PM 23 62719-73 8-4-98 1 of 26

AUG 4 1998

Dennis H. Lade, Ph.D.
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268

Dear Dr. Lade:

Subject: Stinger®
EPA Registration No. 62719-73
Application and Letter Dated June 16, 1998,
Request To Amend Registration by Multiple
Label Revisions Described as "Proposed Changes
by Amendment" and Your Resubmission Dated July 29,
1998

The proposed amendments to the subject pesticide product registration have been reviewed and found acceptable under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) as amended, provided that:

1. Remove all editoral notes, strikeouts and underlining associated with the revisions of the labeling.

2. You submit one (1) copy of the final printed labeling before releasing the product for shipment, under the subject labeling.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA, Section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Sincerely yours,

Joanne I. Miller
Product Manager (23)
Herbicide Branch
Registration Division (7505C)

Enclosure

| | CONCURRENCES | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| SYMBOL | Wilson:Diskette:Flumetsulam:08-04-98 | | | | | | | |
| SURNAME | | | | | | | | |
| DATE | | | | | | | | |

EPA Form 1320-1 (12-70) OFFICIAL FILE COPY

A2A / Stinger / Amend / 07-28-98
file: Stinger-073 28July98d.doc

# Stinger*

**EPA Reg. No. 62719-73**

## Registration Notes:

Current label text based on EPA-accepted copy dated 08/09/93 and 06/01/94.

**Proposed Changes by Amendment:**

1. Revised KOROC statement and signal word in accordance with recent guidance from EPA labeling unit.
2. Deleted items in User Safety Recommendations not consistent with the acute toxicity of Stinger (Toxicity Cat. III).
3. Physical and Chemical Hazards: Deleted the word "Combustible" in accordance with 40 CFR Part 156.10(h)(2)(iii).
4. Revised Environmental Hazards groundwater statement.
5. Directions for sprayer cleanout deleted from Storage and Disposal section and placed in the "Advisory Statements" section.
6. Directions for Use:
   a. In general, Directions for Use were revised to harmonize with other clopyralid-containing products and edited for clarity and user-friendliness throughout.
   b. Added the following statement to General Use Precautions section: "Use directions in Dow AgroSciences supplemental labeling may supersede directions or limitations in this labeling." This statement would allow directions/uses on EPA-accepted supplemental labeling, that might otherwise be in conflict with the main label, without amending the main product label.
   c. Added revised rotation crop restrictions for the states of Idaho, Nevada, Oregon, Utah and Washington from supplemental labeling EPA-accepted 05/14/92. California added to list of western states to which rotation crop restrictions apply.
   d. Added Field Bioassay Instructions.
   e. Added mixing instructions and tank mixing precautions per PR-Notice 82-1 and guidance from EPA reviewer.
   f. Added weed species and revised list to include an indication of life cycle, i.e., (annual (a), biennial (b) and perennial (p).
   g. Revised "~~Weed Control~~ Guidelines for Control of Specific Weeds".
   h. Added rate limitation for certain uses in the state of California.
   i. Added directions for use on asparagus to Crop Uses section - EPA-accepted supplemental labeling dated 02/22/96.
   j. Added directions for use on spearmint and peppermint to the Crop Uses section - EPA-accepted supplemental labeling dated 11/18/93.
   k. Added directions for use on cottonwood/poplar trees grown for pulp to Crop Uses section - EPA-accepted supplemental labeling dated 03-03-97. Note: The limitation " cottonwood/poplar trees grown for pulp" changed to " cottonwood/poplar tree plantations" and eucalyptus was added to species that can be treated.
   l. Although proposed in late 1996, a decision was made not to register Stinger in the state of NY. Therefore, the use limitation added by notification "coded A2A/Stinger/Notification/10-23-96" has been deleted from the General Use Precautions section.

**Note:** This draft version contains final changes requested by EPA reviewer, Eugene Wilson on July 27, 1998.

**[Editor's note: Added text is underlined and deleted text denoted by strike-through. Editors notes in body of text denoted by lower case brackets [-]. Editor's notes appear only in draft labeling.]**

*Trademark of Dow Agro Sciences LLC

(Base label):

(logo) Dow Agro Sciences LLC

# Stinger*

**For selective postemergence control of broadleaf weeds in asparagus, Christmas tree plantations, tree plantations, fallow cropland, field corn, grasses grown for seed, mint, sugar beets, wheat, barley and oats not underseeded with a legume, conservation reserve program (CRP) acres, non-cropland, and rangeland and permanent grass pastures**

| | |
|---|---|
| Active Ingredient: | |
| clopyralid: 3,6-dichloro-2-pyridinecarboxylic acid, monoethanolamine salt | 40.9% |
| *Inert Ingredients* | 59.1% |
| Total | 100.0% |

Acid Equivalent:
clopyralid: 3,6-dichloro-2-pyridinecarboxylic acid - 31% ~~3 lb/gal~~ (3 lb/gal)

**ACCEPTED with COMMENTS In EPA Letter Dated**
AUG 4 1998
**Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No.**
62719-73

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

~~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.)~~

**Causes Eye Injury • Harmful If Inhaled Or Absorbed Through Skin**

**Avoid contact with eyes, skin, or clothing. Avoid breathing spray mist.**

### Personal Protective Equipment (PPE)

**Applicators and other handlers must wear:**
- Long-sleeved shirt and long pants
- Waterproof gloves
- 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.

## 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 with plenty of water. Get medical attention if irritation persists.
**If on skin:** Wash with plenty of soap and water. Get medical attention.

## Environmental Hazards

Do not contaminate water when disposing of equipment washwaters. Do not contaminate water used for irrigation or domestic purposes. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark.

Clopyralid is a chemical which can travel (seep or leach) through soil and under certain conditions contaminate groundwater which may be used for irrigation or drinking purposes. Users are advised not to apply clopyralid where soils have a rapid to very rapid permeability throughout the profile (such as loamy sand to sand) and the water table of an underlying aquifer is shallow, or to soils ~~containing sinkholes over limestone bedrock, severely fractured surfaces, and substrates which~~ that would allow direct introduction into an aquifer. Your local agricultural agencies can provide further information on the type of soil in your area and the location of groundwater.

## Physical or Chemical Hazards

~~Combustible~~ Do not use or store near heat or open flame. ~~Do not cut or weld container.~~

## 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 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" and "Limitation of Remedies" inside label booklet.

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.

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

EPA Reg. No. 62719-73 EPA Est. 464-MI-1

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Dow Agro Sciences LLC • Indianapolis, IN 46268 USA

# Herbicide

**Net Contents XXX**

(Datapack cover):

(logo) Dow Agro Sciences LLC

# Stinger*

**For selective postemergence control of broadleaf weeds in asparagus, Christmas tree plantations, tree plantations, fallow cropland, field corn, grasses grown for seed, mint, sugar beets, wheat, barley and oats not underseeded with a legume, conservation reserve program (CRP) acres, non-cropland, and rangeland and permanent grass pastures**

Active Ingredient:

| | |
|---|---|
| clopyralid: 3,6-dichloro-2-pyridinecarboxylic acid, monoethanolamine salt | 40.9% |
| Inert Ingredients | 59.1% |
| Total | 100.0% |

Acid Equivalent:

clopyralid: 3,6-dichloro-2-pyridinecarboxylic acid - 31% ~~3 lb/gal~~ (3 lb/gal)

## Keep Out of Reach of Children

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

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# Herbicide

Net Contents XXX

(Page 1 through end):

## Table of Contents Page



## Precautionary Statements

### Hazards to Humans and Domestic Animals

# CAUTION PRECAUCION

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**Causes Eye Injury • Harmful If Inhaled Or Absorbed Through Skin**

**Avoid contact with eyes, skin, or clothing. Avoid breathing spray mist.**

## Personal Protective Equipment (PPE)

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Waterproof gloves
- 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.

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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.~~
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Do not contaminate water when disposing of equipment washwaters. Do not contaminate water used for irrigation or domestic purposes. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark.

Clopyralid is a chemical which can travel (seep or leach) through soil and under certain conditions contaminate groundwater which may be used for irrigation or drinking purposes. Users are advised not to apply clopyralid where soils have a rapid to very rapid permeability throughout the profile (such as loamy sand to sand) and the water table of an underlying aquifer is shallow, or to soils ~~containing sinkholes over limestone bedrock, severely fractured surfaces, and substrates which~~ that would allow direct introduction into an aquifer. Your local agricultural agencies can provide further information on the type of soil in your area and the location of groundwater.

## Physical or Chemical Hazards

~~Combustible~~ **Do not use or store near heat or open flame.** ~~Do not cut or weld container.~~

## 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.

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 regulation.

## 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 12 hours.

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
- Waterproof gloves
- Shoes plus socks

## Storage and Disposal

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

**Storage:** Store above 28° F or warm to 40° F and agitate before use.

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

**Metal Container Disposal:** Do not reuse container. Triple rinse (or equivalent). Puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

**Plastic Container Disposal:** Do not reuse container. Triple rinse (or equivalent). 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.

~~**Sprayer Clean-Out:** To avoid injury to desirable plants, equipment used to apply Stinger should be thoroughly cleaned before re-using to apply any other chemicals.~~

~~1. Rinse and flush application equipment thoroughly after use at least three times with water, and dispose of rinse water in non-cropland area away from water supplies.~~

~~2. During the second rinse, add 1 qt of household ammonia for every 25 gallons of water. Circulate the solution through the entire system so that all internal surfaces are contacted (15-20 min). Let the solution stand for several hours, preferably overnight.~~

~~3. Flush the solution out of the spray tank through the boom.~~

~~4. Rinse the system twice with clean water, recirculating and draining each time.~~

~~5. Nozzles and screens should be removed and cleaned separately.~~

**[Editor's note: Information on Sprayer Cleanout moved to General Use Precautions section.]**

## General Information

Stinger® herbicide is recommended for selective, postemergence control of broadleaf weeds in asparagus, barley, oats and wheat not underseeded with a legume, Christmas tree plantations, fallow cropland, field corn, grasses grown for seed, mint (spearmint and peppermint), sugar beets, cottonwood/poplar and eucalyptus tree plantations, rangeland and permanent grass pastures, conservation reserve program

(CRP) acres, and non-cropland areas including fence rows, around farm buildings, and equipment pathways.

## General Use Precautions

**[Editor's note: Within General Use Precautions, a section on field bioassay has been added and several items moved or reformatted for clarity. Text changes are as shown by edit marks.]**
~~**In the state of New York, Stinger may only be applied to Christmas tree plantations.**~~

Use directions in Dow AgroSciences supplemental labeling may supersede directions or limitations in this labeling.

**Advisory:** In California, the maximum application rate for Stinger is 2/3 pint per acre per growing season.

Do not contaminate irrigation ditches or water used for irrigation or domestic purposes.

Do not apply by aircraft unless otherwise permitted by specific use directions or supplemental labeling.

Do not use in ~~a greenhouse~~ greenhouses.

**Chemigation:** Do not apply this product through any type of irrigation system.

~~Apply only once per 12-month period, except for Christmas trees, sugar beets, field corn, and grasses grown for seed. A fallow treatment that precedes or follows a small grain application is also allowed, except in irrigated small grains.~~ *Retreatment is allowed, but do not apply more than the maximum* allowable rate per crop growing season. An application to fallow cropland preceding or following an application to dryland small grains (wheat, barley or oats) is allowed, but is not allowed preceding or following an application to irrigated small grains.

**Do not transfer livestock** from treated grazing areas ~~onto~~ to sensitive broadleaf crop areas without first allowing 7 days of grazing on an untreated pasture. Otherwise, urine may contain enough clopyralid to cause injury to sensitive broadleaf plants.

~~Straw from treated areas, or manure from animals that have grazed treated areas, cannot be used for composting or mulching on ground where susceptible crops may be grown the following season. To promote herbicide decomposition, plant material should be evenly incorporated or burned. Adequate moisture is also required to promote breakdown of plant residues which contain clopyralid.~~

**Residues in Plants or Manure:** Do not use plant residues, including hay or straw from treated areas, or manure from animals that have grazed or consumed forage from treated areas for composting or mulching where susceptible plants may be grown the following season. Do not spread manure from animals that have grazed or consumed forage or hay from treated areas on land used for growing susceptible broadleaf crops. To promote herbicidal decomposition, plant residues should be evenly incorporated or burned. Breakdown of clopyralid in crop residues or manure is more rapid under warm, moist soil conditions and may be enhanced by supplemental irrigation.

~~**Do not move treated soil** and avoid situations where treated soil particles may blow into area where susceptible crops are grown. Violent windstorms may move soil particles. If this product is on soil particles and they are blown onto susceptible plants, visible symptoms may appear. Serious injury is unlikely. The hazard of movement of this product on dust is reduced if treated fields are irrigated or if rain occurs shortly after application.~~

**Advisory (Avoid Movement of Treated Soil):** Avoid conditions under which soil from treated areas may be moved or blown to areas containing susceptible plants. Wind-blown dust containing clopyralid may produce visible symptoms, such as epinasty (downward curving or twisting of leaf petioles or stems), when deposited on susceptible plants, however, serious injury is unlikely. To minimize potential

injury is unlikely. To minimize potential movement of clopyralid on wind-blown dust, avoid treatment of powdery dry or light sandy soils until soil is settled by rainfall or irrigation or irrigate shortly after application.

~~Excessive amounts of this herbicide in the soil may temporarily inhibit seed germination or plant growth.~~

**~~Rotation~~ Crop Rotation Restrictions**
Residues of Stinger in treated plant tissues, including the treated crop or weeds, which have not completely decayed may affect succeeding susceptible crops.

- ~~Wheat, barley, oats, grasses, field corn, or sugar beets may be planted at anytime following treatment.~~
- ~~Do not plant alfalfa, asparagus, canola (rapeseed), cole crops, grain sorghum, onions, popcorn, safflower, sweet corn, or strawberries for 10.5 months after a Stinger herbicide application.~~
- ~~Do not plant dry beans, soybeans, or sunflowers for 10.5 months after a Stinger herbicide application, or 18 months if soils contain less than 2% organic matter and natural precipitation is less than 15 inches during the 12 months following treatment. For these areas see "Special Conditions" below.~~
- ~~Do not plant other crops, including peas, lentils, potatoes and broadleaf crops grown for seed for 18 months after treatment unless the risk of injury is acceptable. For low moisture (less than 15 inches annual rainfall) and low organic matter (less than 2%) areas, a field bioassay is recommended prior to planting these sensitive crops.~~

~~**Special Conditions:** In areas defined previously as low in organic matter and precipitation, sensitive crops such as dry beans, soybeans, and sunflowers may be injured when planted 12 months after treatment. Unless the risk of injury is acceptable, these crops should not be planted until 18 months after treatment. The potential for injury may be reduced by burning, removal, or incorporation of treated crop residues with a minimum of 2 supplemental fall irrigations.~~

**Crop Rotation Restrictions for All States Except California, Idaho, Nevada, Oregon, Utah and Washington**

| Rotation Crop | Rotation Crop Interval[1] | Comments, Conditions and Limitations |
|---|---|---|
| barley, canola (rapeseed), grasses, field corn, oats, sugar beets, wheat | 0 months | Listed crops may be planted anytime following application of Stinger. |
| alfalfa, asparagus, ~~canola (rapeseed)~~, cole crops, dry beans[1], grain sorghum, mint, onions, popcorn, safflower, soybeans[1], sunflowers[1], sweet corn, strawberries | 10.5 months | Do not plant listed crops for 10.5 months following application of Stinger.<br><br>**[1]If soils contain less than 2% organic matter and natural precipitation is less than 15 inches *during the 12 months following application*, these** (footnoted) crops should not be planted until 18 months after application unless the risk of crop injury is acceptable. The potential for injury may be reduced by burning, removal, or incorporation of treated crop residues followed by a minimum of 2 supplemental fall irrigations. |
| Lentils, peas, potatoes and broadleaf crops grown for seed | 18 months | Do not plant listed crops for 18 months after application unless the risk of crop injury is acceptable. For areas with low moisture (less than 15 inches annual rainfall) and low organic matter (less than 2%) areas, a **field bioassay** is recommended prior to planting these sensitive crops. |

Crop Rotation Restrictions for California, Idaho, Nevada, Oregon, Utah and Washington

**[Editor's note: Rotation Crop Restrictions from EPA-accepted supplemental labeling dated 05/14/92.]**

~~Wheat, barley, oats, grasses, field corn, or sugar beets may be planted at anytime following treatment.~~

~~Do not plant alfalfa, asparagus, canola (rapeseed), *Brassica* species grown for seed, cole crops, dry beans, soybeans, grain sorghum, mint, onions, popcorn, safflower, sunflower, sweet corn or strawberries during the first 12 months after an application of Stinger.~~

~~**For areas receiving 18 inches or more of annual precipitation (not including irrigation):** Alfalfa, asparagus, dry beans, canola (rapeseed), *Brassica* species grown for seed, grain sorghum, mint, onions, popcorn, sweet corn, soybeans, strawberries and sunflowers may be planted 12 months after an application of Stinger. Cole crops, lentils, peas, potatoes (including potatoes grown for seed), safflower or broadleaf crops grown for seed (excluding *Brassica* species) may also be planted 12 months after treatment, however, unless risk of injury is acceptable, these crops should not be planted until 18 months after treatment.~~

~~**For areas receiving less than 18 inches average annual precipitation (not including irrigation):** Alfalfa, dry beans, soybeans, sunflowers, lentils, peas, potatoes (including potatoes grown for seed) or broadleaf crops grown for seed (excluding *Brassica* species) should not be planted until 18 months after an application of Stinger Herbicide. However, crop injury and/or yield loss may occur up to 4 years after application.~~

| Rotation Crop | Rotation Crop Interval[†] | Comments, Conditions and Limitations |
|---|---|---|
| barley, canola (rapeseed), grasses, field corn, oats, sugar beets, wheat | 0 months | Listed crops may be planted anytime following application of Stinger. |
| alfalfa, asparagus, *Brassica* species grown for seed, broadleaf crops grown for seed (excluding *Brassica* species)[1], ~~canola (rapeseed),~~ cole crops[1], dry beans, grain sorghum, lentils[1], mint, onions, peas[1], popcorn, potatoes (including potatoes grown for seed)[1], safflower[1], soybeans, sunflower, sweet corn, strawberries | 12 months | **In areas receiving greater than 18 inches of rainfall (not including irrigation),** listed crops may be planted 12 months after an application of Stinger.<br><br>[1]Unless risk of injury is acceptable, these (footnoted) crops should not be planted until 18 months after application. |
| alfalfa, dry beans, carrots, celery, cotton, soybeans, sunflowers, lentils, lettuce, melons, peas, potatoes (including potatoes grown for seed), tomato, and broadleaf crops grown for seed (excluding Brassica species) **[Ed. Note: carrots, celery, cotton, lettuce, melons, and tomatoes have been added to this rotation crop interval.]** | 18 months | **In areas receiving less than 18 inches of rainfall (not including irrigation):** Listed crops should not be planted until 18 months after an application of Stinger. However, crop injury and/or yield loss may occur up to 4 years after application. In such cases, a field bioassay may be useful to determine suitability for planting a given crop. |

[†]**Note:** The above restrictions are based on average annual precipitation, regardless of irrigation practices. Use of Stinger in accordance with the rotational crop restrictions stated, if followed, is not expected to result in crop injury; however, because Stinger is dissipated in the soil by microbial activity and the rate of microbial activity is dependent on soil moisture, temperature and organic matter, accurate prediction of potential rotational crop injury is impossible. In areas of low organic

matter (<2.0%) and less than 15 inches average annual precipitation, potential for crop injury may be reduced by burning or removal of plant residues, supplemental fall irrigation and deep moldboard plowing prior to planting the sensitive crop.

**Field Bioassay Instructions:** In fields previously treated with this product, plant short test rows of the intended rotational crop across the original direction of application in a manner to sample field conditions such as soil texture, soil pH, drainage, and any other variable that could affect the seed bed of the new crop. Field bioassay at any time between harvest of the treated crop and the planting of the rotational crop. Observe the test crop for herbicidal activity, such as poor stand (effect on seed germination) chlorosis (yellowing), and necrosis (dead leaves or shoots), or stunting (reduced growth). If herbicidal symptoms do not occur, the test crop can be grown. If there is apparent herbicidal activity, do not plant the field to the test rotational crop; plant only a labeled crop or crop listed in the table above for which the rotational interval has clearly been met.

## Advisory Statements

**Avoiding Injury to Non-target Plants**

This product can affect susceptible broadleaf plants directly through foliage and indirectly by root uptake from treated soil. Therefore, do not apply Stinger directly to or allow spray drift to come in contact with ~~vegetables,~~ flowers, grapes, tomatoes, potatoes, beans, lentils, peas, alfalfa, sunflowers, soybeans, safflower, or other ~~desirable~~ susceptible broadleaf crops and ornamental plants or soil where these sensitive crops will be planted the same season.

**Avoid spray drift:** ~~Applications should be made to avoid~~ Avoid spray drift since very small quantities of the spray, which may not be visible, may severely injure susceptible crops during ~~both growing~~ active growth ~~and~~ or dormant periods. Use coarse sprays to minimize drift ~~since, under adverse weather conditions, fine spray droplets may drift a mile or more~~. A drift control or deposition agent ~~such as Nalco-Trol~~ suitable for agricultural use may be used with this product to aid in reducing spray drift. If used, follow all use recommendations and precautions on the product label.

To minimize spray drift, apply Stinger in a total spray volume of 10 or more gallons per acre as large-droplet, low-pressure spray. Refer to the spray equipment manufacturer's recommendations for additional information on ~~gallons per acre~~ spray volume, spray pressure, sprayer speed, ~~nozzle types~~ type and ~~arrangements~~ arrangement of nozzles, ~~nozzle heights~~ height of nozzles above the target canopy, etc., ~~for respective application equipment. Spot treatments should only be applied with a calibrated boom to prevent misapplication. With ground equipment, spray~~ Spray drift can be lessened by keeping the spray boom as low as possible; ~~by applying no more than 20 gallons of spray per acre;~~ by using no more than 30 pounds per square inch (psi) spraying pressure with large droplet-producing nozzle tips; by using larger nozzle tips rather than increasing pressure to increase spray volume; and by spraying when wind velocity is low ~~; and by stopping all spraying when wind exceeds 6 to 7 miles per hour~~. Do not apply with hollow cone-type insecticide or other nozzles that produce a fine-droplet spray. Keep operating spray pressures at the lower end of the manufacturer's recommended pressure range for the specific nozzle type used. Low pressure nozzles are available from spray equipment manufacturers. Select nozzles and pressures that provide adequate plant coverage but minimize the production of fine spray particles. Avoid application under completely calm conditions which may be conducive to air inversions.

**Sprayer Clean-Out**

To avoid injury to desirable plants, equipment used to apply Stinger should be thoroughly cleaned before re-using to apply any other chemicals.

1. Rinse and flush application equipment thoroughly after use at least three times with water. ~~, and~~ ~~dispose~~ Dispose of all rinse water ~~in~~ by application to treatment area or apply to non-cropland area away from water supplies.
2. During the second rinse, add 1 qt of household ammonia for every 25 gallons of water. Circulate the solution through the entire system so that all internal surfaces are contacted (15-20 min). Let the solution stand for several hours, preferably overnight.
3. Flush the solution out of the spray tank through the boom.
4. Rinse the system twice with clean water, recirculating and draining each time.

5. Remove nozzles and screens ~~should be removed~~ and ~~cleaned~~ clean separately.

## Mixing Instructions

1. Add 3/4 of the required spray volume to the spray tank and start agitation.
2. Add the required amount of Stinger.
3. Add any surfactants, adjuvants or drift control agents according to manufacturer's label.
4. Agitate during final filling of the spray tank and maintain sufficient agitation during application to ensure uniformity of the spray mixture.

**Tank ~~Mixes~~ Mixing:** ~~When tank mixing, read and follow the label of each tank mix product used for precautionary statements, directions for use, weeds controlled, and geographic and other restrictions. Use in accordance with the most restrictive of label limitations and precautions. No label dosages should be exceeded. This product cannot be mixed with any product containing a label prohibition against such mixing.~~ This product may be applied in tank mix combination with labeled rates of other products provided (1) the tank mix product is labeled for the timing and method of application for the use site to be treated; and (2) tank mixing is not prohibited by the label of the tank mix product.

**Tank Mixing Precautions:**

- Read carefully and follow all applicable use directions, precautions, and limitations on the respective product labels.
- Do not exceed recommended application rates. Do not tank mix with another pesticide product that contains the same active ingredient as this product unless the label of either tank mix partner specifies the maximum dosages that may be used.
- For products packaged in water soluble packaging, do not tank mix with products containing boron or mix in equipment previously used to apply a product mixture containing boron unless the tank and spray equipment has been adequately cleaned. (See instructions for Sprayer Clean-Out.)
- Always perform a (jar) test to ensure the compatibility of products to be used in tank mixture.

**Tank Mix Compatibility Testing:** A jar test is recommended prior to tank mixing to ensure compatibility of Stinger and other pesticides. Use a clear glass quart jar with lid and mix the tank mix ingredients in their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately 1/2 hour. If the mixture balls-up, forms flakes, sludges, jels, oily films or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

## Application Directions

**Timing:** Apply to actively growing weeds. Extreme growing conditions such as drought or near freezing temperatures prior to, at, and following time of application may reduce weed control and increase the risk of crop injury at all stages of growth. **Only weeds ~~which are~~ that have emerged at the time of application will be affected.** ~~Wet foliage at the time of application may decrease control~~ If foliage is wet at the time of application, control may be decreased. The treatment with Stinger will be rainfast within ~~6 to~~ 8 hours after application.

**Spray Coverage:** ~~Adequate spray coverage and drift control are important. Obtaining a balance between spray coverage and drift control may sometimes be difficult but can be achieved provided the applicator understands the factors affecting coverage and drift. Factors affecting spray coverage include spray volume, crop canopy, and weed density. As crop canopy and weed density increase, spray volume should be increased to obtain equivalent weed control. Refer to manufacturer's recommendations for information on the relationship between gallons per acre, spray pressure, sprayer speed, nozzle type and arrangement, nozzle height above the target canopy, droplet size, and drift potential for respective application equipment. Use equipment and nozzle types which are designed for herbicide application. Do not apply less than 2 and not more than 40 gallons per acre total spray volume. For best results, apply 10 or more gallons per acre by ground. Reducing total spray volume may result in decreased coverage and weed control. Use enough total spray volume and a delivery system to provide thorough coverage and a~~

~~uniform spray pattern. Do not apply where spray drift may be a problem due to proximity of susceptible crops or other desirable plants.~~

Use sufficient spray volume to provide thorough and uniform spray coverage of target weeds. Do not broadcast apply in less than 2 gallons of total spray volume per acre. For best results and to minimize spray drift, apply in a spray volume of 10 or more gallons per acre. In general, spray volume must be increased as crop canopy, height and weed density increase in order to obtain equivalent weed control. Use only nozzle types and spray equipment designed for herbicide application. To reduce spray drift, follow precautions under "Avoiding Injury to Non-target Plants" in "Advisory Statements" section of this label.

**Use of Adjuvants:** Addition of surfactants, crop oils, or other adjuvants is not usually necessary when using Stinger. Adding a surfactant to the spray mixture may increase effectiveness on weeds but may reduce selectivity to the crop, particularly under conditions ~~which promote~~ of plant stress. If an adjuvant is added to the spray solution, follow all manufacturer use guidelines.

Spot Treatments: ~~Spot~~ To prevent misapplication, spot treatments should ~~only~~ be applied with a calibrated boom ~~to prevent misapplication~~ or with hand sprayers according to directions provided below.

Hand-Held Sprayers: Hand-held sprayers may be used for spot applications of Stinger if care is taken to apply the spray uniformly and at a rate equivalent to a broadcast application. Application rates in the table are based on an area of 1,000 sq ft. Mix the amount of Stinger (fl oz or ml) corresponding to the desired broadcast rate in one or more gallons of spray. To calculate the amount of Stinger required for larger areas, multiply the table value (fl oz or ml) by the area to be treated in "thousands" of square feet, e.g., if the area to be treated is 3,500 sq ft, multiply the table value by 3.5 (calc. 3,500 ÷ 1,000 = 3.5). An area of 1000 sq ft is approximately 10.5 X 10.5 yards (strides) in size.

| Amount of Stinger per gallon of spray to Equal Specified Broadcast Rate | | | | | |
|---|---|---|---|---|---|
| 1/4 pt/acre | 1/3 pt/acre | 1/2 pt/acre | 2/3 pt/acre | 1 pt/acre | 1 1/3 pt/acre |
| 1/10 fl oz† (2.7 ml) | 1/8 fl oz (3.6 ml) | 1/5 fl oz (5.4 ml) | 1/4 fl oz (7.3 ml) | 3/8 fl oz (11 ml) | 0.5 fl oz (15 ml) |

†1 fl oz = 29.6 (30) ml

~~For measuring small volumes, refer to the following table to obtain appropriate conversions of pints to fluid ounces.~~ Use the following table for converting pints to fluid ounces.

| Conversion Chart - Pints to Fluid Ounces | |
|---|---|
| **Pints** | **Fluid Ounces** |
| 1/3 | 5 |
| 1/4 | 4 |
| 1/2 | 8 |
| 2/3 | 11 |

**Band Application:** Stinger may be applied as a band treatment. Use the formulas below to determine the appropriate rate and volume per treated acre.

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Broadcast rate per treated acre} = \text{Band rate per treated acre}$$

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Broadcast volume per treated acre} = \text{Band volume per treated acre}$$

## Broadleaf Weeds Controlled†

Note: Letter in parentheses (-) after listed weed indicates if weed is annual (a), biennial (b), or perennial (p).

artichoke, Jerusalem (p)
buckwheat, wild (a)
buffalobur (a)††
burdock, common (b)
chamomile, false (scentless)(a)
chamomile, mayweed (dogfennel)(a)
clover, black medic (a)
clover, hop (a)
clover, sweet (b)
clover, red (p)
clover, white (p)
cocklebur, common (a)
coffeeweed (a)
cornflower (bachelor button)(a)
dandelion (p)
dock, curly (p)
groundsel, common (b)
hawksbeard, narrowleaf (a)
hawkweed, orange (p)
hawkweed, yellow (p)
horseweed (a)
jimsonweed (a)
knapweed, diffuse (b)
knapweed, Russian (p)††
knapweed, spotted (b)
ladysthumb(a)††
lettuce, prickly (a)
locoweed, white (p)
locoweed, Lambert (p)
marshelder (a)
nightshade, Eastern black (a)
nightshade, cutleaf (a)
nightshade, hairy (a)
oxeye daisy (p)
pineappleweed (a)
ragweed, common (a)
ragweed, giant (a)
salsify, meadow (goatsbeard)(b)
sicklepod (a)
smartweed, green (a)††
sorrel, red (p)
sowthistle, annual (a)
sowthistle, perennial (p)††
starthistle, yellow (a)
sunflower (a)
teasel, common (b)
thistle, bull (b)
thistle, Canada (p)
thistle, musk (b)
vetch (a)
volunteer alfalfa (p) (from seed only)
volunteer beans (a)
volunteer lentils (a)
volunteer peas (a)

†See "Guidelines for Control of Specific Weeds" for additional information on application timing and application rates.

††These weeds may only be suppressed. Suppression is a visual reduction in weed competition (reduced population or vigor) as compared to untreated areas. The degree and duration of weed control ~~and duration of effect~~ will vary with weed size and density, ~~spray~~ application rate and coverage, and growing conditions before, during, and after the time of treatment. For perennial weeds such as Russian knapweed and perennial sowthistle, Stinger will control the ~~initial~~ top growth and inhibit regrowth during the season of application (season-long control). At higher use rates shown on this label, Stinger may cause a reduction in shoot regrowth in the season following application; however, plant response may be inconsistent due to inherent variability in shoot regrowth from perennial root systems.

## ~~Weed Control~~ Guidelines for Control of Specific Weeds†

| ~~Amount of Stinger Per Acre x Use Site~~†† | | | | | | | |
|---|---|---|---|---|---|---|---|
| ~~Weed Species~~ | ~~Growth Stage~~ | ~~Sugar Beet, Christmas Trees~~ | ~~Wheat, Barley, Oats~~ | ~~Grasses for Seed~~ | ~~Fallow Cropland~~ | ~~Range & Pasture, CRP, and Non-cropland~~ | ~~Field Corn~~ |
| ~~clover~~<br>~~cocklebur~~<br>~~sunflower~~<br>~~ragweeds~~<br>~~Jerusalem artichoke~~<br>~~jimsonweed~~<br>~~volunteer soybean~~<br>~~vetch~~<br>~~marshelder~~ | ~~Up to 6 leaf~~ | ~~1/4 – 1/2 pt~~ | ~~1/4 – 1/3 pt~~ | ~~1/4 – 1/2 pt~~ | ~~1/4 – 1/2 pt~~ | ~~1/3 – 2/3 pt~~ | ~~1/4 – 1/2 pt~~ |
| ~~wild~~ | ~~1 – 3 leaf stage~~ | ~~1/2 pt~~ | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ~~buckwheat~~ | ~~but before vining~~ | | | | | | |
| ~~nightshade sp.~~ | ~~2 - 4 leaf~~ | | | | | | |
| ~~buffalobur~~ | ~~2 - 4 leaf~~ | | | | | | |
| ~~smartweeds (suppression)~~ | ~~2 - 3 leaf~~ | | | | | | |
| ~~Canada thistle~~ | ~~rosette to prebud~~ | ~~1/2 - 2/3 pt~~ | ~~1/4 - 1/3 pt~~ | ~~1/3 - 2/3 pt~~ | ~~2/3 pt~~ | ~~2/3 - 1 pt~~ | ~~1/3 - 2/3 pt~~ |
| ~~sowthistle (suppression)~~ | | | | | | | |
| ~~knapweeds, spotted/diffuse~~ | ~~up to bud stage~~ | ~~2/3 pt~~ | — | ~~2/3 pt~~ | — | ~~2/3 - 1 pt~~ | — |
| ~~knapweeds, Russian (suppression)~~ | | | | | | ~~1 - 1 1/3 pt~~ | — |

~~†This table is intended as a reference only. For complete instructions see the body of the text.~~

~~††Use the lower rate for light to moderate infestations and good growing conditions and the higher rate for dense infestations or under poor growing conditions such as drought.~~

| Weed Species | Stage of Growth | Rate Range to Control†† |
|---|---|---|
| clover<br>cocklebur<br>sunflower<br>ragweeds<br>Jerusalem artichoke<br>jimsonweed<br>volunteer soybean<br>vetch<br>marshelder<br>other annual and biennial weeds | Up to 5 leaf | 1/4 -1/2 pt/acre |
| wild buckwheat | 1 - 3 leaf stage, but before vining | 1/2 pt/acre |
| *nightshade sp.*<br>buffalobur<br>smartweeds (suppression) | 2 - 4 leaf<br>2 - 4 leaf<br>2 - 3 leaf | |
| Canada thistle<br>sowthistle (suppression) | Rosette up to bud stage | Degree of Infestation:<br>Light - 1/3 pt/acre<br>Moderate to heavy - 1/2 to 2/3 pt/acre |
| knapweeds, spotted/diffuse | Up to bud stage | 1/2 to 2/3 pt/acre |
| knapweed, Russian††† (suppression) | | 2/3 to 1 1/3 pt/acre |

†This table provided as a general reference only. Refer to "Approved Uses" section for recommended *application rates refer to use directions for specific crop or use site.*

††Where rate range is provided, use the lower rate for light to moderate infestations under good growing conditions and the higher rate for dense infestations or under less favorable growing conditions such as drought.

†††Provides suppression only.

## Application Rate Ranges

Generally, lower labeled application rates will be satisfactory for young, succulent growth of ~~sensitive~~ susceptible weed species. ~~For less sensitive species, perennials and under conditions where control is more difficult (plant stress conditions such as drought or extreme temperatures, dense weed stands and/or larger weeds) the higher labeled rates will be needed.~~ Higher labeled rates will generally be required for more tolerant species, perennials, weeds in dense stands or in advanced stages of growth, or

under conditions of plant stress such as drought or extreme temperatures. Weeds in fallow land or other areas where ~~crop~~ competition from crops is not ~~a factor~~ present will generally require higher rates ~~to obtain~~ for control or suppression.

| Crop or Use Site | Rate Range (pt/acre) | Maximum Use Rate† (pt/acre/growing season) |
|---|---|---|
| asparagus | 1/2 to 2/3 | 2/3 |
| barley, oats, wheat | 1/4 to 1/3 | 1/3 |
| Christmas tree and cottonwood/poplar and eucalyptus tree plantations, fallow cropland, field corn, grasses grown for seed, sugar beets | 1/4 to 2/3 | 2/3 |
| mint | 1/3 - 2/3 | 2/3 |
| permanent grasses on CRP land, noncropland, non-leguminous trees, rangeland and permanent grass pastures | 1/3 to 1 1/3 | 1 1/3 |

†Do not exceed maximum rate in rate range per growing season.

## ~~Approved~~ Crop Uses

**Agricultural Use Requirements for Crops:** For the following crop uses, follow PPE and Re-entry instructions in the "Agricultural Use Requirements" section of this label.

**[Editor's note: Crops now listed alphabetically.]**

**[Editor's note: Asparagus added to Crop Uses section from previously approved supplemental labeling - EPA-accepted 02/22/96.]**

### Asparagus

Stinger is recommended for selective postemergence control of specific annual and perennial broadleaf weeds infesting asparagus.

**Application Timing:** Applications may be made before or during the asparagus cutting season, or after harvest is complete, but prior to fern growth. Treat annual weeds before they send up a flower stalk. For best results on perennial weeds such as Canada thistle, apply Stinger after the majority of basal leaves have emerged ~~but before~~ up to bud stage. Following application wait at least 2 weeks before cultivating. **Note:** Postharvest (layby) applications should be made as soon as possible after cutting provided weeds are in proper stage of growth for treatment. Malformed ferns may result from application when spears are longer than 3 inches or with open seed heads.

**Broadcast Application Rates:** Apply Stinger at a rate of 1/2 to 2/3 pint per acre in a total spray volume of 10 to 40 gallons per acre. Use the higher rate for more effective control of perennial weeds. A second application may be made as long as the total amount applied does not exceed 2/3 pint per acre of Stinger ~~per acre~~ during the growing season.

**Tank Mixing:** Stinger may be tank mixed with other herbicides registered for use on asparagus to broaden the spectrum of weeds controlled. See "Tank Mixing Precautions" under "Mixing Instructions". Follow all applicable use directions, precautions, restrictions and limitations on the labels for each product used in the tank mixture.

**Use Precautions:**

- **Preharvest Interval:** Do not harvest for a minimum of 12 hours after application.
- When Stinger is applied during the cutting season, some crooking (twisting) of asparagus spears may occur. Do not apply during the cutting season if crooking cannot be tolerated. Clear-cutting of spears just before application of Stinger may reduce the occurrence of crooking.

## ~~Wheat, Barley, and Oats~~ Barley, Oats and Wheat

Apply 1/4 to 1/3 pint per acre of Stinger ~~per acre~~ when crop is from the 3 leaf stage up to early boot stage of growth. For control of perennial weeds such as Canada thistle, 1/3 pint per acre of Stinger ~~per acre~~ should be used. Russian knapweed will only be suppressed at this rate.

~~Note~~ Restrictions:

- Do not permit lactating dairy animals or meat animals being finished for slaughter to forage or graze treated grain fields within 1 week after treatment.
- Do not harvest hay from treated grain fields.

**Tank Mixtures for ~~Wheat, Barley, and Oats~~ Barley, Oats and Wheat**

~~Tank mix 1/4 to 1/3 pint per acre, of Stinger with the herbicides listed below for the control additional weeds.~~ Stinger at a rate of 1/4 to 1/3 pint per acre may be applied in tank mix combination with labeled rates of other products registered for postemergence application in wheat, barley, and oats. See "Tank Mixing Precautions" under "Mixing Instructions". When tank mixing, do not exceed recommended application rates and use only in accordance with the most restrictive precautions and limitations on the respective product labels.

| ~~Active Ingredient~~ | ~~Product~~ | ~~Formulation~~ | ~~Amount of Product per Acre~~ |
|---|---|---|---|
| ~~bromoxynil~~ | ~~Buctril~~ | ~~2 lb/gal~~ | ~~3/4 - 1 pt~~ |
| ~~chlorsulfuron~~ | ~~Glean~~ | ~~75% DF~~ | ~~1/6 - 1/4 wt oz~~ |
| ~~dicamba~~ | ~~Banvel~~ | ~~4 lb/gal~~ | ~~1/8 - 1/4 pt~~ |
| ~~diuron~~ | ~~Direx 4L~~<br>~~Diuron 4L~~<br>~~Diuron 80 WDG~~<br>~~Diuron DF~~ | ~~4 lb/gal~~<br><br>~~80% DF~~<br>~~80% WP~~ | ~~3/4 - 1 1/4 pt~~<br><br>~~1/2 - 1 lb~~ |
| ~~MCPA or 2,4-D†~~ | | ~~4 lb/gal~~ | ~~1/2 - 1 pt~~ |
| ~~metribuzin†~~ | ~~Lexone DF~~<br>~~Sencor DF~~ | ~~75% DG~~ | ~~2 1/2 - 4 wt oz~~ |
| ~~metsulfuron methyl†~~ | ~~Ally~~ | ~~60% DF~~ | ~~1/10 wt oz~~ |
| ~~terbutryn†~~ | ~~Igran 80WP~~ | ~~80% WP~~ | ~~7.5 - 12.5 wt oz~~ |
| ~~thifensulfuron†~~ | ~~Harmony~~ | ~~75% DF~~ | ~~1/3 - 1/2 wt oz~~ |
| ~~tribenuron methyl†~~ | ~~Express~~ | ~~75% DF~~ | ~~1/6 - 1/4 wt oz~~ |
| ~~thifensulfuron† tribenuron methyl†~~ | ~~Harmony Extra~~ | ~~75% DF~~ | ~~1/3 - 2/3 wt oz~~ |

~~†Tank mix for application on wheat and barley only.~~

## Christmas Tree Plantations

**Timing**

Stinger can be safely applied over the top of actively growing: balsam fir, blue spruce, Douglas fir, Fraser fir, grand fir, lodgepole pine, noble fir, ponderosa pine, and white pine. ~~For~~ In the Pacific Northwest, do not apply in the first year of transplanting. (Some needle curling has been observed on 1st year transplants.) Apply to actively growing weeds. For control of annual weeds apply Stinger from weed emergence up to the 5 leaf ~~growth~~ stage of growth (for wild buckwheat application at 3 to 5 leaf stage of growth, but before vining, is recommended). For control of weeds such as Canada thistle and

knapweeds, apply after the majority of the basal leaves have emerged~~, but before~~ up to bud stage. Later application may result in less consistent control.

**Rate**

Apply 1/4 to 1/2 pint per acre of Stinger ~~per acre~~ for control of annual weeds. Apply 1/2 to 2/3 pint per acre of Stinger ~~per acre~~ for difficult to control weeds such as Canada thistle and knapweeds. Apply as a broadcast or band application in a minimum of 10 gallons per acre by ground application. ~~For band applications, use~~ Use the ~~formula~~ formulas under "~~Sugar Beets~~ Band Application" to determine the appropriate rate and volume per treated acre. Apply as often as needed, but do not exceed 2/3 pint per acre of Stinger per annual growing season. Do not exceed 1/2 pint per acre per annual growing season for blue spruce. Tree injury may occur with the addition of a surfactant or crop oil with Stinger. Do not use unless previous experience shows injury is tolerable.

Stinger may be applied as a spot treatment using a hand-held sprayer at an equivalent broadcast rate of 1/2 to 2/3 pint per acre. Refer to instructions for Spot Treatment and Hand-held Sprayers under Application Directions in the General Information section.

## Corn, Field ~~Corn~~

Stinger is recommended for postemergence control of Canada thistle, Jerusalem artichoke, annual sowthistle, common sunflower, common cocklebur, giant and common ragweed, jimsonweed and other broadleaf weeds infesting field corn. Apply Stinger at suggested timing and rates for field corn as indicated below.

General Weed Control: Apply Stinger to actively growing broadleaf weeds any time after corn emergence through 24 inch tall corn. Apply with ground equipment as a postemergence broadcast or directed spray in 10 or more gallons of spray volume per acre to ensure uniform and thorough spray coverage of the weed foliage. Use only spray nozzles designed for herbicide application. The use of flat fan nozzles provides the best coverage and distribution of chemical on the plant foliage. Use spray pressures (at the boom) which nozzle manufacturers recommend to obtain desired spray volume. Use higher spray ~~pressures and~~ volumes when weed foliage is dense.

Control of Canada Thistle: For effective control of Canada thistle, apply 1/3 to 2/3 pint per acre of Stinger ~~per acre~~ as a broadcast treatment to the entire infested area. Apply when the majority of thistle plants have emerged, and thistles are at least 6 to 8 inches in diameter or height~~, but before~~ up to bud stage. Cultivation can disrupt translocation to the roots of Canada thistle. For best long term control, do not cultivate before or after application. If cultivation is necessary, wait 14 to 20 days after application before cultivating to allow for thorough translocation.

Control of Canada thistle ~~will be~~ is influenced by growing conditions, density and size of thistle plant at the time of application, tillage practices used, etc. Light infestations (less than 10 plants per square yard) will generally be adequately controlled with a rate of 1/3 pint per acre. For medium to heavy infestations, (more than 10 plants per square yard) rates of 1/2 to 2/3 pint per acre are generally more effective since these Canada thistle stands involve an extensive rhizome system.

The following are general descriptions of control to be expected from each rate of application, given a medium to heavy population of Canada thistle. Control of lighter infestations may be better than that described.

A rate of 1/3 pint per acre will suppress top growth of Canada thistle for 6 to 8 weeks. Some regrowth may occur by the end of the season, but this will not interfere with harvesting of the crop.

A rate of 1/2 pint per acre will generally provide season long control of Canada thistle. Not all rhizomes will be killed, and some regrowth may occur by the end of the growing season.

A rate of 2/3 pint per acre will provide season long control of Canada thistle plus suppression into the following season, resulting in a reduction of the total number of Canada thistle plants in the treated area.

For control of common cocklebur, giant ragweed, common ragweed, sunflower, other annual weeds and Jerusalem artichoke, apply 1/4 to 1/2 pint per acre of Stinger ~~on weeds~~ from weed emergence up to the 5 leaf stage of growth ~~stage~~. Use higher rate listed for heavy infestations or when greater residual control is desired.

Tank Mixes or Sequential Applications: See "Tank Mixing Precautions" under "Mixing Instructions". When tank mixing, do not exceed recommended application rates and use only in accordance with the most restrictive precautions and limitations on the respective product labels. If Stinger is applied sequentially or in combination with Hornet® or Scorpion III herbicides to the current corn crop, the maximum application rate at which Stinger may be applied to field corn is indicated in the following tables:

| Rate of Hornet Applied to Current Corn Crop (oz/acre) | Maximum Application Rate for Stinger (fl oz/acre) |
|---|---|
| 1.6 | 8.1 |
| 2.4 | 6.8 |
| 3.2 | 5.4 |
| 4.0 | 4.0 |

| Rate of Scorpion III Applied to Current Corn Crop (lb/acre) | Maximum Application Rate for Stinger (fl oz/acre) |
|---|---|
| 0.25 | 8.1 |

Note: Maximum Use Rate for Clopyralid is 0.25 lb active ingredient per acre. One ounce of Hornet contains 0.039 lb of clopyralid. One fourth pound of Scorpion III contains 0.0625 lb of clopyralid. One ounce of Stinger contains 0.023 lb of clopyralid.

**Corn Inbred Lines or Breeding Stock**

Susceptibility of corn to injury from Stinger is highly related to varietal response. Inbred lines or any breeding stock may be injured by Stinger. Contact your seed production agronomist for advice before applying Stinger to inbred lines or breeding stock.

**Hand-Held Sprayers**

Stinger may be applied as a spot treatment using a hand-held sprayer at an equivalent broadcast rate of 2/3 pint per acre. Refer to instructions for Spot Treatment and Hand-held Sprayers under Application Directions in the General Information section. Applications should be made on a spray-to-wet basis with spray coverage uniform and complete. Do not spray to the point of runoff. ~~Prepare the desired volume of spray solution by mixing the amount of Stinger with water as shown in the following table.~~

| ~~Desired Volume of Spray Solution~~ | ~~Required Amount of Stinger~~ |
|---|---|
| ~~1 gal~~ | ~~1/4 fl oz~~ |
| ~~25 gal~~ | ~~1/3 fl oz~~ |
| ~~100 gal~~ | ~~1 1/3 pt~~ |

**Restrictions:** Re-treat as necessary, but do not apply more than 2/3 pint per acre of Stinger ~~per acre~~ per year. Do not apply to field corn greater than 24 inches tall. Do not allow livestock to graze treated areas or harvest treated corn silage as feed within 40 days after last treatment.

## Cottonwood/Poplar ~~Trees Grown for Pulp~~ and Eucalyptus Tree Plantations

**[Editor's note: Cottonwood/Poplar Trees Grown for Pulp added to Crop Uses section from previously approved supplemental labeling - EPA-accepted 03/03/97. The limitation "tree grown for pulp" changed to "plantations". Edits to label text as shown.]**

Stinger may be used for selective postemergence control of labeled broadleaf weeds in new and established plantings of cottonwood/poplar ~~trees grown for pulp~~ and eucalyptus tree plantations. Apply as a broadcast foliar spray over trees or as a banded or directed spray at a rate of 1/3 to 2/3 ~~pints~~ pint ~~/~~ per acre. Apply in 10 or more gallons per acre total spray volume using ground equipment only. Multiple applications of Stinger may be made as long as the total rate per growing season does not exceed 1 1/3 ~~pints/~~ per acre. Apply to new plantings only after they are well-established as indicated by several inches of new healthy growth.

Advisory: In California, the maximum use rate is 2/3 pint per acre per growing season.

~~Follow directions in main product label~~ See Guidelines for Control of Specific Weeds for recommended rates and timing for specific susceptible annual, biennial, and perennial weeds.

Hand-Held Sprayers: Spot applications using hand held equipment are also allowed, but contact ~~to~~ with tree foliage should be avoided or limited to lower branches. Apply to weeds on a spray-to-wet basis with spray coverage uniform and complete. Do not spray to the point of run-off. Prepare a spray solution by adding ¼ fl oz Stinger per gallon of water. When applied at 1 gallon of spray per 1000 sq ft, this spray concentration is equivalent to a broadcast rate of 2/3 ~~pt/~~ pint per acre.

Use Precautions:

- Do not tank mix Stinger with other herbicides labeled for this use unless spray avoids all contact with tree foliage.
- ~~Do not apply Stinger by aircraft.~~
- ~~**Chemigation: Do not apply Stinger to cottonwood/poplar trees through any type of irrigation system.**~~
- ~~Rainfall or irrigation within 6-8 hours of application may reduce efficacy.~~
- Stinger will not control certain broadleaf weeds, including mustards, henbit, chickweed, kochia, lambsquarters, pigweed, Russian thistle and bindweed.
- ~~Spray drift may seriously injure susceptible plants. Applications should be made only when there is minimum potential for spray drift. To minimize spray drift use coarse sprays with large droplets and low pressure, and apply when the wind speed is low. Refer to the label for Stinger for additional drift avoidance information.~~
- ~~Carefully follow all rotational crop restrictions and other use precautions and limitations on the product label for Stinger.~~

**[Ed note: Preceding precautions shown with strike-through have been deleted since they already appear in the General Information section.]**

## Fallow Cropland

**Timing**

Stinger can be applied either postharvest, in the spring/summer (during fallow period), or to set-aside acres to control or suppress listed weeds ~~listed above~~ (refer to ~~rotation restrictions~~ "Crop Rotation Restrictions" section). Apply to young, emerged weeds under conditions that promote active growth. For best results on perennial weeds such as Canada thistle, apply after the majority of the basal leaves have emerged, ~~but before~~ up to ~~bud stages~~ stage. ~~Later applications~~ application may result in less consistent control. Extreme growing conditions (such as drought or near freezing temperatures) prior to, at, and following the time of application may reduce weed control.

For best results, wait 14 to 20 days after application before cultivating or fertilizing with shank-type applicators to allow for thorough translocation.

**Rate**
Apply 1/4 to 2/3 pint per acre of Stinger ~~per acre~~. Use the higher rate on perennial weeds or when the condition of the weeds at the time of treatment may prevent optimum control.

**Tank Mixtures for Fallow Cropland**
To improve control of certain broadleaf weeds, Stinger may be applied with 0.5 to 2.0 lb acid equivalent (a.e.) per acre of 2,4-D. See "Tank Mixing Precautions" under "Mixing Instructions". When tank mixing, do not exceed recommended application rates and use only in accordance with the most restrictive precautions and limitations on the respective product labels.

## Grasses Grown For Seed

**Timing**
Apply only to established grasses before the boot stage. Applications in the boot stage and beyond can result in increased injury. Do not apply to bentgrass unless injury can be tolerated. For control of late emerging Canada thistle, a preharvest treatment may be made after grass seed is fully developed. Treatment of Canada thistle at the bud stage or later may result in less consistent control. Postharvest fall treatments may be made to actively growing Canada thistle after the majority of basal leaves have emerged.

**Rate**
Use 1/4 to 2/3 pint per acre of Stinger ~~per acre~~ for control of annual weeds and Canada thistle. Re-treat as necessary, but do not exceed 2/3 pint per acre of Stinger ~~per acre~~ per season.

**Tank Mixtures ~~for Grasses Grown for Seed~~**
Stinger may be tank mixed with 2,4-D, MCPA, dicamba, or bromoxynil to control additional broadleaf weeds. Refer to the manufacturer's label for use rates and tank mix guidelines. See "Tank Mixing Precautions" under "Mixing Instructions". When tank mixing, do not exceed recommended application rates and use only in accordance with the most restrictive precautions and limitations on the respective product labels. **Note:** Dicamba or bromoxynil tank mixes may be useful in broadening the annual weed control spectrum, but may reduce long term control of perennials such as Canada thistle. Do not tank mix Stinger with 2,4-D, MCPA or dicamba unless the risk to crop injury is acceptable.

## Mint (Spearmint and Peppermint)

**[Editor's note: Spearmint and Peppermint added to Crop Uses section from previously approved supplemental labeling - EPA-accepted 11/18/93.]**

Stinger may be used for selective postemergence control of specific annual and perennial broadleaf weeds infesting mint. Treat annual weeds when they are small and actively growing before they send up a flower stalk. For Canada thistle, apply Stinger after the majority of basal leaves have emerged but prior to bud stage. Apply as a broadcast foliar spray in 10 or more gallons per acre total spray volume using ground equipment only. ~~Do not apply by aircraft.~~ A nonionic surfactant of at least 80% active ingredient may be added at a rate of 1 pint per 100 gallons of spray solution. ~~Rainfall or irrigation within 6 hours of application may reduce weed control.~~

**Broadcast Application Rates, Timing and Weeds Controlled:**

| Application Timing and Weeds Controlled | Application ~~Rate (pt/acre)~~ Per Acre |
|---|---|
| Fall Treatment Only (Sept. 15 to first frost) | |
| Annuals | 1/2 pint |
| Perennials | 2/3 pint |
| Hard-to-kill perennials (Canada thistle, dandelion) | 1 pint |
| Spring Treatment Only | |
| Annuals | 1/3 pint |
| Perennials | 1/2 pint |
| Fall Plus Spring Treatment | Maximum of 2/3 pint in fall plus 1/3 pint in spring |

**Use Precautions:**

- **Preharvest Interval:** Do not apply within 45 days of harvest.
- Do not apply more than one pint per acre per growing season.
- Treated mint may be used for distillation (oil extraction) only.
- Do not feed spent mint hay slugs to livestock.
- Mint straw, hay or spent hay (slugs) from treated areas cannot be used for composting or mulching ~~on ground where susceptible crops may be grown during the following growing season~~. If hay slugs are disposed of on cropland, distribute in a thin layer and incorporate. Do not dispose of hay slugs on land to be rotated to a susceptible crop. (See "Residues in Plants or Manure" in General Information section.)
- Discoloration or malformation of mint leaves may occur following treatment. This effect is generally temporary and does not reduce oil yields.
- Stinger will not control many broadleaf weeds such as mustards, henbit, chickweed, kochia, *lambsquarters, pigweed, Russian Thistle and field bindweed.*
- ~~**Avoid exposure of non-target plants:** This product can affect susceptible broadleaf plants directly through foliage and indirectly by root uptake from treated soil. Therefore, do not apply Stinger directly to or allow spray drift to come in contact with vegetables, flowers, grapes, tomatoes, potatoes, beans, lentils, peas, alfalfa, sunflowers, soybeans, safflower, or other desirable broadleaf crops and ornamental plants or soil where these sensitive crops will be planted the same season.~~

**[Ed note: Preceding precautions shown with strike-through have been deleted since they already appear in the General Information section.]**

## Sugar Beets

Stinger ~~herbicide~~ is recommended for the control of various annual and perennial broadleaf weeds infesting sugar beets. Apply 1/4 to 2/3 pint per acre of Stinger ~~per acre~~ with ground equipment as a broadcast foliar spray or band treatment. See instructions for Band Application under "Application Directions" in the "General Information" section. Apply in 10 or more gallons total spray volume per acre when the sugar beets are in the cotyledon to 8 leaf stage of growth and the weeds are young and actively growing. Re-treat as necessary but do not exceed 2/3 pint per acre of Stinger ~~per acre~~ per season. Do not apply within 105 days before harvest of beet roots and tops.

~~Stinger may be applied as a band treatment. Use the formulas below to determine the appropriate rate and volume per treated acre.~~

~~Band width in inches / Row width in inches × Broadcast rate per treated acre = Band rate per treated acre~~

~~Band width in inches / Row width in inches × Broadcast volume per treated acre = Band volume per treated acre~~

For annual weed control ~~spray~~ apply 1/4 to 1/2 pint per acre of Stinger ~~per acre on weeds~~ from weed emergence up to the 5 leaf stage of ~~growth stage~~. Application to Wild buckwheat ~~applications~~ should be made at the 1 to 3 leaf stage of growth, before vining begins.

For the most effective control of perennials such as Canada thistle and sowthistle, apply 1/2 to 2/3 pint per acre of Stinger ~~per acre~~ as a broadcast treatment to the entire infested area. Apply when the majority of basal leaves have emerged ~~, but before~~ up to the bud stage. Cultivation can disrupt translocation to the roots of perennials such as Canada thistle. For best results do not cultivate thistle patches.

To promote ~~herbicide~~ herbicidal efficacy, wait a minimum of 7 days after application before flood or furrow irrigation.

**Tank ~~Mixes~~ Mixing:**
To control additional broadleaf weeds and provide consistent control of difficult ~~to control~~ weeds such as wild buckwheat, ~~tank mix 1/4 to 2/3 pint~~ labeled rates of Stinger ~~per acre with 2 to 6.5 pints~~ may be applied in combination with labeled rates of Betamix ~~or~~, Betanex, UpBeet, or other products registered for postemergence application in sugar beets. For best results, ~~apply~~ tank mix 1/4 pint per acre of Stinger ~~tank mixed~~ with ~~2 to 6.5 pints of~~ Betamix or Betanex followed 1 to 2 weeks later by a second application of 1/4 to 1/3 pint per acre of Stinger ~~per acre~~ tank mixed with Betamix or Betanex. ~~Note: Do not add additional adjuvants when employing a Betamix or Betanex tank mix with Stinger due to increased potential for crop injury. See "Tank Mixes" section under "General Use Precautions".~~ Stinger may also be tank mixed with grass herbicides such as Poast ~~for grassy weed control~~. ~~Be sure to include crop~~ Crop oil or Dash surfactant may be added to the tank mixture to optimize grass weed control. ~~(See "Tank Mixes" section under "General Use Precautions".)~~ See "Tank Mixing Precautions" under "Mixing Instructions". *When tank mixing, do not exceed recommended application rates and use only in accordance with the most restrictive precautions and limitations on the respective product labels.*

## Rangeland, Pasture, CRP and Non-crop Uses

**Use Requirements for Rangeland, Pasture, and Non-cropland Areas:** No Worker Protection Standard worker entry restrictions or worker notification requirements apply when this product is applied to *rangeland, pasture, or non-cropland areas.*

**Rotation to Broadleaf Crops:** In rangeland, pasture, CRP, or non-crop areas, do not plant broadleaf crops in treated areas until an adequately sensitive bioassay shows that clopyralid is no longer detectable in the soil. (See Crop Rotation Restrictions in General Information section.)

## Conservation Reserve Program (CRP) For Seeding To Permanent Grasses Only

Do not use Stinger if legumes or bentgrass are a desired cover during CRP.

**Advisory:** Conditions that stress grasses, such as drought, will increase potential for injury to the grass at all stages of growth. Do not use in newly seeded areas until grass is established.

~~After CRP, do not plant broadleaf crops in treated areas until an adequately sensitive bioassay shows that no detectable clopyralid is present in the soil.~~

***Broadcast Applications (Ground)***
Applications of Stinger should be made when perennial grasses ~~have become~~ are well established ~~(has tillered, developed a good secondary root system, and shows good vigor)~~ as indicated by tillering, development of a secondary root system and vigorous growth. ~~since most~~ At this stage, most perennial grasses have shown ~~better~~ adequate tolerance to ~~the herbicide~~ Stinger ~~at that stage~~.

For control of actively growing weeds such as musk thistle, Canada thistle, and knapweed (spotted, diffuse, and Russian), use 2/3 to 1 1/3 pints per acre of Stinger after the majority of basal leaves have emerged~~, but before~~ up to bud stage. For the control of wild buckwheat, volunteer sunflower, and musk thistle rosettes, apply 2/3 pint per acre of Stinger. Stinger can also be tank mixed with 1/2 to 1 lb per acre of 2,4-D where species present are sensitive to 2,4-D. See "Tank Mixing Precautions" under "Mixing Instructions". For best results, use in 10 or more gallons of water per acre by ground. Increasing the rate of application can increase the risk of injury. Application prior to the flowering stage is recommended (still in the bud stage).

**Advisory:** In California, the maximum use rate is 2/3 pint per acre per growing season.

## Non-Cropland

~~For use on~~ Stinger may be applied in non-cropland areas such as fencerows, around farm buildings and equipment pathways. For control of broadleaf weeds, apply 1/4 to 1 1/3 pints per acre of Stinger~~ per acre~~. The lower rate of 1/4 pint per acre provides acceptable control of weeds only under highly favorable growing conditions and when plants are 1 to 3 inches tall. Apply 1/2 pint per acre when weeds are 3 to 6 inches tall or under dry conditions. Where Canada thistle or knapweeds are the primary pest, best results are obtained by applying 2/3 to 1 1/3 pints per acre of Stinger~~ per acre~~. To improve spectrum of~~ activity~~ weed control or to increase~~ activity against~~ control of~~ taller~~ more mature weeds, Stinger may be tank mixed with 0.5 to 2.0 lb a.e. per acre of 2,4-D amine or low volatile ester herbicide or other herbicides registered for this use site. See "Tank Mixing Precautions" under "Mixing Instructions". When tank mixing, do not exceed recommended application rates and use only in accordance with the most restrictive precautions and limitations on the respective product labels.

**Advisory:** In California, the maximum use rate is 2/3 pint per acre per growing season.

## Rangeland and Permanent Grass Pastures

~~Use Stinger on forage grasses such as smooth brome, orchardgrass, and Timothy.~~

Apply 1/2 to 1 1/3 pints per acre of Stinger~~ per acre~~ when weeds are young and actively growing. Established ~~Grasses~~ grasses are tolerant to Stinger, but new grass seedlings may be injured to varying degrees until the grass has become well established as indicated by vigorous growth and development of tillers and secondary roots.

**Note:** Some forbs are susceptible to Stinger~~ Herbicide~~. Do not spray pastures containing desirable~~ forbs~~ broadleaf plants, especially legumes, unless injury can be tolerated. However, the stand and growth of established perennial grasses is usually improved after~~ spraying~~ controlling broadleaf weeds, especially when rainfall is adequate and grazing is deferred.

Do not use hay or straw from treated areas for composting or mulching on susceptible broadleaf crops. (See "Residues in Plants or Manure" in "General Information" section.)

There are no~~ grazing~~ restrictions on grazing or hay harvest following application~~ for~~ of Stinger at~~ label use~~ labeled rates.

**Advisory:** In California, the maximum use rate is 2/3 pint per acre per growing season.

## Warranty Disclaimer

Dow Agro Sciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. Dow Agro Sciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

## Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Plant injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperature, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Dow Agro Sciences or the seller. All such risks shall be assumed by buyer.

## Limitation of Remedies

The exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Dow Agro Sciences' election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used.

Dow Agro Sciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow Agro Sciences is promptly notified of such loss or damage in writing. In no case shall Dow Agro Sciences be liable for consequential or incidental damages or losses.

The terms of the "Warranty Disclaimer" above and this "Limitation of Remedies" cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow Agro Sciences or the seller is authorized to vary or exceed the terms of the "Warranty Disclaimer" or this "Limitation of Remedies" in any manner.

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