panicum, which must be no larger than the 2 leaf stage).</del></p> <ul style="list-style-type: none"> <li>• <del>Read and strictly follow all precautions and directions on the label for Bladex.</del></li> <li>• <del>Do not apply tank mixture postemergence under extended cold (&lt;50°F), wet weather conditions, or when cold, wet conditions are predicted because Bladex injury can occur under these conditions.</del></li> <li>• <del>Do not use this combination on sands or loamy sands with less than 1% organic matter.</del></li> <li>• <del>Do not apply Bladex 4L postemergence</del></li> <li>• <del>Do not apply Bladex by air.</del></li> <li>• <del>The maximum rate for Bladex 90DF for early postemergence applications is 2.2 lb of product per acre.</del></li> </ul>
<p>Buctril + Atrazine (1.5 to 2.0 pt/acre)</p> <p><b>Do not</b> use in California.</p>	<p><b>Early Postemergence Application:</b> Apply from spike through the 4-leaf (2nd collared leaf) stage and before weeds exceed the height on the label for Buctril + Atrazine. This tank mix will not effectively control emerged grasses.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the label for Buctril + Atrazine.</u></li> </ul>
<p>Dual <u>Magnum</u> or Dual II <u>Magnum</u> (1.250 to 2.50 pt/acre)</p> <p><b>Do not</b> use in California.</p>	<p><b>Preemergence Application:</b> Apply after planting, but before weeds or crops emerge. Preemergence applications may be made through center pivot irrigation systems.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the labels for Dual <u>Magnum</u> or Dual II <u>Magnum</u>.</u></li> </ul>
<p>Dual <u>Magnum</u> or Dual II <u>Magnum</u> (1.250 to 2.50 pt/acre) plus Bladex 90DF (1.0 to 2.22 lb/acre) or Bladex 4L (1.0 to 2.0 qt/acre)</p> <p><b>Do not</b> use in California.</p>	<p><b>Preemergence Application:</b> <del>Apply after planting, but before weeds or crops emerge.</del></p> <p><b>Early Postemergence Application:</b> <del>Apply from spike through the 4 leaf (2<sup>nd</sup> collared leaf) stage and before weeds exceed one inch in height (except for Texas panicum, which must be no larger than the 2 leaf stage).</del></p> <ul style="list-style-type: none"> <li>• <del>Read and strictly follow all precautions and directions on the labels for Bladex and Dual Magnum.</del></li> <li>• <del>Do not apply tank mixture postemergence under extended cold (&lt;50°F), wet weather conditions, or when cold, wet conditions are predicted. Bladex injury can occur under these conditions.</del></li> <li>• <del>Do not use this combination on sands or loamy sands with less than 1% organic matter.</del></li> <li>• <del>Do not apply Bladex 4L postemergence or Dual II Magnum postemergence.</del></li> </ul>

30/87

	<ul style="list-style-type: none"> <li>Do not apply Bladex by air.</li> <li>The maximum rate for Bladex 90DF for early postemergence applications is 2.2 lb of product per acre.</li> </ul>
<p>Extrazine II DF (0.8 to 3.3 lb/acre) or Extrazine II 4L (0.75 to 3.0 qt/acre)</p> <p><b>Do not use in California.</b></p>	<p><b>Preemergence Application:</b> Apply after planting, but before weeds or crops emerge.</p> <p><b>Early Postemergence Application:</b> Apply from spike through the 4 leaf (2nd collared leaf) stage and before weeds exceed one inch in height (except for Texas panicum, which must be no larger than the 2 leaf stage).</p> <ul style="list-style-type: none"> <li>Read and strictly follow all precautions and directions on the label for Extrazine.</li> <li>Do not apply tank mixture postemergence under extended cold (&lt;math&gt;50^{\circ}\text{F}&lt;/math&gt;), wet weather conditions, or when cold, wet conditions are predicted. Extrazine injury can occur under these conditions.</li> <li>Do not use this combination on sand or loamy sands with less than 1% organic matter.</li> <li>Do not apply Extrazine II 4L postemergence.</li> <li>Do not apply this tank mix by air.</li> </ul> <p>The maximum rate for Extrazine II DF for early postemergence applications is 2.2 lb/A.</p>
<p>Frontier (13 to 25 oz/acre)</p> <p><b>Do not use in California.</b></p>	<p><b>Preemergence Application:</b> Apply after planting, but before weeds or crops emerge.</p> <p><b>Early Postemergence Application:</b> Apply after corn emergence but before corn exceeds 3 inches in height. This tank mix will not control emerged weeds.</p> <ul style="list-style-type: none"> <li>Read and strictly follow all precautions and directions on the label for Frontier.</li> </ul>
<p>FulTime* (2.5 to 4.0 qt/acre)</p> <p><b>Do not use in California.</b></p>	<p><b>Preemergence Application:</b> Apply after planting, but before emergence of weeds or crop.</p> <p><b>Early Postemergence Application:</b> Apply to corn up to 3 inches in height but before weeds exceed 1 inch in height</p> <ul style="list-style-type: none"> <li>Read and strictly follow all precautions and directions on the label for FulTime.</li> </ul>
<p>Guardman Max (2.5 to 5.0 4.6 pt/acre)</p> <p><b>Do not use in California.</b></p>	<p><b>Preemergence Application:</b> Apply after planting, but before weeds or crops emerge.</p> <p><b>Early Postemergence Application:</b> Apply to corn up to 3 inches in height but before weeds exceed 1.5 inches in height</p> <ul style="list-style-type: none"> <li>Read and strictly follow all precautions and directions on the label for Guardman.</li> </ul>
<p>Harness (1.25 to 3.0 pt/acre)</p> <p><b>Do not use in California.</b></p>	<p><b>Preemergence Application:</b> Apply after planting, but before weeds or crops emerge. Apply within 5 days of last preplant tillage operation.</p> <ul style="list-style-type: none"> <li>Read and strictly follow all precautions and directions on the label for Harness Plus.</li> </ul>
<p>Harness Xtra (1.8 to 2.3 qt/acre)</p> <p><b>Do not use in California.</b></p>	<p><b>Preemergence Application:</b> Apply after planting, but before weeds or crops emerge. Apply within 5 days of last preplant tillage operation.</p> <ul style="list-style-type: none"> <li>Read and strictly follow all precautions and directions on the label for Harness Xtra.</li> </ul>
<p>Keystone (2.2 to 3.4 qt/acre)</p> <p><b>Do not use in California.</b></p>	<p><b>Preemergence Application:</b> Apply after planting, but before emergence of weeds or crop.</p> <p><b>Postemergence Application:</b> Apply to corn up to 3 inches in height but before weeds exceed 1 inch in height</p> <ul style="list-style-type: none"> <li>Read and strictly follow all precautions and directions on the label for Keystone.</li> </ul>
<p>Lariat (2.0 to 4.5 qt/acre) or</p>	<p><b>Preemergence Application:</b> Apply after planting, but before weeds or crops emerge. Preemergence applications may be made through center pivot irrigation systems.</p>

31/87

<p>Bullet (2.0 to 4.5 qt/acre)</p> <p><b>Do not</b> use in California.</p>	<p><b>Early Postemergence Application:</b> Apply from spike through the 4-leaf (2<sup>nd</sup> collared leaf) stage and when weeds are no larger than 2-leaf growth stage. Apply with ground equipment in water only.</p> <ul style="list-style-type: none"> <li>Read and strictly follow all precautions and directions on the labels for Lariat and Bullet.</li> <li><b>Do not</b> graze treated area or feed treated forage to livestock for 21 days following application.</li> </ul>
<p>Lasso (1.5 to 4.0 qt/acre)</p>	<p><b>Preemergence Application:</b> Apply after planting, but before weeds or crops emerge. This treatment must be applied within 5 days of the last replant tillage operation. Preemergence applications may be made through center pivot irrigation systems.</p> <p><b>Early Postemergence Application:</b> Apply after corn emergence, but before corn exceeds 5 inches in height. This tank mix will not control emerged weeds.</p> <ul style="list-style-type: none"> <li>Read and strictly follow all precautions and directions on the label for Lasso.</li> </ul>
<p>Marksman (2.0 to 3.5 pt/acre)</p> <p><b>Do not</b> use in California.</p>	<p><b>Preemergence Application:</b> Apply after planting, but before weeds or crops emerge. <b>Do not</b> use on furrow irrigated corn</p> <p><b>Early Postemergence Application:</b> Apply after corn emergence but no later than when corn is in the 2-leaf (no collared leaves) stage of growth and weeds are no larger than one inch in height.</p> <ul style="list-style-type: none"> <li>Read and strictly follow all precautions and directions on the label for Marksman.</li> <li>Apply only on level planted corn.</li> <li><b>Do not</b> apply preemergence on any soils with less than 2.0% organic matter.</li> <li><b>Avoid</b> drift to soybeans or other sensitive crops.</li> </ul>
<p>Marksman (2.0 to 3.5 pt/acre) plus Bladex 90DF (1.0 to 2.22 lb ai/acre) or Bladex 4L (1.0 to 2.0 qt/acre)</p> <p><b>Do not</b> use in California.</p>	<p><del><b>Preemergence Application:</b> Apply after planting, but before weeds or crops emerge. <b>Do not</b> use on furrow irrigated corn.</del></p> <p><del><b>Early Postemergence Application:</b> Apply after corn emergence but no later than when corn is in the 2 leaf (no collared leaves) stage of growth and weeds are no larger than one inch tall.</del></p> <ul style="list-style-type: none"> <li><del>Read and strictly follow all precautions and directions on the labels for Marksman and Bladex.</del></li> <li><del>Apply only on level planted corn</del></li> <li><del><b>Do not</b> apply tank mixture postemergence under extended cold (&lt;50°F), wet weather conditions, or when cold, wet conditions are predicted. Bladex injury can occur under these conditions.</del></li> <li><del><b>Do not</b> apply preemergence on any soils with less than 2% organic matter.</del></li> <li><del><b>Do not</b> use this tank mixture postemergence on any soils with less than 1% organic matter.</del></li> <li><del><b>Avoid</b> drift to soybeans or other sensitive crops.</del></li> <li><del><b>Do not</b> apply Bladex 4L postemergence.</del></li> <li><del><b>Do not</b> apply Bladex by air.</del></li> </ul>
<p>Outlook (10 to 13 oz/acre)</p> <p><b>Do not</b> use in California.</p>	<p><b>Preemergence Application:</b> Apply after planting, but before weeds or crops emerge.</p> <p><b>Early Postemergence Application:</b> Apply after corn emergence but before corn exceeds 3 inches in height. This tank mix will not control emerged weeds.</p> <ul style="list-style-type: none"> <li>Read and strictly follow all precautions and directions on the label for Outlook.</li> </ul>
<p>Surpass EC (1.05 to 3.75 pt/acre)</p> <p><b>Do not</b> use in California.</p>	<p><b>Preemergence Application:</b> Apply after planting, but before weeds or crops emerge.</p> <ul style="list-style-type: none"> <li>Read and strictly follow all precautions and directions on the label for Surpass.</li> </ul>

32/87

Surpass 100 (1.6 to 3.3 qt/acre)  <b>Do not</b> use in California.	<b>Preemergence Application</b> Apply after planting, but before weeds or crops emerge.  Read and strictly follow all precautions and directions on the label for Surpass 100.
TopNotch (2.0 to 3.0 qt/acre)  <b>Do not</b> use in California.	<b>Preemergence Application:</b> Apply after planting, but before emergence of weeds or crop.  <b>Early Postemergence Application:</b> Apply to corn up to 3 inches in height but before weeds exceed 1 inch in height  • Read and strictly follow all precautions and directions on the label for Fultime.

### Directions for use on SR Sethoxydim-resistant Field Corn

Ipimethalin-L Plus:	Tank Mix Use Directions
Poast Plus (12 to 24 oz/A)	<p><b>Early Postemergence Application:</b> Apply after corn emergence but no later than when corn is in the 6-leaf (4 collared leaves) stage of growth. Refer to the label for Poast Plus for specific weed height, rate recommendations, and postemergence broadleaf tank-mix partners.</p> <ul style="list-style-type: none"> <li>• Only SR corn hybrids are tolerant to Poast Plus applications. Severe crop injury will occur to corn hybrids not labeled as SR corn.</li> <li>• A non-phytotoxic Crop Oil Concentrate (COC) should be used at a concentration of 1.0% v/v (2 pints per acre maximum) or as recommended by the manufacturer (if recommendation is less than 1.0%).</li> <li>• <b>Do not</b> apply if rainfall is expected within 1 hour following application or unsatisfactory weed control may result.</li> <li>• Read and follow all precautions and directions on the label for Poast Plus.</li> </ul>

## Postemergence Incorporated Application

### General Directions and Precautions

Ipimethalin-L or Ipimethalin-L plus atrazine tank mixtures applied as a **postemergence incorporated** treatment will control most late season annual grasses and certain broadleaf weeds in field corn. Ipimethalin-L treatments can be applied from the 4-inch growth stage to as late as the last cultivation (layby) of field corn. Ipimethalin-L plus atrazine must be applied before the field corn reaches 12 inches in height. Ipimethalin-L treatments will not control established weeds. **Destroy emerged weeds by cultivation before applying** Ipimethalin-L.

Postemergence incorporated applications of Ipimethalin-L or Ipimethalin-L plus atrazine tank mixture can be applied in field corn that was previously treated with herbicides registered for use in field corn. Refer to the labels of those herbicides for suggested treatments, rates to be used, and precautions or restrictions for use in field corn and for Follow Crop Restrictions.

### Postemergence Incorporated Applications (Ipimethalin-L alone or Ipimethalin-L plus Atrazine)

1. Cultivate with a sweep-type or rolling cultivator operated at sufficient speed to throw at least one inch of soil over the bases of the field corn plants. This will kill any small weed seedlings that are growing in the field corn row, and it will prevent direct contact of the zone of brace root formation by Ipimethalin-L during application.



33/87

2. Apply broadcast with a ground sprayer when corn is at least 4 inches tall up to layby (last cultivation). Use drop nozzles if crop foliage will prevent uniform coverage of the soil surface within the rows.
3. Uniformly and thoroughly incorporate Ipimethalin-L treatments into the soil (1) with a sweep-type or rolling cultivator set to provide thorough incorporation in the top 1 inch of soil OR (2) with adequate irrigation water or rainfall. For best results, incorporate Ipimethalin-L treatments as soon as possible after application. Incorporation must be concluded within 7 days after application. If adequate moisture is not received within 7 days after application, incorporate Ipimethalin-L with a sweep-type or rolling cultivator.

In situations such as, low rainfall or soil moisture, when deep germinating weeds such as shattercane or field sandbur are anticipated, mechanical incorporation will provide best results.

If cultivation is needed after application and incorporation of Ipimethalin-L, the depth of cut should be no deeper than the depth of cut used to incorporate.

**Broadcast Application Rates: Postemergence Incorporated Application in Field Corn**

Soil Texture	Ipimethalin-L (pt/acre)	
	Southern States †	Northern States †
Coarse	1.2 to 1.8	1.8 to 2.4
Medium	1.8 to 2.4	2.4 to 3.6
Fine	1.8 to 3.6	2.4 to 3.6

† See map at end of this label for specific states.

For Ipimethalin-L plus atrazine tank mixtures, do not exceed 1.2 pounds of active ingredient per acre of atrazine.

**Note:** Livestock can graze or be fed forage from treated field corn after 21 days following application.

**SWEET CORN**

For use on sweet corn in Alabama, Arizona, Idaho, California, Florida, Georgia, Illinois, Minnesota, Mississippi, Montana, Oregon, New York, Texas, Washington and Wisconsin.

**General Directions and Precautions**

- Ipimethalin-L herbicide may be applied as a preemergence treatment only in sweet corn (all varieties) in Arizona, California, Montana, and Texas.
- Ipimethalin-L may be applied as a preemergence or early postemergence treatment in sweet corn (processing varieties only) in Idaho, Illinois, Minnesota, New York, Oregon, Washington, and Wisconsin.
- Ipimethalin-L may be applied as an early postemergence treatment only in sweet corn in Alabama, Florida ~~and~~ Georgia and Mississippi. Ipimethalin-L can only be applied as an early postemergence treatment with atrazine. **Do not** apply Ipimethalin-L alone or with any other product in these states.
- **Do not apply as a preplant incorporated treatment** or serious corn injury can occur.
- Plant into a firm seedbed that is free of clods and trash. Use only where adequate tillage is practiced to provide good soil coverage of the corn seed. **Plant corn at least 1 1/2 inches deep. Completely cover corn seed with soil.**
- Ipimethalin-L or Ipimethalin-L tank-mix combination treatments control weeds most effectively when adequate rainfall or overhead irrigation is received within 7 days after application. If cultivation is

34/87

necessary because of soil crusting, soil compaction or weed germination before rain or irrigation, use shallow tillage (such as rotary hoe), and make certain corn seeds are below the tilled area.

- If Ipimethalin-L is used alone and corn loss occurs as a result of weather conditions, corn or any crop registered for Ipimethalin-L preplant incorporated use can be replanted the same year with no adverse effects. If corn is replanted, make sure seeding depth is below refilled area, or crop injury may occur.
- Ipimethalin-L is not recommended for use on peat or muck soils.

## Use Methods and Timings

**Preemergence Application:** Apply Ipimethalin-L after planting, but before weeds and crop emerge. Apply Ipimethalin-L tank mixes as specified under the tank mix section.

**Early Postemergence Application:** Apply Ipimethalin-L tank mixes postemergence according to corn height and weed size specified under the tank mix section. Ipimethalin-L alone will not control emerged weeds. Wait at least 7-10 days before cultivating early postemergence treatments for maximum effectiveness.

Ipimethalin-L may ~~only~~ be applied as a postemergence treatment to sweet corn only in Alabama, Florida, Georgia, Illinois, Minnesota, New York, and Wisconsin. **Do not** apply as a postemergence treatment to sweet corn in Arizona, California, Idaho, Montana, Oregon, Texas, and Washington states other than those listed in this paragraph.

**Do not apply as a preplant incorporated treatment** or serious corn injury can occur.

## Application Rates in Sweet Corn

Use rates recommended for Ipimethalin-L alone and in tank mix applications are given in the following table.

### Broadcast Application Rates: Preemergence and Early postemergence Application in Sweet Corn

Soil Texture	Ipimethalin-L (pt/acre) †		
	<1.5 % Organic Matter	1.5-3.0 % Organic Matter	>3.0 % Organic Matter
<b>Coarse</b>	1.8 to 2.4	2.4 to 3.6	3.6
<b>Medium</b>	2.4 to 3.6	3.6	3.6 to 4.8
<b>Fine</b>	2.4 to 3.6	3.6 to 4.8	3.6 to 4.8

† When using Ipimethalin-L alone, use the high rate for each soil classification.

## Tank Mixes in Sweet corn

Ipimethalin-L may be applied in a tank mix with atrazine, ~~Bicep~~, Bicep II Magnum, Dual Magnum, Dual II Magnum, Lariat or Bullet, or Lasso herbicides. Refer to the labels of companion products for weeds controlled in addition to Ipimethalin-L alone.

When using tank mixtures with Ipimethalin-L, always read the labels of companion product(s) to determine the specific use rates by soil types, weed species, and weed or crop growth stage. Also follow precautions and restrictions, including state and local use restrictions, that may apply to specific products. Always follow the most restrictive label directions.

## Restrictions for Early Postemergence Applications

Observe the following restrictions to avoid serious crop injury with early postemergence applications:

35/87

- **Do not** apply following Ipimethalin-L preemergence applications.
- **Do not** apply in liquid fertilizer.

Follow additional use directions in the table for Ipimethalin-L tank mixes.  
 (Refer to the application table "Broadcast Application Rates: Preemergence or Early Postemergence Application in Sweet Corn" to determine the appropriate use rate for Ipimethalin-L.)

<b>Ipimethalin-L Plus:</b>	<b>Tank Mix Use Directions</b>
<p>Atrazine (1.0 to 2.0 lb ai/acre)</p>	<p><b>Preemergence Application:</b> Apply after planting, but before weeds or crops emerge.</p> <p><b>Early Postemergence Application:</b> Apply from spike through the 4-leaf stage but before weeds exceed one inch in height (except for Texas panicum, which must be no larger than the 2-leaf stage).</p> <ul style="list-style-type: none"> <li>• <u>Read</u> and strictly follow all precautions and directions on the label for atrazine.</li> <li>• <u>In</u> Alabama, Florida and Georgia, Ipimethalin-L can only be applied with atrazine early postemergence. <b>Do not</b> apply Ipimethalin-L alone or with any other product in these states.</li> </ul>
<p><del>Bicep</del> or Bicep II Magnum (1.5 to 3.0 qt/acre) (1.3 to 2.6 qt/acre)</p> <p><b>Do not</b> use in California.</p>	<p><b>Preemergence Application:</b> Apply after planting, but before weeds or crops emerge.</p> <p><b>Early Postemergence Application:</b> Apply from spike through the 4-leaf stage, and when weeds are no larger than the 1-2 leaf growth stage. For best results, destroy emerged weeds by cultivation prior to application. <b>Do not</b> apply Bicep II <u>Magnum</u> postemergence.</p> <ul style="list-style-type: none"> <li>• <u>Read</u> and strictly follow all precautions and directions on the label for Bicep II <u>Magnum</u>.</li> <li>• <u>Add</u> Ipimethalin-L to the spray tank prior to the addition of Bicep II <u>Magnum</u>.</li> </ul>
<p>Dual <u>Magnum</u> or Dual II <u>Magnum</u> (1.250 to 2.50 pt/acre)</p> <p><b>Do not</b> use in California.</p>	<p><b>Preemergence Application:</b> Apply after planting, but before weeds or crops emerge.</p> <ul style="list-style-type: none"> <li>• <u>Read</u> and strictly follow all precautions and directions on the label for Dual <u>Magnum</u> or Dual II <u>Magnum</u>.</li> </ul>
<p>Lariat (2.0 to 4.5 qt/acre) or Bullet (2.0 to 4.5 qt/acre)</p> <p><b>Do not</b> use in California</p>	<p><b>Preemergence Application:</b> Apply after planting, but before weeds or crops emerge.</p> <ul style="list-style-type: none"> <li>• <u>Read</u> and strictly follow all precautions and directions on the label for Lariat or Bullet.</li> <li>• <b>Do not</b> graze treated area or feed treated forage to livestock for 21 days following application.</li> </ul>

36/87

<p>Lasso (1.5 to 4.0 qt/acre)</p>	<p><b>Preemergence Application:</b> Apply after planting, but before weeds or crops emerge. This treatment must be applied within 5 days of the last preplant tillage.</p> <p><b>Early Postemergence Application:</b> Apply after planting but before corn exceeds 5 inches in height. Apply in ground equipment with water only. This tank mix will not control emerged weeds.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the label for Lasso.</u></li> </ul>
---------------------------------------	--

## COTTON

### General Directions and Precautions

**Ipimethalin-L may be applied in the following ways in cotton:** conventional, minimum, stale seedbed or no-till as a preplant surface, preplant incorporated, or preemergence application.

- **Do not** use in no-till cotton in California.
- Preplant surface and preemergence treatments control weeds most effectively when adequate rainfall or overhead irrigation is received within 7 days after application. A shallow cultivation is recommended if soil crusting or soil compaction occurs. If weeds begin to germinate or adequate moisture is not received within 7 days after application, use shallow tillage, such as rotary hoe or light harrow, and make sure cotton seeds are below tilled area. Otherwise, the use of a postemergence herbicide treatment may be required to control weed escapes at planting or following cotton emergence.
- If crop loss occurs as a result of weather conditions, cotton or any crop registered for Ipimethalin-L preplant incorporated application can be replanted without adverse effects the same year. If replanting is necessary, **do not** rework the soil deeper than the treated zone.
- **Do not** feed forage or graze livestock in treated cotton fields.
- Ipimethalin-L is not recommended for use on peat or muck soils.

### Application Methods and Timings

**Preplant Surface Application:** Apply Ipimethalin-L up to 15 days before planting. Apply Ipimethalin-L tank mixes and sequential programs as specified under the tank mix section.

**Preplant Incorporated Application:** Apply Ipimethalin-L up to 60 days before planting and incorporate within 7 days of application. Apply Ipimethalin-L tank mixes and sequential programs as specified under the tank mix section.

**Preemergence Application:** Apply Ipimethalin-L at planting or up to 2 days after planting. Apply to a firm seedbed that is free of clods. Apply Ipimethalin-L tank mixes and sequential programs as specified under the tank mix section.

**Preplant Incorporated Application followed by Preemergence Application:** Apply Ipimethalin-L up to 60 days before planting and incorporate within 7 days of application. Apply overlay application of Ipimethalin-L at planting or up to 2 days after planting. Total amount of Ipimethalin-L applied per acre cannot exceed the highest labeled rate for a given soil type. Preplant incorporated and preemergence applications of Ipimethalin-L may be applied with labeled tank mix herbicide(s).

**Fall Application:** Ipimethalin-L may be applied for weed control in cotton in the fall, after October 15 (up to 140 days before planting cotton) in Arizona, California Louisiana, New Mexico, Mississippi, Oklahoma

37/87

and Texas. Apply Ipimethalin-L at the broadcast rate of 1.8 pints on coarse soils, 2.4 pints on medium soils and 3.6 pints on fine soils.

### Application Rates in Cotton

Use rates recommended for Ipimethalin-L alone and in tank mix or sequential applications are given in the following table.

#### Broadcast Application Rates in Cotton

Soil Texture	Ipimethalin-L (pt/acre)	
	Conventional or Minimum Tillage	No-Tillage †
Coarse	1.2 to 2.4 ††	1.8 to 2.4
Medium	1.8 to 2.4	2.4 to 3.6
Fine	2.4 to 3.6	3.6 to 4.8

† This use is not recommended for soils with more than 3% organic matter.

†† Do not exceed 1.8 pt/A on coarse soils in California.

For heavy clay soils, apply Ipimethalin-L at the broadcast rate of 3.6 pints per acre.

The high rates for each soil texture above should be used if heavy weed populations are anticipated, extensive crop residues were present before seedbed preparation, or in no-till.

### Tank Mixes and Sequential Programs in Cotton

Ipimethalin-L may be applied in a tank mix with fluometuron (i.e. Cotoran) prometryn (i.e. Caparol) and Zorial. Ipimethalin-L may be applied in a sequential application with fluometuron, diuron (i.e. Karmex) or Zorial. Refer to the labels of companion products for weeds controlled in addition to Ipimethalin-L alone.

When using tank mixtures or sequential applications with Ipimethalin-L, always read the labels of companion products to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions, including state and local use restrictions that may apply to specific products. Always follow the most restrictive label directions.

Follow additional use directions in this table for Ipimethalin-L tank mixes.

(Refer to the application rate table above "Broadcast Application Rates in Cotton" to determine appropriate Ipimethalin-L use rate in cotton.)

**For no-till:** Ipimethalin-L alone or Ipimethalin-L tank mixes may be used with Gramoxone Extra or Roundup herbicides to kill any existing vegetation that is present before planting. Refer to these labels for specific use recommendations, rates, and weeds controlled.

Ipimethalin-L Plus:	Tank Mix Use Directions
fluometuron (i.e. Cotoran) (0.8 to 2.0 lb ai/acre)	<p><b>Preplant Incorporated Application Followed By Preemergence Application:</b> Apply Ipimethalin-L up to 60 days before planting and incorporate within 7 days of application. Apply fluometuron as an overlay preemergence application as directed on the label for fluometuron (use the preemergence rates for fluometuron alone).</p> <p><b>Preemergence Application:</b> Apply immediately after planting or crop injury may result. Apply in water or nitrogen solution with ground equipment only. Do not apply tank mix preemergence in Arizona, California, Oklahoma, New Mexico and West Texas.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and directions on the label for fluometuron.</li> <li>• Plant cotton seeds 1 inch or deeper below the soil surface.</li> </ul>

38/87

	<ul style="list-style-type: none"> <li>• The use of fluometuron as a preemergence application following the use of a systemic insecticide at-planting, may result in crop injury. <b>Do not</b> plant crops other than cotton within 6 months of the last application of fluometuron or injury may result.</li> <li>• Maintain good agitation at all times until spraying is completed.</li> <li>• <b>Do not</b> feed livestock foliage from treated cotton plants or gin trash.</li> </ul>
<p>prometryn (i.e. Caparol) (1.2 to 2.4 lb ai/acre)</p> <p><b>For use in Arizona, California, New Mexico, and the Upper and Lower El Paso Valley of Texas.</b></p>	<p><b>Preplant Incorporated Application:</b> Apply with ground equipment prior to listing or over partially finished or finished beds. Incorporate immediately after application.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and directions on the label for prometryn.</li> <li>• <b>Do not</b> use on sands or loamy sands.</li> <li>• <b>Do not</b> use this tank mix in cut areas of newly leveled fields, in areas of excess salt, or in areas where flooding over the bed is likely to occur or crop injury may result. Cotton should not be planted in tractor wheel depressions or crop injury may result.</li> <li>• <b>Do not</b> use this tank mixture when cotton is irrigated up or crop injury may result. On mulch planted cotton, water back only after cotton seedlings are well established.</li> <li>• Maintain good agitation at all times until spraying is completed to keep the material in suspension. Mechanical agitation should be used in Arizona and California.</li> <li>• <b>Do not</b> rework the soil if replanting is necessary.</li> </ul>
<p>prometryn (i.e. Caparol)</p> <p><b>For use in specified areas of Oklahoma and Texas.</b></p>	<p><b>Preplant Surface Application:</b> Apply up to 15 days before planting.</p> <p><b>Preemergence Application:</b> Apply at planting or up to 2 days after planting before weeds and crops emerge.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and directions on the label for prometryn.</li> <li>• See the label for prometryn for use rates and specified areas of Oklahoma and Texas.</li> </ul>
<p>diuron (i.e. Karmex) (0.5 to 1.6 lb ai/acre)</p>	<p><b>Preplant Incorporated Application Followed By Preemergence Application:</b> Apply Ipimethalin-L up to 60 days prior to planting and incorporate within 7 days of application. Apply diuron as an overlay preemergence application as directed on the label for diuron (use the preemergence rates for diuron alone).</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and directions on the label for diuron.</li> <li>• The use of diuron as a preemergence application following the use of a systemic insecticide at planting may cause injury to cotton.</li> </ul>
<p>Zorial Rapid 80 or Zorial 80WP (1.25 to 2.5 lb/acre)</p> <p><b>Do not</b> use in Arizona, California, New Mexico, Oklahoma and Texas.</p>	<p><b>Preplant Surface Application:</b> Apply up to 15 days before planting.</p> <p><b>Preplant Incorporated Application:</b> Apply up to 30 days before planting and incorporate within 7 days of application. <b>Do not</b> incorporate deeper than 2-3 inches with commonly used equipment.</p> <p><b>Preemergence Application:</b> Apply tank mix with ground equipment immediately after planting or crop injury may result. Be sure that cotton seeds are planted 1 inch or deeper below soil surface.</p> <p><b>Preplant Incorporated Followed By Preemergence</b> Apply Ipimethalin-L up to 60 days before planting and incorporate within 7 days of application. Apply Zorial as an overlay preemergence application as directed on the label for Zorial (use the preemergence rates for Zorial alone).</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and directions on the label for Zorial.</li> <li>• If cotton plants undergo stress during early development, application of Ipimethalin-L plus Zorial at the labeled rate may cause temporary bleaching or chlorosis of the leaves, from which the plants will recover.</li> <li>• Maintain good agitation at all times until application is complete.</li> </ul>

39/87

## Preplant Incorporated Application for Control of Rhizome Johnsongrass

Ipimethalin-L, applied as a preplant incorporated treatment for two consecutive years will control rhizome johnsongrass (*Sorghum halepense*) in cotton at the rates recommended for soil textures listed below.

**This use is not recommended for Arizona, New Mexico, and California.** Rhizome johnsongrass will be suppressed after the first year and controlled after the second year.

Before application, use a chisel plow or similar equipment to bring johnsongrass rhizomes to the surface. Chop rhizomes into small pieces with a disk harrow set to cut 4 to 6 inches deep and operated in two different directions at 4 to 6 mph.

Ipimethalin-L is to be incorporated into the soil within 7 days after application before planting. For maximum control of rhizome johnsongrass, incorporate Ipimethalin-L as soon as possible after application. To control rhizome johnsongrass, deep and thorough incorporation of Ipimethalin-L is necessary. Mechanical incorporation can be achieved by the following methods:

- Disk harrow set to cut 4 to 6 inches deep and operated in two different directions at 4 to 6 mph.
- PTO-driven equipment, such as tillers, cultivators, and hoes, set to cut 3 to 4 inches deep and operated one time at 4 mph or less.

For johnsongrass escapes during the crop season, cultivation and/or application of registered postemergence herbicides is recommended. Follow the directions for use on the labels of the respective herbicides.

### Broadcast Application Rates: Preplant Incorporated for Control of Rhizome Johnsongrass in Cotton (APPLY FOR TWO CONSECUTIVE YEARS)

Soil Texture (Up to 3% organic matter †)	Ipimethalin-L (pt/acre)
Coarse	2.4
Medium	3.6
Fine	4.8

† This use is not recommended for soils with more than 3% organic matter.

**NOTE: Do not feed forage or graze livestock in treated cotton fields.**

If cotton crop loss occurs as a result of weather conditions, cotton or soybeans can be replanted the same year into treated soil without adverse effects. **Do not** rework the soil deeper than the treated zone if replanting is necessary.

## EDIBLE BEANS

**(Dry, Lima, Snap, Chickpeas (Garbanzo beans), Southern Peas (Cowpeas) and Sweet Lupines)**

### General Directions and Precautions

- Ipimethalin-L may only be applied as a preplant incorporated treatment in chickpeas (garbanzo beans), dry beans (such as navy, great northern, red kidney, black turtle, cranberry and small white type), lima beans, snap beans and southern peas (cowpeas).
- Ipimethalin-L may be applied as a preplant incorporated treatment or preemergence treatment in sweet lupines.

40/87

- **Do not** feed lupine hay and forage or graze livestock in treated lupine fields.
- If crop loss occurs as a result of weather conditions, beans or any crop registered for Ipimethalin-L preplant incorporated use can be replanted without adverse effects the same year. **Do not** rework the soil deeper than the treated zone if replanting is necessary.
- Ipimethalin-L is not recommended for use on peat or muck soils.

### Application Methods and Timings

**Preplant Incorporated Application:** Apply Ipimethalin-L up to 60 days before planting and incorporate within 7 days of application. Apply Ipimethalin-L tank mixes as specified under the tank mix section.

**Preemergence Application:** Apply Ipimethalin-L to sweet lupines only at planting or up to 2 days after planting. Apply to a firm seedbed that is free of clods. **Do not apply Ipimethalin-L as a preemergence (post plant surface treatment to chickpeas, dry beans, lima beans, snap beans and southern peas (cowpeas) after planting or serious crop injury can occur.**

### Application Rates in Edible Beans

Use rates recommended for Ipimethalin-L alone and in tank mix applications are given in the following table.

#### Broadcast Application Rates in Edible Beans

Soil Texture	Ipimethalin-L (pt/acre)		
	Southern States †	Northern States †	
		<3% Organic Matter	>3 % Organic Matter
<b>Coarse</b>	1.2 to 1.8	1.2 to 2.4	2.4
<b>Medium</b>	1.8 to 2.4	1.8 to 3.0	3.0 to 3.6
<b>Fine</b>	1.8 to 3.6	2.4 to 3.6	3.6

† See map at the end of this label for specific states.

Use the 3.6 pt/acre rate for heavy clay soils.

### Tank Mixes in Edible Beans

Ipimethalin-L may be applied in a tank mix with Dual Magnum, Eptam, Lasso or Micro-Tech. Refer to the labels of companion products for weeds controlled in addition to Ipimethalin-L alone.

When using tank mixtures with Ipimethalin-L, always read the labels of companion products to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions, including state and local use restrictions that may apply to specific products. Always follow the most restrictive label.

Follow additional use directions in this table for tank mixes of Ipimethalin-L tank mixes. (Refer to the application rate table "Broadcast Application Rates in Edible beans" to determine the appropriate use rate for Ipimethalin-L.)



4/1/87

<b>Ipimethalin-L Plus:</b>	<b>Tank Mix Use Directions</b>
<p>Dual <u>Magnum</u> (1.50 to 32.0 pt/acre)</p> <p>For use in dry, lima or snap beans, chickpeas, and southern peas.</p>	<p><b>Preplant Incorporated Application</b> Apply up to 14 days before planting and incorporate within 7 days of application.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and directions on the label for Dual <u>Magnum</u>.</li> <li>• <b>Do not</b> apply preemergence to dry, lima or snap beans, chickpeas or southern peas.</li> <li>• <b>Do not</b> graze or feed forage or fodder.</li> <li>• <b>Do not</b> apply to sweet lupines.</li> </ul>
<p>Eptam (2.5 to 4.5 pt/acre)</p> <p>For use in dry and snap beans only.</p>	<p><b>Preplant Incorporated Application</b> Apply with ground sprayer up to 2 days before planting. Incorporate within minutes after application to prevent loss of Eptam. Whenever possible, application and incorporation should be done in the same application.</p> <p>Read and strictly follow all precautions and directions on the label for Eptam.</p> <p><b>Incorporation Directions</b> Use power driven cultivation equipment set to cut to a depth of 2 to 3 inches or tandem disks set to cut to a depth of 4 to 6 inches, operated at 4 to 6 mph. Follow with a spike-toothed harrow or some other leveling device that extends beyond the ends of the disks. For thorough mixing, disk in two different directions (cross disk).</p> <ul style="list-style-type: none"> <li>• <b>Do not</b> exceed 3.5 pints Eptam per acre on small white beans on coarse-textured soils.</li> <li>• <b>Do not</b> use this tank mixture on Adzuki beans, chickpeas, southern peas (cowpeas, including blackeye peas, blackeye beans), soybeans, lima beans or other flat podded beans.</li> <li>• <b>Do not</b> feed bean hay, vines and forage, or graze livestock in treated bean fields.</li> <li>• For nutsedge control, use 4.5 pints of Eptam per acre.</li> </ul>
<p>Lasso or Micro-Tech (2.5 to 3.0 qt/acre) or Partner WDG (3.8 to 4.8 lb./acre)</p> <p>For use only in dry beans west of the Mississippi river.</p> <p><b>Do not</b> use in California.</p>	<p><b>Preplant Incorporated Application</b> Apply within 7 days before planting and incorporate within 7 days of application.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and directions on the label for Lasso or Micro-Tech.</li> <li>• Apply in water with ground equipment only.</li> <li>• This tank mixture may delay crop maturity and/or decrease crop yield if cold, wet soil conditions occur after planting.</li> </ul>

## FORAGE LEGUMES

### General Directions and Precautions

Ipimethalin-L may be used in forage legumes used as a cover crop in Federal Set-aside or Conservation Reserve Program areas.

42/87

- Some stand reduction of the legume cover crop may result from this use. Consult local county extension service or the local ASC committee for recommended cover crops.
- If loss of cover crop occurs as a result of adverse weather conditions, any crop registered for Ipimethalin-L preplant incorporated use can be replanted the same year into Ipimethalin-L treated soil without adverse effects. If replanting is necessary, **Do not** rework the soil deeper than the Ipimethalin-L treated zone.
- **Do not** feed or graze legume cover crops established following Ipimethalin-L application.
- The cover crop residue should ultimately be destroyed by tillage or it should be left on the surface to retard erosion or as directed by the local ASC committee.

### Application Methods and Timings

Ipimethalin-L may be applied as a preplant incorporated treatment or preemergence treatment to control weeds in legume cover crops. Refer to Mixing, Application and Incorporation Directions, Weeds Controlled and Follow Crop Restrictions sections (see table of contents for page numbers).

### Application Rates in Forage Legumes

Use rates recommended for Ipimethalin-L alone are given in the following table.

#### Broadcast Application Rates: Preplant Incorporated in Forage Legumes

Soil Texture	Ipimethalin-L (pt/acre)
Coarse	1.2 to 1.8
Medium	1.8 to 2.4
Fine	2.4 to 3.0

## GARLIC, DRY BULB SHALLOTS, AND DIRECT-SEEDED AND TRANSPLANTED DRY BULB ONIONS

### General Directions and Precautions

- **Application with ground equipment:** Uniformly apply in 10 or more gallons of water per acre.
- **Application with aircraft:** Uniformly apply in 5 or more gallons of water per acre.
- **Chemigation:** Apply Ipimethalin-L only through center pivot, solid set or hand move irrigation ~~in onions~~. **Do not** apply through other irrigation systems. Apply Ipimethalin-L between the 2 to 9 true leaf stage (2 to 6 true leaf stage in California) only. **Do not** irrigate in excess of 0.5 inches of water. Refer to "Chemigation" section in this label for complete directions
- Ipimethalin-L treatments are most effective when adequate rainfall or overhead irrigation is received within 7 days after application.
- **Do not** mechanically incorporate except as specified for use on dry bulb onions in Colorado and the Texas High Plains.
- **Do not** apply to green (bunching) onions or leeks.

43/87

## Use Directions for Mineral Soils

### Broadcast Application Rate per Acre of Ipimethalin-L (Pints per Acre) For Use on Mineral Soils in All States

Soil Texture	Ipimethalin-L (pt/acre)
Coarse	1.2 to 1.8
Medium	1.8 to 2.4
Fine	1.8 to 3.6

**Do not** exceed 3.6 pints per acre per crop (except Idaho, Oregon and Washington). **Do not** apply within 60 days of harvest in California and within 45 days of harvest in all other states. **Do not** feed or graze these crops.

If loss of treated crop occurs as a result of adverse weather conditions, any crop registered for preplant incorporated use of Ipimethalin-L can be replanted the same year. If replanting is necessary, **do not** rework the soil deeper than 2 inches.

## Garlic

Ipimethalin-L may be applied to garlic in the following ways:

1. Preemergence after planting but before crop and weeds emerge.
2. Postemergence to garlic at the 1 to 5 true leaf growth stage.
3. As a split application, apply at both preemergence and postemergence timings.

## Dry Bulb Shallots and Direct-Seeded and Transplanted Dry Bulb Onions

In all states **except California**, apply Ipimethalin-L as a broadcast treatment when onions or shallots have 2 to 9 true leaves.

**Additional Use in Colorado, Kansas and Nebraska:** In seeded onions, Ipimethalin-L may be applied sequentially. First application of Ipimethalin-L should be applied at loop stage. Apply sequential application of Ipimethalin-L early postemergence (2 to 9 true leaf stage). **Do not** exceed the maximum labeled rate for a given soil texture. **Do not** apply Ipimethalin-L at loop stage through the 9 true leaf stage if heavy rains are expected or severe crop injury may result.

**Additional Use in Colorado and the Texas High Plains:** For transplanted onions only, apply and shallow incorporate (less than 2" deep) Ipimethalin-L into preformed beds before transplanting.

**Additional Use in Idaho, Oregon, and Washington:** For dodder control on medium and fine textured soils, Ipimethalin-L may be used at 3.6 to 4.8 pints per acre. **Do not** use chemigation to apply Ipimethalin-L at the dodder control rate.

Ipimethalin-L may be applied in the fall or spring to the furrow area of land bedded in the fall in preparation for planting seed of dry bulb onions the following spring. Apply Ipimethalin-L as a banded application using rates based on appropriate soil texture. Band width should be approximately 1/2 the width of the row spacing. Keep Ipimethalin-L away from the area where onion seed will be planted. Before planting onions, harrow-off tops of beds following Ipimethalin-L furrow applications. For selective weed control in the onion row, apply Ipimethalin-L as a banded postemergence application to flag leaf onions at the labeled rates based on soil texture. Apply Ipimethalin-L only once to the furrow area and once to the onion row as a postemergence application.

44/87

**Additional Use in Michigan:** For mineral soils containing >10% organic matter, follow the directions for muck soils (see below).

**In California:** Ipimethalin-L may only be applied as a single application when onions or shallots have 2 to 6 true leaves.

### Use Directions for Muck Soils (Onions Only)

**On muck soils** in all states **except California**, Ipimethalin-L may be applied sequentially to **onions only** on muck soils by following the given rates and application timings indicated below:

#### Broadcast Application Rates and Application Timing for Muck Soils

Application Timing and Growth Stage	Ipimethalin-L (pt/acre)
Preemergence through loop Stage	2.4 to 4.8
Early Postemergence (2 to 6 true leaf stage)	3.6 to 4.8
Late Postemergence (6 to 9 true leaf stage)	3.6 to 4.8

- **Do not** apply more than 14.4 pints of Ipimethalin-L per acre per growing season on muck soils. To maximize crop safety, ensure good soil coverage during planting or transplanting. In addition, delay preemergence applications to the loop stage if possible.
- **Do not** apply Ipimethalin-L preemergence through the loop stage if heavy rains are expected or severe crop injury may result. **Do not** irrigate in excess of 0.5 inches of water if irrigating immediately after Ipimethalin-L application at the preemergence through loop stage.
- **Do not** apply within 45 days of harvest.
- **Do not** plant sugar beets, red beets, spinach, winter wheat, or winter barley as rotational crops on muck soils for 12 months from the time of last application if more than 3.6 pints per acre of Ipimethalin-L is applied to the onion crop. See the ~~Ipimethalin-L label booklet~~ **Follow Crop Restrictions section in this label booklet** for additional follow crop restrictions.
- If loss of onion crop occurs as a result of adverse weather conditions, **do not** replant any crop other than onions in muck soil during the same cropping year. **Do not** rework the soil deeper than 2 inches.
- **Do not** use on muck soils in California.

## GRAIN SORGHUM

Ipimethalin-L or Ipimethalin-L plus atrazine may be applied as a **postemergence incorporated** application in grain sorghum grown in all states.

In addition, Ipimethalin-L plus atrazine may be applied as an early postemergence treatment in grain sorghum grown in states east of the Mississippi River and in Arkansas, East Texas, Louisiana, and the Missouri "bootheel".

### Postemergence Incorporated Application (For Use in All States)

#### General Directions and Precautions

Ipimethalin-L or Ipimethalin-L plus atrazine tank mixtures applied as a postemergence incorporated application will provide control of most late season annual grasses and certain broadleaf weeds in grain sorghum.

45/87

Ipimethalin-L treatments can be applied from the 4-inch growth stage until the last cultivation (layby) of grain sorghum.

Ipimethalin-L plus atrazine must be applied before the grain sorghum reaches 12 inches in height.

Ipimethalin-L treatments will not control established weeds. **Destroy emerged weeds by cultivation prior to application of Ipimethalin-L.**

Postemergence incorporated applications of Ipimethalin-L or Ipimethalin-L plus atrazine tank mixture can be applied in grain sorghum previously treated with herbicides registered for use in grain sorghum. Consult the labels of those herbicides for suggested treatments, rates to be used, and precautions or restrictions for use in grain sorghum and for Follow Crop Restrictions.

- **Do not** apply Ipimethalin-L in grain sorghum as a preplant incorporated treatment or preemergence treatment because serious crop injury can occur.
- **Do not** apply Ipimethalin-L in grain sorghum that is planted in double row beds because this cultural practice does not allow adequate soil coverage of the bases of the grain sorghum plants with cultivation.

### Postemergence Incorporated Applications: Alone or in Tank Mixture with Atrazine

1. Cultivate using a sweep-type or rolling cultivator operated at a speed that will throw at least one inch of soil over the bases of the grain sorghum plants. This will kill small weed seedlings growing in the grain sorghum row, and it will prevent direct contact of the zone of brace root formation by Ipimethalin-L during application.
2. Apply broadcast with a ground sprayer when grain sorghum is at least 4 inches until layby or last cultivation (atrazine must be applied before grain sorghum reaches 12 inches tall). Use drop nozzles if crop foliage will prevent uniform coverage of the soil surface within the rows.
3. Uniformly and thoroughly incorporate Ipimethalin-L treatments into the soil (1) with a sweep-type or rolling cultivator set to provide thorough incorporation in the top 1 inch of soil **or** (2) with adequate irrigation (water or rainfall). For best results, incorporate Ipimethalin-L treatments as soon as possible after application. Incorporation must be completed within 7 days after application. If adequate moisture is not received within 7 days after application, incorporate Ipimethalin-L with a sweep-type or rolling cultivator.

Under situations of low rainfall or soil moisture, when deep germinating weeds such as shattercane or field sandbur are anticipated, mechanical incorporation will provide the best results.

If cultivation is needed after application and incorporation of Ipimethalin-L, the depth of cut should be no deeper than the depth of cut used to incorporate.

**Do not** apply Ipimethalin-L in grain sorghum more than one time per crop season.

### Broadcast Application Rate: Postemergence incorporated Application in Grain Sorghum

Soil Texture	Ipimethalin-L (pt/acre)	
	Southern States †	Northern States †
Coarse	1.2 to 1.8	1.8 to 2.4
Medium	1.8 to 2.4	2.4 to 3.6
Fine	1.8 to 3.6	2.4 to 3.6

† See map at end of this label for specific states.

4/6/85

For Ipimethalin-L plus atrazine tank mixtures, apply 1.0 pounds active ingredient per acre of atrazine. **Do not** apply tank mixture on coarse soils.

**NOTE:** Livestock can graze or be fed forage from treated grain sorghum after 21 days following application. Observe all precautions, limitations, and follow crop restrictions on atrazine labels.

**Early Postemergence Application**

For use in states east of the Mississippi River, in addition to Arkansas, East Texas, Louisiana, and the Missouri "bootheel" only.

**Application directions**

The seedbed should be firm and free of clods and trash. To provide good seed coverage, use only where adequate tillage is practiced. Plant grain sorghum **at least** 1 ½ inches deep to ensure good seed coverage.

Uniformly apply Ipimethalin-L plus atrazine tank mix treatment in water by ground equipment or by aircraft. Apply Ipimethalin-L plus atrazine tank mixture only after grain sorghum has reached the 2-leaf stage, and when weeds are no more than 1 inch tall.

- **Do not** apply Ipimethalin-L in grain sorghum as a preplant incorporated treatment or preemergence treatment because serious crop injury can occur.
- **Do not** apply in liquid fertilizer.

Ipimethalin-L plus atrazine treatments control weeds most effectively when adequate rainfall or overhead irrigation is received within 7 days after application. If cultivation is necessary due to soil crusting, soil compaction, or weed germination before rain or irrigation, use shallow tillage (such as a rotary hoe), and make certain grain sorghum seeds are below the tilled area. Wait 7 to 10 days after application before cultivating.

**Broadcast Application Rates: Ipimethalin-L plus Atrazine, Early Postemergence Application in Grain Sorghum**

Soil Texture	Ipimethalin-L + Atrazine
Coarse	<b>DO NOT USE</b>
Medium	1.8 to 2.4 pints + 1.0 to 1.2 pounds a.i.
Fine	2.4 pints + 1.0 to 1.2 pounds a.i.

The high rate for each soil texture listed above should be used if heavy weed populations are anticipated.

**NOTE:** **Do not** replant grain sorghum if crop loss occurs as a result of weather conditions. Observe all precautions, limitations and follow crop restrictions on atrazine labels. Livestock can graze or be fed forage from Ipimethalin-L plus atrazine treated grain sorghum fields after 21 days following application.

47/87

## NONBEARING FRUIT AND NUT CROPS AND VINEYARDS

### General Directions and Precautions

Ipimethalin-L may be applied for preemergence control of certain broadleaf weeds and most annual grasses in various nonbearing fruit and nut crops and vineyards. Ipimethalin-L may be used on the following nonbearing crops:

Almond	Peach
Apple	Pear
Apricot	Pistachio
Cherry	Plum
Citrus	Prune
Grape	Walnut, English
Nectarine	

Ipimethalin-L treatments control weeds most effectively when adequate rainfall or irrigation is received within 21 days after application.

### Precautions

- Apply the spray directly to the ground under trees or vines. **Do not** apply above trees or vines with leaves or buds. Contact with leaves, shoots or buds by the spray mixture may cause plant tissues to become malformed.
- **Do not** apply to newly transplanted trees or vines until ground has settled and no cracks are present.
- **Do not** feed forage or graze livestock in treated fields.
- **For Newly Transplanted and One Year Old Grapevines:** Apply only to dormant grapevines. If buds have started to swell, **do not** apply. Leaf distortion may result if applied after the buds have started to swell.

### Application Methods and Timings

**Preemergence Application:** Uniformly apply in 20 or more gallons of water per acre (broadcast basis) with ground equipment. Applications may be band or broadcast.

### Application Rates in Nonbearing Fruit and Nut Crops and Vineyards

Use rates recommended for Ipimethalin-L alone and in tank mix applications are given in the following table.

#### Broadcast Application Rates in Nonbearing Fruit and Nut Crops and Vineyards

Length of Control	Ipimethalin-L (qt/acre)	Ipimethalin-L (fl oz/1000 sq ft)
Short-term control (4 months)	2.4	1.8
Long-term control (6 to 8 months)	4.8	3.6

### Tank Mixes in Nonbearing Fruit and Nut Crops and Vineyards

Ipimethalin-L may be used in combination with a contact herbicide registered for use in the specific nonbearing crop to remove existing vegetation. Refer to the label of the contact herbicide for all directions, precautions and restrictions.

4/8/8

# PEANUTS

## General Directions and Precautions

- Ipimethalin-L may be applied as a preplant incorporated treatment in peanuts.
- **Do not** use in California.
- If crop loss occurs as a result of weather conditions, peanuts or any crop registered for Ipimethalin-L preplant incorporated use can be replanted without adverse effects during the same year. If replanting is necessary, **do not** rework the soil deeper than the treated zone.

## Application Methods and Timings

**Preplant Incorporated Application:** Apply Ipimethalin-L up to 60 days before planting and incorporate within 7 days of application. Apply Ipimethalin-L tank mixes as specified under the tank mix section.

## Application Rates in Peanuts

Use rates recommended for Ipimethalin-L alone and in tank mix applications are provided in the following table.

### Broadcast Application Rates in Peanuts

Region	Ipimethalin-L (pt/acre)
Texas, Oklahoma and New Mexico	1.2 to 2.4
Other peanut growing states	1.8 to 2.4

In Alabama, Georgia or Florida, up to 3.6 pints of Ipimethalin-L can be used for heavy weed infestations, especially of Texas panicum.

## Tank Mixes in Peanuts

Ipimethalin-L may be applied in a tank mix with Pursuit, Dual Magnum or Vernam herbicides. Refer to the label of the companion product for weeds controlled in addition to Ipimethalin-L alone.

When using Ipimethalin-L with tank mixtures, always read the labels of companion products to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions, including state and local use restrictions that may apply to specific products. Always follow the most restrictive label directions.

Follow additional use directions in this table for tank mixes with Ipimethalin-L. (Refer to application rate table "Broadcast Application Rates in Peanuts" to determine appropriate use rates for Ipimethalin-L.)

Ipimethalin-L Plus:	Tank Mix Use Directions
Pursuit (4 oz/acre) or Pursuit DG (1.4 oz/acre)	<p><b>Preplant Incorporated Application</b> Apply by ground equipment only up to 45 days before planting and incorporate within 7 days of application. Apply and incorporate after bed formation if crop will be planted on beds.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and directions on the label for Pursuit.</li> <li>• <b>Do not</b> apply tank mix preplant incorporated in West Texas, New Mexico and Arizona.</li> </ul>



49/87

<p>Dual <u>Magnum</u> (<del>1.25 to 2.0 pt/acre</del>) (0.8 to 1.33 pt/acre)</p>	<p><b>Preplant Incorporated Application</b> Apply up to 14 days before planting and incorporate within 7 days of application. Apply and incorporate after bed formation if crop will be planted on beds.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and directions on the label for Dual <u>Magnum</u>.</li> </ul>
<p>Vernam 7E (2.33 to 3.0 pt/acre)</p>	<p><b>Preplant Incorporated Application</b> Apply with ground sprayer only up to 10 days before planting. Incorporate <b>immediately</b> (within minutes) after application to prevent loss of Vernam herbicide. Whenever possible, application and incorporation should be done during the same operation.</p> <p><b>Incorporation Instructions</b> Use power driven cultivation equipment set to cut to a depth of 2 to 3 inches or tandem disks set to cut to a depth of 4 to 6 inches, operated at 4 to 6 mph, followed by a spike-toothed harrow or some other leveling device that extends beyond the ends of the disks. For thorough mixing, disk in two different directions (cross disk). Before the second disking, raise the disk to avoid cutting deeper than 4 to 6 inches.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and directions on the label for Vernam.</li> <li>• Do not plant seed deeper than 2 inches.</li> </ul>

[Editor's note: Peas section added from EPA-accepted supplemental labeling for Ipimethalin-L dated May 25, 2000.]

## Peas (English, Dry Garden, Dwarf, Green, Pigeon, Edible Pod, and Lentils)

### General Directions and Precautions

Do not use in California.

Do not apply Ipimethalin-L as a preemergence application in peas.

**Chemigation:** Do not apply Ipimethalin-L to peas through any type of irrigation system.

- Do not use on muck or peat soils.
- **Note:** If loss of pea crop occurs due to adverse weather conditions, peas or any crop for which Ipimethalin-L is registered as a preplant incorporated treatment can be replanted into soil treated with Ipimethalin-L without adverse effects. If replanting is necessary, to avoid loss of weed control, do not rework the soil deeper than the original treated zone.
- Any crop for which Ipimethalin-L is registered as a preplant incorporated treatment may be double cropped following peas.
- Do not apply Ipimethalin-L more than once per cropping season. Do not apply to peas, lentils, peas or lentils forage, pea silage, pea hay or pea straw grown for livestock feed.
- When Ipimethalin-L is applied in tank mix combinations, refer to the labels of the tank mix products for additional rotational crop restrictions. Always follow the most restrictive label requirement.

### Application Methods and Timings

**Application:** Uniformly apply the recommended rate of Ipimethalin-L in 10 or more gallons of water per acre or in 20 or more gallons of liquid fertilizer per acre using ground equipment. (Refer to the label booklet for Ipimethalin-L for instructions for determining the compatibility of Ipimethalin-L with liquid fertilizers.) If applied by aircraft, apply in 5 or more gallons of water per acre. If applied with dry bulk fertilizer, refer to the label booklet for Ipimethalin-L for application instructions.

**Soil Preparation and Application Timing:** Thoroughly mix surface residues from previous crop into the soil to a depth of 4 to 6 inches by plowing or discing prior to application. Ipimethalin-L may be applied and incorporated immediately before planting or up to 60 days before planting. Refer to the label booklet for Ipimethalin-L for incorporation instructions.

After application, rotary hoeing, shallow cultivation/tillage, or hand hoeing can be practiced without reducing weed control, but loss of weed control may result if tillage is deep enough to bring untreated soil to the surface.

**Overlay or Sequential Applications:** Application of Ipimethalin-L may be followed by any registered herbicide to control weeds not listed on the label for Ipimethalin-L.

#### **Broadcast Application Rates: Preplant Incorporated in Peas**

Soil Texture †	Ipimethalin-L (pt/acre)
	1.2 to 1.8
<b>Coarse</b>	
<b>Medium</b>	1.8 to 3.0†
<b>Fine</b>	2.4 to 3.6

† Refer to the label booklet for Ipimethalin-L for information on soil texture classification.

For each soil texture, use the high rate in the rate range where heavy weed populations are anticipated or if heavy crop residues were present prior to seedbed preparation. In all cases, use the 3.6 pt/acre rate for heavy clay soils.

## **POTATOES**

### **General Directions and Precautions**

Ipimethalin-L may be applied as a preemergence treatment, preemergence incorporated treatment or early postemergence treatment in potatoes. **Do not** apply to sweet potatoes or yams. Apply to a firm seedbed that is free of clods and trash.

- **Do not** apply before planting crop.
- Ipimethalin-L treatments control weeds most effectively when adequate rainfall or irrigation is received within 7 days of application.
- **Do not** make more than one application of Ipimethalin-L per season.
- If crop loss occurs as a result of weather conditions, any crop registered for Ipimethalin-L preplant incorporated use can be replanted without adverse effects the same year. **Do not** rework the soil deeper than the treated zone if replanting is necessary.
- Ipimethalin-L is not recommended for use on peat or muck soils.

### **Application Methods and Timings**

**Preemergence Application:** Apply Ipimethalin-L after planting but before potatoes and weeds emerge or after dragoff where this operation is practiced. Apply Ipimethalin-L tank mixes as specified under the tank mix section.

**Preemergence Incorporated Application:** Apply Ipimethalin-L and incorporate after planting but before potatoes and weeds emerge. Where drag-off is practiced, apply Ipimethalin-L and incorporate before, at,

5/18/17

or after drag-off, but before potatoes and weeds emerge. Incorporate Ipimethalin-L within 7 days of application. Apply Ipimethalin-L tank mixes as specified under the tank mix section.

Ipimethalin-L must be uniformly and thoroughly incorporated into the top 1 to 2 inches of soil. Use care to ensure that incorporation equipment does not damage seed pieces or elongating sprouts.

Mechanical incorporation is not required if adequate rainfall for good crop and weed emergence occurs or irrigation is received within 7 days after application.

**Early Postemergence Application:** Apply Ipimethalin-L from crop emergence until the 6-inch stage of growth. Do not apply Ipimethalin-L postemergence if potatoes are under stress from cold/wet or hot/dry conditions or crop injury may occur. Ipimethalin-L treatments will not control established weeds. Emerged weeds must be destroyed before application. Apply Ipimethalin-L tank mixes as specified under the tank mix section.

**Sprinkler Irrigation System Application:** Apply Ipimethalin-L alone as a preemergence treatment after planting, but before potatoes and weeds have emerged, or after drag-off where this operation is practiced, or early postemergence through sprinkler irrigation systems. See Chemigation section for complete directions (see table of contents for page number).

## Application Rates in Potatoes

Use rates recommended for Ipimethalin-L alone and in tank mix applications are given in the following table.

### Broadcast Application Rates in Potatoes

Soil Texture	Ipimethalin-L (pt/acre) <sup>†</sup>	
	<3% Organic Matter	>3 % Organic Matter
Coarse	1.2 to 1.8	1.2 to 1.8
Medium	1.8 to 2.4	2.4 to 3.6
Fine	1.8 to 3.6	3.6

<sup>†</sup> Use the high rate for Ipimethalin-L alone applications.

### Tank Mixes in Potatoes

Ipimethalin-L may be applied in a tank mix with Eptam, Lorox, Sencor/Lexone or Eptam plus Sencor/Lexone herbicides. Refer to the label of the companion product for weeds controlled in addition to Ipimethalin-L alone.

When using tank mixtures with Ipimethalin-L, always read the labels of companion products to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions including state and local use restrictions that may apply to specific products. Always follow the most restrictive label directions.

Follow additional use directions in this table for Ipimethalin-L tank mixes.

(Refer to the application rate table "Broadcast Application Rates in Potatoes" to determine the appropriate use rate for Ipimethalin-L.)

5/87

Ipimethalin-L Plus:	Tank Mix Use Directions
<p>Eptam (3.0 to 3.5 pt/acre)</p>	<p><b>Preemergence Incorporated Application</b> Apply and incorporate after planting but before potatoes and weeds emerge. In areas where potatoes are normally dragged-off, apply and incorporate following drag-off, but before potatoes and weeds emerge. Incorporate immediately after application.</p> <p><b>Incorporation Directions:</b> Uniformly and thoroughly incorporate into the top 1 or 2 inches of soil. Whenever possible, application and incorporation should be done in the same operation. Use care to ensure that incorporation equipment does not damage seed pieces or elongating sprouts.</p> <p><b>Early Postemergence Application</b> Apply through <b>sprinkler irrigation systems only</b> from crop emergence to the 6-inch stage of growth. Ipimethalin-L plus Eptam will not control established weeds. <b>Emerged weeds must be destroyed prior to application. Do not</b> apply if potatoes are under stress from cold/wet or hot/dry conditions or crop injury may occur.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the label for Eptam.</u></li> <li>• <u>The Superior variety potato is sensitive to Eptam and early season stunting may occur under stress conditions.</u></li> <li>• <u>For nutsedge control, use 4.5 to 7.0 pints of Eptam per acre.</u></li> </ul>
<p>Lorox L (1.5 to 4.0 lb/acre) or Lorox DF (1.5 to 4.0 lb/acre)</p> <p>For use on potatoes grown East of the Rocky Mountains only</p>	<p><b>Preemergence Application</b> Apply after planting but before potatoes and weeds emerge or after drag-off or hilling where these operations are practiced.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the label for Lorox. Plant seed pieces at least two inches deep.</u></li> <li>• <u>Do not use on sands and loamy sands (except in Wisconsin-Central Sands Area), gravelly soils or exposed subsoils, or on soils containing less than 1% organic matter because injury to the treated crop or subsequent crops may occur.</u></li> <li>• <u>Wisconsin-Central Sands Area Only:</u> Ipimethalin-L plus Lorox tank mixture may be used on sands and loamy sands. Sands - apply 1.2 to 1.8 pints of Ipimethalin-L plus 1 pound of Lorox DF or 1 pint of Lorox L per acre. Loamy sand - apply 1.2 to 1.8 pints of Ipimethalin-L plus 2 pounds of Lorox DF or 2 pints of Lorox L per acre.</li> </ul>
<p>Sencor DF/Lexone DF (0.33 to 0.67 lb/acre) or Sencor F (0.5 to 1.0 pt/acre)</p>	<p><b>Preemergence Application</b> Apply after planting but before potatoes and weeds emerge or after drag-off where this operation is practiced.</p> <p><b>Early Postemergence Application</b> Apply from crop emergence to the 6-inch stage of growth. For optimum weed control, apply before weeds are 1 inch tall. <b>Do not</b> apply within 24 hours of applying other pesticides. <b>Do not</b> apply within three days after periods of cool, wet or cloudy weather or crop injury may occur. <b>Do not use</b> on early maturing, smooth-skinned white or red-skinned potato varieties.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the label for Sencor or Lexone. Observe organic matter restrictions on the labels.</u></li> <li>• <u>This combination may be applied through sprinkler irrigation systems.</u></li> </ul>

53/87

<p>Eptam (3.0 to 3.5 pt/acre) plus Sencor/Lexone DF (0.33 to 0.67 lb/acre) or Sencor F (0.5 to 1.0 pt/acre)</p> <p><b>Do not use in California</b></p>	<p><b>Early Postemergence Application</b> Apply through <b>sprinkler irrigation systems only</b> from crop emergence to the 6-inch stage of growth. For optimum weed control, apply before weeds are 1 inch tall.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the labels for Eptam and Sencor/Lexone. Observe organic matter restrictions on the labels for Sencor/Lexone.</u></li> <li>• <b>Do not</b> apply within 24 hours of applying other pesticides.</li> <li>• <b>Do not</b> apply within three days after periods of cool, wet or cloudy weather or crop injury may occur.</li> <li>• <b>Do not</b> use on early maturing, smooth-skinned white or red-skinned potato varieties.</li> <li>• The Superior variety potato is sensitive to Eptam and early season stunting may occur under stress conditions.</li> <li>• <b>Do not</b> apply within 60 days of potato harvest.</li> <li>• <u>For nutsedge control, use 4.5 to 7.0 pints of Eptam per acre.</u></li> </ul>
<p>Eptam (3.0 to 3.5 pt/acre) plus Sencor/Lexone DF (0.33 to 0.67 lb/acre) or Sencor F (0.5 to 1.0 pt/acre)</p> <p>For use in Idaho, Oregon and Washington only</p>	<p><b>Preemergence Application</b> Apply with <b>ground equipment only</b> after planting but before potatoes and weeds emerge.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the labels for Sencor or Lexone. Observe organic matter restrictions on the labels.</u></li> <li>• The Superior variety potato is sensitive to Eptam and early season stunting may occur under stress conditions.</li> <li>• <b>Do not</b> make more than one application per season.</li> </ul>
<p>Eptam (3.0 to 3.5 pt/acre) plus metribuzin (0.33 to 0.67 lb/acre)</p> <p>For use in Idaho, Oregon and Washington only</p>	<p><b>Preemergence Application</b> Apply with <b>sprinkler irrigation systems</b> after planting before potatoes and weeds emerge.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the label for metribuzin. Observe organic matter and variety restrictions on the label.</u></li> <li>• <u>Add metribuzin first and mix thoroughly before adding Eptam. After mixing is complete add Ipimethalin-L. Maintain continuous agitation while adding herbicides and until spraying is completed.</u></li> <li>• The Superior variety potato is sensitive to Eptam and early season stunting may occur under stress conditions.</li> <li>• <b>Do not</b> make more than one application per season.</li> </ul>
<p>Matrix (1.0 to 1.5 oz/acre)</p>	<p><b>Preemergence Application</b> Apply after planting but before potatoes and weeds emerge or after drag-off where this operation is still practiced.</p> <ul style="list-style-type: none"> <li>• <b>Do not</b> apply by air.</li> <li>• <b>Do not</b> use on potatoes grown for seed.</li> <li>• Use the most restrictive rotational crop interval.</li> <li>• To avoid injury to desirable crops, follow "Sprayer Tank Cleanout" directions on the label for Matrix.</li> <li>• <u>Read and follow all precautions on the label for Matrix.</u></li> </ul>

54/84

## RICE

### General Directions and Precautions

- Apply Ipimethalin-L plus Facet 75 DF, propanil (or Arrosolo) or propanil plus Londax herbicides as an early postemergence treatment in dry-seeded rice.
- Apply Ipimethalin-L alone or in a tank mix with Facet 75 DF, Bolero 8 EC or glyphosate (Glyphomax Plus) herbicide as a delayed preemergence treatment in drilled, dry-seeded rice. **Do not** use in California.
- **Do not** use this product on water seeded rice, ~~except as specified in other Dow AgroSciences labeling.~~
- This pesticide is toxic to fish and aquatic organisms. Fish may be killed at the recommended application rates. **Do not** contaminate water by cleaning of equipment or disposal of wastes.
- **Do not** apply to rice fields if fields are used for fish production, especially catfish or crayfish farming.
- **Do not** exceed the maximum rates listed on the label for any soil type in one season.
- **Do not** bale or use rice straw from treated fields for feed or bedding.
- **Do not** use water containing Ipimethalin-L residues from rice cultivation to irrigate food or feed crops that are not registered for use with Ipimethalin-L.
- **Do not** plant crops in Ipimethalin-L treated fields unless Ipimethalin-L is registered for use on those crops.
- If crop failure occurs as a result of weather conditions or disease following treatment with Ipimethalin-L alone or in a tank mixture, only drilled dry-seeded rice may be immediately replanted. However, the grower assumes all risks and consequences associated with replanting of rice because there is the potential for stand reduction or stunting. A 10 percent increase in seeding rate is recommended. Replant seed below the herbicide layer because reduced stand or stunting may occur if Ipimethalin-L comes into contact with germinating rice seed. **Do not** replant with gibberellic acid-treated seed. **Do not** reapply Ipimethalin-L alone or in a tank mixture.
- When using tank mixes with Ipimethalin-L, always read the labels of companion products and follow all precautions and restrictions. Always follow the most restrictive label.
- Ipimethalin-L is not recommended for use on peat or muck soils.

### Early Postemergence Applications in Dry Seeded Rice

#### Ipimethalin-L plus Arrosolo or propanil

Ipimethalin-L plus Arrosolo or propanil are postemergence treatments combining the direct contact action of propanil and the residual activity of Ipimethalin-L. Since the residual activity of Ipimethalin-L provides preemergence control of certain annual grasses that can germinate after this tank-mix treatment is applied, flooding after application can be delayed.

For maximum weed control, it is important to carefully follow the directions below for (1) adequate spray coverage of weeds and soil and (2) proper timing of application, which is when barnyardgrass (watergrass) is in the 1 to 3 leaf stage of growth with an occasional 4 leaf plant (make application when sprangletop is less than 1/2 inch in height).

The seedbed should be firm and free of clods and trash. The seedbed must be prepared to allow for good seed coverage. Before planting rice, previous crop residues should be thoroughly mixed into the soil to a depth of 4 to 6 inches by plowing or disking.

By aircraft or ground equipment, uniformly apply recommended Ipimethalin-L plus Arrosolo or Ipimethalin-L plus propanil treatment after rice emergence, according to spraying directions for Rice. This is when barnyardgrass is in the 1 to 3 leaf growth stage with an occasional 4 leaf plant (make application when sprangletop is less than 1/2 inch). **The grower should inspect fields frequently to check growth of**

55/87

**barnyardgrass and/or sprangletop to determine proper application timing.** Application timing should be based on the growth stage of barnyardgrass and/or sprangletop and not on the growth stage of rice. If rice is too small to maintain a flood on the field, the treatment can still be applied because flooding can be delayed due to the residual activity of Ipimethalin-L.

While the residual activity of Ipimethalin-L allows flooding to be delayed, proper water management practices must be followed for normal rice growth. If weeds begin to develop after application, flooding should not be delayed. No flood water should be on the field at time of application because soil and weeds must be completely exposed to spray coverage. If necessary, fields may be flushed prior to treatment to produce vigorous rice and weed growth.

Since moisture activates the residual activity of Ipimethalin-L, Ipimethalin-L controls emerging weeds most effectively when adequate rainfall or irrigation (flush) is received within 7 days after application.

For maximum direct contact activity of propanil or Arrosolo, delay application if there is a chance of rain within 6 to 8 hours.

**Do not** apply this tank mixture within 14 days before or after insecticide applications because serious damage to rice may occur.

#### **Broadcast Application Rates for Ipimethalin-L plus Arrosolo or Propanil Tank Mixtures in Rice**

<b>Soil Texture</b>	<b>Ipimethalin-L (pt/acre)</b>	<b>Arrosolo or Propanil † (pt/acre)</b>
<b>Coarse</b>	1.8	6.0 to 8.0
<b>Medium</b>	1.8 to 2.4	6.0 to 8.0
<b>Fine</b>	1.8 to 2.4	6.0 to 8.0

† Based on 4 pounds of active ingredient per gallon

Use the high rate of Arrosolo or propanil if the following situations exist at the time of application: (1) unseasonably cool weather; (2) barnyardgrass has progressed to predominantly the 3 to 4 leaf stage; or (3) emerged sprangletop (less than 1/2 inch) is present.

#### **Ipimethalin-L plus propanil plus Londax**

**Preflood Application:** Ipimethalin-L plus propanil (or Arrosolo) may be tank mixed with Londax for early postemergence weed control. Londax provides improved control of certain broadleaves and sedges when applied as a preflood postemergence application. Refer to the label for Londax for specific weeds controlled. Apply Londax at 0.75 to 1.0 oz per acre with Ipimethalin-L plus propanil 1 to 7 days before establishment of the permanent flood. At the time of application, weeds should be actively growing.

**Preflood Sequential Applications:** Ipimethalin-L plus propanil (or Arrosolo) plus Londax may be applied in a sequential application with Londax plus propanil (or Arrosolo). Apply Londax at 0.50 to 0.75 oz per acre with Ipimethalin-L plus propanil when broadleaf weeds are in the cotyledon to 4-leaf stage and the sedges are 3 to 6 inches tall. If needed, apply the second application of Londax plus propanil 1 to 7 days before establishment of the permanent flood.

#### **Ipimethalin-L plus Facet 75 DF**

Ipimethalin-L plus Facet 75 DF herbicides may be tank mixed for early postemergence weed control in dry-seeded rice. This mixture provides broad-spectrum grass and certain broadleaf weed control, especially where sprangletop (*Leptochloa* spp.) is a problem.

56/87

Facet 75 DF controls the emerged grasses and broadleaves listed on its label. Refer to the label for Facet 75 DF for weed size limitations. Ipimethalin-L provides residual control of labeled grass weeds that can germinate after this tank mixture is applied and that Facet 75 DF does not control.

For maximum weed control, it is important to carefully follow the directions below for (1) adequate spray coverage of weeds and soil; and (2) proper timing of application. Ipimethalin-L will not control emerged weeds. Facet 75 DF does not control sprangletop. Therefore, schedule spraying before sprangletop emergence.

Ipimethalin-L plus Facet 75 DF tank mixture may be applied early postemergence as follows:

1. Treatments may be applied to conventional, reduced or minimum tillage, and no-till (stale seed-bed) rice. The seedbed should be firm and free of clods. The seedbed must be prepared to allow for complete soil coverage of the rice seed. Using a planter under conditions that prevent good soil coverage of the rice seed can cause reduced stand or stunting if Ipimethalin-L comes into contact with germinating rice seed.
2. Apply when soil surface is dry, moist, or wet without standing water. Fields may be flushed prior to treatment to produce vigorous rice and weed growth, if necessary. No flood water should be on the field at time of application because soil and weeds must be completely exposed to spray coverage. Soil clods or standing water (puddles) at the time of application, or cracks in the soil that form after application may result in reduced weed control.
3. Uniformly apply the recommended Ipimethalin-L plus Facet 75 DF treatment after rice emergence (spiking) and at the correct timing for Facet 75 DF, by aircraft or ground equipment according to spraying directions for rice. Refer to timing directions and illustrations in the label for Facet 75 DF. **The grower should inspect fields frequently to check growth of sprangletop, other labeled weeds, and rice to determine proper application timing.**
4. For maximum direct contact activity of Facet 75 DF, delay application of the tank mix if there is a chance of rain within 6 to 8 hours.
5. Because the residual activity of the Ipimethalin-L plus Facet 75 OF allows for delayed flooding, this treatment may be applied if rice is too small to maintain a flood on the field for weed control. However, for normal rice growth and activity of Ipimethalin-L and Facet 75 DF, proper water management practices must be followed. Refer to the Water Management section of the label for Facet 75 DF. If weeds begin to develop after application, flooding should not be delayed.

Since moisture activates the residual activity of Ipimethalin-L and Facet 75 DF, the tank mix is most effective in controlling emerging weeds when adequate rainfall or irrigation (flush) is received within 3-7 days after application or when new grass/weeds have emerged and are less than one inch tall.

**Broadcast Application Rate per Acre for Ipimethalin-L plus Facet 75 DF  
Early Postemergence in Rice**

Soil Texture	Ipimethalin-L (pt/acre)	Facet 75 DF (lb/acre)
Coarse	1.8	0.50
Medium	1.8 to 2.4	0.50
Fine	1.8 to 2.4	0.50

Use the higher rate of Ipimethalin-L for each soil texture if heavy weed populations are anticipated

**Mixing Directions:** Refer to the label for Facet 75 DF for sections on mixing/spraying and on adjuvant for postemergence application. **Addition of crop oil concentrate is required** for application of FACET 75



DF. **Do not** use liquid fertilizer solution. Add Facet 75 DF to a half-full spray tank of clean water with agitation running. After the Facet 75 DF is thoroughly mixed, add Ipimethalin-L. Mix thoroughly. Then, add the recommended amount of crop oil concentrate (see label for Facet 75 DF) and remaining volume of water. Agitate constantly during the application process.

### Delayed (Late) Preemergence Applications

Ipimethalin-L alone, or a tank mixture of Ipimethalin-L plus Roundup (glyphosate), Facet 75 DF or Bolero 8 EC herbicides may be applied for delayed (late) preemergence weed control in grain-drilled, dry-seeded rice.

The tank mixtures will provide broad-spectrum grass and certain broadleaf weed control. Tank mixtures are especially effective where sprangletop (*Leptochloa* spp.) is a problem. Ipimethalin-L alone will not control broadleaf weeds. A postemergence application of propanil, Arrosolo, Bolero, Facet 75 DF or Londax herbicide may be necessary to control weeds during the entire season.

Glyphosate or Facet 75 DF will control the emerged grasses and broadleaves listed on their label. Ipimethalin-L will provide residual control of labeled grass weeds that can germinate after the tank mixture has been applied and that Facet 75 DF does not control. Ipimethalin-L will not control emerged weeds. Facet 75 DF does not control sprangletop. Accordingly, schedule spraying before sprangletop emergence.

For maximum weed control and rice stand, it is important to carefully follow the directions below for (1) adequate spray coverage of soil and (2) proper application timing:

1. Treatments may be applied to conventional, reduced or minimum tillage, and no-till (sole seedbed) rice. The seedbed should be firm and free of clods, and must be prepared to allow for good seed coverage. Plant rice with a grain drill at a depth that provides complete soil coverage of the rice seed. Using a planter under conditions that prevent good soil coverage of the rice seed can cause reduced stand or stunting if Ipimethalin-L comes into contact with germinating rice seed.
2. Apply Ipimethalin-L alone or in tank mixture to levees after the levees are pulled and planted. Exposed seeds may be injured if they come in contact with Ipimethalin-L or Facet 75 DF.
3. Uniformly apply the recommended Ipimethalin-L plus glyphosate after rice planting (as described below) and before rice emergence (spiking), by aircraft or ground equipment according to spraying directions for rice. **The grower should inspect fields frequently to check growth of rice to determine proper application timing.**

Uniformly apply the recommended rate of Ipimethalin-L alone, Ipimethalin-L plus Facet 75 DF or Ipimethalin-L plus Bolero 8 EC after rice planting (as described below) and before rice and weed emergence (spiking), by aircraft or ground equipment according to spraying directions for rice. **The grower should inspect fields frequently to check growth of rice to determine proper application timing.**

4. Apply **only** when growing conditions favor vigorous rice growth. The seedbed should have adequate moisture for seed germination. If there is insufficient moisture, flushing is recommended before Ipimethalin-L application to supply moisture for root (radicle) initiation and for vigorous rice and weed growth.

**Do not** apply Ipimethalin-L and then flush for germination. **Do not** apply to stressed rice. Stress factors include cold or hot temperature extremes, excessive moisture or drought, problem soils, poor field drainage or deep water after application. **Do not** apply early preemergence or preplant incorporated because severe rice injury is possible.

58/87

5. Apply when soil surface is dry, moist, or wet without standing water. No flood water should be on the field at time of application since soil and weeds (only for glyphosate) must be completely exposed to spray coverage. Soil clods, standing water (puddles) at the time of application, or cracks in the soil that form after application may result in reduced weed control.
6. Apply after the rice seed has absorbed water and germinated and after the soil has been previously sealed over the seed by at least 1 inch of rainfall or by irrigation (flush). If the soil has not been sealed by rain or flush, apply when 80 percent of germinated seeds have a primary root (radicle) or a shoot at least 1/2 inch long.

If applied to soil before these conditions, or if applied to cracked soil, then stand reduction or stunting of rice may occur. Facet 75 DF may cause buggy-whipping. Under some conditions, when using gibberellic acid-treated seed, **heavy rainfall after application, or flushing after application** may result in herbicide injury to rice. With appropriate cultural practices, rice can overcome moderate injury.

7. For maximum direct contact activity of glyphosate, delay application of the tank mix if there is a chance of rain within 6 or 8 hours.
8. Because the residual activity of Ipimethalin-L alone, Ipimethalin-L plus Facet 75 DF or Ipimethalin-L plus Bolero 8 EC tank mix allows for delayed flooding. This treatment may be applied if rice is too small to maintain a flood on the field for weed control. However, proper water management practices must be followed for normal rice growth and activity of Ipimethalin-L, Facet 75 DF or Bolero 8 EC. Refer to the Water Management section of the label for Facet 75 DF. If weeds begin to develop after application, flooding should not be delayed.

Residual activity of Ipimethalin-L, Facet 75DF and Bolero 8 EC is most effective when applied to moist soil. Soil should be kept moist after application and not be allowed to crust or crack.

**Broadcast Application Rates for Ipimethalin-L Alone, Ipimethalin-L plus Facet 75 DF, Ipimethalin-L plus Bolero 8 EC or Ipimethalin-L plus Glyphosate † Tank Mixtures for Delayed Preemergence Application in Rice**

Soil Texture	Ipimethalin-L (pt/acre)	Facet 75 DF (lb/acre)	Bolero 8 EC (pt/acre)
Sands, loamy sands	DO NOT USE	DO NOT USE	DO NOT USE
Sandy loams	1.8	0.33 to 0.44	2 to 3
Loams, silt loams, silts, sandy clay loams	1.8 to 2.4	0.44 to 0.5	3 to 4
Silty clay loams, clay loams, sandy clays, silty clays, clays	1.8 to 2.4	0.5 to 0.67	3 to 4

Use the higher rate of Ipimethalin-L for each soil texture if heavy weed populations are anticipated.

† See the label for glyphosate for recommended rates.

**Mixing Directions**

**Ipimethalin-L Plus Glyphosate Tank Mix**

Refer to Mixing directions in the label booklet for Ipimethalin-L and to Mixing, Additives, and Application directions on the label for glyphosate. **Addition of nonionic surfactant may be required with glyphosate application** (see product label) and use of ammonium sulfate may increase performance.

59/87

**Ipimethalin-L Plus Facet 75 DF Tank Mix**

Refer to the labels of Ipimethalin-L and Facet 75 DF for sections on mixing and spraying. **Do not** use liquid fertilizer solution. Add Facet 75 DF to a half-full spray tank of clean water with agitation running. After the Facet 75 DF is thoroughly mixed, add Ipimethalin-L. Mix thoroughly and then add the remaining volume of water. Agitate constantly during application.

**Ipimethalin-L Plus Bolero 8 EC Tank Mix**

Add Ipimethalin-L to the half-full spray tank of clean water with agitator running. After Ipimethalin-L is thoroughly mixed, add Bolero 8 EC and mix thoroughly. Then add the remaining volume of water. Agitate constantly during application.

**Spraying Directions**

Spray drift can cause injury to sensitive crops. See the labels for propanil or Arrosolo, Facet 75 DF, Bolero 8 EC and glyphosate for sensitive crops, and follow all recommendations to minimize drift.

- **Do not** apply Ipimethalin-L through any type of irrigation system.
- **Do not** apply in liquid fertilizer.

**For Aerial Applications:** To ensure adequate coverage, apply the recommended rate in 5 to 10 (10 to 12 for propanil and Arrosolo) gallons of water per acre. To minimize drift, **do not** apply during periods of gusty winds or when wind conditions favor drift. It is recommended that a flagman or an automatic mechanical flagging unit on the aircraft be used to prevent overlap and possible crop injury.

**For Ground Equipment Applications:** To ensure adequate coverage, apply the recommended rate in 10 to 20 (15 to 25 for propanil and Arrosolo) gallons of water per acre. Use a properly calibrated low-pressure (20 to 40 psi) sprayer equipped with 8002 or larger size Tee-Jet or comparable nozzles for uniform spray distribution and to minimize drift. Keep the bypass line on or near the bottom of the tank to minimize foaming. Nozzle screens must be no finer than 50 mesh. **Do not** apply Ipimethalin-L during periods of gusty winds or when wind velocity is greater than 20 mph. As with all herbicides, windy conditions can result in uneven application.

**SOYBEANS****General Directions and Precautions**

- Ipimethalin-L may be applied in conventional, minimum, or no-till systems as a preplant surface, preplant incorporated or preemergence application in soybeans.
- **Do not apply postemergence** because serious crop injury can occur.
- **Do not** make applications of Ipimethalin-L preemergence north of Interstate 80, except as specified in other supplemental labeling.
- **Do not** use Ipimethalin-L in soybeans in California.
- Preplant surface and preemergence treatments control weeds most effectively when adequate rainfall or overhead irrigation is received within 7 days after application. If moisture is insufficient to activate Ipimethalin-L, a shallow cultivation (preferably with a rotary hoe) should be made after emergence of soybeans, but while weeds are small enough to be controlled by mechanical cultivation. Otherwise, a postemergence herbicide treatment may be required to control weed escapes at planting or following soybean emergence.

60/87

- If crop loss occurs as a result of weather conditions, soybeans or any crop registered for preplant incorporated use can be replanted without adverse effects the same year. If replanting is necessary, **Do not** rework the soil deeper than the treated zone.
- Livestock can graze or be fed forage from treated soybean fields.
- Ipimethalin-L is not recommended for use on peat or muck soils.

### Application Methods and Timings

**Preplant Surface Application:** Apply Ipimethalin-L up to 15 days before planting. Ipimethalin-L may be applied up to 45 days before planting when used in a tank mix or applied sequentially with Pursuit or Scepter herbicides. Preplant surface applications of Ipimethalin-L alone should be followed by a postemergence program using Pursuit herbicide. Apply Ipimethalin-L tank mixes and sequential programs as specified under the tank mix section.

**Preplant Incorporated Application:** Apply Ipimethalin-L up to 60 days before planting and incorporate within 7 days of application. Apply Ipimethalin-L tank mixes and sequential programs as specified under the tank mix section.

**Preemergence Application:** Apply Ipimethalin-L at planting or up to 2 days after planting. Apply to a firm seedbed that is free of clods. **Do not** make applications of Ipimethalin-L preemergence north of Interstate 80, except as specified in other supplemental labeling. Apply Ipimethalin-L tank mixes and sequential programs as specified under the tank mix section.

**Do not** apply Ipimethalin-L as a postemergence treatment because serious crop injury can occur.

### Application Rates in Soybeans

Use rates recommended for Ipimethalin-L alone and in tank mix combinations or sequential applications with other herbicides are given in the following tables.

#### Broadcast Application Rates: Preplant Surface or Preplant Incorporated in Soybeans

Soil Texture	Ipimethalin-L (pt/acre)	
	<3% Organic Matter	>3 % Organic Matter
Coarse	1.2 to 1.8	2.4
Medium	1.8 to 3.0 <sup>†</sup>	3.0 to 3.6
Fine	2.4 to 3.6	3.6

<sup>†</sup> Do not exceed 2.4 pints/acre for Southern states. See map at the end of this label for specific states.

For heavy clay soils, apply Ipimethalin-L at the broadcast application rate of 3.6 pints per acre.

The high rates for each soil texture above should be used if heavy weed populations are anticipated, extensive crop residues were present prior to seedbed preparation, or in no-till systems.

#### Broadcast Application Rate Per Acre of Ipimethalin-L (Pints per Acre) Preemergence in Soybeans

Soil Texture	Ipimethalin-L (pt/acre)	
	<3% Organic Matter	>3 % Organic Matter
Coarse	1.2 to 1.8	1.8
Medium	1.8 to 2.4	1.8 to 2.4
Fine	1.8 to 2.4	2.4 to 3.0

6/1/87

The high rates for each soil texture above should be use if heavy weed populations are anticipated, extensive crop residues were present prior to seedbed preparation or in no-till systems.

**Tank Mixes and Sequential Programs in Soybeans**

Ipimethalin-L may be applied in a tank mix with Pursuit, Scepter, Command, Canopy, Dual Magnum, Lasso, Lorox, Lorox Plus, Preview, and Sencor/Lexone herbicides. Ipimethalin-L may be applied in a sequential application with Pursuit, Scepter, Scepter O.T., Lorox and Sencor/Lexone. Refer to the labels of companion products for weeds controlled in addition to Ipimethalin-L alone.

When using tank mixtures or sequential applications with Ipimethalin-L, always read the labels of companion product to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions including state and local use restrictions that may apply to specific products. Always follow the most restrictive label directions.

For no-till, Ipimethalin-L alone or Ipimethalin-L tank mixes may be used with Gramoxone Extra, Glyphomax Plus, Roundup, 2-4,D or Butyrac 200 (2,4-DB) herbicides to kill existing vegetation that may be present prior to planting. Refer to these labels for specific use recommendations, restrictions, rates, and weeds controlled. Ipimethalin-L alone will control weeds as they germinate, but it will not control emerged weeds.

Follow additional use directions in this table for Ipimethalin-L Tank Mixes (Refer to application rate table "Broadcast Application Rates: Preplant Surface or Preplant Incorporated in Soybeans" and "Broadcast Application Rate Per Acre of Ipimethalin-L (Pints per Acre) Preemergence in Soybeans" to determine appropriate use rates for Ipimethalin-L.)

Ipimethalin-L Plus:	Tank Mix Use Directions
Pursuit (4 oz/acre) or Pursuit DG (1.4 oz/acre)	<p><b>Preplant Surface Application</b> Apply up to 45 days before planting.</p> <p><b>Preplant Incorporated Application</b> Apply up to 45 days before planting and incorporate within 7 days of application.</p> <p><b>Preemergence Application</b> Apply at planting or up to 2 days after planting before weeds and crops emerge.</p> <p><b>Preplant Surface Application, Preplant Incorporated Application Or Preemergence Followed By Early Postemergence Application</b> Apply Ipimethalin-L as described above. Follow with a early Postemergence treatment of PURSUIT as directed on the label for Pursuit.</p> <ul style="list-style-type: none"> <li>• Read and strictly follow all precautions and directions on the label for Pursuit.</li> <li>• Preplant surface applications of Ipimethalin-L alone should be followed by a postemergence program using Pursuit herbicide.</li> <li>• Do not graze or feed treated soybean forage, hay or straw to livestock.</li> </ul>

6/2/87

<p>Scepter (0.67 pt/acre) or Scepter 70DG (2.8 oz/acre)</p>	<p><b>Preplant Surface Application</b> Apply up to 45 days before planting.</p> <p><b>Preplant Incorporated Application</b> Apply up to 45 days before planting (30 days in Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee and Texas) and incorporate within 7 days of application.</p> <p><b>Preemergence Application</b> Apply at planting or up to 2 days after planting before weeds and crops emerge.</p> <p><b>Preplant Surface Application, Preplant Incorporated Application Or Preemergence Followed By Early Postemergence Application</b> Apply Ipimethalin-L as described above. Follow with a early Postemergence treatment of Pursuit as directed on the label for Pursuit.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the label for Pursuit.</u></li> <li>• <u>Do not graze or feed treated soybean forage, hay or straw to livestock.</u></li> </ul>
<p>Command 4EC (0.75 to 1.5 pt/acre)</p>	<p><b>Preplant Incorporated Application</b> Apply to the soil surface and uniformly incorporate. See the label for Command for incorporation requirements and directions.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the label for Command.</u></li> <li>• <u>Apply with calibrated ground equipment in 10 to 40 gallons of water per acre. The use of an agriculturally approved drift reduction agent is required at finished spray volumes of 10 to 15 gallons per acre.</u></li> <li>• <u>Do not apply this tank mix to overly moist or wet soils.</u></li> <li>• <u>Command is a volatile compound. Off-site movement of spray drift or vapors of Command can cause foliar whitening or yellowing of some plant parts.</u></li> <li>• <u>Do not allow livestock to graze on soybean vines or use the vines for feed. Cover crops may be planted anytime, but stand reductions may occur. Do not graze or use the cover crop for feed.</u></li> </ul>
<p>Canopy (6 to 12 oz/acre)</p>	<p><b>Preplant Surface Application</b> Apply up to 30 days before planting.</p> <p><b>Preplant Incorporated Application</b> Apply up to 14 days before planting and incorporate within 7 days of application.</p> <p><b>Preemergence Application</b> Apply at planting or up to 2 days after planting before weeds and crops emerge.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the label for Canopy. Observe all soil type, soil pH, and soybean variety restrictions.</u></li> <li>• <u>Do not apply to soils with less than 0.5% organic matter.</u></li> <li>• <u>Continuous agitation in the spray tank is required to keep the material in suspension.</u></li> <li>• <u>Avoid overlap, and shut off spray booms while starting, turning, slowing or stopping, otherwise crop injury may occur.</u></li> </ul>

63/87

<p><b>Dual Magnum</b> (1.50 to 32.0 pt/acre)</p>	<p><b>Preplant Surface Application</b> Apply up to 15 days before planting.</p> <p><b>Preplant Incorporated Application</b> Apply up to 14 days before planting and incorporate within 7 days of application. Use a preplant incorporated application if furrow irrigation is used or after application when a period of dry weather is expected. If soybeans are planted on beds, apply and incorporate after bed formation.</p> <p><b>Preemergence Application</b> Apply at planting or up to 2 days after planting before weeds and crops emerge.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the label for Dual Magnum.</u></li> </ul>
<p><b>Lasso</b> (2.5 to 4.0 qt/acre)</p>	<p><b>Preplant Surface Application</b> Apply up to 15 days before planting.</p> <p><b>Preplant Incorporated Application</b> Apply up to 7 days before planting and incorporate within 7 days of application.</p> <p><b>Preemergence Application</b> Apply at planting or up to 2 days after planting before weeds and crops emerge. This treatment must be applied within 5 days of the last preplant tillage.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the full label for Lasso.</u></li> <li>• <u>Apply with ground equipment.</u></li> <li>• <u>Incorporation on Coarse soils may reduce length of control as a result of leaching of Lasso with rainfall or irrigation.</u></li> <li>• <u>Incorporation is not recommended on coarse soils in the Southeastern States</u></li> <li>• <u>High Intensity or excessive rainfall or excessive irrigation after preemergence application may reduce weed control.</u></li> </ul>
<p><b>Lorox DF</b> (1.0 to 2.5 lb/acre) or <b>Lorox L</b> (1.0 to 2.5 pt/acre)</p>	<p><b>Preplant Surface Application</b> Apply up to 15 days before planting.</p> <p><b>Preplant Incorporated Followed By Preemergence Application</b> Apply Ipimethalin-L up to 60 days before planting and incorporate within 7 days of applications. Follow with a preemergence treatment of Lorox as directed on the label for Lorox.</p> <p><b>Preemergence Application</b> Apply at planting or up to 2 days after planting before weeds and crops emerge.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the label for Lorox.</u></li> <li>• <u>Do not use on sands, loamy sands, gravelly soils or soils containing less than 0.5 % organic matter.</u></li> </ul>

6/1/87

<p>Lorox Plus (12 to 18 oz/acre)</p>	<p><b>Preplant Surface Application</b> Apply up to 30 days before planting.</p> <p><b>Preplant Incorporated Application</b> Apply up to 30 days before planting and incorporate within 7 days of application.</p> <p><b>Preemergence Application</b> Apply at planting or up to 2 days after planting before weeds and crops emerge.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the label for Lorox Plus.</u> Observe all soil type, soil pH and soybean variety restrictions.</li> <li>• <b>Do not</b> apply to soils with less than 0.5% organic matter.</li> <li>• <u>Contiguous agitation in the spray tank is required to keep the material in suspension.</u></li> <li>• <u>Avoid overlap and shut off spray booms while starting, turning, slowing or stopping, otherwise crop injury may occur.</u></li> </ul>
<p>Preview (6 to 10 oz/acre)</p>	<p><b>Preplant Surface Application</b> Apply up to 30 days before planting.</p> <p><b>Preplant Incorporated Application</b> Apply up to 14 days before planting and incorporate within 7 days of application.</p> <p><b>Preemergence Application</b> Apply at planting or up to 2 days after planting before weeds and crops emerge.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the label for Preview.</u> Observe all soil type, soil pH and soybean variety restrictions.</li> <li>• <b>Do not</b> apply to soils with less than 0.5% organic matter.</li> <li>• <u>Continuous agitation in the spray tank is required to keep the material in suspension.</u></li> <li>• <u>Avoid overlap and shut off spray booms while starting, turning, slowing or stopping, otherwise crop injury may occur.</u></li> </ul>
<p>Sencor/Lexone DF (0.33 to 0.67 lb/acre) or Sencor F (0.5 to 1.0 pt/acre)</p>	<p><b>Preplant Surface Application</b> Apply up to 15 days before planting.</p> <p><b>Preplant Incorporated Application</b> Apply up to 7 days before planting and incorporate within 7 days of application.</p> <p><b>Preplant Incorporated Application Followed By Preemergence Application</b> Apply Ipimethalin-L up to 60 days prior to planting and incorporate within 7 days of application. Follow with a preemergence treatment of Sencor/Lexone as directed on the label for Sencor or Lexone.</p> <p><b>Preemergence Application</b> Apply at planting or up to 2 days after planting before weeds and crops emerge.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the label for Sencor/Lexone.</u> Observe all soil type, soil pH, soybean variety and incorporation restrictions.</li> <li>• <b>Do not</b> use on sands. <b>Do not</b> use on loamy sands or on sandy loams that contain less than 0.5% organic matter as crop injury may occur. This tank mixture is not recommended for use on soils with less than 2% organic matter in the Coastal Plain of New Jersey or the Delmarva Peninsula.</li> <li>• <u>Soybean seed should be planted at least 1.5 inches below the soil surface.</u></li> <li>• <u>If replanting is necessary, Do not rework the soil.</u></li> </ul>



65/817

<b>Ipimethalin-L Followed by:</b>	<b>Sequential Application Use Directions</b>
Scepter O.T. (1.0 pt/acre)	<p><b>Preplant Surface Application Followed By Early Postemergence Application</b> Apply Ipimethalin-L up to 15 days before planting. Follow with a early Postemergence treatment of Scepter O.T. as directed on the label for Scepter O.T.</p> <p><b>Preplant Incorporated Application Followed By Early Postemergence Application</b> Apply Ipimethalin-L up to 60 days before planting and incorporate within 7 days of application. Follow with an early Postemergence treatment of Scepter O.T. as directed on the label for Scepter O.T.</p> <p><b>Preemergence Application Followed By Early Postemergence Application</b> Apply Ipimethalin-L at planting or up to 2 days after planting. Follow with a Postemergence treatment of Scepter O.T. as directed <del>on</del><u>by</u> the label for Scepter O.T.</p> <ul style="list-style-type: none"> <li>• <u>Read and strictly follow all precautions and directions on the label for Scepter O.T.</u></li> </ul>

**Special Weeds**

**Shattercane and Woolly Cupgrass**

Preplant incorporated treatments of Ipimethalin-L alone, Ipimethalin-L plus Scepter or Ipimethalin-L plus Sencor/Lexone preplant incorporated tank mixtures, or preplant incorporated Ipimethalin-L applications followed by registered sequential preemergence or postemergence herbicides will control shattercane (wild cane) (*Sorghum bicolor*).

Woolly cupgrass (*Eriochloa villosa*) will be controlled by the following: Preplant incorporated treatments of Ipimethalin-L plus Pursuit; Ipimethalin-L applied preplant incorporated followed by an early postemergence application of Pursuit herbicide; or, other registered sequential preemergence or postemergence herbicides.

Shattercane and woolly cupgrass are difficult to control in many soybean-growing areas because they can germinate from a greater depth in the soil than most other weeds. Shattercane and woolly cupgrass can emerge at any time during the growing season, depending on soil temperature, moisture, and seed dormancy.

Thoroughly mix previous crop residues into the soil and destroy any existing vegetation before applying herbicide. Apply Ipimethalin-L or Ipimethalin-L combinations at the recommended rates listed in following tables. See Incorporation Directions section (see table of contents for page number) for incorporation directions. Thoroughly and uniformly mechanically incorporate Ipimethalin-L into the **top 2 inches** of soil. Acceptable results **cannot** be expected if Ipimethalin-L is applied preemergence. Cultivation may be necessary to control escapes and late germinating shattercane or woolly cupgrass during the crop season.

**Broadcast Application Rates: Preplant Incorporated for Control of Shattercane or Woolly Cupgrass in Soybeans**

Soil Texture	Ipimethalin-L (pt/acre)	
	<3% Organic Matter	>3 % Organic Matter
Coarse	2.4	2.4
Medium	3.0	3.6
Fine	3.6	3.6

**Broadcast Application Rates: Ipimethalin-L Plus Sencor/Lexone Tank Mix Preplant Incorporated for Control of Shattercane in Soybeans**

66/87

Soil Texture †	Ipimethalin-L + Sencor/Lexone DF † (0.5% to 3% Organic Matter) (pt/acre + lb/acre)	Ipimethalin-L + Sencor/Lexone † DF (> 3% organic matter) (pt/acre + lb/acre)
Coarse	1.8 + 0.5	1.8 + 0.5
Medium	2.4 + 0.5	2.4 + 0.5 to 0.67
Fine	2.4 + 0.5 to 0.67	3.0 + 0.67

† Do not use on sands. Do not USE on loamy sands or on sandy loams that contain less than 1% organic matter, or on other soils with less than 0.5% organic matter because crop injury may occur.

†† Read and strictly follow all precautions and directions on the label for Sencor/Lexone. Observe all soil type, soil pH and soybean variety restrictions.

**Red Rice and Itchgrass**

Ipimethalin-L applied as a preplant incorporated treatment will control red rice (*Oryza saliva*), and will help control and reduce competition from itchgrass (*Rottboellia exaltata*) at the rates listed in the following table:

**Broadcast Application Rates: Preplant Incorporated Application for Control of Red Rice and Suppression of Itchgrass in Soybeans**

Soil Texture	Ipimethalin-L (pt/acre) Up to 3% Organic Matter †
Coarse	2.4 to 3.6 ††
Medium	3.6
Fine	4.8

† This use is not recommended for soils with more than 3% organic matter.

†† The higher rate should be used if heavy red rice or itchgrass infestation is anticipated.

**NOTE:** Livestock can graze or be fed forage from treated soybean fields. If soybean crop loss occurs as a result of weather conditions, cotton or soybeans can be replanted the same year into treated soil without adverse effects. If replanting is necessary, do not rework the soil deeper than the treated zone.

**Rhizome Johnsongrass**

Ipimethalin-L, applied as a preplant incorporated treatment for two consecutive years will control rhizome johnsongrass (*Sorghum halepense*) in soybeans at the rates recommended for soil textures listed in the following table. This use is not recommended for Arizona, New Mexico and California. Rhizome johnsongrass will be suppressed after the first year and controlled after the second year.

Before application, use a chisel plow or similar implement to bring johnsongrass rhizomes to the surface. Chop rhizomes into small pieces with a disk harrow set to cut 4 to 6 inches deep and operated in two different directions at 4 to 6 mph.

Ipimethalin-L should be incorporated into the soil within 7 days after application before planting. For maximum control of rhizome johnsongrass, incorporate Ipimethalin-L as soon as possible after application. Deep and thorough incorporation of Ipimethalin-L is necessary for control of rhizome johnsongrass. Mechanical incorporation can be achieved by the following methods:

- (a) Disk harrow set to cut 4 to 6 inches deep and operated in two different directions at 4 to 6 mph.
- (b) PTO-driven equipment (tillers, cultivators, hoes) set to cut 3 to 4 inches deep and operated one time at 4 mph or less.

6/2/87

For johnsongrass escapes during the crop season, cultivation and/or application of registered postemergence herbicides are recommended. Follow the directions for use on the labels of the respective herbicides.

**Broadcast Application Rates: Preplant Incorporated Application for Control of Rhizome Johnsongrass in Soybeans (APPLY FOR TWO CONSECUTIVE YEARS)**

Soil Texture	Ipimethalin-L (pt/acre) Up to 3% Organic Matter †
Coarse	2.4
Medium	3.6
Fine	4.8

† This use is not recommended for soils with more than 3% organic matter.

## SUGARCANE (Except Hawaii)

### General Directions and Precautions

Ipimethalin-L may be applied to newly planted or ratoon sugarcane as a preemergence treatment through layby and, again in late summer or early fall to the newly planted sugarcane.

- **Do not** apply on sugarcane through irrigation systems.
- **Do not** make aerial applications at close-in because complete and uniform coverage cannot be obtained.
- **Do not** apply more than 14.4 pints per acre of Ipimethalin-L during one growing season.
- Ipimethalin-L is not recommended for use on peat or muck soils.
- **Do not** apply within 90 days of harvest.
- **Do not** graze treated fields or feed treated forage or fodder to livestock.

### Application Methods and Timings

Apply Ipimethalin-L as a preemergence treatment through layby to newly planted or ratoon sugarcane, and again in late summer or early fall to the newly planted sugarcane. Applications may be made band or broadcast. Although there may be adequate crop tolerance for postemergence applications at layby, in order to obtain effective weed control the spray must be directed under the sugarcane canopy.

### Application Rates

#### Broadcast Rate in Sugarcane (except Hawaii)

Apply 4.8 to 7.2 pints of Ipimethalin-L but **do not** exceed 14.4 pints per acre in one growing season. See spraying directions to calculate the band treatment rate.

Use the 7.2 pint rate under the following conditions:

- heavy clay soils;
- no mechanical incorporation is planned;
- heavy weed populations are anticipated;
- itchgrass infestation is anticipated; or,
- no shaving is planned.

68/87

## Incorporation Directions

Ipimethalin-L must be thoroughly and uniformly incorporated into the soil with either (a) mechanical incorporation equipment as outlined below, or (b) with rainfall or irrigation, as long as rainfall or irrigation is adequate for good crop and weed emergence and is received within 7 days after application. If rainfall or irrigation is not obtained, Ipimethalin-L should be mechanically incorporated.

**Mechanical Incorporation:** Apply Ipimethalin-L herbicide to loosened beds and incorporate into the top 1 to 2 inches of soil within 7 days after application. Ratoon sugarcane must be lightly shaved during the early spring to remove the old stubble before incorporation over the line of sugarcane is possible. Carefully adjust equipment to incorporate without causing excessive damage to emerging shoots. Mechanical incorporation can be achieved by the following:

- a. Rolling cultivator (Lilliston type - Lely Roterra) set to cut 2 or 3 inches deep and operated two times at 6 to 8 mph. This technique may be used with all application timings.
- b. Rolling disc cultivator (Hipper) set to cut 2 to 3 inches deep and operated two times at 6 to 8 mph. This technique may be used to incorporate between sugarcane lines (rows) at layby only.

## Tank Mixes in Sugarcane (Except Hawaii)

Ipimethalin-L may be used in combination with any registered herbicide. Refer to labels of companion herbicides for all directions, precautions and restrictions. Always check compatibility when applying in a tank mix and follow the most restrictive label directions.

## SUGARCANE (For Use in Hawaii)

### General Directions and Precautions

Ipimethalin-L may be applied preemergence through layby in plant or ratoon sugarcane.

- **Do not** apply to sugarcane through irrigation systems.
- **Do not** make aerial applications at close-in because complete and uniform coverage cannot be obtained.
- **Do not** apply more than 14.4 pints per acre of Ipimethalin-L during one growing season.
- Ipimethalin-L is not recommended for use on peat or muck soils.
- **Do not** apply within 90 days of harvest.
- **Do not** graze treated fields or feed treated forage or fodder to livestock.

### Application Methods and Timings

Ipimethalin-L may be applied twice per season, as a preemergence treatment through layby, in plant or ratoon sugarcane. Band or broadcast applications may be made. Although there may be adequate crop tolerance for postemergence applications at layby, in order to obtain effective weed control the spray must be directed under the sugarcane canopy.

### Application Rates

#### Broadcast Rate for Sugarcane Grown in Hawaii

Apply 4.8 to 9.7 pints per acre of Ipimethalin-L but **do not** exceed 14.4 pints per acre in one growing season. See spraying directions to calculate the band treatment rate.

Use the higher rates under the following conditions:

- for dark clay soils;

69/87

- no mechanical incorporation is planned;
- heavy weed populations are anticipated; or,
- no shaving is planned.

### Tank Mixes in Sugarcane (For Use in Hawaii)

Ipimethalin-L may be used in combination with any registered herbicide. Refer to labels of companion products for all directions, precautions and restrictions. Always check compatibility when applying in a tank mix and follow the most restrictive label directions.

## SUNFLOWERS

### General Directions and Precautions

- Ipimethalin-L may be applied as a preplant incorporated treatment in the spring in sunflowers in all states.
- Ipimethalin-L alone may be applied as a preplant incorporated treatment in the fall ~~in~~ prior to planting sunflowers in the spring in the states of North Dakota, South Dakota, and Minnesota only.
- Ipimethalin-L plus Eptam tank mixture may be applied as a preplant incorporated treatment in the fall ~~in~~ prior to planting sunflowers in the spring in the states of North Dakota and Minnesota only.
- Ipimethalin-L may be applied as preplant surface or preemergence application in no-till sunflowers in Colorado, Kansas, Minnesota, Nebraska, and North and South Dakota.
- If crop loss occurs as a result of weather conditions, sunflowers or any crop registered for Ipimethalin-L preplant incorporated use can be replanted without adverse effects the same year. **Do not** rework the soil deeper than the treated zone if replanting is necessary.
- **Do not** feed forage or graze livestock in treated sunflower fields.
- Ipimethalin-L is not recommended for use on peat or muck soils.

### Application Methods and Timings

**Preplant Incorporated (Spring) Application:** Apply Ipimethalin-L up to 60 days before planting and incorporate within 7 days of application.

**Preplant Incorporated (Fall) Application:** Apply Ipimethalin-L or Ipimethalin-L plus Eptam and immediately incorporate in late fall before planting sunflowers the following spring. Refer to Incorporation Directions section (see table of contents for page number) and the label for Eptam for incorporation directions. Destroy existing weeds before applying Ipimethalin-L or Ipimethalin-L tank mixture. The soil should be dry enough to allow good incorporation.

**Do not** apply Ipimethalin-L plus Eptam tank mixture by air.

Apply Ipimethalin-L or Ipimethalin-L plus EPTAM tank mixture in the late fall when soil temperatures are 45°F or below, but before the ground freezes. **Do not** apply when the air temperature is below 45°F.

Before planting sunflower in the spring, fields treated with Ipimethalin-L or Ipimethalin-L plus Eptam should receive at least one additional shallow incorporation. Spring incorporation should be made at an angle to the last tillage operation.

### Application Rates in Sunflowers

Recommended use rates for Ipimethalin-L are given in the following tables.

70/87

**Broadcast Application Rates: Spring Application, Preplant Incorporated in Sunflowers**

Soil Texture	Ipimethalin-L (pt/acre)		
	Southern States †	Northern States <sup>1</sup>	
		<3.0 % Organic Matter	>3.0 % Organic Matter
Coarse	1.2 to 1.8	1.2 to 2.4	2.4
Medium	1.8 to 2.4	1.8 to 3.0	3.0 to 3.6
Fine	1.8 to 3.6	2.4 to 3.6	3.6

† See map at the end of this label for specific states.

Use the 3.6 pint/acre broadcast application rate for heavy clay soils.

**Broadcast Application Rates: Fall Application, Preplant Incorporated in Sunflowers †**

Soil Texture	Ipimethalin-L (pt/acre)	
	<3% Organic Matter	>3 % Organic Matter
Coarse	1.8 to 3.0	3.0
Medium	2.4 to 3.6	3.6 to 4.2
Fine	3.0 to 4.2	4.2

† For use in North Dakota, South Dakota and Minnesota only

Use the high application rate for each soil texture if heavy weed pressure is anticipated.

**Broadcast Application Rates: Ipimethalin-L Plus Eptam 7E Tank Mixture Fall Applied Preplant Incorporated in Sunflowers †**

Soil Texture	Ipimethalin-L plus Eptam 7E (pt/acre)	
	<3% Organic Matter	>3 % Organic Matter
Coarse	1.2 to 2.4 +2.25	2.4 + 2.25
Medium	2.8 to 3.0 + 2.25	3.0 to 3.6 +2.25
Fine	2.4 to 3.6 + 2.25	3.6 + 2.25

† For use in North Dakota and Minnesota only.

Use the high application rate for each soil texture if heavy weed pressure is anticipated.

Read and strictly follow all precautions and directions on the label for Eptam.

**No-Till Sunflowers**

**(For use in Colorado, Kansas, Minnesota, Nebraska, and North and South Dakota)**

Ipimethalin-L may be applied immediately after planting, or up to 30 days before planting. **Do not** apply Ipimethalin-L postemergence because sunflowers exposed at the time of application will be killed. Ipimethalin-L controls weeds most effectively when adequate rainfall or irrigation is received within 7 days after application. Otherwise, treatment with a registered postemergence grass herbicide may be required.

If the field has a history of heavy weed infestations or contains excessive crop residues, uniformly apply Ipimethalin-L alone or in combination with other herbicides registered for gallonage.

Existing living vegetation must be controlled at or before the application of Ipimethalin-L. A registered contact herbicide for use in sunflowers may be applied sequentially or in a tank mix with Ipimethalin-L. Consult the label of the contact herbicide for all directions, precautions and restrictions.

7/1/87

**Broadcast Application Rates: Applied Preplant Surface or Preemergence in No-Till Sunflowers**

Soil Texture	Ipimethalin-L (pt/acre)	
	<3% Organic Matter	>3 % Organic Matter
Coarse	3.0 to 3.6	3.6
Medium	3.6	3.6
Fine	3.6	DO NOT USE

**TOBACCO**

**General Directions and Precautions**

- Ipimethalin-L may be applied as a preplant incorporated treatment or layby application in transplanted tobacco.
- If crop loss occurs as a result of weather conditions, transplanted tobacco or any crop registered for Ipimethalin-L preplant incorporated use can be replanted without adverse effects the same year. If replanting is necessary, **do not** rework the soil deeper than the treated zone.
- Ipimethalin-L is not recommended for use on peat or mock soils.

**Application Methods and Timings**

**Preplant Incorporated Application:** Apply Ipimethalin-L with ground sprayer up to 60 days before transplanting tobacco and incorporate within 7 days of application.

Ipimethalin-L will not harm transplanted tobacco when applied according to directions and under normal growing conditions. Under stressful plant growth conditions, such as cold/wet or hot/dry weather, Ipimethalin-L may induce a temporary retardation of tobacco development.

**Layby Application:** Ipimethalin-L may be applied as a directed spray following the last normal cultivation (layby), usually 4 to 6 weeks after transplanting tobacco. Apply Ipimethalin-L in a 16 to 24-inch band in the middle of the row between the crop rows. The spray should not come into contact with tobacco plants. If the spray nozzles on the ends of the spray boom pass over the same row middle twice, use nozzles that apply one-half (1/2) the normal number of gallons per acre to prevent over application.

Layby applications can be applied to tobacco previously treated with herbicides registered for use in tobacco. Consult the labels of those herbicides for suggested treatments, rates to be used, and precautions or restrictions for use in tobacco and for follow crop restrictions.

Ipimethalin-L controls weeds most effectively when adequate rainfall or irrigation is received within 7 days after application.

Ipimethalin-L will not control established weeds. **Destroy emerged weeds before application.**

**Do not apply as a broadcast spray over top of tobacco leaf. Contact may cause malformed leaves.**

**Application Rates in Transplanted Tobacco**

Recommended use rates for Ipimethalin-L alone is given in the following table.

7/2/87

**Broadcast Application Rates: Preplant incorporated in Transplanted Tobacco**

REGION	SOIL TEXTURE	Ipimethalin-L (pt/acre) <sup>†</sup>
Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida	Coarse	1.8 to 2.4
	Medium: sandy clay loams, loams	1.8 to 2.4
	Medium: silt loams, silts	2.4 to 3.0
	Fine	2.4 to 3.0
Other tobacco- growing states	Coarse	1.8 to 2.4
	Medium	3.0 to 3.6
	Fine	3.0 to 3.6

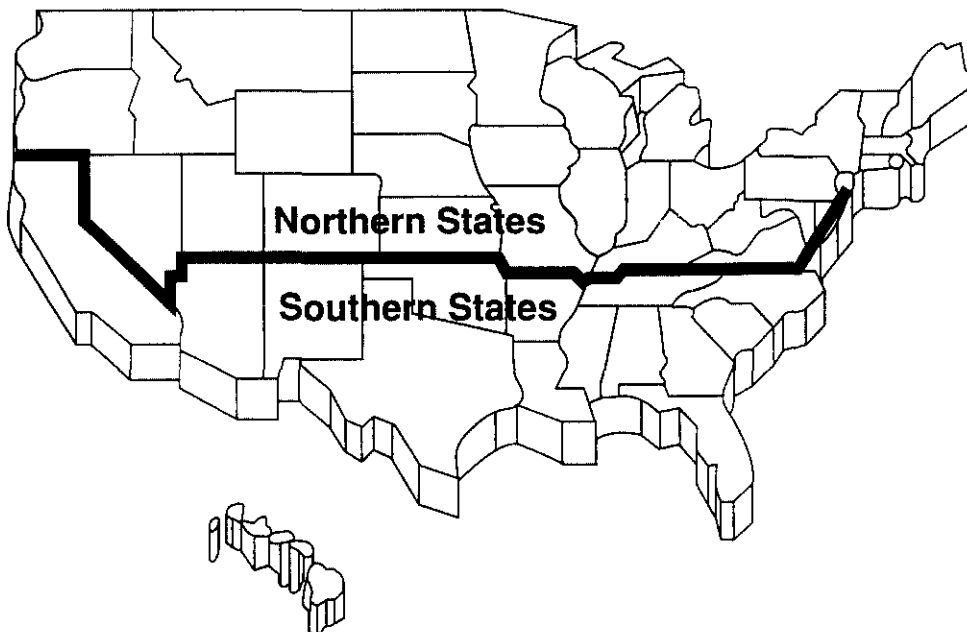
**Broadcast Application Rates: Layby Application in Transplanted Tobacco**

Soil Texture	Ipimethalin-L (pt/acre) <sup>††</sup>
Coarse	1.2 to 1.8
Medium	1.8 to 2.4
Fine	1.8 to 2.4

<sup>†</sup> To calculate the band treatment rate, see Spraying Directions section (see table of contents for page number).

<sup>††</sup> The high rate for each soil texture above should be used if a registered herbicide treatment was not applied prior to layby.

**Regional Map for Rate Determination**





---

## Use in Turfgrasses, Ornamentals, Landscape and Grounds Maintenance Programs, Noncropland Areas and Total Vegetative Control

---

### General Directions and Precautions

**Turfgrass Areas:** Ipimethalin-L will provide pre-emergence control of most annual grasses and certain broadleaf weeds in turfgrass sites, including lawns, sod, and turf areas. These turfgrass sites include, but are not limited to airports, athletic fields, cemeteries, golf courses, grounds or lawns around residential and commercial establishments, houses of worship, multi-family dwellings, military and other institutions, parks, picnic grounds, prairie grass areas, roadsides, schools, and sod farms.

**Ornamentals and Nurseries:** Ipimethalin-L may also be applied in and around field, liner, and container grown ornamental nurseries; established landscape ornamentals and ornamental gardens, listed groundcovers, nonbearing fruit and nut trees, conifer and hardwood seedling nurseries, and for tree plantation site preparation and maintenance.

**Grounds Maintenance and Related Areas:** Ipimethalin-L may be used in general grounds maintenance programs in and around areas such as alleyways, bike and jogging paths, buildings, driveways and roadsides, markers and fence lines, mulch beds, parking lots, vacant lots, stone gardens and gravel yards and other similar areas. Ipimethalin-L may also be used under concrete or asphalt treatments in conjunction with a site preparation program.

**Rights-of-Way and other Noncropland Areas:** Ipimethalin-L may be used for pre-emergence control of most annual grasses and certain broadleaf weeds as they germinate in noncropland areas such as railroad, utility, highway, and pipeline rights-of-way, highway guardrails, delineators and sign posts, bridge abutments and approaches, utility substations, petroleum tank farms, pumping installations, storage areas, fence rows, windbreaks and shelterbelts, paved or gravel surfaces, and other similar areas.

Ipimethalin-L herbicide controls weeds as they germinate, but does not control established weeds. Established weeds should first be removed from areas to be treated. To control of established weeds, Ipimethalin-L herbicide may be used in conjunction with herbicides registered for post-emergence use. Consult the labels of post-emergence herbicides for use rates, timings, precautions and restrictions.

Usually cold, excessively wet, or hot and dry conditions that can delay germination or extend germination over a long period of time may reduce weed control. To improve the efficacy of Ipimethalin-L, applications should be followed by one-half inch of rainfall or its equivalent in sprinkler irrigation. Erratic weed control can occur if Ipimethalin-L is not activated by rainfall or irrigation within 30 days.

Ipimethalin-L alone or Ipimethalin-L tank-mix combinations will not cause crop injury if applied according to label directions and under normal growing conditions. Over-application may cause crop injury, crop stand loss, or soil residues. Decreased weed control or cause crop injury may result from uneven application.

Cold weather, excessive moisture, drought, high soil pH, high soil salt concentration, or seedling diseases may weaken seedlings and plants, and increase the potential for plant injury from application of Ipimethalin-L.

Temporary discoloration of sprayed surfaces may be caused by application of Ipimethalin-L. Immediately rinse all surfaces to avoid staining. Add spray colorants or dyes to alter the color of the spray solution so that it matches the treated surfaces.

74/87

## Mixing Directions

Mixing instructions for Ipimethalin-L alone or tank mix combination.

### Ground Driven Sprayer

1. Fill the tank one-half to three-quarters full with clean water.
2. While agitating add Ipimethalin-L to the partially filled tank. Then fill the rest of the tank with water.
3. **Continuous agitation must be maintained while adding Ipimethalin-L and until spraying is completed.** If the spray mixture is permitted to settle for any period of time, thorough agitation is necessary before spraying is resumed. Continue agitation while spraying.
4. When using Ipimethalin-L in tank mixtures with other registered herbicides, follow the directions on the labels of those products recommended for tank mixing.

### Backpack Sprayer

Start with a clean spray tank. Fill the spray tank to one-half full with clean water. Add the required amount of Ipimethalin-L herbicide to the partially filled spray tank. Cap the spray tank and agitate for thorough mixing. Uncap the spray tank and then fill the tank to the desired level. Cap the spray tank and continue agitation. Continue to agitate the mixture on occasion during application for thorough mixing. If the spray mixture is permitted to settle for any period of time, thorough agitation is necessary before spraying is resumed.

### Liquid Fertilizers

Before mixing Ipimethalin-L with liquid fertilizers, small quantities should first be tested using a simple jar test. While agitating, add the required amount of Ipimethalin-L herbicide to the half-filled spray tank. Then add the liquid fertilizer. Finish by filling the spray tank to the desired level.

### Dry Bulk Fertilizers

Ipimethalin-L can be impregnated on dry bulk fertilizers. When applied as directed, Ipimethalin-L herbicide/Dry Bulk Fertilizer mixtures will provide weed control equal to that provided by the same rates of Ipimethalin-L herbicide applied in water.

## Spraying Directions

Ipimethalin-L and Ipimethalin-L tank mixtures should be applied with properly calibrated ground equipment in enough water per acre so that uniform spray distribution (at least 40 gallons of water per acre) is achieved. Low-pressure (e.g. 20-40 psi) sprayers are recommended. Continuous agitation should be maintained while spraying using good mechanical or bypass agitation. Check spray equipment on a routine basis to ensure proper calibration. Overlapping spray should be avoided, especially if it will increase rates above those recommended. Application should be avoided when winds may cause drift. Avoid letting spray solution come into contact with driveways, stone, wood or other porous surfaces. If contact occurs, rinse immediately to avoid staining.

## Weeds Controlled

Apply Ipimethalin-L for preemergence control of the weed species listed in the following tables. Applications may be made around and over the top of the ornamentals and to the sites listed on this label.

### Grasses:

Common Name	Scientific Name
Barnyardgrass	<i>Echinochloa crus-galli</i>
Bluegrass, Annual	<i>Poa annua</i>
Crabgrass	<i>Digitaria</i> spp.
Crowfootgrass	<i>Dactyloctenium aegyptium</i>

75/87

Foxtail, Giant	<i>Setaria faberi</i>
Foxtail, Green	<i>Setaria viridis</i>
Foxtail, Yellow	<i>Setaria glauca</i>
Goosegrass	<i>Eleusine indica</i>
Itchgrass	<i>Rottboellia exaltata</i>
Johnsongrass (from seed)	<i>Sorghum halepense</i>
Junglerice	<i>Echinochloa colona</i>
Lovegrass (from seed)	<i>Eragrostis</i> spp.
Panicum, Browntop	<i>Panicum fasciculatum</i>
Panicum, Fall	<i>Panicum dichotomiflorum</i>
Panicum, Texas	<i>Panicum texanum</i>
Sandbur, Field	<i>Cenchrus incertus</i>
Signalgrass	<i>Brachiaria platyphylla</i>
Sprangletop, Mexican	<i>Leptochloa uninervis</i>
Sprangletop, Red	<i>Leptochloa filiformis</i>
Witchgrass	<i>Panicum capillare</i>
Woolly Cupgrass	<i>Eriochloa villosa</i>

**Broadleaf Weeds:**

<b>Common Name</b>	<b>Scientific Name</b>
Burweed, Lawn	<i>Soliva pterosperma</i>
Carpeweed	<i>Mollugo verticillata</i>
Chickweed, Common	<i>Stellaria media</i>
Chickweed, Mouseear	<i>Cerastium vulgatum</i>
Clover, Hop	<i>Trifolium procumbens</i>
Cudweed	<i>Gnaphalium</i> spp.
Eveningprimrose	<i>Oenothera biennis</i>
Fiddleneck	<i>Amisnckia intermedia</i>
Filaree	<i>Erodium</i> spp.
Henbit	<i>Lamium amplexicaule</i>
Knotweed, Prostrate	<i>Polygonum aviculare</i>
Kochia	<i>Kochia scoparia</i>
Lambsquarters	<i>Chenopodium album</i>
Pigweed	<i>Amaranthus</i> spp.
Puncturevine	<i>Tribulus terrestris</i>
Purslane	<i>Portulaca oleracea</i>
Pusley, Florida	<i>Richardia scabra</i>
Rocket, London	<i>Sisymbrium inio</i>
Shepherdspurse	<i>Capsella bursa-pastoris</i>
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>
Speedwell, Corn	<i>Veronica arvensis</i>
Spurge, Annual	<i>Euphorbia</i> spp.
Spurge, Prostrate	<i>Euphorbia humistrata</i>
Woodsorrel, Yellow	<i>Oxalis stricta</i>
Velvetleaf (Buttonweed)	<i>Abutilon theophrasti</i>

---

**Landscape and Grounds Maintenance Programs**

---

**General Directions and Precautions**

Ipimethalin-L may be used in landscape and grounds maintenance programs for extended preemergence control of most annual grasses and certain broadleaf weeds.

- Areas to be treated (including beds, parking areas and roadsides fence lines and borders, around statuary or monuments, and similar areas) should be free of emerged weeds prior to applying

7/6/87

Ipimethalin-L. Remove emerged weeds by cultivation or tank mixing with a post-emergence product labeled for such use.

- Avoid letting spray solution contact stone, wood, or other porous surfaces because staining may occur. If contact occurs, rinse immediately to avoid staining.

### Application Methods and Timings

For pre-emergence control of the listed weed species using broadcast spray equipment, apply Ipimethalin-L at the rates per acre indicated in the rate table for landscape and grounds maintenance programs.

When applying Ipimethalin-L using hand-held spray equipment, apply Ipimethalin-L at the rates per 1000 square feet indicated in the rate table for landscape and grounds maintenance programs. Although the amount of water used to apply Ipimethalin-L is not critical, be sure to use enough water to provide thorough coverage without causing runoff. Calibration of backpack or other hand-held equipment will vary with each operator. Determine the amount of water needed to treat 1000 square feet before mixing the spray solution. Follow the mixing instructions provided in the general "Mixing Directions" section of this label.

To improve the efficacy of Ipimethalin-L, applications should be followed by one-half inch of rainfall or its equivalent in sprinkler irrigation. Erratic weed control may occur if Ipimethalin-L is not activated by rainfall or irrigation within 30 days.

Ipimethalin-L does not control established weeds.

Weeds that develop before Ipimethalin-L is activated should be destroyed by shallow cultivation or remove by hand where possible. Use Ipimethalin-L in conjunction with herbicides registered for post-emergence use (i.e. Roundup or Finale herbicide) to control established weeds. Do not apply sprays containing Roundup or Finale over the top of desirable plants. Follow Ipimethalin-L application with any registered herbicide to control weeds not listed on this label.

### Application Rates in Landscape and Grounds Maintenance Programs

Use rates recommended for Ipimethalin-L alone and in tank mix applications are provided in the following table.

#### Broadcast Application Rates per Acre and Rates per 1000 Square Feet for Preemergence Application in Landscape and Grounds Maintenance Programs

Length of Control	Ipimethalin-L (qt/acre)	Ipimethalin-L (fl oz per 1000 sq ft)
Short-term control (2-4 Months)	2.4	1.8
Long-term control (6-8 months)	4.8	3.6

### Non-cropland Areas (Including Tree Plantations)

#### General Directions and Precautions

Ipimethalin-L may be applied as a grounds maintenance treatment in noncropland areas for pre-emergence control of weed species found in and around pulpwood and fiber farms, established tree plantations (including Christmas trees), established ornamentals planted in non-cropland areas (including

77/87

utility substations and highway rights-of-way). Ipimethalin-L may also be used in conjunction with hardwood and conifer regeneration on conservation reserve program land or similar areas.

- Apply Ipimethalin-L either at planting or to established trees.
- If application of Ipimethalin-L is made at planting, be sure that slit closure has been completed to ensure that Ipimethalin-L does **not** come into direct contact with tree roots or washed into the root zone through the open slit; otherwise, root stunting may occur.

### Application Methods and Timings

For pre-emergence control of the listed weed species using broadcast spray equipment, apply Ipimethalin-L at the rates per acre indicated in the rate table for noncropland areas (including tree plantations).

When applying Ipimethalin-L using hand-held spray equipment, apply Ipimethalin-L at the rates per 1000 square feet indicated in the rate table for noncropland areas (including tree plantations). Although the amount of water used to apply Ipimethalin-L is not critical, be sure to use enough water to provide thorough coverage without causing runoff. Calibration of backpack or other hand-held equipment will vary with each operator. Determine the amount of water needed to treat 1000 square feet before mixing the spray solution. Follow the mixing instructions provided in the general "Mixing Directions" of this label.

To improve the efficacy of Ipimethalin-L, applications should be followed by one-half inch of rainfall or its equivalent in sprinkler irrigation. Erratic weed control may occur if Ipimethalin-L is not activated by rainfall or irrigation within 30 days.

Ipimethalin-L does not provide control of established weeds.

Weeds that develop before Ipimethalin-L is activated should be destroyed by shallow cultivation or remove by hand where possible. Use Ipimethalin-L in conjunction with herbicides registered for post-emergence use (i.e. Roundup or Finale herbicide) to control established weeds. Do not apply sprays containing Roundup or Finale over the top of desirable plants. Follow application of Ipimethalin-L with any registered herbicide to control weeds not listed on this label.

### Application Rates in Noncropland Areas (Including Tree Plantations)

Use rates recommended for Ipimethalin-L alone and in tank mix applications are provided in the following table.

#### Broadcast Application Rates per Acre and Rates per 1000 Square Feet for Preemergence Application in Noncropland Areas (Including Tree Plantations)

Length of Control	Ipimethalin-L (qt/acre)	Ipimethalin-L (fl oz per 1000 sq ft)
Short-term control (2-4 Months)	2.4	1.8
Long-term control (6-8 months)	4.8	3.6

### Tank Mixes in Noncropland Areas (Including Tree Plantations)

Ipimethalin-L may be applied in tank mixes with postemergence herbicides to control emerged weeds in noncropland areas (including tree plantations). To control emerged weeds in noncropland areas (including tree plantations), Ipimethalin-L may be applied with Roundup, Finale, and other similar herbicide products. Refer to the labels of companions for species recommendations. When using tank mixtures with Ipimethalin-L, always read the companion product label(s) to determine the specific use rates by soil

78/87

types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions including state and local use restrictions that may apply to specific products. Always follow the most restrictive label directions.

Be sure to prevent combination sprays from coming into direct contact with desirable foliage, otherwise plant injury may occur. Combining Ipimethalin-L with diuron or simazine may expand the weed control spectrum, but the use of such combinations may restrict Ipimethalin-L application in sensitive areas.

## Ornamentals

### General Directions and Precautions

Ipimethalin-L may be applied to established plantings in ornamentals for preemergence weed control. Application of Ipimethalin-L to seedbeds, transplant beds, or liners should be **delayed** until plants have become well-rooted.

- Be sure soil and/or planting mixes have settled completely after transplanting so that no cracks are present that would allow Ipimethalin-L to come into direct contact with roots. Effective weed control and ornamental tolerance will result from directed sprays where soil and media surfaces are uniformly covered.
- Plant only desirable plant species listed on this label into soil that has been treated with Ipimethalin-L during the previous season; otherwise, plant injury may occur.
- **Delay** first Ipimethalin-L application to bare root liners for 2-4 weeks in container-grown ornamentals.
- **Do not** treat plants grown for food or feed.
- **Do not** use treated plants for food or feed.

### Recommended Ornamental Species

Ipimethalin-L sprays may be applied around and over the top of established plants listed in the following tables, but not all of the varieties or strains of the listed plants have been tested. Adverse effects such as crop injury may occur due to environmental or growth factors, use methods, or application conditions. Spray only a few plants to test for plant damage before treating a large number of plants or full-scale application.

Although Ipimethalin-L may be used on plant species not listed in the following tables, compatibility with non-listed species should be tested by treating a small number of such plants at the recommended rates. Treated plants should be monitored for 1 - 2 months after treatment to determine the possibility for injury. **Users will assume responsibility for any crop damage or other liability.**

#### Trees:

Common Name	Scientific Name
Alder, European black	<i>Alnus glutinosa</i>
Apple	<i>Malus</i> spp.
Arborvitae, American	<i>Thuja occidentalis</i>
Arbutus	<i>Arbutus</i> spp
Ash, Red	<i>Fraxinus pennsylvanica</i>
Ash, White	<i>Fraxinus americana</i>
Aspen, Bigtooth	<i>Populus grandidentata</i>
Aspen, Quaking	<i>Populus tremuloides</i>
Basswood	<i>Tilia</i> spp.
Birch, European Weeping	<i>Betula pendula</i>

79/87

Common Name	Scientific Name
Birch, River	<i>Betula nigra</i>
Buckeye, Red	<i>Aesculus pavia</i>
Cedar, White	<i>Thuja occidentalis</i>
Chamaecyparis, Boulevard	<i>Chamaecyparis pisifera</i>
Cherry, Black	<i>Prunus serotina</i>
Cherry, Choke	<i>Prunus virginiana</i>
Cherry, Kwanzan	<i>Prunus serrulata</i>
Cherry, Nanking	<i>Prunus tomentosa</i>
Cottonwood	<i>Populus deltoides</i>
Crabapple	<i>Malus spp.</i>
Crepe myrtle	<i>Lagerstroemia indica</i>
Cryptomeria, Japanese Cedar	<i>Cryptomeria japonica</i>
Cypress, Bald	<i>Taxodium distichum</i>
Cypress, Leyland	<i>Cupressocyparis leylandii</i>
Dogwood, Flowering	<i>Comus florida</i>
Dogwood, Korean	<i>Comus kousa</i>
Dogwood, Silky	<i>Comus amomum</i>
Dogwood, Shrub	<i>Comus spp</i>
Elm	<i>Ulmus japonica</i>
Fir, Balsam	<i>Abies balsamea</i>
Fir, Douglas	<i>Pseudotsuga menziesii</i>
Fir, Fraser	<i>Abies fraseri</i>
Fir, White	<i>Abies concolor</i>
Franklinia	<i>Franklinia spp.</i>
Ginkgo	<i>Ginkgo biloba</i>
Gum, Black	<i>Nyssa sylvatica</i>
Gum, Sour	<i>Nyssa sylvatica</i>
Haw. Black	<i>Vibumum prunifolium</i>
Hawthorn	<i>Crataegus spp</i>
Hemlock, Canada	<i>Tsuga canadensis</i>
Hemlock, Eastern	<i>Tsuga canadensis</i>
Holly, American	<i>Ilex opaque</i>
Honeylocust	<i>Gleditsia triacanthos</i>
Lilac, Common	<i>Syringa vulgaris</i>
Lilac, Japanese Tree	<i>Syringa reticulate</i>
Linden	<i>Tilia, spp.</i>
Magnolia, Saucer	<i>Magnolia soulangiana</i>
Magnolia, Southern	<i>Magnolia grandiflora</i>
Magnolia, Star	<i>Magnolia stellata</i>
Maidenhair Tree	<i>Ginkgo biloba</i>
Maple, Norway	<i>Acer platanoides</i>
Maple, Japanese	<i>Acer palmatum</i>
Maple, Red	<i>Acer rubrum</i>
Maple, Sugar	<i>Acer saccharum</i>
Nannyberry, Rusty	<i>Vibumum rufidulum</i>
Oak, Chinquapin	<i>Quercus muehlenbergii</i>
Oak, Live	<i>Quercus virginiana</i>
Oak, Pin	<i>Quercus palustris</i>
Oak, Red	<i>Quercus rubra</i>
Oak, Swamp Chestnut	<i>Quercus michauxii</i>
Oak, Water	<i>Quercus nigra</i>
Oak, White	<i>Quercus alba</i>
Oak, Willow	<i>Quercus phellos</i>
Olive	<i>Olea europaea</i>

80/87

Common Name	Scientific Name
Palm, Date	<i>Phoenix</i> spp.
Palm, Fan	<i>Washingtonia</i> spp.
Palm, Pindo	<i>Butia</i> spp.
Palm, Washington	<i>Washingtonia</i> spp.
Peach	<i>Prunus persica</i>
Pear, Bradford	<i>Pyrus calleryana</i> 'Bradford'
Pecan	<i>Carya illinoensis</i>
Pine, Austrian	<i>Pinus nigra</i>
Pine, Italian Stone	<i>Pinus pinea</i>
Pine, Loblolly	<i>Pinus taeda</i>
Pine, Monterey	<i>Pinus radiata</i>
Pine, Red	<i>Pinus resinosa</i>
Pine, Scotch	<i>Pinus sylvestris</i>
Pine, Slash	<i>Pinus elliotii</i>
Pine, Virginia	<i>Pinus virginiana</i>
Pine, White	<i>Pinus strobus</i>
Plum, Purple Leaf	<i>Prunus cerasifera</i>
Poplar, Black	<i>Populus nigra</i>
Redcedar, Eastern	<i>Juniperus virginiana</i>
Redcedar, Western	<i>Thuja plicata</i>
Red Ironbark	<i>Eucalyptus sideroxylon</i> 'Rosea'
Redwood, Dawn	<i>Metasequoia</i> <i>glyptostroboides</i>
Sequoia, Giant	<i>Sequoiadendron giganteum</i>
Serviceberry	<i>Amelanchier laevis</i>
Sourwood	<i>Oxydendrum arboreum</i>
Spruce, Colorado Blue	<i>Picea pungens</i>
Spruce, Dwarf Alberta	<i>Picea glauca</i> 'Albertiana'
Spruce, Norway	<i>Picea abies</i>
Spruce, White	<i>Picea glauca</i>
Sweetgum	<i>Liquidambar styraciflua</i>
Sycamore	<i>Platanus occidentalis</i>
Trachycarpus	<i>Trachycarpus</i> spp.
Tulip tree	<i>Liriodendron tulipifera</i>
Walnut, Black	<i>Juglans nigra</i>
Willow, Weeping	<i>Salix babylonica</i>
Yellowwood	<i>Cladrastis lutea</i>

**Shrubs:**

Common Name	Scientific Name
Abelia, Glossy	<i>Abelia grandiflora</i>
Aucuba, Gold	<i>Aucuba japonica</i>
Azalea	<i>Rhododendron</i> spp.
Bamboo, Heavenly	<i>Nandina domestica</i>
Barberry	<i>Berberis gladywensis</i>
Barberry, Japanese	<i>Berberis thunbergii</i>
Blue Indigo Bush	<i>Dalea gregii</i>
Bottlebrush, Lemon	<i>Callistemon citrinus</i>
Boxwood, Common	<i>Buxus sempervirens</i>
Boxwood, Japanese	<i>Buxus microphylla</i>
Camellia	<i>Camellia japonica</i>
Cape jasmine	<i>Gardenia jasminoides</i>
Cordylone	<i>Cordylone</i> spp.



81/87

Common Name	Scientific Name
Correa	<i>Correa</i> spp.
Cotoneaster	<i>Cotoneaster apiculatus</i>
Cotoneaster, Bearberry	<i>Cotoneaster dammeri</i>
Cotoneaster, Rock	<i>Cotoneaster horizontalis</i>
Cypress, Italian	<i>Cupressus sempervirens</i>
Cypress, Leyland	<i>Cupressocyparis leylandii</i>
Deutzia, Slender	<i>Deutzia gracilis</i>
Dogwood, Red Twig	<i>Cornus sericea</i>
Elaeagnus	<i>Elaeagnus ebbingei</i>
Escallonia	<i>Escallonia fradesii</i>
Euonymus	<i>Euonymus fortunei</i>
Euonymus, Golden	<i>Euonymus japonica</i>
Euonymus, Winged	<i>Euonymus alata</i>
Firethorn	<i>Pyracantha coccinea</i>
Forsythia, Border	<i>Forsythia intermedia</i>
Fragrant Olive	<i>Osmanthus fragrans</i>
Fuchsia, California	<i>Zauschneria californica</i>
Gardenia	<i>Gardenia jasminoides</i>
Hawthorne, Indian	<i>Raphiolepis indica</i>
Hibiscus	<i>Hibiscus syriacus</i>
Holly, Chinese	<i>Ilex cornuta</i>
Holly, Japanese	<i>Ilex crenata</i>
Holly, Fosters	<i>Ilex attenuata</i> 'Fosteri'
Holly, Savannah	<i>Ilex attenuata</i>
Holly, Yaupon	<i>Ilex vomitoria</i>
Honeysuckle, Bush	<i>Diervilla lonicera</i>
Juniper	<i>Juniperus</i> spp.
Juniper, Chinese	<i>Juniperus chinensis</i> v. <i>pfitzer</i>
Juniper, Shore	<i>Juniperus conferta</i>
Juniper, Trailing	<i>Juniperus horizontalis</i>
Laurel, Cherry	<i>Prunus laurocerasus</i>
Laurel, Mountain	<i>Kalmia latifolia</i>
Laurel, Otto Luyken	<i>Prunus laurocerasus</i>
Laurel, Schipka	<i>Prunus schipkanensis</i>
Laurustinus	<i>Viburnum tinus</i>
Lavender, English	<i>Lavandula angustifolia</i>
Leucothoe	<i>Leucothoe fontanesiana</i>
Leucothoe, Coast	<i>Leucothoe axillaris</i>
Lilac, Cut-Leaf	<i>Syringa laciniata</i>
Lily-of-the-Nile	<i>Agapanthus africanus</i>
Mahonia	<i>Mahonia aquifolium</i>
Mock Orange	<i>Pittosporum tobira</i>
Myrtle, Compact	<i>Myrtus communis</i>
Myrtle, Wax	<i>Myrica cerifera</i>
Nandina	<i>Nandina domestica</i>
Oleander	<i>Nerium oleander</i>
Oregon Grape	<i>Mahonia aquifolium</i>
Osmanthus	<i>Osmanthus fragrans</i>
Palm, European Fan	<i>Chamaerops humilis</i>
Palm, Mediterranean Fan	<i>Chamaerops</i> spp.
Phlox, Prickly	<i>Leptodactylon californicum</i>
Photinia, Fraser	<i>Photinia X Fraseri</i>
Pieris, Japanese	<i>Pieris japonica</i>
Pine, Mugo	<i>Pinus mugo</i>
Plum, Natal	<i>Carissa grandiflora</i>

8/87

Common Name	Scientific Name
Privet, California	<i>Ligustrum ovalifolium</i>
Privet, Glossy	<i>Ligustrum lucidum</i>
Privet, Variegated	<i>Ligustrum sinensis</i>
Privet, Waxleaf	<i>Ligustrum japonicum</i>
Pyracantha	<i>Pyracantha coccinea</i>
Quince, Flowering	<i>Chaenomeles japonica</i>
Ranger, Texas	<i>Leucophyllum frutescens</i>
Redroot	<i>Ceanothus</i> spp.
Rhododendron	<i>Rhododendron</i> spp.
Robira	<i>Pittosporum tobira</i>
Spice Plant	<i>Illicium parviflorum</i>
Spiraea	<i>Spiraea vanhouttei</i>
Spiraea, Anthony Waterer	<i>Spiraea X bumalda</i>
Spiraea, Japanese	<i>Spiraea japonica</i>
Sweet Bay	<i>Laurus nobilis</i>
Trumpet Bush	<i>Tecoma stans</i>
Verbena, Lemon	<i>Aloysia triphylla</i>
Viburnum	<i>Viburnum suspensum</i>
Vitex	<i>Vitex</i> spp.
Weigela	<i>Weigela florida</i>
Wild Lilac	<i>Ceanothus</i> spp.
Xylosma	<i>Xylosma congestum</i>
Yellowbells	<i>Tecoma stans</i>
Yew	<i>Taxus media</i>
Yew, Japanese	<i>Taxus cuspidata</i>
Yew, Southern	<i>Podocarpus macrophyllus</i>
Yucca, Adam's	<i>Yucca filamentosa</i>
Yucca, Weeping	<i>Yucca pendula</i>

**Ground Covers:**

Common Name	Scientific Name
Ajuga	<i>Ajuga reptans</i>
Capweed	<i>Arctotheca calendula</i>
Cinquefoil, Spring	<i>Potentilla verna</i>
Daisy, Trailing African	<i>Osteospermum fruticosum</i>
Gazania	<i>Gazania splendens</i>
Iceplant, Large Leaf	<i>Carpobrotus edulis</i>
Ivy, English	<i>Hedera helix</i>
Ivy, Geranium	<i>Pelargonium peltatum</i>
Jasmine, Asiatic	<i>Trachelospermum asiaticum</i>
Jasmine, Primrose	<i>Jasminum mesnyi</i>
Mondograss	<i>Ophiopogon japonica</i>
Myoporum	<i>Myoporum parvifolium</i>
Pachysandra	<i>Pachysandra terminalis</i>
Potentilla	<i>Potentilla fruticosa</i>
Rose-of-Sharon	<i>Hypericum calycinum</i>
Wintercreeper	<i>Euonymus fortunei</i>

**Perennials:**

Common Name	Scientific Name
Bleeding Heart	<i>Dicentra spectabilis</i>
Calla lily	<i>Zantedeschia aethiopica</i>
Canna, Common Garden	<i>Canna generalis</i> 'Lucifer'

Common Name	Scientific Name
Chincherinchee	<i>Ornithogalum thyrsoides</i>
Crinum Lily	<i>Crinum</i> spp.
Fern, Asparagus	<i>Asparagus officinalis</i>
Fern, Leatherleaf	<i>Rumohra adiantiformis</i>
Freesia	<i>Freesia X hybrida</i>
Heather, Dwarf	<i>Calluna vulgaris</i>
Hosta	<i>Hosta</i> , spp.
Lily	<i>Lillium</i> spp.
Liriope, Creeping	<i>Liriope spicata</i>
Liriope, Variegated	<i>Liriope muscari</i>
Montbretia	<i>Crocsmia crocosmiiflora</i>
Orchid, Peacock	<i>Acidanthera bicolor</i>
Peony, Chinese	<i>Paeonia lactiflora</i>
Wisteria	<i>Wisteria</i> spp.
Zephyr Lily	<i>Zephyranthes</i> spp.

**Ornamental Grasses:**

Common Name	Scientific Name
Beach Grass	<i>Ammophila breviligulata</i>
Fescue, Blue	<i>Festuca ovina</i>
Fescue, Sheep	<i>Festuca ovina</i>
Fountain Grass	<i>Pennisetum setaceum</i>
Pampas Grass	<i>Cortaderia selloana</i>
Reed Canary Grass	<i>Phalaris arundinacea</i>
Reed, Giant	<i>Arundo</i> spp.
Ribbon Grass	<i>Phalaris arundinacea</i>
Tufted Hair Grass	<i>Deschampsia caespitosa</i>

**Application Methods and Timings**

For pre-emergence control of the listed weed species using broadcast spray equipment, apply Ipimethalin-L at the rates per acre indicated in the rate table for ornamentals.

When applying Ipimethalin-L using hand-held spray equipment, apply Ipimethalin-L at the rates per 1000 square feet indicated in the rate table for ornamentals. Although the amount of water used to apply Ipimethalin-L is not critical, be sure to use enough water to provide thorough coverage without causing runoff. Calibration of backpack or other hand-held equipment will vary with each operator. Determine the amount of water needed to treat 1000 square feet before mixing the spray solution. Follow the mixing instructions provided in the general "Mixing Directions" section of this label.

To improve the efficacy of IPIMETHALIN-L, applications should be followed by one-half inch of rainfall or its equivalent in sprinkler irrigation. Erratic weed control may occur if Ipimethalin-L is not activated by rainfall or irrigation within 30 days.

Ipimethalin-L does not provide control of established weeds.

Weeds that develop before Ipimethalin-L is activated should be destroyed by shallow cultivation or remove by hand where possible. Use Ipimethalin-L in conjunction with herbicides registered for post-emergence use (i.e. Roundup or Finale herbicide) to control established weeds. Do not apply sprays containing Roundup or Finale over the top of desirable plants. Follow Ipimethalin-L application with any registered herbicide to control weeds not listed on this label.

84/87

## Application Rates in Ornamentals

Use rates recommended for Ipimethalin-L alone and in tank mix applications are provided in the following table.

### Broadcast Application Rates per Acre and Rates per 1000 Square Feet for Preemergence Application in Ornamentals

Length of Control	Ipimethalin-L (qt/acre)	Ipimethalin-L (fl oz per 1000 sq ft)
Short-term control (2-4 Months)	2.4	1.8
Long-term control (6-8 months)	4.8	3.6

## Tank Mixes in Ornamentals

Ipimethalin-L may be applied in tank mixes with postemergence herbicides to control emerged weeds in ornamentals. To control emerged weeds in ornamentals, Ipimethalin-L may be applied with Roundup, Finale, Ornamec, Gallery, Princep, and other similar herbicide products. **Do not** apply tank mix sprays with Roundup or Finale over the top of desirable plants.

When using tank mixtures with Ipimethalin-L, always read the labels of companion products to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions including state and local use restrictions that may apply to specific products. Always follow the most restrictive label directions.

---

## Turfgrasses

---

### General Directions and Precautions

Apply Ipimethalin-L to well established turfgrass with a dense and uniform stand.

- Application should not be made to newly planted areas until the turfgrass has filled in and has been mowed at least four times. Allow for turf recovery before applying Ipimethalin-L to turf that has been thinned or damaged due to winter injury, excessive moisture, etc.
- **Do not** apply to over-seeded warm-season turfgrasses as thinning or injury of the over-seeded species may result.
- **Do not** use on greens as injury may result.
- Re-seeding or winter over-seeding of treated turfgrass should be delayed for at least three months after the last Ipimethalin-L application. Sprigging turfgrass should be delayed for five months after Ipimethalin-L application.
- To control weed emergence and ensure effective application rates along lawn edges and similar areas, it may be necessary to overlap the spray three to six inches onto sidewalks or driveways, etc. To avoid temporary discoloration and staining of pavement, rinse immediately.

### Application Rates in Turfgrasses

Use rates recommended for Ipimethalin-L alone and in tank mix applications are provided in the following table.

85/87

**Application Rates per Acre and per 1000 Square Feet for Preemergence Application in Turfgrasses**

Turfgrass Species	Weeds Controlled	Ipimethalin-L (pt/acre)	Ipimethalin-L (fl oz/1000 sq ft)	Use Directions
<b>Warm Season Species</b>				
Bahiagrass Bermudagrass Buffalograss Centipedegrass Tall fescue St. Augustine-grass Zoysiagrass	Barnyardgrass Crabgrass Evening primrose Fall panicum Foxtail Hop clover Knotweed Oxalis <i>Poa annua</i> Prostrate spurge Purslane	3.6 to 7.2	1.3 to 2.6	Make initial application before weed germination in spring.  Make repeat application of 2.5 to 3.6 pt/acre (1 to 1.3 fl oz/1000 sq ft) after 6-8 weeks if necessary.
	Goosegrass	3.6 to 7.2	1.3 to 2.6	Make initial application before weed germination in spring, then a second application 6-8 weeks later.  An additional application of 3.6 pt/acre (1.3 oz/1000 sq. ft.) may be made to extend goose-grass control 8 weeks after the second applicaton.
	Chickweed Corn speedwell Cudweed Henbit Lawn burweed <i>Poa annua</i>	3.6 to 4.8	1.3 to 1.8	Make application in late summer or early fall before weed germination.
<b>Cool Season Species</b>				
Kentucky bluegrass Fine fescue Tall fescue Perennial ryegrass	Barnyardgrass Crabgrass Evening primrose Fall panicum Foxtail Hop clover Knotweed Oxalis <i>Poa annua</i> Prostrate spurge Purslane	3.6 to 4.8	1.3 to 1.8	Make initial application before weed germination in spring.  Make repeat application of 2.5 to 3.6 pt/acre (1 to 1.3 fl oz/1000 sq ft) after 6-8 weeks for extended control or where heavy weed infestations are expected.
	Goosegrass	3.6 to 7.2	1.3 to 2.6	Make initial application prior to weed germination in spring.  Make repeat application of 3.6 pt/acre (1.3 fl oz/1000 sq ft) if the lower rate was used initially or for extended goosegrass control.
	Chickweed Corn speedwell Cudweed Henbit Lawn burweed <i>Poa annua</i>	3.6 to 4.8	1.3 to 1.8	Make application in late summer or early fall before weed germination.

86/87

*The efficacy of Ipimethalin-L herbicide will be improved if the applications followed by one-half inch of rainfall or its equivalent in sprinkler irrigation. If Ipimethalin-L herbicide is not activated by rainfall or irrigation within 30 days erratic weed control may result.*

## Tank Mixes in Turfgrass

Ipimethalin-L may be applied in tank mixes with post-emergence herbicides to control emerged weeds in turfgrasses. For annual grass control, Ipimethalin-L may be applied with Acclaim Extra or MSMA herbicide. For broadleaf weed control, Ipimethalin-L may be applied with Trimec, Three-Way, 2,4-D, and other similar herbicide products.

When using tank mixtures with Ipimethalin-L, always read the labels of companion products to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions including state and local use restrictions that may apply to specific products. Always follow the most restrictive label directions.

## Application on Industrial (Unimproved) Turf

The spectrum of weeds to be controlled in industrial (unimproved) turf areas may differ from those for fine turf as indicated elsewhere on this label. In addition to the annual grasses and broadleaf weeds listed in the fine turf sections of this label, Ipimethalin-L will provide control of the following weeds that may emerge in established grasses in construction sites, lots, parks, rights-of-way, roadsides, substations, or other similar areas:

Annual spurge	Browntop Panicum	Carpetweed
Crowfootgrass	Fiddleneck	Field sandbur
Filaree	Florida pusley	Itchgrass
Johnsongrass (from seed)	Junglerice	Kochia
Lambsquarters	London rocket	Lovegrass
Mexican sprangletop	Pennsylvania smartweed	Pigweed
Puncturevine	Red sprangletop	Shepherdspurse
Signalgrass	Texas panicum	Velvetleaf
Witchgrass	Woolly cupgrass	

Apply Ipimethalin-L before weed germination. Ipimethalin-L may be tank mixed with a post-emergence herbicide such as 2,4-D, MSMA, or similar herbicide products to control established weeds.

When using tank mixtures with Ipimethalin-L, always read the labels of companion products to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions including state and local use restrictions that may apply to specific products. Always follow the most restrictive label directions.

---

## Total Vegetative Control

---

### General Directions and Precautions

Ipimethalin-L may be applied in tank mixes with Arsenal, Plateau, Roundup, Karmex, Finale, Oust, diuron, or similar herbicide products to achieve bare ground or total vegetation control. Ipimethalin-L can be used to provide greater selectivity in areas where bare ground or total vegetation control is desired. Such areas may contain roots from desirable trees, landscape vegetation, or ornamentals within the treated zone.

When using tank mixtures with Ipimethalin-L, always read the labels of companion products to determine the effects on desirable plants.

**Do not** tank mix with Arsenal in California.

Applications may be made to emerged weeds controlled by the companion product herbicide. Determine recommended rates from the label of the companion product prior to use and follow the most restrictive label instructions.

For Kochia, use combinations of Ipimethalin-L with Arsenal or diuron if there have been control problems with other herbicides.

---

### **Terms and Conditions of Use**

---

If terms of the following Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. Otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitations of Remedies.

---

### **LIMITATIONS OF LIABILITY AND DAMAGES**

---

The liability of Dintec Agrichemicals and any other seller for any loss or injury, whether based on negligence, breach of warranty, strict liability in tort, or any other cause of action, shall be limited to the purchase price of the product. Prompt notice of any claim must be given by the buyer to Dintec Agrichemicals within ninety days after the application of the product or ninety days after the first planting, whichever is later. Notification to Dintec Agrichemicals should be at this address: Dintec Agrichemicals, 9330 Zionsville Road Indianapolis, IN 46268

Dintec Agrichemicals and any other seller of the product shall not be liable, and any and all claims against Dintec Agrichemicals and any other seller are waived, for special, indirect, incidental, or consequential damages or expenses of any nature, including, but not limited to, loss of profits or income, and crop or property loss or damage, whether or not based on negligence, breach of warranty, strict liability in tort or any other cause of action.

\*Trademark of Dow AgroSciences LLC  
EPA Accepted: \_\_/\_\_/\_\_