



U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs
Registration Division (7505T)
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

EPA Reg. Number:

94144-3

Date of Issuance:

3/24/25

NOTICE OF PESTICIDE:

☒ Registration
☐ Reregistration
(under FIFRA, as amended)

Term of Issuance:

Unconditional

Name of Pesticide Product:

Mestalin

Name and Address of Registrant (include ZIP Code):

Infinicrop, LLC
c/o Pyxis Regulatory Consulting, Inc.
535 Dock Street, Suite 211
Tacoma, WA 98402

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is unconditionally registered in accordance with FIFRA section 3(c)(5) provided that you:

1. Submit and/or cite all data required for registration/registration review of your product when the Agency requires all registrants of similar products to submit such data.

Continues page 2

Signature of Approving Official:

Mindy Ondish, Product Manager 23
Herbicide Branch, Registration Division (7505T)

Date:

3/24/25

2. Submit one copy of the final printed label for the record before you release the product for shipment.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under FIFRA and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) lists examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records.

The record for this product currently contains the following CSFs:

- Basic CSF dated 03/21/2025
- Alternate CSF 1 dated 03/21/2025

If you have any questions, please contact Julia Kerr at (202) 566-2810 or at kerr.julia@epa.gov.

Enclosure

ACCEPTED

03/24/2025

Under the Federal Insecticide, Fungicide
and Rodenticide Act as amended, for the
pesticide registered under
EPA Reg. No. 94144-3

[Note to reviewer: [Text] in brackets denotes optional or explanatory language]

[Note to reviewer: {Text} in braces denotes where in the final label text will appear]

{BOOKLET FRONT PANEL LANGUAGE}

S-METOLACHLOR	GROUP	15	HERBICIDE
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Mestalin

**FOR WEED CONTROL IN BEANS, PEAS, AND LENTILS; CORN; COTTON; GRASSES GROWN FOR SEED;
HORSERADISH; PEANUTS; POTATOES; PUMPKIN; RHUBARB; SAFFLOWERS; SWEET, GRAIN, OR FORAGE
SORGHUM; SOYBEANS; SOYBEANS, IMMATURE SEED; SUGAR BEETS; SUGARCANE[*]; SUNFLOWERS;
AND TOMATOES.**

[*NOT FOR USE IN CALIFORNIA]

**SALE, USE AND DISTRIBUTION OF THIS PRODUCT IN NASSAU AND SUFFOLK COUNTIES IN THE STATE OF NEW
YORK IS PROHIBITED.**

Active Ingredient:	(% by weight)
S-metolachlor*	81.8%
Other Ingredients	18.2%
Total	100.0%

*CAS No. 87392-12-9. Contains 7.64 lbs. of active ingredient per gallon.

KEEP OUT OF REACH OF CHILDREN

WARNING/AVISO

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.)

[See] [inside] [label] [booklet] [for] [additional] [Precautionary Statements][,] [and] [Directions for Use] [including]
[Storage and Disposal] [instructions][.]

EPA Reg. No.: 94144-3

EPA Est. No.:

Net Contents:

Manufactured For:

Infinicrop, LLC
234 East Southwood Road
San Tan Valley, AZ 85240

{LANGUAGE INSIDE BOOKLET}

FIRST AID	
If in eyes:	<ul style="list-style-type: none">• 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 Poison Control or doctor for treatment advice.
If swallowed:	<ul style="list-style-type: none">• Call Poison Control 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:	<ul style="list-style-type: none">• Take off contaminated clothing.• Rinse skin immediately with plenty of water for 15-20 minutes.• Call Poison Control or doctor for treatment advice.
HOT LINE NUMBER <p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For information on this pesticide product (including general health concerns or pesticide incidents), call the National Pesticide Information Center at 1-800-858-7378, Monday through Friday, 8:00 AM to 12 PM Pacific Standard Time. In the event of a medical emergency, call Poison Control at 1-800-222-1222.</p>	

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS & DOMESTIC ANIMALS

WARNING: Causes substantial but temporary eye injury. Harmful if swallowed. Harmful if absorbed through skin. Do not get in eyes or on clothing. Avoid contact with skin. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, or Viton ≥ 14 mils.
- Protective eyewear
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

Engineering Control Statements

Mixers and loaders supporting aerial applications are required to use closed systems. The closed system must be used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.607(d-f)]. When using the closed system, the mixers' and loaders' PPE requirements may be reduced or modified as specified in the WPS.

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 170.607(d-f)], the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

Users should:

- Remove clothing/PPE 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.

ENVIRONMENTAL HAZARDS:

Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash water or rinsate.

Groundwater Advisory:

S-metolachlor is known to leach through soil into groundwater under certain conditions as a result of label use. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

Surface Water Advisory:

S-metolachlor has the potential to contaminate surface water through ground spray drift. This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for several weeks or months after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of S-metolachlor from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

Non-Target Organism Advisory

This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated site. Protect the forage and habitat of non-target organisms by following label directions intended to minimize spray drift.

Reporting Ecological Incidents:

To report ecological incidents, including mortality, injury, or harm to plants and animals, call 480-599-6157.

Mixing/Loading Instruction:

Care must be taken when using this product to prevent back-siphoning into wells, spills, or improper disposal of excess pesticide, spray mixtures, or rinsate.

Check-valves or anti-siphoning devices must be used on all mixing and/or irrigation equipment.

This product may not be mixed or loaded within 50 ft. of perennial or intermittent streams and rivers, natural or impounded lakes, and reservoirs. This product may not be mixed/loaded or used within 50 ft. of all wells, including abandoned wells, drainage wells, and sink holes. Operations that involve mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 ft. of any well are prohibited, unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or wash water, and rain water that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self-contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at a minimum 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above-specified minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading site.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Mestalin must be used only in accordance with directions on this label.

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.

Endangered Species Protection Requirements: It is a federal offense to use any pesticide in a manner that results in an unauthorized "Take" (e.g. kill or otherwise harm) of an endangered species and certain threatened species, under the Endangered Species Act section 9. When using this product, you must follow the measures contained in the Endangered Species Protection Bulletin for the area in which you are applying the product. You must obtain a Bulletin no earlier than six months before using this product. To obtain Bulletins, consult <http://www.epa.gov/espp/>, call 1-844-447-3813, or email ESPP@epa.gov. You must use the Bulletin valid for the month in which you will apply the product.

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 intervals. 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 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 are:

- Coveralls
- Chemical-resistant gloves made of barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, or Viton ≥ 14 mils.
- Protective eyewear
- Shoes plus socks

FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN POOR WEED CONTROL, CROP INJURY, OR ILLEGAL RESIDUES.

To avoid spray drift, do not apply under windy conditions. Avoid spray overlap, as crop injury may result.

Sale, use and distribution of this product in Nassau and Suffolk Counties in the State of New York is prohibited.

PRODUCT INFORMATION

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions, limitations, and directions for use on all product labels involved in the tank mixture. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Mestalin is a selective herbicide for use as a preplant surface-applied, preplant incorporated, or preemergence

treatment in water or fluid fertilizer for control of most annual grasses and certain broadleaf weeds in beans, peas, and lentils; corn (all types); cotton; grasses grown for seed; peanuts; potatoes; safflowers; sweet, grain, or forage sorghum; soybeans; soybean, immature seed; sugar beets; sugarcane; sunflowers; and tomatoes.

Restrictions: Do not use in nurseries, turf, or landscape plantings.

Do not apply under conditions which favor runoff or wind erosion of soil containing this product to nontarget areas.

To prevent off-site movement due to runoff or wind erosion:

1. Avoid treating powdery dry or light sand soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.
2. Do not apply to impervious substrates, such as paved or highly compacted surfaces.
3. Do not use tailwater from the first flood or furrow irrigation of treated fields to treat nontarget crops, unless at least 1/2 inch of rainfall has occurred between application and the first irrigation.

Where directions specify a **Mestalin** tank mixture with AAtrex® formulations, other brands of atrazine may be used. Follow the rates, recommendations, and limitations on the AAtrex or respective atrazine product label, if other brands of atrazine are used.

Restrictions: Certain states may have established rate limitations for atrazine within specific geographical areas. Consult your state lead pesticide control agency for additional information. It is a violation of this label to deviate from state use regulations.

If **Mestalin** is incorporated, any supplemental tillage before planting must not exceed the depth of incorporation.

Dry weather following preemergence application of **Mestalin** or a tank mixture may reduce effectiveness. Cultivate if weeds develop.

Where reference is made to weeds partially controlled, partial control can either mean erratic control from good to poor, or consistent control at a level below that generally considered acceptable for commercial weed control.

Precaution: Injury may occur following the use of **Mestalin** under abnormally high soil moisture conditions during early development of the crop.

WEED RESISTANCE MANAGEMENT

For resistance management, **Mestalin** is a Group 15 herbicide. Any weed population may contain or develop plants naturally resistant to **Mestalin** and other Group 15 herbicides. Weed species with acquired resistance to Group 15 herbicides may eventually dominate the weed population if Group 15 herbicides are used repeatedly in the same field or in successive years as the primary method of control for targeted species. This may result in partial or total loss of control of those species by **Mestalin** or other Group 15 herbicides. Users should scout before and after application.

Suspected herbicide-resistant weeds may be identified by these indicators:

- Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds;
- A spreading patch of non-controlled plants of a particular weed species; and
- Surviving plants mixed with controlled individuals of the same species.

To delay herbicide resistance:

- Avoid the consecutive use of **Mestalin** or other target site of action Group 15 herbicides that might have a similar target site of action, on the same weed species.
- Use tank mixtures or premixes with herbicides from different target site of action Groups as long as the involved products are all registered for the same use, have different sites of action and are both effective at the tank mix or prepack rate on the weed(s) of concern (an herbicide mode of action classification by itself may not adequately address specific weeds that are resistant to specific herbicides)

- Base herbicide use on a comprehensive Integrated Pest Management (IPM) program.
- Scout fields prior to application to identify the weed species present and their growth state to determine if the intended application will be effective.
- Scout fields after application to verify that the treatment was effective.
- Contact your local extension specialist, certified crop advisors and/or manufacturer for herbicide resistance management and/or integrated weed management recommendations for specific crops and resistant weed biotypes.
- For further information or to report suspected resistance, contact an INFINICROP, LLC representative.

SOIL TEXTURES AND HERBICIDE RATES

Where rates are based on coarse-, medium-, or fine-textured soils, it is understood that soil textural classes are generally categorized as follows:

COARSE	MEDIUM	FINE	
Sand	Loam	Sandy clay loam	Sandy clay
Loamy sand	Silt loam	Silty clay loam	Silty clay
Sandy loam	Silt	Clay loam	Clay

Within rate ranges in the rate tables and elsewhere on this label, use the lower rate on soils relatively coarse-textured or low in organic matter; use the higher rate on soils relatively fine-textured or high in organic matter.

Restrictions: **Mestalin** may be applied preemergence alone, or in combination with tank mix partners specified on this label, following preplant incorporated herbicides when used according to their label directions, provided that such use is not prohibited on the respective labels.

Thoroughly clean sprayer or other application device before using. Dispose of cleaning solution in a responsible manner. Do not use a sprayer or applicator contaminated with any other materials, or crop damage or clogging of the application device may result.

MESTALIN APPLIED ALONE

Weeds Controlled:

Mestalin is taken up by the shoots and/or roots of emerging weeds. This uptake results in the inhibition of shoot and root tissue growth soon after weed germination. Because of this, **Mestalin** will not control emerged weeds and should be applied prior to weed emergence.

If **Mestalin** is incorporated, do not exceed a 2- to 3-inch depth. Any tillage after the **Mestalin** incorporation and before planting should not exceed 2-3 inches.

Dry weather following application of **Mestalin** may reduce weed control. Cultivate if weeds develop.

Where reference is made to weeds partially controlled, partial control can either mean erratic control from good to poor or consistent control at a level below that generally considered acceptable for commercial weed control. Control of these weeds can be erratic, due partially to variable weather conditions. The following procedures may improve the control of weeds listed as partially controlled in Table 1:

1. Thoroughly till soil to destroy germinating and emerged weeds.
2. Plant crop into moist soil immediately after tillage. If **Mestalin** is to be used preemergence, apply at planting or immediately after planting.
3. If available, sprinkler irrigate within 2 days after application. Apply 1/2-1 inch of water. Use lower water volume (1/2 inch) on *coarse-textured soils* and higher volume (1 inch) on *fine-textured soils*. Also, refer to the section on **Center Pivot Irrigation Application** for this method of applying **Mestalin**.
4. If irrigation is not possible and rain does not occur within 2 days after planting and application, weed control may be decreased. Under these conditions, a uniform, shallow cultivation is recommended as soon as weeds emerge.

Table 1: Weeds Controlled or Partially Controlled by Mestalin Applied Prior to Weed Emergence

Common Name	Scientific Name	Weed Type	Control (C) or Partial Control (PC)
Amaranth, Palmer	<i>Amaranthus palmeri</i>	Broadleaf	C
Amaranth, Powell	<i>Amaranthus powellii</i>	Broadleaf	C
Barnyardgrass	<i>Echinochloa crus-galli</i>	Grass	C
Beggarweed, Florida	<i>Desmodium tortuosum</i>	Broadleaf	P
Carpetweed	<i>Mollugo verticillata</i>	Broadleaf	C
Crabgrass, large	<i>Digitaria ischaemum</i>	Grass	C
Crabgrass, smooth	<i>Digitaria sanguinalis</i>	Grass	C
Crowfootgrass	<i>Dactyloctenium aegyptium</i>	Grass	C
Cupgrass, Prairie	<i>Eriochloa contracta</i>	Grass	C
Cupgrass, Southwestern	<i>Eriochloa acuminata</i>	Grass	C
Cupgrass, woolly	<i>Eriochloa villosa</i>	Grass	PC ¹
Eclipta	<i>Eclipta prostrata</i>	Broadleaf	P
Foxtail, bristly	<i>Setaria verticillata</i>	Grass	C
Foxtail, giant	<i>Setaria faberi</i>	Grass	C
Foxtail, green	<i>Setaria viridis</i>	Grass	C
Foxtail, millet	<i>Setaria italica</i>	Grass	C
Foxtail, yellow	<i>Setaria pumila</i>	Grass	C
Galinsoga, hairy	<i>Galinsoga quadriradiata</i>	Broadleaf	C
Galinsoga, smallflower	<i>Galinsoga parviflora</i>	Broadleaf	C
Goosegrass	<i>Eleusine indica</i>	Grass	C
Johnsongrass (seedling)	<i>Sorghum halepense</i>	Grass	PC
Millet, wild-proso	<i>Panicum miliaceum</i>	Grass	PC ¹
Nightshade, Eastern black	<i>Solanum ptychanthum</i>	Broadleaf	C
Nightshade, hairy	<i>Solanum physalifolium</i>	Broadleaf	P
Nutsedge, yellow	<i>Cyperus esculentus</i>	Sedge	C
Panicum, fall	<i>Panicum dichotomiflorum</i>	Grass	C
Panicum, Texas	<i>Panicum texanum</i>	Grass	PC
Pigweed, prostrate	<i>Amaranthus blitoides</i>	Broadleaf	C
Pigweed, redroot	<i>Amaranthus retroflexus</i>	Broadleaf	C
Pigweed, smooth	<i>Amaranthus hybridus</i>	Broadleaf	C
Pigweed, tumble	<i>Amaranthus albus</i>	Broadleaf	C
Purslane, common	<i>Portulaca oleracea</i>	Broadleaf	P
Pusley, Florida	<i>Richardia scabra</i>	Broadleaf	C
Rice, red	<i>Oryza punctata</i>	Grass	C
Ryegrass, Italian	<i>Lolium multiflorum</i>	Grass	C
Sandbur, field	<i>Cenchrus spinifex</i>	Grass	PC
Sandbur, Southern	<i>Cenchrus spinifex</i>	Grass	PC
Shattercane	<i>Sorghum bicolor</i>	Grass	PC
Signalgrass, broadleaf	<i>Urochloa platyphylla</i>	Grass	C
Spiderwort, tropical	<i>Commelina benghalensis</i>	Broadleaf	C
Sorghum (volunteer)	<i>Sorghum bicolor</i>	Grass	PC
Waterhemp, common	<i>Amaranthus rudis</i>	Broadleaf	C
Waterhemp, tall	<i>Amaranthus tuberculatus</i>	Broadleaf	C
Witchgrass	<i>Panicum capillare</i>	Grass	C

¹ Refer to the corn section of this label for additional directions.

REPLANT AND ROTATIONAL CROPS SECTION

Replanted Crop Directions:

This section covers replant crops that may be planted following a lost crop that has had an application of **Mestalin**.

If a crop treated with **Mestalin** is lost, any crop on this label may be replanted immediately provided that the rate of **Mestalin** applied to the previous crop was not greater than the labeled rate for the crop to be replanted. If the first application was banded and the replant crop is planted in the center of the untreated bands, a second banded treatment may be applied at the rate for the use pattern for the replant crop, provided the application does not overlap the first application band.

Rotational Crop Directions:

Do not rotate to food or feed crops other than those listed below. For all crops not listed, wait at least 12 months following the last application of **Mestalin** before planting.

Barley, oats, rye, or wheat may be planted 4 1/2 months following treatment.

Alfalfa may be planted 4 months following application. Clover may be seeded 9 months following application.

If Mestalin is applied after June 1, rotating crops other than corn (all types), grain sorghum or sugarcane the next spring, may result in crop injury.

Restrictions: To avoid injury to rotational alfalfa or clover, (1) Do not apply more than 1.9 lbs. active ingredient per acre (2.0 pts. of **Mestalin**) in the previous crop, and (2) Do not make lay-by or other postemergent applications of **Mestalin** in the previous crop.

Tobacco, buckwheat, rice and sugarcane may be planted in the next spring following treatment.

Below in the rotational crop subsections A through C is a listing of rotational crop options that are made possible through S-metolachlor tolerances which were established by the EPA as crop groupings.

Precautions: 1) Rotating to crops within these crop groupings at less than 60 days may result in crop injury. 2) If the rate of **Mestalin** applied in the previous crops was greater than the rate listed here (Sections A-C below), these crops cannot be planted until the following spring.

- A. If not more than 1.33 pts./A of Mestalin was applied to the field, the following crops (as well as those listed under subsections B or C below) may be planted 60 days after the last application. A second application of any S-metolachlor-containing product to the following crops is prohibited within 60 days of the original application:**
 - 1. **Crop Subgroup 1B – Root Vegetables:** garden beet, edible burdock, carrot, celeriac, turnip-rooted chervil, chicory, ginseng, horseradish, turnip-rooted parsley, parsnip, radish, oriental radish, rutabaga, salsify, black salsify, Spanish salsify, skirret, and turnip.
 - 2. **Crop Subgroup 3 – Bulb Vegetables (if to be harvested green):** garlic, great-headed garlic, leek, green onion, Welsh onion, shallot.
 - 3. Winter squash (including pumpkins).
- B. If not more than 1.67 pts./A of Mestalin was applied to the field, the following crops (as well as any listed under subsection C below) may be planted 60 days after the last application. A second application of an S-metolachlor-containing product to the following crops is prohibited within 60 days of the original applications:**
 - 1. **Crop Group 8 – Fruiting Vegetables, except Cucurbits and Tabasco Peppers:** eggplant, groundcherry (*Physalis* spp.), pepino, peppers (bell, chili, cooking, pimento, and sweet), tomatillo, and tomato.
- C. If not more than 2.0 pts./A of Mestalin was applied to the field, the following crops may be planted 60 days after the last application. A second application of an S-metolachlor-containing product to the**

following crops is prohibited within 60 days of the original application:

1. **Crop Subgroup 1C – Tuberous and Corm Vegetables:** arracacha; arrowroot; Chinese artichoke; Jerusalem artichoke; edible canna; bitter and sweet cassava; chayote (root); chufa; dasheen (taro); ginger; leren; potato; sweet potato; tanier; tumeric; yam bean; and yam, true.
2. **Crop Group 3 Bulb Vegetables (if to be harvested dry):** garlic, great-headed garlic, leek, dry bulb and green onion, Welsh onion, shallot.
3. **Crop Subgroup 4B - Leaf Petiole Vegetables:** cardoon, celery, Chinese celery, celtuce, Florence fennel, rhubarb, and Swiss chard.
4. **Crop Subgroup 5A - Head and Stem Brassica Vegetables:** broccoli; Chinese broccoli, Brussels sprouts, cabbage, Chinese (Napa) cabbage, Chinese mustard, cauliflower, cavalo broccolo, and kohlrabi.

APPLICATION PROCEDURES

Application Timing:

Mestalin alone or in some tank mixtures with other labeled herbicides may be applied for weed control in certain crops at various times. Refer to the given crop section of the label to determine if application timings listed below are permitted. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use and precautionary statements of each product in the tank mixture.

Preplant Surface-Applied: For minimum-tillage or no-tillage systems only, **Mestalin** alone and some **Mestalin** tank mixtures may be applied up to 45 days before planting certain crops. Use only split applications for treatments made 30-45 days before planting, with 2/3 the recommended broadcast rate for the crop and soil texture applied initially and the remaining 1/3 at planting. Treatments less than 30 days before planting may be made either as a split or a single application. Refer to individual crop section on this label to determine if early preplant surface application is permitted. If weeds are present at the time of treatment, apply in a tank mixture combination with a contact herbicide (for example, Gramoxone® 3LB, Touchdown® Total, or Roundup® brands). Observe directions for use, precautions, and restrictions on the label of the contact herbicide. To the extent possible, do not move treated soil out of the row or move untreated soil to the surface during planting, or weed control will be diminished.

Preplant Incorporated: Apply **Mestalin** to the soil and incorporate into the top 2 inches of soil within 14 days before planting, using a finishing disk, harrow, rolling cultivator, or similar implement capable of providing uniform 2-inch incorporation. Use a preplant incorporated application if furrow irrigation is used or when a period of dry weather after application is expected. If crop will be planted on beds, apply and incorporate **Mestalin** after bed formation, unless specified otherwise.

Preemergence: Apply **Mestalin** during planting (behind the planter) or after planting, but before weeds or crops emerge.

Postemergence: **Mestalin** will not control emerged weeds so it must be applied to a weed-free soil surface or in tank mixture with products that provide postemergence control of weeds present at the time of application. Refer to the individual crop section of this label if a postemergence application is permitted.

SPECIAL APPLICATION PROCEDURES

CA Only (Beans, Peas, and Lentils; Corn; Safflowers):

Preplant Incorporated: Broadcast **Mestalin** alone or with tank mix partners listed on this label to the soil and thoroughly incorporate with a disk or similar implement set to till 4-6 inches deep. For more thorough incorporation, till the soil in 2 different directions (cross-till). Crops may be planted on flat surface or on beds. Use caution when forming the beds that only soil from the **Mestalin** treated zone is used (i.e., untreated soil should not be brought to soil surface). If the application is made to preformed beds, incorporate **Mestalin** with a tillage implement set to till 2-4 inches deep. Care should be taken during tilling to keep the tilled (**Mestalin** -treated) soil on the beds.

Preemergence: Apply **Mestalin** after planting. Water with sprinkler or flood irrigation within 7-10 days.

Fall Application for Spring Weed Control (Only in IA, MN, ND, SD, WI, and portions of NE and IL – See specific instructions in the Beans, Peas, and Lentils; Corn; and Soybeans sections of this label for timing of application and other information):

Do not apply to frozen ground. Use on medium and fine soils with greater than 2.5% organic matter that will be planted to corn or soybeans the next spring. Ground may be tilled before or after application. Do not exceed a 2 to 3-inch incorporation depth if tilled after treatment.

Restrictions: If a spring application is made, the total rate of the fall plus spring applications must not exceed the maximum total rate for the specific crop.

Fall Application for Italian Ryegrass Control (Corn, Cotton, Grain and Forage Sorghum, and Soybean Only - See specific instructions in the Corn, Cotton, Grain and Forage Sorghum, and Soybean sections of this label for timing of application and other information):

Mestalin may be applied in the fall (September 1-December 1) for residual control of glyphosate-resistant Italian ryegrass (*Lolium multiflorum*). A tillage operation may precede the application. Do not incorporate to a depth greater than 2-3 inches if tillage follows the application of **Mestalin**.

Restrictions:

1. Do not apply **Mestalin** to frozen ground.
2. All crops on the **Mestalin** label may be planted the following spring after application.
3. If a spring application is made, the combined total amount of **Mestalin** applied in the fall plus the spring must not exceed the maximum seasonal S-metolachlor rate for the specific crop planted.

Refer to the crop sections on this label for specific directions.

Ground Application:

Apply **Mestalin** alone or in tank mixtures by ground equipment in a minimum of 10 gals. of spray mixture per acre, unless otherwise specified.

Use sprayers that provide accurate and uniform application. For **Mestalin** tank mixtures with wettable powder or dry flowable formulations, screens and strainers should be no finer than 50-mesh. Rinse sprayer thoroughly with clean water immediately after use.

Calculate the amount of herbicide needed for band treatment by the formula:

$$\frac{\text{band width in inches}}{\text{row width in inches}} \times \text{broadcast rate per acre} = \text{amount needed per acre of field}$$

For information on applying in lower volumes of carrier, see **Low Carrier Application** section.

For application by air or through center pivot systems, see **Mandatory Spray Drift Management** and **Center Pivot Irrigation Application** sections.

For information on impregnating dry fertilizer, see **Dry Bulk Granular Fertilizers** section.

SPRAY EQUIPMENT

LOW CARRIER APPLICATION

For Broadcast Ground Application Only:

Use sprayers that provide accurate and uniform application. **Only water may be used as a carrier.** Screens in suction and in-line strainers should be 50-mesh. Manufacturers may require that tip screens as fine as 100-mesh be used with some nozzles. Use a pump with capacity to: (1) maintain up to 35-40 psi at the nozzles, and (2) provide sufficient agitation in tank to keep mixture in suspension. Use a minimum of 5.0 gals. of spray mixture per acre. Maximum recommended sprayer speed is 15 mph. Rinse sprayer thoroughly with clean water immediately after each use.

Precautions:

Low pressure nozzles are recommended to reduce drift and increase application accuracy. Care should be taken when using automatic rate controlling devices to spray the material within the rated working pressure and flow ranges of the nozzles selected. Nozzle screens should be used when recommended by the manufacturer. All nozzles should be placed on 20-inch centers, except flooding types which should be placed on 40-inch centers. When Flat Fan-type nozzles are used, angles of 80° or 110° are recommended. Always read and follow the manufacturer's directions for optimum setup and performance of their nozzles or tips.

Aerial Application:

Apply **Mestalin** in water alone or in tank mixtures with AAtrex, Lorox®, or Sencor® in a minimum total volume of 2.0 gals./A by aircraft. **Mestalin** may also be applied by air in combination with Prowl®, or Treflan®. Do not apply under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur. In order to assure that spray will be controllable within the target area when used according to label directions, make applications at a maximum height of 10 ft., using low-drift nozzles at a maximum pressure of 40 psi, and restrict application to periods when wind speed does not exceed 15 mph. To assure that spray will not adversely affect adjacent sensitive nontarget plants, apply **Mestalin** alone or **Mestalin** + AAtrex by aircraft at a minimum upwind distance of 400 ft. from sensitive plants, or apply **Mestalin** + Lorox or Sencor at a minimum upwind distance of 300 ft. from sensitive plants.

The applicator must be familiar with and take into account the information covered in the **Mandatory Spray Drift Management and Spray Drift Advisories** sections below.

MANDATORY SPRAY DRIFT MANAGEMENT**Aerial Applications:**

- Do not release spray at a height greater than 10 ft above the ground or vegetative canopy, unless a greater application height is necessary for pilot safety.
- Applicators are required to select the nozzle and pressure that deliver medium or coarser droplets (ASABE S641).
- If the wind speed is 10 miles per hour or less, applicators must use 1/2 swath displacement upwind at the downwind edge of the field. When the wind speed is between 11-15 miles per hour, applicators must use 3/4 swath displacement upwind at the downwind edge of the field.
- Do not apply when wind speeds exceed 15 mph at the application site. If the wind speed is greater than 10 mph, the boom length must be 65% or less of the wingspan for fixed wing aircraft and 75% or less of the rotor diameter for helicopters. Otherwise, the boom length must be 75% or less of the wingspan for fixed-wing aircraft and 90% or less of the rotor diameter for helicopters.
- Do not apply during temperature inversions.

Ground Boom Applications:

- User must only apply with the release height recommended by the manufacturer, but no more than 4 feet above the ground or crop canopy.
- Applicators are required to select the nozzles and pressure that deliver medium or coarser droplets (ASABE S572).
- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

Boomless Ground Applications:

- Applicators are required to select the nozzle and pressure that deliver medium or coarser droplet size (ASABE S572) for all applications.
- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

Spray Drift Advisories

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT.
BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

IMPORTANCE OF DROPLET SIZE

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

Controlling Droplet Size – Ground Boom:

- **Volume** – Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- **Pressure** – Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- **Spray Nozzle** – Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift

Controlling Droplet Size - Aircraft:

- **Adjust Nozzles** – Follow nozzle manufacturers' recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

BOOM HEIGHT – Ground Boom

For ground equipment, the boom should remain level with the crop and have minimal bounce.

RELEASE HEIGHT – Aircraft

Higher release heights increase the potential for spray drift.

SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

BOOMLESS GROUND APPLICATIONS:

Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.

HANDHELD TECHNOLOGY APPLICATIONS:

Take precautions to minimize spray drift.

TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, use larger droplets to reduce the effects of evaporation.

TEMPERATURE INVERSIONS

Drift potential is high during temperature inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or 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. Avoid applications during temperature inversions.

WIND

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS. Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

CENTER PIVOT IRRIGATION APPLICATION

Mestalin alone or in tank mixture with other herbicides on this label, which are registered for center pivot application,

may be applied in irrigation water preemergence (after planting, but before weeds or crop emerge) at rates listed on this label. **Mestalin** also may be applied postemergence to the crop and preemergence to weeds in crops where postemergence applications are allowed on this label. Follow all restrictions (height, timing, rate, etc.) to avoid illegal residues. Apply this product only through a center pivot irrigation system. Do not apply this product through any other type of irrigation system. Crop injury, lack of effectiveness, or illegal residues in the crop can result from nonuniform distribution of treated water. If you have questions about calibration, you should contact State Extension specialists, equipment manufacturers, or other experts. 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. 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.

Operating Instructions:

1. The 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.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check-valve to prevent the flow of fluid back toward the injection pump.
3. 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.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. 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.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump or piston pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.
8. Prepare a mixture with a minimum of 1-part water to 1-part herbicide(s) and inject this mixture into the center pivot system. Injecting a larger volume of a more dilute mixture per hour will usually provide more accurate calibration of metering equipment. Maintain sufficient agitation to keep the herbicide in suspension.
9. Meter into irrigation water during entire period of water application.
10. Apply in 1/2-1 inch of water. Use the lower water volume (1/2 inch) on *coarse-textured soils* and the higher volume (1 inch) on *fine-textured soils*. More than 1 inch of water at application may reduce weed control by moving the herbicide below the effective zone in the soil.

Precaution for center pivot applications: Where sprinkler distribution patterns do not overlap sufficiently, unacceptable weed control may result. Where sprinkler distribution patterns overlap excessively, crop injury may result.

DRY BULK GRANULAR FERTILIZERS

Many dry bulk granular fertilizers may be impregnated or coated with **Mestalin** alone or selected **Mestalin** tank mixtures which are registered for preplant incorporated or preplant surface applications which are used to control weeds in crops on the **Mestalin** label and are not prohibited from use on dry bulk granular fertilizers.

When applying **Mestalin** or **Mestalin** mixtures with dry bulk granular fertilizers, follow all directions for use and precautions on the respective product labels, regarding target crops, rates per acre, soil texture, application methods (including timing of application), and rotational crops.

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

Prepare the herbicide/fertilizer mixtures by using any closed drum, belt, ribbon, or other commonly used dry bulk fertilizer blender. Nozzles used to spray **Mestalin** and **Mestalin** mixtures onto the fertilizer must be placed to provide uniform spray coverage. Care should be taken to aim the spray directly onto the fertilizer only and to avoid spraying the walls of the blender.

If the herbicide/fertilizer mixture is too wet, add a highly absorptive material, such as Agsorb® or Celatom MP-79®, or similar granular clay or diatomaceous earth materials, to obtain a dry, free-flowing mixture. Add absorptive materials only after the herbicide has been thoroughly blended into the fertilizer mixture. Best application results will be obtained by using a granule of 6/30 particle size or of a size similar to that of the fertilizer material being used. Generally, less than 2% by weight of absorptive material will be needed. Avoid using more than 5% absorptive material by weight.

Calculate amounts of **Mestalin**, AAtrex, AAttrex + Princep®, Balance® Pro, Princep, Sencor, or Sonalan® by the following formula:

$$\frac{2000}{\text{lbs. of fertilizer per acre}} \times \text{pts./A of liquid flowable product} = \text{pts. of liquid or flowable product per ton of fertilizer}$$

$$\frac{2000}{\text{lbs. of fertilizer per acre}} \times \text{pts./A of dry product} = \text{pts. of dry product per ton of fertilizer}$$

Pneumatic (Compressed Air) Application (Mestalin Alone):

High humidity, high urea concentrations, low fertilizer use rates, and dusty fertilizer may cause fertilizer mixture to build up or plug the distributor head, air tubes, or nozzle deflector plates. To minimize buildup, premix **Mestalin** with Exxon Aromatic 200 at a rate of 1.0-4.0 pts./gals. of **Mestalin**. Aromatic 200 is a noncombustible/nonflammable petroleum product. Aromatic 200 may be used in either a fertilizer blender or through direct injection systems. Drying agents should not be used when using Aromatic 200.

Restriction:

1. Mixtures of **Mestalin** and Aromatic 200 must be used on dry fertilizer only. Poor results or crop injury may result if these mixtures are used in water or liquid fertilizer solutions for spraying applications.

Precautions:

1. To avoid potential for explosion, do not impregnate **Mestalin** or **Mestalin** mixtures on ammonium nitrate, potassium nitrate, or sodium nitrate, either alone or in blends with other fertilizers.
2. To avoid potential for explosion, do not use **Mestalin** or **Mestalin** mixtures on straight limestone, since absorption will not be achieved. Fertilizer blends containing limestone can be impregnated.
3. Drying agents are not recommended for use with On-The-Go impregnation equipment.
4. When impregnating **Mestalin** in a blender before application, a drier mixture can be attained by substituting a drying agent for Aromatic 200. The use of Agsorb FG or drying agents of 6/30 particle size are recommended.

Application:

Apply 200-700 lbs. of the herbicide/fertilizer mixture per acre. For best results, apply the mixture uniformly to the soil with properly calibrated equipment immediately after blending. Uniform application of the herbicide/fertilizer mixture is essential to prevent possible crop injury. Nonuniform application may also result in unsatisfactory weed control. In areas where conventional tillage is practiced, a shallow incorporation of the mixture into the soil may improve weed control. On fine- or medium-textured soils in areas where soil incorporation is not planned, i.e., reduced tillage situations or in some conventional till situations, make applications approximately 30 days before planting to allow moisture to move the herbicide/fertilizer mixture into the soil. On coarse-textured soils, make applications approximately 14 days prior to planting.

Precaution: To avoid crop injury, do not use the herbicide/fertilizer mixture on crops where bedding occurs.

MIXING INSTRUCTIONS

Mestalin Alone:

Mix **Mestalin** with water or fluid fertilizer and apply as a spray. Fill the spray tank 1/2-3/4 full with water or fluid fertilizer, add the proper amount of **Mestalin**, then add the rest of the water or fluid fertilizer. Provide sufficient agitation during mixing and application to maintain a uniform emulsion.

Tank Mixtures:

Fill the spray tank 1/4 full with water, and start agitation; add 2,4-D, AAtrex, Balance Pro, Banvel®, Basagran®, Butyrac®, Canopy®, Caparol® 4L, Command®, Cotoran®, Eptam®, Liberty® Herbicide, Lorox, Marksman®, MSMA, Princep, Prowl, Pursuit®, AAtrex + Princep, Scepter®, Sencor, Sonalan, or Treflan, and allow it to become dispersed; then add **Mestalin**; then add Gramoxone 3LB, Landmaster® BW, or Touchdown Total or Roundup (glyphosate products) if these products are being used; and finally the rest of the water. For tank mixtures with AAtrex, Balance, Banvel, Canopy, Caparol 4L, Command, Cotoran*, Eptam, Lorox, Marksman, Princep, Prowl*, Pursuit, AAtrex + Princep, Scepter, Sencor, Sonalan, or Treflan, fluid fertilizers may replace all or part of the water as carrier, except in the AAtrex postemergence and the Banvel postemergence tank mixes. For tank mixtures with AAtrex, see additional mixing instructions on the AAtrex label. For each mixture, check compatibility with fluid fertilizer, as described below, before mixing in spray tank. For all tank mixtures, agitate during mixing and application to maintain a uniform suspension.

*See **Special Mixing Instructions** for tank mixtures with Cotoran and with AAtrex or Princep + Prowl under the appropriate tank mixture section.

Please see the Tank Mix Partner Information section at the end of this label for active ingredient and EPA Registration Number information.

For directions on how to conduct a compatibility test, see the **Compatibility Test** section.

COMPATIBILITY TEST

A jar test is recommended before tank mixing to ensure compatibility of **Mestalin** with other pesticides. The following test assumes a spray volume of 25 gals/A. For other spray volumes, make appropriate changes in the ingredients.

Restrictions:

Nitrogen solutions or complete fluid fertilizers may replace all or part of the water in the spray. Because liquid fertilizers vary, even within the same analysis, **always check compatibility with pesticide(s) before use.** Incompatibility of tank mixtures is more common with suspensions of fertilizer and pesticides.

Test Procedure:

1. Add 1.0 pt. of carrier (fertilizer or water) to each of 2 one qt. jars with tight lids. **Restrictions:** Use the same source of water that will be used for the tank mix and conduct the test at the temperature the tank mix will be applied.
2. To one of the jars, add 1/4 tsp. or 1.2 milliliters of a compatibility agent approved for this use, such as Compex® or Unite® (1/4 tsp. is equivalent to 2.0 pts./100 gals. spray). Shake or stir gently to mix.
3. To both jars, add the appropriate amount of pesticide(s) in their relative proportions based on the label rates. If more than one pesticide is used, add them separately with dry pesticides first, flowables next, and emulsifiable concentrates last. After each addition, shake or stir gently to thoroughly mix.
4. After adding all ingredients, put lids on and tighten, and invert each jar ten times to mix. Let the mixtures stand 15-30 minutes and then look for separation, large flakes, precipitates, gels, heavy oily film on the jar, or other signs of incompatibility. Determine if the compatibility agent is needed in the spray mixture by comparing the two jars. If either mixture separates, but can be remixed readily, the mixture can be sprayed as long as good agitation is used. If the mixtures are incompatible, test the following methods of improving compatibility: (a) Slurry the dry pesticide(s) in water before addition, or (b) add ½ the compatibility agent to the fertilizer or water and the other 1/2 to the emulsifiable concentrate or flowable pesticide before addition to the mixture. If incompatibility is still observed, do not use the mixture.

5. After compatibility testing is complete, dispose of any pesticide wastes in accordance with the **Storage and Disposal** section in this label.

CROP USE DIRECTIONS

CORN (ALL TYPES) – MESTALIN ALONE

Apply **Mestalin**, either preplant surface, preplant incorporated, preemergence, postemergence, or lay-by, using the appropriate rate specified below.

Preplant Surface Applied:

Refer to instructions for use of **Mestalin** alone under **Application Procedures**.

Fall Application for Spring Weed Control:

1. Apply after September 30 in ND, SD, MN, WI and north of Route 30 in IA.
2. Apply after October 15 north of Route 91 in NE and south of Route 30 in IA.
3. Apply after October 31 north of Route 136 in IL.

In all locations, apply to crop stubble after harvest when the sustained soil temperature at a 4-inch depth is less than 55°F and falling. In minimum-till or no-tillage systems on soils having greater than 2.5% organic matter, use 1.67-2.0 pts./A on *medium-textured* and 2.0 pts./A on *fine-textured* soils. Do not apply to frozen ground. A tillage operation may precede the application. A fall and/or a spring tillage may follow application, but do not exceed an incorporation depth greater than 2-3 inches. Minimize furrow and ridge formation in the tillage operations.

Restrictions: If a spring application is made, the total rate of the fall plus spring applications must not exceed the maximum total rate for corn.

Fall Application for Italian Ryegrass Control:

Mestalin may be applied for residual control of glyphosate-resistant Italian ryegrass (*Lolium multiflorum*). Apply **Mestalin** at 1.33-1.67 pts./A in the fall (September 1-December 1) after harvest of the previous crop and prior to Italian ryegrass emergence. Use the lower **Mestalin** rate for coarse-textured soils and the higher rate for fine-textured soils. A tillage operation may precede the application. Do not incorporate to a depth greater than 2-3 inches if tillage follows the application of **Mestalin**. For fall applications after emergence of glyphosate-resistant Italian ryegrass, Gramoxone 3LB can be tank mixed with **Mestalin** to control emerged ryegrass. Refer to the Gramoxone 3LB label for specific rates, application instructions, and restrictions. Other registered herbicides may be tank mixed with **Mestalin** for control or improved control of other weeds present at the time of application.

Restrictions:

1. Do not apply **Mestalin** to frozen ground.
2. If a spring application is made, the combined total amount of **Mestalin** applied in the fall plus the spring must not exceed the maximum seasonal S-metolachlor rate for corn (3.9 pts./A, depending on soil texture).

Fall Application for Control or Suppression of Yellow Nutsedge (ID, OR, and WA only):

For preemergent control or suppression of yellow nutsedge the following spring, apply 1.33 pts./A of **Mestalin** in the fall after the harvest of the previous crop but before freeze-up. Fall applications of **Mestalin** can be surface-applied or incorporated.

Restrictions:

1. Make no more than one fall application per crop.
2. Apply not more than 1.33 pts./A in a single fall preplant application.
3. Do not apply to frozen ground.
4. If a spring application is made, the combined total amount of **Mestalin** applied in the fall plus the spring must not exceed the maximum season S-metolachlor rate for corn (3.9 pts./A, depending on soil texture).

EARLY PREPLANT APPLICATIONS

Use on medium- and fine-textured soils with minimum-tillage or no-tillage systems in CO, IA, IL, IN, KS, KY, MN, MO, MT, ND, NE, SD, TN, WI, and WY. Apply 2/3 the labeled rate of **Mestalin** (1.67 pts./A on *medium soils* and 2.0 pts./A on *fine soils*) as a split treatment 30-45 days before planting and the remainder at planting.

Applications made less than 30 days prior to planting may be as either a split or single treatment. Apply 1.33 pts./A on *coarse soils* not more than 2 weeks before planting.

Restrictions: If a spring application is made, the total rate of the fall plus spring application must not exceed the maximum total rate for corn.

On medium- and fine-textured soils with minimum- or no-tillage systems in CT, DE, MA, MD, ME, MI, NH, NY, OH, PA, RI, VA, VT, and WV, preplant surface applications may be applied following the directions for use above. If the amount of rainfall results in unsatisfactory length of weed control following the earlier treatment, a postemergence application of an appropriately labeled broadleaf and/or grass weed herbicide may be used, i.e., AAtrex, Beacon®, Bicep II Magnum®, Accent®, Banvel, Basagran, bromoxynil (Brominal® or Buctril®), or 2,4-D. If the postemergence treatment includes the herbicide used preplant surface-applied, do not exceed the total labeled rate for corn on a given soil texture. Observe all directions for use, precautions, and limitations on the label of the postemergent herbicide.

PREPLANT INCORPORATED OR PREEMERGENCE

Follow instructions for use of **Mestalin** alone under **Application Procedures**. On *coarse soils*, apply 1.0-1.33 pts./A of **Mestalin** if organic matter content is less than 3%, or 1.33 pts./A if organic matter content is 3% or greater. On *medium soils*, apply 1.33-1.67 pts./A of **Mestalin**. On *fine soils*, apply 1.33-1.67 pts./A of **Mestalin** if organic matter content is less than 3%, or 1.67-2.0 pts./A if organic matter content is 3% or greater.

POSTEMERGENCE OR LAY-BY

To extend the duration of weed control in corn, a maximum rate of 2.0 pts./A of **Mestalin** may be applied after corn emergence until the corn plants reach 40 inches in height, following any preplant surface-applied, preplant incorporated, or preemergence herbicide application, including **Mestalin**. For best results, applications should be made to soil free of merged weeds and directed toward the base of corn plants in excess of 5 inches tall. The total **Mestalin** rate applied to corn during any one crop year should not exceed 3.9 pts./A, depending on soil texture.

Restrictions for all applications to corn:

1. Do not graze or feed forage from treated areas for 30 days following application
2. Do not harvest sweet corn ears from treated areas for 30 days following application.

PROBLEM WEED CONTROL DIRECTIONS

Shattercane, Wild Proso Millet, Woolly Cupgrass, and Eclipta - Partial Control:

For more consistent partial control of shattercane, wild proso millet, woolly cupgrass, or eclipta, apply 1.0-1.33 pts./A of **Mestalin** preplant incorporated followed by 1.0-1.33 pts./A of **Mestalin** preemergence. Make the preemergence application during or after planting, but before weeds and corn emerge. Apply the 1.33 pts./A rate of **Mestalin** when a heavy infestation of shattercane, wild proso millet, woolly cupgrass, or eclipta is expected. A shallow cultivation may be needed to control any late emerging weeds.

Woolly Cupgrass and Wild Proso Millet Control Program:

For control of these species, use the following 3-step program:

1. Apply **Mestalin** early preplant, preplant incorporated, or preemergence at 1.67 pts./A on *medium soils* and 2.0 pts./A on *fine-textured soils*, up to the maximum label rate. Lightly incorporate with a rotary hoe if rainfall does not occur within 5-7 days.
2. Apply a postemergence tank mix of Beacon at 0.38 oz./A plus Accent SP at 0.33 oz./A plus 1.0 qt. of crop oil concentrate plus 1.0 gal./A of 28% nitrogen, or the equivalent amount of ammonium sulfate, when grasses are 2-3 inches tall and the corn is at least 4 inches tall.
3. Cultivate 14-21 days after the postemergence application.

Restrictions:

1. Do not apply more than the labeled application rate for a given soil texture per year, either as a single or split treatment.
2. In corn, use up to 2.5 pts./A of **Mestalin** preplant surface, preplant incorporated, or preemergence treatment on soils having an organic matter content between 6% and 20%.
3. In the event of escape of annual weeds following a preplant surface, preplant incorporated, or preemergence treatment of **Mestalin**, follow with a postemergence application of an appropriately labeled broadleaf and/or grass weed herbicide, i.e., AAtrex, Beacon, Bicep II Magnum, Accent, Banvel, Basagran, Brominal, Buctril, or 2,4-D. If the postemergence treatment includes the herbicide used in the earlier treatment, do not exceed the total labeled rate for corn on a given soil texture.
4. Brominal or Buctril may be applied postemergence alone or in tank mix combination with AAtrex. Do not exceed 1.2 lbs. a.i./A of AAtrex in tank mix combination with Brominal or Buctril postemergence. Refer to the AAtrex, Brominal, and Buctril labels for specific rates and precautions.
5. Do not use **Mestalin** on peat or muck soils.

CORN – MESTALIN COMBINATIONS

Mestalin in any tank mixture for corn may be applied in water or fluid fertilizer before corn emerges. Use only water as a carrier when **Mestalin** is applied after corn emergence.

Restrictions: For all applications to corn:

1. Do not graze or feed forage from treated areas for 30 days following application.
2. Do not harvest sweet corn ears from treated areas for 30 days following application.

IMPORTANT: FOR TANK MIXTURES WITH AATREX (OR OTHER BRANDS OF ATRAZINE) – IF APPLYING MESTALIN IN TANK MIXTURE WITH AATREX, ALL THE RESTRICTIONS AND RATE LIMITATIONS ON THE AATREX LABEL MUST BE FOLLOWED IF MORE RESTRICTIVE/PROTECTIVE THAN THOSE ON THIS LABEL. IN ADDITION, IF AATREX IS/MUST BE APPLIED AT RATES LOWER THAN THOSE RECOMMENDED ON THIS LABEL, BROADLEAF WEED CONTROL MAY BE AFFECTED. REFER TO THE AATREX LABEL FOR WEEDS CONTROLLED AT THE REDUCED RATES.

Table 2: Mestalin Tank Mixtures for Corn – Additional Weeds Controlled and Special Instructions

	Mestalin + AAtrex and/or Princep (Preplant Surface, PPI, PRE)	Mestalin + AAtrex (Post)	Mestalin + Banvel (Field Corn)	Mestalin + AAtrex + Lorox	Mestalin + AAtrex or Princep + Prowl	Mestalin + Marksman	Mestalin + Balance Pro
Special Mixing Instructions					1		
Comments	2, 3, 4, 5, 7, 8	2, 3, 4, 5		2, 3, 4, 5, 6	2, 3, 4, 5	7	2, 3, 7
Browntop panicum	X			X	X		X
Cocklebur	X	0	0	X	X		0-X
Common purslane	X			X	X	X	X
Hairy nightshade	X			X	X		X
Jimsonweed		X	0			X	X
Kochia		X				X	X
Lambsquarters	X	X	X	X	X	X	X
Morningglory	X	0	0	X	X		X
Mustard		X				X	X
Pigweed				X	X	X	X
Prickly sida		X					
Ragweed	X	X	X	X	X	X	X
Smartweed	X	X	X	X	X	X	X
Velvetleaf	X	X	0	X	X	0-X	0-X

X = control; 0 = partial control; 0-X = partial to full control depending on ratio of products used or on weed population

Comments:

1. Special Mixing Instructions for **Mestalin** + AAtrex or Princep and Prowl
 - a. Fill the spray tank $\frac{1}{4}$ full with water or fluid fertilizer and start agitation.
 - b. To aid compatibility, add a compatibility agent, such as Unite or X-77[®], at 4.0 pts./100 gals. of spray mixture.
 - c. Then add the AAtrex or Princep and allow it to become dispersed.
 - d. Then add **Mestalin** and Prowl 4E.
 - e. Add the rest of the water.
2. Although a single formulation for AAtrex or Princep is listed in the rate tables, other formulations may be substituted, using the following formula:
 - a. 1.0 lb. of AAtrex[®] Nine-O[®] or Princep[®] Caliber 90[®] = 1.8 pts. of AAtrex 4L or Princep 4L
3. Although direction specify AAtrex formulations in tank mixture with **Mestalin**, other brands of atrazine may be used. Follow the rates, recommendations, and limitations on the atrazine label.
4. See additional mixing instructions on the AAtrex label.
5. Do not exceed a total of 2.5 lbs. a.i. of atrazine per acre per year. However, certain states may have established rate limitations for atrazine within specific geographical areas. Consult your state lead pesticide control agency for additional information. It is a violation of this label to deviate from state use regulations.
6. Other formulations of Lorax can be used: 1.0 lb. of Lorax DF = 1.0 pt. of Lorax L.
7. In Minimum-Tillage and No-Tillage systems, mix with Gramoxone 3LB for control of most emerged annual weeds and suppression of perennial weeds; or with Landmaster BW for suppression of emerged field bindweed and control or suppression of annual weeds; or with Touchdown Total or Roundup brands for control of most emerged annual and perennial weeds.
8. Refer to the **Corn – Mestalin Combinations – Tank Mixture with AAtrex; or AAtrex + 2,4-D; or AAtrex + 2,4-D + Banvel for Minimum-Tillage or No-Tillage Systems** sections for specific directions for 2,4-D or Banvel burndown combinations in Minimum-Tillage or No-Tillage systems.

Mestalin in any tank mixture for corn may be applied in water or fluid fertilizer, except as noted.

Restrictions:

1. For all applications to corn, do not graze or feed forage from treated areas for 30 days following application and do not harvest sweet corn ears from treated areas for 30 days following application.
2. When applying **Mestalin** in tank mixture with AAtrex, do not exceed a total of 2.5 lbs. a.i. of atrazine per acre per year.

Refer to **Corn (All Types) – Mestalin Alone** for recommended sequential postemergence treatments if escape weeds develop.

TANK MIXTURE WITH AATREX OR PRINCEP, OR AATREX + PRINCEPT – PREPLANT SURFACE, PREPLANT INCORPORATED, OR PREEMERGENCE

In addition to the weeds controlled by **Mestalin** alone, **Mestalin** + AAtrex or Princep, or **Mestalin** + AAtrex + Princep, applied preplant surface, preplant incorporated, or preemergence, also controls the following weeds: browntop panicum, cocklebur, common purslane, hairy nightshade, lambsquarters, morningglory, ragweed, smartweed, and velvetleaf.

Apply **Mestalin** + AAtrex or Princep, or **Mestalin** + AAtrex + Princep either preplant surface, preplant incorporated, or preemergence.

Preplant Surface-Applied:

Follow instructions for use of **Mestalin** alone under **Application Procedures** and under application instructions for **Mestalin** alone on corn. Apply **Mestalin** + AAtrex or Princep, or **Mestalin** + AAtrex + Princep on *medium soils* (1.67 pts./A of **Mestalin** + 3.2-4.0 pts./A of AAtrex 4L or Princep 4L, or AAtrex 4L + Princep 4L combined) and on *fine soils* (1.67-2.0 pts./A of **Mestalin** + 4.0 pts./A of AAtrex 4L or 4.0-5.0 pts./A of Princep 4L, or AAtrex 4L + Princep 4L combined) in minimum-tillage and no-tillage systems in CO, IA, IL, IN, KS, KY, MN, MO, MT, ND, NE, SD, TN, WI, and WY. Apply the tank mixtures as a split or single treatment in those states and as indicated in the **Mestalin Alone** -

Preplant Surface-Applied section of the label for corn. On *coarse soils*, apply 1.33 pts./A of **Mestalin** and 3.2 pts./A of AAtrex 4L or Princep 4L, or AAtrex 4L + Princep 4L combined.

Preplant Incorporated or Preemergence: Follow instructions for use of **Mestalin** alone under **Application Procedures**. Apply **Mestalin** + AAtrex or Princep, or **Mestalin** + AAtrex + Princep, using the appropriate rates from Table 3.

Restrictions: Do not apply more than the labeled rate for a given soil texture per year, either as a split or single treatment.

Shattercane and Wild Proso Millet – Partial Control

For more consistent partial control of shattercane or wild proso millet where **Mestalin** is applied in tank mixture or sequentially with other registered corn herbicides, the following applications may be made:

1. Apply 1.0-1.33 pts./A of **Mestalin** + 2.0 lbs. a.i./A of AAtrex or Princep preplant incorporated, followed by 1.0-1.33 pts./A of **Mestalin** preemergence. Make the preemergence application during or after planting, but before weeds and corn emerge.
2. Apply **Mestalin** at 1.33 pts./A alone or in tank mix combination with up to 2.0 lbs. a.i./A of AAtrex, or Princep, preplant incorporated. Do not exceed the total rate of triazine herbicide recommended in combination with **Mestalin** for corn grown on a given soil texture. Follow with a post-directed application of Evik® 80W at 2.5 lbs./A. Refer to the Evik 80W label for specific directions for the post-directed application. Apply Eradicane® (or equivalent EPTC or butylate formulations) at labeled rates preplant incorporated, followed by a preemergence application of **Mestalin** at 1.0-1.33 pts./A. Do not use Eradicane on soils where rapid degradation has been shown to occur. Make the preemergence application during or after planting, but before weeds and corn emerge.

Precautions: When following the application regimes in numbers 1-3 above, a shallow cultivation may be needed after the preemergence or postemergence application to help control any late emerging shattercane or wild proso millet plants.

Restrictions: Do not exceed a total of 1.9 lbs. a.i./A (2.0 pts. of **Mestalin**) in the preplant incorporated plus preemergence application on soils with less than 6% organic matter, or crop injury may result.

Table 3: Mestalin + AAtrex or Princep, or Mestalin + AAtrex + Princep, Preplant Incorporated or Preemergence – Corn (All Types)

Soil Texture	Broadcast Rates Per Acre			
	Less than 3% Organic Matter		3% Organic Matter or Greater	
	Mestalin + AAtrex Nine-O*	OR Mestalin + AAtrex Nine-O**	Mestalin + AAtrex Nine-O*	OR Mestalin + AAtrex Nine-O**
	or Princep Caliber 90*	or Princep Caliber 90**	or Princep Caliber 90*	or Princep Caliber 90**
COARSE	0.8 – 1.0 pt. + 1.1 – 2.2 lbs.	0.8 – 1.0 pt. + 0.6 – 1.1 lbs. + 0.6 – 1.1 lbs.	1.0 pts. + 1.3 – 2.2 lbs.	1.0 pt. + 0.7 – 1.1 lbs. + 0.7 – 1.1 lbs.
MEDIUM	1.0-1.33 pts. + 1.3 – 2.2 lbs.	1.0 – 1.33 pts. + 0.7 – 1.1 lbs. + 0.7 – 1.1 lbs.	1.33 pts. + 1.8 – 2.2 lbs.	1.33 pts. + 0.9-1.1 lbs. + 0.9 – 1.1 lbs.

Soil Texture	Broadcast Rates Per Acre			
	Less than 3% Organic Matter		3% Organic Matter or Greater	
	Mestalin + AAtrex Nine-O*	OR Mestalin + AAtrex Nine-O**	Mestalin + AAtrex Nine-O*	OR Mestalin + AAtrex Nine-O**
	or Princep Caliber 90*	or Princep Caliber 90**	or Princep Caliber 90*	or Princep Caliber 90**
FINE	1.33 pts. + 1.8 – 2.2 lbs.	1.33 pts. + 0.9 – 1.1 lbs. + 0.9 – 1.1 lbs.	1.33 – 1.67 pts. + 1.8 – 2.2 lbs.***	1.33 – 1.67 pts. + 0.9 – 1.1 lbs.*** + 0.9 – 1.1 lbs.***
Muck or Peat (soils with more than 20% organic matter)	DO NOT USE			

* Use Princep in preference to AAtrex when heavy infestations of crabgrass or fall panicum are expected. On soils having between 6% and 20% organic matter, **Mestalin** may be used up to 2.33 pts./A in tank mix combination with 2.2 lbs./A of AAtrex Nine-O, or equivalent rates of AAtrex 4L. Refer to the AAtrex label for weeds controlled at this reduced rate.

** When using the tank mixture of **Mestalin** + AAtrex Nine-O + Princep Caliber 90, use equal rates of each as shown when heavy broadleaf weed infestations are expected. When heavy infestations of crabgrass or fall panicum are expected, use a 1:2 ratio of AAtrex + Princep instead of the 1:1 ratio given in Table 3. (*Example:* Total AAtrex Nine-O + Princep Caliber 90 = 1.2 lbs./A, use 0.4 lb. of AAtrex + 0.8 lb. of Princep, respectively.) Refer to Comment No. 2 following Table 2 for AAtrex 4L and Princep 4L conversions.

***For cocklebur, yellow nutsedge, and velvetleaf control on *fine-textured soils* above 3% organic matter, apply 2.25 lbs./A of AAtrex Nine-O, or equivalent rates of AAtrex 4L, or the same total amount of AAtrex +Princep with 1.33-1.67 pts./A of **Mestalin**.

TANK MIXTURE WITH AATREX – POSTEMERGENCE

Weeds Controlled			Weeds Partially Controlled
Barnyardgrass	Green foxtail	Pigweed	Cocklebur
(watergrass)	Yellow foxtail	Prickly sida	Morningglory
Crabgrass	Jimsonweed	Purslane	Yellow nutsedge
Crowfootgrass	Kochia	Ragweed	
Fall panicum	Lambsquarters	Smartweed	
Giant foxtail	Mustard	Velvetleaf	

Apply 1.0 pt./A of **Mestalin** + 1.3 lbs./A of AAtrex Nine-O* on *coarse* soils, 1.33 pts./A of **Mestalin** + 1.8 lbs./A of AAtrex Nine-O on *medium* soils, or 1.33-1.67 pts./A of **Mestalin** + 1.8-2.2 lbs./A** of AAtrex Nine-O on *fine* soils. Apply this tank mixture before grass and broadleaf weeds pass the 2-leaf stage and before corn exceeds 5 inches in height.

Application to weeds larger than the 2-leaf stage will generally result in unsatisfactory control.

Lay-by:

Apply to corn plants not more than 12 inches tall. Applications to corn in excess of 5 inches should be directed to the base of the corn plants; whereas, applications to corn plants less than 5 inches tall may be made over the top. Occasionally, some corn leaf burn may result, but this should not affect later growth or yield. Do not apply this postemergence tank mixture in fluid fertilizer, or severe crop injury may occur.

* When using AAtrex 4L, use equivalent rates. One lb. of AAtrex Nine-O = 1.8 pts. of AAtrex 4L.

** For better control of cocklebur, morningglory, velvetleaf, and yellow Nutsedge on *fine-textured soils* above 3% organic matter, apply 2.2 lbs./A of AAtrex Nine-O, or equivalent rate of AAtrex 4L with 1.33-1.67 pts./A of **Mestalin**.

Tank mixtures of **Mestalin** + AAtrex may be applied following use of any registered preplant surface-applied, preplant incorporated, or preemergence corn herbicide, including **Mestalin** + AAtrex.

Restrictions:

The total **Mestalin** rate must not exceed 3.9 pts., nor the AAtrex rate more than 2.5 lbs. a.i./A during any one crop year. Refer to the AAtrex label for geographic, soil-texture, and rotational restrictions.

TANK MIXTURE WITH BANVEL

Preemergence:

Use this tank mixture only on field corn which is flat-planted (no furrows) in CO, IA, IL, IN, KS, MN, NE, OH, SD, and WI.

In addition to the weeds controlled by **Mestalin** alone, **Mestalin** + Banvel, applied preemergence, also controls lambsquarters, ragweed, smartweed, cocklebur*, jimsonweed*, morningglory*, and velvetleaf*.

*Partially controlled.

Apply **Mestalin** + Banvel preemergence. Broadcast 1.0 pt./A of Banvel with 1.33 pts./A of **Mestalin** on *medium soils*, or with 1.33-1.67 pts./A of **Mestalin** on *fine soils*. Do not apply on *coarse soils* or on soils with less than 2.5% organic matter. Apply this tank mixture to the soil surface at planting or after planting, but before corn emerges. Plant corn at least 1.5 inches deep and apply behind planting equipment, avoiding incorporation by the planter wheel or other seed covering device. Do not incorporate before corn emergence. If it is necessary to rotary hoe to break the soil crust, do not disturb the soil more than ½ inch deep.

Restriction:

1. Do not apply with aircraft.

Precautions:

1. Avoid drift to sensitive nontarget plants, such as soybeans, during application, or injury may occur.

Postemergence for Control of Pigweed (Mid-Atlantic states, including DE, MD, PA, VA, and WV):

Apply 1.0 – 1.5 pts./A of **Mestalin** + 0.5 – 1.0 pt./A of Banvel or Clarity® by ground equipment when pigweed plants are less than 3 inches tall and before corn exceeds 5 inches in height in a minimum of 20 gals. of spray per acre. Use the lower rate on coarse-textured and low organic matter soils. Use the higher rate on fine-textured and high organic matter soils.

Restriction:

1. Do not apply with aircraft.

Precautions:

1. Avoid drift to sensitive nontarget plants, such as soybeans, during application, or injury may occur.

TANK MIXTURE WITH AATREX OR PRINCEP + PROWL FOR PROLONGED CONTROL OF LAMBSQUARTERS AND PIGWEED IN FIELD CORN ONLY (NORTHEAST U.S., INCLUDING MI, IN, KY, AND STATES EAST OF THESE)

For prolonged control of lambsquarters and pigweed, in addition to a broad spectrum of annual broadleaf and grass weeds, **Mestalin** in tank mix combination with AAtrex* or Princep + Prowl 4E may be applied after planting, but before corn or weeds emerge. Apply by ground equipment in a minimum of 10 gals. of water or 20 gals. of liquid fertilizer. Apply by air in a minimum of 5.0 gals. of water. Refer to Table 3 of this label for rates of **Mestalin**, AAtrex, or Princep to be applied. Apply Prowl 4E according to the rates in Table 4.

*Do not apply **Mestalin** in tank mix combination with AAtrex 80W+ Prowl, as this combination is not compatible. Other AAtrex formulations may be used.

Mixing Instructions: See Comment No. 1 following Table 2.

Table 4: Prowl 4E – Broadcast Rates Per Acre

Soil Texture	Percent Organic Matter in Soil		
	Less Than 1.5%	1.5 – 3%	Over 3%
COARSE	1.5 – 2.0 pts.	2.0 pts.	3.0 pts.
MEDIUM	2.0 pts.	3.0 pts.	3.0 pts.
FINE	2.0 pts.	3.0 pts.	3.0 pts.

Observe all directions for use, precautions, and limitations on the respective product labels when applying these products in tank mix combination. Refer to the Prowl 4E label for replanting instructions in the event of crop loss.

TANK MIXTURE WITH AATREX OR PRINCEP, OR AATREX + PRINCEP WITH GRAMOXONE 3LB, LANDMASTER BW, TOUCHDOWN TOTAL, OR ROUNDUP FOR MINIMUM-TILLAGE OR NO-TILLAGE SYSTEMS

In minimum-tillage or no-tillage systems where corn is planted directly into a cover crop, state seedbed, established sod, or previous crop residues, the contact herbicides Gramoxone 3LB, Landmaster BW, Touchdown Total, or Roundup brands should be tank mixed with **Mestalin** + AAtrex, **Mestalin** + Princep, or **Mestalin** + AAtrex + Princep. See Comment No. 7 following Table 2. The **Mestalin**, **Mestalin** + AAtrex or Princep, or **Mestalin** + AAtrex + Princep portion of the tank mixture provides preemergence control of the weeds listed on this label in the tank mixture section for **Mestalin**, **Mestalin** + AAtrex or Princep, or **Mestalin** + AAtrex + Princep – Preplant Surface, Preplant incorporated, or Preemergence.

Application:

Apply before, during, or after planting, but before the corn emerges. Add Gramoxone 3LB, Landmaster BW, Touchdown Total, or Roundup brands and apply as directed on the product label.

Gramoxone 3LB:

Apply as directed on the product label. This treatment will not control weeds taller than 6 inches.

Restrictions:

Do not apply combinations containing Gramoxone 3LB in suspension-type liquid fertilizers, as the activity of paraquat will be reduced.

Landmaster BW:

27-54 oz./A depending on weed species and size. See the Landmaster BW label for weeds controlled, recommended rates for specific weeds, and other information concerning use.

Touchdown Total or Roundup Brands:

See the Touchdown Total or Roundup brand label for weeds controlled, recommended rates, and other use directions.

Apply in 20-60 gals. of water or fluid fertilizer per acre with ground equipment.

On *coarse soils*, apply 1.0 pt./A of **Mestalin** with 1.3 lbs. of AAtrex Nine-O* or Princep Caliber 90*, or with 0.7 lb. of AAtrex Nine-O** + 0.7 lb. of Princep Caliber 90**. On *medium soils*, apply 1.33 pts./A of **Mestalin** with 1.8 lbs. of AAtrex Nine-O or Princep Caliber 90, or with 0.9 lb. of AAtrex Nine-O + 0.9 lb. of Princep Caliber 90. On *fine soils****, apply 1.33-1.67 pts./A of **Mestalin** with 1.8-2.2 lbs. of AAtrex Nine-O or Princep Caliber 90, or with 0.9-1.1 lbs. of AAtrex Nine-O + 0.9-1.1 lbs. of Princep Caliber 90.

* Use Princep in preference to AAtrex when heavy infestations of crabgrass or fall panicum are expected.

When using the tank mixture of **Mestalin + AAtrex Nine-O + Princep Caliber 90, use equal rates of AAtrex and Princep as shown when heavy broadleaf weed infestations are expected. When heavy infestations of crabgrass or fall panicum are expected, use a 1:2 ratio of AAtrex + Princep instead of the 1:1 ratio given. (Example: Total AAtrex Nine-O + Princep Caliber 90 = 1.8 lbs./A, use 0.6 lb. of AAtrex + 1.2 lbs. of Princep, respectively.) Refer to Comment No. 2

following Table 2 for AAtrex 4L and Princep 4L conversions.

***For cocklebur, yellow nutsedge, and velvetleaf control on *fine-textured soils* above 3% organic matter, apply 2.25 lbs./A of AAtrex Nine-O, or equivalent rate of AAtrex 4L, or the same total amount of AAtrex + Princep with 1.33-1.67 pt./A of **Mestalin**.

TANK MIXTURE WITH AATREX; OR AATREX + 2,4-D; OR AATREX + 2,4-D + BANVEL FOR MINIMUM-TILLAGE OR NO-TILLAGE SYSTEMS

In minimum-tillage or no-tillage systems where corn is planted directly into a cover crop, stale seedbed, established sod, or previous crop residues, **Mestalin** applied in combination with AAtrex will kill most emerged small annual weeds. Apply **Mestalin** + AAtrex before, during, or after planting, but before corn emerges, according to the rates in Table 3.

Where heavy crop residues exist, add 0.8-1.6 pts./A of an appropriately labeled 3.8 lbs. a.i./gals. of 2,4-D amine (such as Weedar 64, Weedar 64A, DMA-4 Herbicide, Weedone® 638 or Formula 40) to the spray tank last and apply in a minimum of 25 gals. of carrier per acre.

As carriers, nitrogen solutions and complete liquid fertilizers, applied before corn emergence, enhance burndown of existing weeds, and therefore, are recommended instead of water. Add X-77 surfactant at 1.0-2.0 qts./100 gals. of diluted spray, or another appropriate surfactant at its recommended rate, or add crop oil concentrate plus 28% liquid nitrogen (or equivalent). Apply before weeds exceed 3 inches in height. If alfalfa is present, add Banvel to the spray mixture at 0.33-0.5 pt./A and apply before alfalfa exceeds 6 inches in height.

For fields with existing sod grasses (e.g., brome grass, orchard grass, rye, or timothy), when existing weeds exceed 3 inches in height or when very dry conditions exist, add Gramoxone 3LB at the rate indicated on the product label in place of or in addition to 2,4-D, as indicated above. Do not apply Gramoxone 3LB in suspension-type liquid fertilizer. Observe all directions for use, precautions, and limitations on the respective product labels when applying these products in tank mix combination.

TANK MIXTURE WITH MARKSMAN IN CONSERVATION TILLAGE - FIELD AND SILAGE CORN

In conservation tillage systems where corn is planted directly into a cover crop or previous crop residue, **Mestalin** + Marksman will kill most emerged small annual weeds. Apply **Mestalin** + Marksman before, during, or after planting, but before corn emergence on *medium* and *fine soils* with greater than 2.5% organic matter. For fields with existing vegetation exceeding 3 inches in height or when very dry conditions exist, add Gramoxone 3LB at its standard rate. **Mestalin** + Marksman may be applied postemergence to corn less than 3 inches tall and before weedy grasses exceed the 2-leaf stage.

As carriers, nitrogen solutions and complete liquid fertilizers, applied before corn emergence, enhance burndown of existing weeds. Do not apply Gramoxone 3LB in suspension-type liquid fertilizer or use on emerged corn.

Refer to the Marksman label and follow all directions, limitations, precautions, and information regarding application and use in corn.

TANK MIXTURE WITH BALANCE PRO – FIELD CORN ONLY

Mestalin and Balance Pro have a complementary response and weed control profile which allows various tank mix rate combinations to be considered. The addition of Balance Pro will improve the control of certain problem weeds, including Texas panicum, woolly cupgrass, and wild proso millet. **Mestalin** improves both the duration and spectrum of annual grass and small-seeded broadleaf weed control, in particular foxtails (yellow foxtail) and witchgrass, and yellow nutsedge.

To reduce the risk of an adverse crop response, the Balance Pro label does not allow applications to *coarse-textured soils* with less than 1.5% organic matter and warns about applications to all soils with less than 1.5% organic matter or with pH greater than 7.5, as well as applications made to areas in fields with clay knolls, eroded hillsides, and exposed subsoil. **Mestalin** has no adverse crop response warnings or use restrictions.

Listed below are compensating rate options for combinations of **Mestalin** and Balance Pro, i.e., higher rates of **Mestalin** are combined with lower rates of Balance Pro and vice versa. Select a rate option for **Mestalin** plus Balance Pro by weighing the intensity of problem weed pressure (population presence and density) and your acceptance for risk of an adverse crop response. For example, where Texas panicum, woolly cupgrass, or wild proso millet is a primary target weed, use a tank-mix combination with a higher Balance Pro rate for the given soil type.

Where your acceptance of an adverse crop response risk is low and/or a more general weed spectrum is targeted (especially yellow foxtail, witchgrass, or yellow nutsedge), use a tank-mix combination with a higher **Mestalin** rate for the given soil type. Where a target weed is listed as controlled on both product labels, a tank-mix combination option including intermediate rates of both products may be used. Where a target weed is listed as controlled on only one product label, do not apply a rate of that product below what is recommended for that weed on the individual product label, or unacceptable control may result. Follow all other directions for use, rate limitations, precautions, and restrictions on both the **Mestalin** and Balance Pro product labels.

For coarse-textured soils: Where 1.5 or 1.88 oz./A of Balance Pro is used, 1.0-1.33 pts./A of **Mestalin** may be applied. Do not use Balance Pro on *coarse-textured soils* with less than 1.5% organic matter.

For medium-textured soils: Where 1.5 oz./A of Balance Pro is used, rates as low as 1.33 pts./A of **Mestalin** may be applied. Where 1.88 or 2.25 oz./A of balance Pro is used, rates as low as 1.0 pts./A of **Mestalin** may be applied. **Mestalin** can be used in combinations with Balance Pro at rates up to 1.67 pts./A on *medium-textured soils*.

For fine-textured soils: Where 1.5 oz./A of Balance Pro is used, rates as low as 1.33 pts./A of **Mestalin** may be applied if the soil organic matter is less than 3%; if the soil organic matter is 3% or greater, 1.67 pts./A of **Mestalin** should be applied. Where 1.88 or 2.25 oz./A of Balance Pro is used, rates as low as 1.33 pts./A of **Mestalin** may be applied. Where 3.0 oz./A or more of Balance Pro is used, rates as low as 1.0 pt./A of **Mestalin** may be applied. **Mestalin** can be used in combinations with Balance Pro at rates up to 2.0 pts./A on *fine-textured soils* if the organic matter is 3% or greater.

TANK MIXTURES FOR POSTEMERGENCE SALVAGE WEED CONTROL IN FIELD CORN ONLY

For postemergence control of weeds in specific types of field corn, the **Mestalin** combinations listed below may be used. Full season weed control from early preplant, preplant incorporated, or preemergence treatments can lead to maximum yield potential under competition-free conditions. However, if control of emerged weeds is needed, a postemergence program listed below can be applied to provide residual control for the remainder of the season.

Restrictions:

1. Follow all label directions, instructions, precautions, and limitations for each product used.
2. Do not use fluid fertilizer with these mixtures or corn injury may occur.
3. For each tank mixture with **Mestalin**, apply only to the specific field corn type specified on the tank mix product label.

Precaution:

1. In row weed control may be reduced because of lack of coverage when applied to corn over 4 inches tall.

Mestalin + Liberty Herbicide or Ignite® 280 SL Herbicide: Postemergence Use in LibertyLink® Corn or Corn Warranted by Bayer CropScience as Being Tolerant to Liberty Herbicide or Ignite 280 SL Herbicide

These tank mixtures can be applied postemergence to weeds and corn from seed designated as LibertyLink or corn warranted by Bayer CropScience as being tolerant to Liberty Herbicide or Ignite 280 SL Herbicide. Liberty provides postemergence control of a broad spectrum of grass and broadleaf weeds and the **Mestalin** provides residual control of grasses and certain broadleaf weeds listed in the label section **Mestalin Applied Alone - Weeds Controlled**. Refer to section **Mestalin Alone - Preplant Incorporated or Preemergence** and use the minimum rate per soil texture and organic matter classification for season-long residual control from this tank mix combination with Liberty Herbicide or Ignite 280 SL Herbicide. Refer to the Liberty Herbicide or Ignite 280 SL Herbicide label for the postemergence application rates according to weed species and their maximum height at the time of postemergence application. Where multiple weed species are present, use the highest rate recommended to control the species and growth stages present.

Follow all applicable use directions, limitations, precautions, and information regarding application to corn on the **Mestalin** and Liberty Herbicide or Ignite 280 SL Herbicide labels. Where difficult species and/or severe weed populations are expected, use the maximum rate where rate ranges are listed.

Mestalin + Touchdown Total or Roundup Brands for Postemergence Application to Glyphosate-Tolerant Corn (e.g., Roundup Ready® or Agrisure® GT)

The tank mixture of **Mestalin** + Touchdown Total or Roundup brands can be applied postemergence to weeds and to corn designated as glyphosate-tolerant. Application may be applied postemergence to glyphosate-tolerant corn from emergence until corn reaches 30 inches tall or the V8 stage (8 leaves with collars), whichever comes first. This mixture will provide postemergence control of weed species on the Touchdown Total or Roundup brand label and residual control of weed species on the **Mestalin** label. Use the minimum **Mestalin** rate postemergence with Touchdown Total or Roundup in glyphosate-tolerant corn as specified in the **Corn - Mestalin - Preplant Incorporated or Preemergence** section of this label according to soil texture and organic matter. Refer to the Touchdown Total or Roundup brand label and follow appropriate use directions, application procedures, precautions, and limitations.

Refer to the Touchdown Total or Roundup brand label for directions for control of problem species. Where difficult species and/or severe weed populations are expected, use the maximum rate where rate ranges are listed.

Mestalin + Touchdown Total or Roundup Brands + AAtrex for Postemergence Application to Glyphosate-Tolerant Corn (e.g., Roundup Ready or Agrisure GT)

The tank mixture of **Mestalin** + AAtrex + Touchdown Total or Roundup brands can be applied postemergence to weeds and to corn designated as glyphosate-tolerant. Application may be applied postemergence to glyphosate-tolerant corn from emergence up to 12 inches in height. This mixture will provide postemergence control of weed species on the Touchdown Total or Roundup brand label and residual control of weed species on the **Mestalin** + AAtrex label. Use the minimum **Mestalin** + AAtrex rate postemergence with Touchdown Total or Roundup in glyphosate-tolerant corn as specified in the **Corn - Mestalin Combinations - Tank Mixture With AAtrex or Princep, or AAtrex + Princep - Preplant Incorporated or Preemergence** section and **Table 3** of this label according to soil texture and organic matter.

Follow all applicable use directions, limitations, precautions, and information regarding application to corn on the **Mestalin**, AAtrex, and Touchdown Total or Roundup brand labels for application to glyphosate-tolerant corn. Where difficult species and/or severe weed populations are expected, use the maximum rate where rate ranges are listed.

COTTON – MESTALIN ALONE

Application:

Apply **Mestalin** preemergence only in Area 1* at the rate of 0.5 – 1.0 pts./A on sandy loams, 0.66 – 1.33 pts./A on *medium soils*, or 1.0 – 1.33 pts./A on *fine soils*. Apply **Mestalin** preplant incorporated or preemergence in Area 2** at 1.0 pt./A on sandy loams, 1.0 – 1.33 pts./A on *medium soils*, or 1.33 pts./A on *fine soils*. Apply **Mestalin** postemergence to cotton and preemergence to weeds at 0.5 – 1.33 pts./A, according to the state limitations in the follow Postemergence section.

* Area 1 = AR, KS, LA, MS, TN, and Bootheel of MO

** Area 2 = NM, OK, and TX

Fall Application for Italian Ryegrass Control:

Mestalin may be applied for residual control of glyphosate-resistant Italian ryegrass (*Lolium multiflorum*). Apply **Mestalin** at 1.33-1.67 pts./A in the fall (September 1 - December 1) after harvest of the previous crop and prior to Italian ryegrass emergence. Use the lower **Mestalin** rate for coarse-textured soils and the higher rate for fine-textured soils. A tillage operation may precede the application. Do not incorporate to a depth greater than 2-3 inches if tillage follows the application of **Mestalin**. For fall applications after emergence of glyphosate-resistant Italian ryegrass, Gramoxone 3LB can be tank mixed with **Mestalin** to control emerged ryegrass. Refer to the Gramoxone 3LB label for specific rates, application instructions, and restrictions. Other registered herbicides may be tank mixed with **Mestalin** for control or improved control of other weeds present at the time of application.

Restrictions:

1. Do not apply **Mestalin** to frozen ground.
2. If a spring application is made, the combined total amount of **Mestalin** applied in the fall plus the spring must not exceed the maximum seasonal S-metolachlor rate for cotton (2.6 pts./A, depending on soil texture).

Preplant Incorporated (NM, OK, and TX Only):

Apply to the soil and incorporate into the top inch of soil immediately before planting, at planting, or after planting, but before crop or weed emerge. Use a rolling cultivator or similar implement to uniformly incorporate not more than 1 inch deep. Use a preplant incorporated application if furrow irrigation is used or when a period of dry weather after application is expected. Where furrow irrigation is used, wet the top of the bed for best results. If the crop is to be planted on beds, apply and incorporate after bed formation. Cotton should be planted below the zone of incorporation; i.e., at least 1 inch on *fine soils* and 1.5 inches on *coarse* and *medium soils*. If incorporated prior to planting, use a planter that will result in a minimum of soil disturbance.

Restrictions: For best control of yellow nutsedge and suppression of seedling johnsongrass, apply **Mestalin** preplant incorporated at the maximum rate for the soil texture, whether applied alone or mixed with Caparol 4L.

Preemergence:

Apply to the soil surface at planting or after planting, but before weeds or crop emerge.

Postemergence:

Apply **Mestalin** broadcast over the top or directed to the soil surface according to the rate limitations listed below by state. Over-the-top postemergence application may be made not later than 100 days before harvest, and directed-postemergence application may be made not later than 80 days before harvest. Application before weeds emerge or after clean cultivation to remove existing weeds is necessary since **Mestalin** will not control emerged weeds.

Mestalin postemergence may be applied over any previous registered herbicide treatment. In sprinkler-irrigated areas, sprinkler irrigate after application with 1/2-1 inch of water (1/2 inch on *coarse-textured soils* to 1 inch on *fine-textured soils*) to incorporate **Mestalin**. In furrow-irrigated areas, apply **Mestalin**, incorporate with a rolling cultivator or similar implement that provides uniform shallow incorporation (2 inches or less), and then irrigate. In non-irrigated areas, if at least 1/2 inch of rainfall does not occur within 10 days after application, cultivate with a rolling cultivator or similar implement that provides uniform shallow incorporation of **Mestalin**.

VA, NC, SC, GA, FL, and AL: Apply **Mestalin** postemergence at 1.0-1.33 pts./A.

TN, AR, KS, MS, MO, and LA: Apply **Mestalin** postemergence at 0.5-1.33 pts./A.

TX, OK, NM, AZ, CA, and Clay Soils in AR: Apply **Mestalin** postemergence at 1.0-1.33 pts./A before August 1.

Multiple Applications: Where weed pressure is heavy, difficult-to-control species are expected, or re-infestation may occur, and a weed control program is used, multiple applications of **Mestalin** are effective when used as part of the weed control program. Apply as a preplant incorporated or preemergence treatment and follow with an application postemergence to cotton before weeds emerge or after clean cultivation to remove existing weeds, since **Mestalin** will not control emerged weeds. Apply **Mestalin** postemergence over a previous preplant or preemergence **Mestalin** application as shown in the following table.

State	Multiple Mestalin Applications to Cotton		
	Preplant Incorporated or Preemergence (Pt./A)	+	Postemergence (Pt./A)
MS, LA, TN, AR, KS, MO	0.5 – 1.33 (Preemergence only)	+	0.5 – 1.33
TX, OK, NM	1.0 – 1.33	+	1.0 – 1.33 before August 1
NC, VA	1.0 – 1.33 (Preemergence only)	+	1.0 – 1.33

In sprinkler-irrigated areas, sprinkler irrigate after application with 1/2-1 inch of water (1/2 inch on *coarse-textured soils* to 1 inch on *fine-textured soils*) to incorporate **Mestalin**. In furrow-irrigated areas, apply **Mestalin**, incorporate

with a rolling cultivator or similar implement that provides uniform shallow incorporation (2 inches or less), and then irrigate. In nonirrigated areas, if at least 1/2 inch of rainfall does not occur within 10 days after application, cultivate with a rolling cultivator or similar implement that provides uniform shallow incorporation of **Mestalin**.

Restrictions: For best control of yellow nutsedge and suppression of seedling johnsongrass, apply **Mestalin** preplant incorporated, preemergence, or postemergence to cotton and preemergence to weeds at the maximum rate for the soil texture, whether applied alone or in combinations. Do not apply more than a total of 2.0 pts./A on *coarse soils* or 2.6 pts./A of **Mestalin** on *medium* and *fine soils* during a growing season. These treatments may be applied over previous registered herbicide treatments.

Precautions: To avoid crop injury:

1. Do not apply **Mestalin** on sand or loamy sand soils, or in areas where water is likely to "pond" over the bed;
2. To avoid concentration in the seed furrow, do not make broadcast applications of **Mestalin** to cotton planted in furrows more than 2 inches deep. Band applications may be made to cotton planted in furrows deeper than 2 inches, but band width should not exceed the width of the bottom of the furrow;
3. In furrow-planted cotton, to avoid concentration in the furrow and potential injury, do not apply **Mestalin** postemergence until after first "knifing" or cultivation to level soil surface;
4. Do not apply over the top in fluid fertilizer or any other adjuvant, surfactant, oil, or other pesticide not recommended in the cotton section of this label, or injury may occur;
5. Do not apply on Taloka silt loam;
6. Do not use in Gaines County, TX.

Restrictions: Do not graze or feed forage or fodder from cotton to livestock.

COTTON – MESTALIN COMBINATIONS

TANK MIXTURE WITH CAPAROL 4L

Mestalin tank mixtures with Caparol 4L may be applied preplant incorporated or preemergence in water or fluid fertilizer. When fluid fertilizer is used as a carrier for **Mestalin**, either alone or in combination with Caparol 4L, mix only the amount that will be sprayed in one operation. These mixtures should not be allowed to stand without agitation. Only use water as a carrier for postemergence-directed application.

In addition to those weeds controlled by **Mestalin** alone, **Mestalin** + Caparol 4L, applied preplant incorporated or preemergence, also controls the following weeds: junglerice, wild oats, annual morningglory, groundcherry, hairy nightshade, lambsquarters, malva, mustard, prickly sida (teaweed), purslane, ragweed, and shallow-germinating seedlings of cocklebur and coffeeweed. As a postemergence-directed application, Caparol 4L provides postemergence control and residual control of weeds on its label, while **Mestalin** provides residual control of weed species on its label. **Mestalin** will not control emerged weeds.

Preplant incorporated or Preemergence:

Apply **Mestalin** + Caparol 4L, either preplant incorporated or preemergence, using the appropriate rate from Table 5. Plant cotton below the zone of incorporation; i.e., at least 1.0 inch on *fine soils* and 1.5 inches on *coarse* and *medium soils*. If incorporated before planting, use a planter that will result in a minimum of soil disturbance.

Table 5: Mestalin + Caparol 4L – Cotton (NM, OK, TX)

Use Areas	Soil Texture	Broadcast Rates Per Acre	
		Mestalin	Caparol 4L
ALL	Sand, loamy sand	DO NOT USE	
OK, Blacklands and Gulf Coast of TX	Loams	0.8-1.33 pts.	2.4 pts.
	Clays	1.33 pts.	4.8 pts.

Use Areas	Soil Texture	Broadcast Rates Per Acre	
		Mestalin	Caparol 4L
Rio Grande Valley of TX	Loams	0.8-1.33 pts.	3.2 pts.
	Clays	1.33 pts.	4.8 pts.
NM; High Plains, Rolling Plains, Edwards Plateau of TX; and Southwest TX	Sandy loam	0.8-1.0 pt.	1.6 pts.
	Loams	0.8-1.33 pts.	2.4 pts.
	Sandy clay loams	1.33 pts.	2.4 pts.
	Other clay soils	1.33 pts.	3.2 pts.

Postemergence Directed (AR, AZ, CA, LA, MS, NM, OK, TN, TX, and MO):

Mestalin may be tank mixed with Caparol 4L in water and applied postemergence directed in cotton for control of emerged weeds listed on the Caparol 4L label and residual preemergence control of weeds controlled by **Mestalin** and Caparol 4L, or application may be made after cultivation for residual preemergence control. These treatments may be applied over previous registered treatments, including **Mestalin**, provided the maximum label rate of any product is not exceeded. Do not apply over the top of cotton or injury may occur.

Apply **Mestalin** + Caparol 4L in a minimum of 20 gals. of spray volume per acre. Follow the directions, limitations, and precautions on the Caparol 4L label when Caparol 4L is applied as a postemergence-directed application. Refer to the directions, limitations, and precautions for use of **Mestalin** under the **Cotton - Mestalin Alone - Postemergence** section.

Precautions:

To avoid concentration in the seed furrow, do not make broadcast applications of **Mestalin** + Caparol 4L to cotton planted in furrows more than 2 inches deep. Band applications may be made to cotton planted in furrows deeper than 2 inches, but band width should not exceed the width of the bottom of the furrow.

To avoid crop injury:

1. Do not apply on sand or loamy sand soils, or in areas where water is likely to "pond" over the bed;
2. Do not apply in cut areas of newly leveled fields, or in areas of excess salt;
3. Do not apply to glandless cotton varieties;
4. Do not apply on Taloka silt loam.
5. Do not use in Gaines County, TX.

Restrictions:

Do not graze or feed forage or fodder from cotton to livestock.

Refer to the Caparol 4L label for further instructions and limitations.

TANK MIXTURE WITH COTORAN DF

Apply **Mestalin** in tank mixture with Cotoran DF preemergence for control of those weeds controlled by **Mestalin** alone and those as listed on the Cotoran DF label. This combination will also control spotted spurge, hyssop spurge, nodding spurge, and prostrate spurge. Apply to the soil surface at planting or after planting, but before weeds or crop emerge, using the appropriate rates from Table 6. Apply the tank mixture postemergence to cotton but preemergence to weeds, or apply postemergence to both cotton and broadleaf weeds for control of weeds on the Cotoran DF label. Apply as a directed, semi-directed, or over-the-top spray. **Mestalin** will not control emerged weeds but will provide preemergence control of species on its label. Where rate ranges are given for Cotoran DF, use the higher rate when applying postemergence to weeds that are 2 inches or less. These treatments may be applied over previous registered treatments, including **Mestalin**, provided the maximum label rate of any product is not exceeded.

Mixing Instructions: Incompatibility may occur when tank mixing **Mestalin** and Cotoran DF. To help overcome this condition, fill the spray tank 1/4 full with water or fluid fertilizer and start agitation, add the Cotoran DF and allow it to become dispersed. Add X-77 at 0.5% volume/volume final spray (4.0 pts./100 gals.), then add the **Mestalin**

and finally the rest of the water or fluid fertilizer. Agitate during mixing and application to maintain a uniform suspension. Do not use fluid fertilizer as a carrier for postemergence applications.

Table 6: Mestalin + Cotoran 4L – Cotton

Soil Texture	Broadcast Rates Per Acre		
	Mestalin (pts.)		Cotoran 4L (lbs.)
	Area 1*	Area 2**	
Sand, loamy sand	DO NOT USE		
Sandy loam	0.5-1.0	0.8-1.0	1.2
Loam, silt loam, silt	0.66-1.33	1.0-1.33	1.2-1.9
Fine soil	1.0-1.33	1.33	1.9-2.4

* Area 1 = AR, LA, MS, Bootheel of MO and TN

** Area 2 = Eastern OK, Gulf Coast, Rio Grande Valley, and Eastern TX

Precautions:

1. Do not apply **Mestalin** + Cotoran on sand or loamy sand soils, or in areas where water is likely to “pond” over the bed, or crop injury may occur.
2. To avoid concentration in the seed furrow, do not make broadcast applications of **Mestalin** + Cotoran to cotton planted in furrows more than 2 inches deep. Band applications may be made to cotton planted in furrows deeper than 2 inches, but band width should not exceed the width of the bottom of the furrow.
3. The use of Cotoran following the use of a systemic insecticide at planting may result in crop injury.
4. Do not use on Taloka silt loam or crop injury may occur.
5. Do not use in Gaines County, TX.

Restrictions:

Do not feed treated forage or gin trash to livestock, or graze treated areas.

Refer to the Cotoran labels for further instructions, precautions, and limitations.

TANK MIXTURE OF MESTALIN OR MESTALIN + COTORAN WITH GRAMOXONE 3LB, TOUCHDOWN TOTAL, OR ROUNDUP BRANDS FOR MINIMUM-TILLAGE OR NO-TILLAGE SYSTEMS

In minimum-tillage or no-tillage systems where cotton is planted directly into a cover crop, stale seedbed, or previous crop residues, the contact herbicides Gramoxone 3LB, Touchdown Total, or Roundup brands may be added to a tank mix of either **Mestalin** or **Mestalin** + Cotoran. When used as directed, the Gramoxone 3LB portion of the tank mixture controls most emerged weeds and suppresses many perennial weeds. Touchdown Total or Roundup combinations will control emerged annual and perennial weeds when applied as directed on the Touchdown Total or Roundup label. The **Mestalin** and **Mestalin** + Cotoran portion of the tank mixture provides preemergence control of the weeds listed on this label in the **Mestalin** and **Mestalin** + Cotoran sections, respectively.

Refer to the label of each product used in combination and observe the planting details, information regarding application, geographical restrictions, and all other precautions and limitations. Refer to **Mixing Instructions** under **Tank Mixture with Cotoran 4L** section.

Application:

Apply before, during, or after planting, but before the cotton emerges. Apply **Mestalin** at 0.8-1.0 pt./A on sandy loams, *medium-*, and *fine-textured soils*. Refer to Table 6 for the Cotoran 4L rates.

Gramoxone 3LB:

Apply as directed on the product label. This treatment will not control weeds taller than 6 inches.

Restrictions:

Do not apply combinations containing Gramoxone 3LB in suspension- type liquid fertilizers, as the activity of paraquat will be reduced.

Touchdown Total or Roundup Brands:

See the Touchdown Total or Roundup label for weeds controlled, recommended rates, and other use directions.

Restrictions:

1. Do not apply **Mestalin** + Cotoran 4L + Roundup in tank mixture because of compatibility problems.
2. Do not use in Gaines County, TX.

Apply in 20-60 gals. of water or fluid fertilizer per acre with ground equipment.

Precautions:

1. If heavy rain occurs soon after application, crop injury may result, especially in poorly drained areas where water stand for several days, or where the seeding slit has not been properly closed.
2. Refer to the Cotoran labels and the **Tank Mixture with Cotoran 4L** section of this label for further instructions, precautions, and limitations.

TANK MIXTURE WITH MSMA, MSMA + CAPAROL, OR MSMA + COTORAN

Mestalin may be tank mixed with MSMA in water and applied postemergence directed for control of emerged weeds listed on the MSMA product label and residual preemergence control of weeds controlled by **Mestalin**. The addition of Caparol or Cotoran will add control of weed species on their respective labels.

Postemergence Directed (AL, AR, AZ, CA, FL, GA, LA, MS, NC, NM, OK, SC, TN, TX, VA, and Bootheel of MO):

Apply **Mestalin** + MSMA postemergence directed to cotton at least 3 inches tall according to the directions, limitations, and precautions on the MSMA product label, as well as the directions, limitations, and precautions for use of **Mestalin** in the section for **Cotton - Mestalin Alone - Postemergence**. Do not apply after first cotton bloom. These treatments may be applied over previous registered treatments, including **Mestalin**, provided the maximum label rate of any product is not exceeded. Cotoran or Caparol may be added to the **Mestalin** + MSMA tank mixture according to the respective label directions for application to cotton at least 3 inches tall. When these mixtures are used, follow the mixing instructions for **Mestalin** + Caparol or Cotoran and then add the MSMA product.

Do not use **Mestalin** in tank mix with premixes of MSMA plus herbicides other than those registered for use in tank mixture with **Mestalin** on cotton.

TANK MIXTURE WITH TREFLAN FOR POST-DIRECTED FOLLOWED BY SOIL INCORPORATION APPLICATIONS

Mestalin may be applied as a tank mixture with Treflan in cotton for improved late-season weed control when used as an incorporated lay-by type application. This combination may be applied after the cotton is at least 3 inches tall and has reached the 4 true-leaf stage. Make the application directed to the soil surface and away from the crop foliage. Incorporate using a sweep or rolling type cultivator to provide uniform and shallow mixing into the top 2 inches of soil. Refer to each product label for the appropriate application rates by soil type and for this application timing, and follow all product use limitations and restrictions.

TANK MIXTURE WITH TOUCHDOWN TOTAL OR ROUNDUP BRANDS FOR USE ON ROUNDUP READY COTTON ONLY

Apply **Mestalin** as a tank mixture with Touchdown Total or Roundup in water postemergence over-the-top or postemergence directed for control of emerged weeds listed on the Touchdown Total or Roundup labels and for residual preemergence control of weeds listed on the **Mestalin** label. See the **Cotton - Mestalin Alone – Postemergence** section of this label for rates and timings of **Mestalin** and follow the Touchdown Total and Roundup label for their respective rates, application methods, and application timing restrictions. Do not add additional spray adjuvants, surfactants, fertilizer additives, or pesticides to this tank mixture if applied postemergence over-the-top or

unacceptable injury may occur. Refer to the Touchdown Total or Roundup brand label and follow appropriate use directions, application procedures, precautions, and limitations.

Restrictions:

1. Do not apply this tank mixture postemergence to any cotton variety unless it is designated glyphosate-resistant and unless the Touchdown Total or Roundup formulation being used is registered for postemergence use in glyphosate-resistant Cotton.
2. Do not apply Touchdown Total or Roundup postemergence over-the-top to cotton past the growth stage limit specified on their respective labels.
3. Do not use on sand or loamy sand soils in Gaines County, TX.

Precautions:

1. Postemergence over-the-top applications of this tank mixture may cause temporary injury in the form of necrotic spotting to exposed cotton leaves, which will not affect normal plant development.

SOYBEAN, IMMATURE SEED

Mestalin may be applied preplant or preemergence for the control or suppression of grass and small-seeded weeds in immature-seed soybean or other food-grade soybeans. For specific rates, see the rate table listed below.

Preplant Surface-Applied:

For minimum-tillage or no-tillage systems only, **Mestalin** alone may be applied up to 45 days before planting. Use only split applications for treatments made 30-45 days before planting, with 2/3 the recommended broadcast rate for the crop and soil texture applied initially and the remaining 1/3 applied at planting. Treatments less than 30 days before planting may be made either as a split or a single application. If weeds are present at the time of treatment, apply in a tank mixture combination with a contact herbicide (e.g., Gramoxone 3LB, Touchdown Total, or Roundup). Observe directions for use, precautions, and restrictions on the label of the contact herbicide. To the extent possible, do not move treated soil out of the row or move untreated soil to the surface during planting, or weed control will be diminished.

Preplant Incorporated:

Apply **Mestalin** to the soil and incorporate into the top 2 inches of soil within 14 days before planting, using a finishing disk, harrow, rolling cultivator, or similar implement capable of providing uniform 2-inch incorporation. Use a preplant incorporated application if furrow irrigation is used or when a period of dry weather after application is expected. If crop will be planted on beds, apply and incorporate **Mestalin** after bed formation, unless specified otherwise.

Preemergence:

Apply **Mestalin** during planting (behind the planter) or after planting, but before weeds emerge.

Mestalin Broadcast Rates Per Acre

Soil Texture	Percent Organic Matter in Soil	
	< 3%	≥ 3%
Medium	1.33-1.67 pts.	1.33-1.67 pts.
Fine	1.33-1.67 pts.	1.67-2.0 pts.

Precautions:

1. **Mestalin** will not control emerged weeds.

Restrictions:

1. Do not cut for hay within 120 days following a **Mestalin** application.
2. Do not use for forage within 60 days following a **Mestalin** application.
3. Do not apply more than 2.0 pts./A of **Mestalin** during any one crop year.

GRASSES GROWN FOR SEED (ID, OR, WA) - MESTALIN APPLIED ALONE

To control weeds and volunteer grasses in established grasses grown for seed, apply **Mestalin** to established stands of tall fescue, orchard grass, perennial ryegrass, fine fescue, bentgrass, and Kentucky bluegrass just before, during, or immediately following the first fall rains or just before or during a late summer or early fall irrigation, but before target grasses emerge. The seed crop must have had one seed harvest or been established at least one year. The post-harvest residue (straw) should be evenly spread, removed, or burned before applying **Mestalin**.

Rainfall or

irrigation is required after application and before weed, emergence for best control. **Mestalin** will provide preemergence control/suppression of volunteer seedlings of perennial ryegrass, fine fescue species, tall fescue, orchardgrass, bentgrass, and Kentucky bluegrass. **Mestalin** will control those weed species listed in the **Mestalin Alone** section of the **Mestalin** label and will suppress or control rattail fescue, annual bluegrass, Italian ryegrass, California brome, downy brome, and roughstalk bluegrass.

Apply **Mestalin** by ground equipment in a minimum of 10 gallons of water per acre using the rate listed below according to grass species.

Established Grass Crop Grown for Seed	Pt./A
Fine fescue species	1.0
Perennial ryegrass	1.0
Bentgrass	1.0-1.33
Kentucky bluegrass	1.0-1.33
Orchardgrass	1.0-1.33
Tall fescue	1.0-1.33

Precautions:

1. Tank mixtures with other pesticides, or the addition of an adjuvant, can increase the risk of crop injury.
2. Application to perennial ryegrass and fine fescue stands under stress may cause crop injury.
3. If weed escapes occur following **Mestalin** application, an application of a postemergence herbicide may be necessary to control escapes. When making such an application, follow all directions, precautions, and limitations on the label of the postemergence herbicide.
4. Control may be decreased if excessive straw from the previous harvest is present at application and/or insufficient rainfall/irrigation occurs.

Restrictions:

1. Do not apply **Mestalin** more than once per crop year.
2. Do not apply after November 15 or poor control may result.
3. Do not graze forage regrowth for 60 days following application west of the Cascades.
4. In areas east of the Cascades, do not graze forage regrowth for 150 days following application.
5. Hay may be harvested anytime between seed harvest and the next application of S-metolachlor.

HORSERADISH

Apply a single application of **Mestalin** at a broadcast rate of 1.0-1.33 pts./A to the soil surface after planting, but before weed or crop emergence (i.e., preemergence). Use lower rates on soils relatively coarse-textured and higher rates on fine-textured soils. A band application may also be used, applying proportionally less spray mixture on the area actually treated. **Mestalin** will not control emerged weeds. Control emerged weeds with an appropriate registered foliar herbicide or by mechanical means.

Restrictions:

1. Make only one application of **Mestalin** per crop.
2. Do not apply more than 1.33 pts./A of **Mestalin** per crop.
3. Harvest horseradish at normal timing.

PEANUTS – MESTALIN ALONE

Apply **Mestalin**, either preplant incorporated, postplant incorporated, or preemergence, using the appropriate rate specified below.

Preplant Incorporated or Preemergence: Follow instructions for use of **Mestalin** alone under **Application Procedures**.

Postplant Incorporated: Apply and shallowly incorporate **Mestalin** into the soil after planting, but before peanut emergence. Incorporation depth and incorporating implements must be kept above the seed, or seed will be damaged.

Apply **Mestalin** alone, preplant incorporated, postplant incorporated, or preemergence, at a broadcast rate of 1.0-1.33 pts./A in the Southeast* and 0.8-1.33 pts./A in NM, OK, and TX.

*In the Southeast, use 1.33-2.0 pts./A and apply preemergence for partial control of Florida beggarweed.

Restrictions:

1. **Mestalin** alone may be applied as directed after any of the following preplant incorporated herbicides when used according to their label rates: Treflan E.C. at 1.0 pts./A; Sonalan at 1.25-3.0 pts./A; Pursuit at 0.25 pt./A; or Prowl at 1.0-2.0 pts./A.
2. Do not apply more than 2.0 pts./A (1.91 lb. ai/A s-metolachlor) of Mestalin per application.
3. Do not apply more than 2.0 pts./A (1.91 lb. ai/A s-metolachlor) of Mestalin per year.
4. Do not graze or feed peanut forage or fodder to livestock for 30 days following application.
5. Do not apply within 90 days of harvest.

PEANUTS – MESTALIN COMBINATIONS

TANK MIXTURE OR SEQUENTIALLY WITH PURSUIT

The tank mixture or sequential treatment of **Mestalin** and Pursuit controls all weeds controlled by **Mestalin** alone and by Pursuit alone. Refer to the **Mestalin Applied Alone** section for weeds controlled by **Mestalin** and to the Pursuit label for weeds controlled by Pursuit.

Refer to the respective labels for application methods, timing, rates, restrictions, and precautions; and use in accordance with the more restrictive label. Do not exceed the label rate of either product **Mestalin** will not control emerged weeds.

TANK MIXTURE WITH SONALAN

The tank mixture controls all weeds controlled by **Mestalin** alone and by Sonalan alone. Refer to the **Mestalin Applied Alone** section for weeds controlled by **Mestalin** and to the Sonalan label for weeds controlled by Sonalan.

Apply **Mestalin** + Sonalan preplant incorporated, using the appropriate rate from Table 7. Follow recommended soil preparation procedures for Sonalan.

Table 7: Mestalin + Sonalan – Peanuts

Soil Texture	Broadcast Rates Per Acre			
	Southeast		NM, OK, TX	
	Mestalin	Sonalan	Mestalin	Sonalan
COARSE	1.0 – 1.33 pts.	1.25 – 2.0 pts.	0.8 – 1.33 pts.	1.25 – 2.0 pts.
MEDIUM	1.0 – 1.33 pts.	1.75 – 2.5 pts.	0.8 – 1.33 pts.	1.75 – 2.5 pts.
FINE	1.0 – 1.33 pts.	2.25 – 3.0 pts.	0.8 – 1.33 pts.	2.25 – 3.0 pts.

Restrictions: Follow all use directions, limitations, precautions, and information regarding application to peanuts on the **Mestalin** and Sonalan labels.

TANK MIXTURE WITH PROWL

Mestalin + Prowl applied preplant incorporated controls all weeds controlled by **Mestalin** alone plus Texas panicum, field sandbur, johnsongrass from seed, lambsquarters, kochia, annual spurge, and other species on the Prowl label. Apply **Mestalin** + Prowl by ground or by aerial equipment within 14 days before planting. Incorporate into the top 1-2 inches of soil before planting and within 7 days of application, using a finishing disk or similar implement capable of providing uniform incorporation. If peanuts will be planted on beds, apply and incorporate after bed formation. Refer to the **Incorporation** instructions of the respective labels for additional directions.

Apply **Mestalin** + Prowl preplant incorporated, using the appropriate rates from Table 8.

Table 8: Mestalin + Prowl - Peanuts

Soil Texture	Broadcast Rates Per Acre	
	NM, OK, TX	Other Peanut Growing States
	Mestalin + Prowl	Mestalin + Prowl
Sand, loamy sand	0.8 + 1.0 - 1.5 pts.	1.0 - 1.33 + 1.5 - 2.0 pts.
Sandy loam	0.8 - 1.0 - 1.5 pts.	1.0 - 1.33 + 1.5 - 2.0 pts.
Fine soil	1.33 + 1.0 - 1.5 pts.	1.33 + 1.5 - 2.0 pts.

Restrictions: Follow all use directions, limitations, precautions, and information regarding application to peanuts on the **Mestalin** and Prowl labels.

TANK MIXTURE WITH GRAMOXONE 3LB

Mestalin + Gramoxone 3LB applied at ground cracking will control or suppress small (1- to 6-inch) emerged annual grass and broadleaf weeds and provide residual control of weed species listed in the **Mestalin Applied Alone** section of this label. Apply Gramoxone 3LB plus the appropriate **Mestalin** rate from the **Peanuts - Mestalin Alone** section in a minimum spray volume of 20 gals./A with ground equipment. Refer to the Gramoxone 3LB label and follow all directions, limitations, and restrictions.

TANK MIXTURE WITH GRAMOXONE 3LB + BASAGRAN

The addition of Basagran to the **Mestalin** + Gramoxone 3LB mixture will result in improved control of such problem broadleaf weeds as prickly sida, cocklebur, smartweed, and bristly starbur. **Mestalin** + Gramoxone 3LB + Basagran applied at ground cracking will control or suppress small (1- to 6-inch) emerged annual grass and broadleaf weeds and provide residual control of weed species listed in the **Mestalin Applied Alone** section of this label. Apply Basagran + Gramoxone 3LB with the appropriate **Mestalin** rate from the **Peanuts - Mestalin Alone** section in a minimum spray volume of 20 gals./A with ground equipment. Refer to the Gramoxone 3LB and Basagran labels and follow all directions, limitations, and restrictions.

TANK MIXTURE WITH GRAMOXONE 3LB + BUTYRAC 200

The addition of Butyrac 200 to the **Mestalin** + Gramoxone 3LB mixture will result in improved control of such problem broadleaf weeds as sicklepod, morning glory, and cocklebur. **Mestalin** + Gramoxone 3LB + Butyrac 200 applied at ground cracking will control or suppress small (1- to 6-inch) emerged annual grass and broadleaf weeds and provide residual control of weed species listed in the **Mestalin Applied Alone** section of this label. Apply Gramoxone 3LB + Butyrac 200 with the appropriate **Mestalin** rate from the **Peanuts - Mestalin Alone** section in a minimum spray volume of 20 gals./A with ground equipment. Refer to the Gramoxone 3LB and Butyrac 200 labels and follow all directions, limitations, and restrictions.

TANK MIXTURE WITH BASAGRAN

Mestalin + Basagran applied at ground cracking will control species on the Basagran label and provide residual control of species listed in the **Mestalin Applied Alone** section of this label. Apply 1.0-2.0 pts./A of Basagran in 20 gals./A, depending on weed species and stage of growth as specified on the Basagran label, with the appropriate **Mestalin** rate from the **Peanuts - Mestalin Alone** section. A second Basagran application may be made in all peanut-growing areas, if needed. Refer to the respective labels and follow all directions, limitations, and restrictions for each product.

TANK MIXTURE WITH BASAGRAN + BUTYRAC 200

Mestalin + Basagran + Butyrac 200 applied at ground cracking will control species on the Basagran label and on the Butyrac 200 label, especially morning glories. Apply 1.5 – 2.0 pts./A of Basagran + 8.0 fl. oz./A of Butyrac 200 in 20 gals./A, depending on weed species and stage of growth as specified on the Basagran label, with the appropriate **Mestalin** rate from the **Peanuts - Mestalin Alone** section. A second Basagran + Butyrac 200 application may be made in all peanut-growing areas, if needed. Refer to the respective labels and follow all directions, limitations, and restrictions for each product.

SEQUENTIALLY WITH STORM®

Apply **Mestalin** according to the directions for **Mestalin Alone** and follow with a postemergence treatment of Storm as specified on its label for the control of weeds listed on the **Mestalin** label and on the Storm label. Refer to the **Mestalin - Peanuts - Alone** section and to the Storm label and follow all directions, limitations, and restrictions for each product.

PEANUTS - MULTIPLE APPLICATIONS

Where weed pressure is heavy or where species difficult to control are expected, **Mestalin**, is most effective when used as follows:

Southeast Only (AL, FL, GA, NC, SC, VA)

1st Application:

Apply **Mestalin** preplant incorporated as directed under **Peanuts - Mestalin Alone**. Refer to the respective section for weeds controlled. Or, apply **Mestalin** any time from preemergence to before "ground cracking" at 1.0-2.0 pts./A for extended control of weeds not yet emerged. Do not use **Mestalin** after peanut emergence.

2nd Application:

Do not use Mestalin. Apply an appropriately labeled s-metolachlor product at lay-by as directed by the product label.

Restrictions:

1. Do not apply more than the equivalent of 2.67 lbs. of active ingredient of **Mestalin** per acre during any one year. If an appropriately labeled s-metolachlor product is used as a sequential treatment, the lbs. of active ingredient of the product plus the lbs. of active ingredient of **Mestalin** should not exceed 2.67 lbs. **Do not use Mestalin after peanuts have emerged.**
2. Do not graze or feed peanut forage or fodder to livestock for 30 days following application.
3. Do not apply within 90 days of harvest.

Southwest Only (NM, OK, TX)

1st Application:

Apply **Mestalin** preplant incorporated or preemergence to before "ground cracking" as directed under **Peanuts - Mestalin Alone**. **Do not use Mestalin after peanut emergence.**

2nd Application:

Do not use Mestalin. Apply an appropriately labeled s-metolachlor product at lay-by as directed on the product label.

Restrictions:

1. Do not apply more than the equivalent of 2.67 lbs. of active ingredient of **Mestalin** per acre during any one year. If using another product that contains s-metolachlor as a sequential treatment, the lbs. of active ingredient of that product plus the lbs. of active ingredient of **Mestalin** should not exceed 2.67 lbs. **Do not use Mestalin after peanuts have emerged.**
2. Do not graze or feed peanut forage or fodder to livestock for 30 days following application.
3. Do not apply within 90 days of harvest.

BEANS, PEAS, AND LENTILS – MESTALIN ALONE

Beans, peas, and lentils, including garbanzo, great northern beans, kidney beans, lima beans, mung beans, navy beans, peas (English*; southern peas, such as blackeye, pinkeye, crowder, etc.), pinto beans, snap beans (green, wax, string), lentils, and lupines (sweet, white, white sweet, and grain).

Fall Application:

1. Apply after September 30 in ND, SD, MN, WI, and north of Route 30 in IA.
2. Apply after October 15 north of Route 91 in NE and south of Route 30 in IA.
3. Apply after October 31 north of Route 136 in IL.

In all locations, apply to crop stubble after harvest when the sustained soil temperature at a 4-inch depth is less than 55°F and falling. In minimum-till or no-tillage systems on soils having greater than 2.5% organic matter, use 1.67-2.0 pts./A on *medium-textured* and 2.0 pts./A on *fine-textured* soils. Do not apply to frozen ground. A tillage operation may precede the application. A fall and/or a spring tillage may follow application, but do not exceed an incorporation depth greater than 2-3 inches. Minimize furrow and ridge formation in the tillage operations.

Restrictions: If a spring application is made, the total rate of the fall plus spring applications must not exceed the maximum total rate for beans, peas, and lentils.

Spring Application:

Apply **Mestalin**, either preplant incorporated or preemergence, using the appropriate rate specified below.

Preplant Incorporated or Preemergence: Follow instructions for use of **Mestalin** alone under **Application Procedures**. On *coarse soils* with less than 3% organic matter, apply 1.0-1.33 pts./A of **Mestalin** or 1.33 pts./A if organic matter is 3% or greater. On *medium soils*, apply 1.33-1.67 pts./A of **Mestalin**. On *fine* soils, apply 1.33-1.67 pts./A of **Mestalin** if organic matter content is less than 3%, or 1.67-2.0 pts./A if organic matter content is 3% or greater.

*On English peas, use only preemergence applications. If soils are cold and wet during pea germination and emergence, the use of **Mestalin** may delay maturity and/or reduce yields.

Restrictions:

1. Do not cut for hay within 120 days following a **Mestalin** application.
2. Do not use for forage within 60 days following a **Mestalin** application.
3. Do not apply more than 2.0 pts./A of **Mestalin** during any one crop year.

BEANS, PEAS, AND LENTILS – MESTALIN COMBINATIONS

Restrictions: When applying **Mestalin** in combination on beans, peas, and lentils, do not cut for hay within 120 days following application.

TANK MIXTURE AND SEQUENTIAL APPLICATIONS WITH EPTAM - BEANS (GREEN OR DRY)

This mixture controls all weeds controlled by **Mestalin** alone and by Eptam alone. Refer to the **Mestalin Applied Alone** section of this label for weeds controlled by **Mestalin** alone and to the Eptam label for weeds controlled by Eptam.

Preplant Incorporated:

Follow instructions for use of **Mestalin** alone under **Application Procedures**. **Sequential:** Apply Eptam alone preplant incorporated, as specified on that label. Follow with a preemergence application of **Mestalin**, at rates specified for **Mestalin** alone, during planting (behind the planter) or after planting, but before the weeds or crop emerge.

Refer to the **Product Information** section of this label and to the Eptam label for weather, cultural practices, and all other precautions and limitations that affect performance of these products.

Apply 2.5-4.5 pts./A of Eptam 7E* with **Mestalin** as specified. On *coarse soils*, apply 0.8 pt./A of **Mestalin** if organic matter content is less than 3%, or 1.0 pt./A if organic matter content is 3% or greater. On *medium soils*, apply 1.0 pt./A of **Mestalin** if organic matter content is less than 3%, or 1.33 pts./A if organic matter content is 3% or greater. On *fine soils*, apply 1.33 pts./A of **Mestalin** if organic matter is less than 3%, or 1.33-1.67 pts./A if organic matter is 3% or greater.

*Refer to the Eptam label for rate limitations depending on geographical area, and for species and varietal restrictions.

Restriction: Do not exceed 3.5 pts./A of Eptam 7E on small white beans or green beans grown on coarse-textured soils.

TANK MIXTURE WITH TREFLAN - BEANS (DRY - KIDNEY, NAVY, PINTO, ETC.; LIMA; AND SNAP)

Mestalin + Treflan tank mix applied preplant incorporated controls those weeds listed under **Mestalin Applied Alone** and those weeds listed for Treflan alone on the Treflan label. **Mestalin** + Treflan may be applied by ground or by aerial equipment and incorporated up to 14 days prior to planting. Follow the procedures on this label and on the respective Treflan label using equipment that provides uniform 2-inch incorporation.

Apply **Mestalin** + Treflan tank mix using the appropriate **Mestalin** rate specified for **Mestalin** alone, and the Treflan rate from the Dry Beans, and the Lima and Snap Beans sections of the respective Treflan label. Choose the product rate for the specific soil texture/organic matter classification and weed species expected.

Restrictions: Follow all restrictions and precautions on the respective Treflan label and in the **Beans, Peas, and Lentils - Mestalin Alone** section of this label.

POTATOES – MESTALIN ALONE

Apply **Mestalin**, either incorporated, preemergence, or postemergence to potatoes after hilling/lay-by, according to directions specified below for control of weeds listed under the **Product Information** section. Within a rate

range, use the lower rate on soils relatively coarse-textured or low in organic matter; use the higher rate on soils relatively fine-textured or high in organic matter. Effectiveness will be reduced if later cultural practices expose untreated soil. For application by center pivot irrigation, see the **Center Pivot Irrigation Application** section of this label.

Incorporated:

Apply **Mestalin** at 1.0-2.0 pts./A to the soil and incorporate into the top 3 inches before planting, using a finishing disk, harrow, rolling cultivator, or similar implement. Planting and later cultural practices should not bring untreated soil to the surface. Postplant incorporated application may be made any time after planting to drag-off, but before potato emergence. Use an implement that evenly distributes **Mestalin** in the top 2 inches of soil. Do not damage potato seed pieces or sprouts with incorporation equipment.

Preemergence:

Apply **Mestalin** at 1.0-2.0 pts./A, either after planting as a preemergence, delayed preemergence, after drag-off or hilling treatment, but before weeds emerge. Up to 2.5 pts./A of **Mestalin** alone may be used where soil organic matter is between 6% and 20%.

Postemergence After Hilling/Lay-by:

Apply 1.67 pts./A of **Mestalin** postemergence to potatoes through after hilling/at lay-by to control **Mestalin** - sensitive species for remainder of the growing season. This application will not control emerged weeds. It may be applied over a previous **Mestalin** application, but do not apply more than 3.6 pts./A of **Mestalin** in a single crop season.

Precautions:

1. Do not use on muck or peat soils. If cool, wet soil conditions occur after application, **Mestalin** may delay maturity and/or reduce yield of Superior and other early maturing potato varieties.
2. These directions for use do not apply to sweet potatoes or yams.
3. Do not apply both as a preemergence and an incorporated treatment.

Restrictions: Potatoes treated with **Mestalin** should not be harvested within 60 days after the at-planting to drag-off application.

POTATOES- MESTALIN COMBINATIONS**TANK MIXTURE WITH SENCOR**

In addition to those weeds controlled by **Mestalin** alone, **Mestalin** applied in tank mix combination with, or sequentially with, any of the registered Sencor formulations also controls the following broadleaf weeds: cocklebur*, hairy nightshade*, hemp sesbania, jimsonweed*, lambsquarters, prickly sida, ragweed, smartweed, velvetleaf, Venice mallow, and wild mustard.

*Partially controlled.

Mestalin at 1.0-2.0 pts./A plus the labeled Sencor use rate may be used preemergence or postemergence to potatoes through after last hilling. Apply 1.0-1.33 pts./A of **Mestalin** on *coarse soils* and 1.33-2.0 pts./A on other soil textures. Within this rate range, use the lower rate on soils relatively coarse-textured or low in organic matter; use the higher rate on soils relatively fine-textured or high in organic matter. Effectiveness will be reduced if later cultural practices expose untreated soil. **Mestalin** will not control emerged weeds.

Refer to the Sencor label for precautionary statements, restrictions, application information, center pivot irrigation application, weeds controlled, and varietal limitations.

Precautions:

1. Postemergence applications to potatoes, except center pivot, should be made only as a directed or semi-directed spray to avoid chlorosis, minor necrosis, or leaf distortion.
2. These directions for use do not apply to sweet potatoes or yams.

Restrictions:

1. Potatoes treated with **Mestalin** in tank mixture with Sencor cannot be harvested within 60 days after application.
2. Potatoes may not be harvested within 40 days after a lay-by application of **Mestalin**.
3. Do not use this tank mixture on muck or peat soils.

MESTALIN + LOROX DF TANK MIXTURE (EAST OF ROCKY MOUNTAINS)

Mestalin may be applied in a tank mix combination with any of the registered Lorox formulations as a preemergence broadcast application to potatoes. Apply to the soil surface after planting and before emergence of the crop or after final drag-off according to the rates specified in Table 9.

Table 9: Mestalin + Lorox DF - Potatoes (East of Rocky Mountains)

Soil Texture	Broadcast Rates Per Acre			
	1% to Less Than 3% Organic Matter		3-5% Organic Matter	
	Mestalin	Lorox DF	Mestalin	Lorox DF
COARSE Sandy loam	1.0 pt.	1.0-1.5 lbs.	1.33 pts.	1.5-2.0 lbs.
MEDIUM Loam, silt loam, silt	1.33 pts.	1.5-2.0 lbs.	1.67-2.0 pts.	2.0-2.5 lbs.

Precautions: To avoid crop injury,

1. Do not use on sands or loamy sand.
2. Do not incorporate or spray over the top of emerged potatoes.

Refer to the **Product Information** section of this label and to the Lorox label for precautionary statements, restrictions, application information, and weeds controlled.

TANK MIXTURE WITH PROWL 4E

In addition to the weeds controlled by **Mestalin** alone, this tank mixture with Prowl 4E controls such problem species as kochia, lambsquarters, purslane, annual spurge, stinging nettle, and others specified on the Prowl 4E Alone label. Apply **Mestalin** + Prowl 4E preemergence, preemergence incorporated, or early postemergence, according to the specific directions on the Prowl 4E label, using the rates in Table 10.

Table 10: Mestalin + Prowl 4E - Potatoes

Soil Texture	Broadcast Rates Per Acre	
	Less Than 3% Organic Matter	More Than 3% Organic Matter
	Mestalin + Prowl 4E*	Mestalin + Prowl 4E*
COARSE	1.0-1.33 pts. + 1.0-1.5 pts.	1.0-1.33 pts. + 1.0-1.5 pts.
MEDIUM	1.33 pts. + 1.5-2.0 pts.	1.33-1.67 pts. + 2.0-3.0 pts.
FINE	1.33-1.67 pts. + 2.0-3.0 pts.	1.67-2.0 pts. + 3.0 pts.

*When using other formulations of Prowl, use equivalent rates of active ingredient.

Refer to the **Mestalin** and Prowl 4E labels and observe all directions, timings, limitations, precautions, and restrictions concerning the use of these products on potatoes and follow the most restrictive.

TANK MIXTURE WITH PROWL 4E + EPTAM

In addition to the weeds controlled by **Mestalin** alone, this tank mixture will control those species on the Prowl 4E and Eptam labels. Refer to the **Mestalin** + Prowl 4E labels for rates of those products and add Eptam 7E at 3.5-7.0 pts./A, depending on geographical area. Refer to the respective **Mestalin**, Prowl 4E, and Eptam labels and observe all directions, limitations, precautions, and restrictions concerning the use of these products on potatoes and follow the most restrictive.

PUMPKIN – MESTALIN ALONE

Preemergence

Apply **Mestalin** preemergence (before the weeds have emerged) at 1.0 to 1.33 pts./A as an inter-row or inter-hill application in pumpkin. Leave 1 foot of untreated area over the row, or 6 inches to each side of the planted hill and/or any emerged pumpkin foliage (inter-row or inter-hill means not directly over the planted seed or young pumpkin plants). Use the lower **Mestalin** rate on soils light in texture (loamy sand or lighter) and low in soil organic matter (less than 3%). **Mestalin** applied as a broadcast spray over the planted row or hill, or applications made directly to crop foliage, will increase the risk of injury (e.g., stand loss, delayed maturity, and loss of yield) to the pumpkin crop. Do not apply **Mestalin** closer than 30 days before pumpkin harvest.

Mestalin will not control emerged weeds, and thus should be applied before the weeds emerge. Weeds that are present should be controlled by another means, e.g., by mechanical means or by another herbicide.

RHUBARB – MESTALIN ALONE

Apply **Mestalin** at a broadcast rate of 0.67-1.33 pts./A to the soil surface in early spring, prior to crop emergence. Use lower rates on soils relatively coarse-textured and higher rates on fine-textured soils. A band application may also be used, applying proportionally less spray mixture on the area actually treated. **Mestalin** will not control emerged weeds. Control emerged weeds with an appropriate registered foliar herbicide or by mechanical or physical means.

Restrictions:

1. Make only one application of **Mestalin** per crop.
2. Do not apply more than 1.33 pts./A of **Mestalin** per crop.
3. Do not harvest rhubarb within 62 days of the **Mestalin** application.

SAFFLOWERS – MESTALIN ALONE**Preplant Incorporated or Preemergence:**

Follow instructions for use of **Mestalin** alone under **Application Procedures**.

On *coarse soils*, apply 1.0-1.33 pts./A of **Mestalin** if organic matter content is less than 3%, or 1.33 pts./A if organic matter is 3% or greater. On *medium soils*, apply 1.33-1.67 pts./A of **Mestalin**. On *fine soils*, apply 1.33-1.67 pts./A of **Mestalin** if organic matter content is less than 3%, or 1.67-2.0 pts./A if organic matter content is 3% or greater.

GRAIN OR FORAGE SORGHUM (SEED TREATED WITH CONCEP®) – MESTALIN ALONE

Apply **Mestalin**, either preplant surface, preplant incorporated, preemergence, or postemergence using the appropriate rate specified below. Apply **Mestalin** alone only when the sorghum seed has been properly treated with Concep seed treatment. Preplant or preemergence applications of **Mestalin** not treated with Concep seed treatment will result in crop death.

Fall Application for Italian Ryegrass Control:

Mestalin may be applied for residual control of glyphosate-resistant Italian ryegrass (*Lolium multiflorum*). Apply **Mestalin** at 1.33-1.67 pts./A in the fall (September 1-December 1) after harvest of the previous crop and prior to Italian ryegrass emergence. Use the lower **Mestalin** rate for coarse-textured soils and the higher rate for fine-textured soils. A tillage operation may precede the application. Do not incorporate to a depth greater than 2-3 inches if tillage follows the application of **Mestalin**. For fall applications after emergence of glyphosate-resistant Italian ryegrass, Gramoxone 3LB can be tank mixed with **Mestalin** to control emerged ryegrass. Refer to the Gramoxone 3LB label for specific rates, application instructions, and restrictions. Other registered herbicides may be tank mixed with **Mestalin** for control or improved control of other weeds present at the time of application.

Restrictions:

1. Do not apply **Mestalin** to frozen ground.
2. If a spring application is made, do not apply **Mestalin** or any other product containing S-metolachlor the following spring to grain or forage sorghum.

Preplant Surface-Applied:

Refer to instructions for use of **Mestalin** under **Application Procedures** section on this label. For minimum-tillage or no-tillage systems only, apply **Mestalin** up to 45 days before planting in CO, IA, IL, KS, MO, NE, and SD. Use only split applications for treatments made 30-45 days prior to planting, with 2/3 of the broadcast rate applied initially and the remaining 1/3 at planting. Apply 1.5 pts./A of **Mestalin** on *medium soils* or 1.67 pts./A on *fine soils*. Treatments less than 30 days prior to planting may be made either as a split or single application. Apply 1.33 pts./A of **Mestalin** on *coarse soils* not more than 2 weeks prior to planting. Under dry conditions, irrigation after application is recommended to move **Mestalin** into the soil.

Preplant Incorporated or Preemergence:

Refer to instructions for use of **Mestalin** under **Application Procedures** section on this label. Broadcast 1.0-1.33 pts./A of **Mestalin** on *coarse soils*, 1.33-1.5 pts./A on *medium soils*, or 1.33-1.67 pts./A on *fine soils*.

Postemergence: Refer to instructions for use of **Mestalin** under **Application Procedures** section on this label.

Mestalin may be applied broadcast postemergence at 1.0-1.33 pts./A on coarse soils, 1.33-1.5 pts./A on *medium soils*, or 1.33-1.67 pts./A on *fine soils*. **Mestalin** will not control emerged weeds. Therefore, emerged weeds must be controlled by cultural or chemical means. When applied alone, **Mestalin** will be safe to emerged sorghum. The risk of sorghum injury increases when adjuvants (e.g., non-ionic, crop oil), nitrogen sources (e.g., AMS, UAN), or fertilizers are applied with **Mestalin**.

Precautions:

1. If sorghum seed is not properly treated with Concep seed treatment, preplant and preemergence applications of **Mestalin** will severely injure the crop.
2. Under high soil moisture conditions prior to sorghum emergence, injury may occur following preplant and preemergence application of **Mestalin**. The crop will normally outgrow this effect.
3. Do not use **Mestalin** on sorghum grown under dry mulch tillage, or injury may occur.

Restrictions:

1. Except for the split preplant surface treatment, do not make more than one application per year.
2. Do not apply **Mestalin** postemergence within 75 days of harvest.

GRAIN OR FORAGE SORGHUM (SEED TREATED WITH CONCEP) – MESTALIN TANK MIXTURES

Mestalin preplant or preemergence (prior to sorghum emergence) tank mixtures with AAtrex may be applied in water or fluid fertilizer. Apply **Mestalin** preplant or preemergence in tank mixtures only when the sorghum seed has been properly treated with Concep seed treatment. Preplant or preemergence applications of **Mestalin** to sorghum not treated with Concep seed treatment will result in crop death.

IMPORTANT: FOR TANK MIXTURES WITH AATREX (OR OTHER BRANDS OF ATRAZINE) - If applying Mestalin in tank mixture with AAtrex, all the restrictions and rate limitations on the AAtrex label must be followed if more restrictive/protective than those on this label. In addition, if AAtrex is/must be applied at rates lower than those listed on this label, broadleaf weed control may be affected. Refer to the AAtrex label for weeds controlled at the reduced rates.

Precautions:

1. Applications of **Mestalin** + AAtrex on highly alkaline soils or on eroded areas where calcareous subsoils are exposed may cause sorghum injury.
2. If sorghum seed is not properly treated with Concep, **Mestalin** + AAtrex may severely injure the crop.
3. Under high soil moisture conditions prior to sorghum emergence, injury may occur following preplant and preemergence application of **Mestalin** + AAtrex. The crop will normally outgrow this effect.
4. Do not use **Mestalin** + AAtrex on sorghum grown under dry mulch tillage, or injury may occur.

Restriction:

1. Except for the split preplant surface treatment, do not make more than one application per year.

TANK MIXTURE WITH AATREX

In addition to the weeds controlled by **Mestalin** alone, **Mestalin** + AAtrex also controls the following broadleaf weeds when applied either preplant surface, preplant incorporated, or preemergence: cocklebur, common purslane, hairy nightshade, lambsquarters, morningglory, ragweed, smartweed, and velvetleaf.

Preplant Surface-Applied:

Refer to instructions for use of **Mestalin** under **Application Procedures** section on this label. For minimum-tillage or no-tillage systems only, **Mestalin** + AAtrex may be applied up to 45 days prior to planting in IA, IL, eastern KS, MO, NE, and SD. Use only split applications for treatments made 30-45 days prior to planting, with 2/3 of the broadcast rate applied initially and the remaining 1/3 at planting. Apply 1.5 pts./A of **Mestalin** + 1.7-2.0 lbs./A of AAtrex Nine-O* on *medium soils* with 1.5% organic matter or greater. Apply 1.5 pts./A of **Mestalin** + 1.7-2.0 lbs./A of AAtrex Nine-O on *fine soils* with less than 1.5% organic matter, or apply 1.67 pts./A of **Mestalin** + 2.0-2.2 lbs./A of AAtrex Nine-O on *fine soils* with 1.5% organic matter or greater. Treatments less than 30 days prior to planting may be made either as a split or single application. Under dry conditions, irrigation after application is recommended to move **Mestalin** + AAtrex into the soil.

Precautions:

To avoid crop injury,

1. Do not use on coarse soils.
2. Do not use on medium soils with less than 1.5% organic matter.

Preplant Incorporated or Preemergence:

Refer to instructions for use of **Mestalin** under **Application Procedures** on this label. On *medium soils* with 1.5% organic matter or greater, apply 1.0 pt./A of **Mestalin** + 1.3 bs./A of AAtrex Nine-O*. On *fine soils* with less than 1.5% organic matter, apply 1.0 pt./A of **Mestalin** + 1.3 lbs./A of AAtrex Nine-O; on *fine soils* with 1.5% organic matter or greater, apply 1.2-1.33 pts./A of **Mestalin** + 1.6-1.8 lbs./A of AAtrex Nine-O.

*When using AAtrex 4L, use equivalent rates. One lb. of AAtrex Nine-O equals 1.8 pts. of AAtrex 4L.

Precautions:

To avoid crop injury,

1. Do not use on coarse soils.
2. Do not use on medium soils with less than 1.5% organic matter.
3. Do not use in NM, OK, or TX, except in northeast OK and the TX Gulf Coast and Blacklands areas.
4. Do not apply preplant incorporated in AZ or the Imperial Valley of CA.

TANK MIXTURE OF MESTALIN OR MESTALIN + AATREX, WITH GRAMOXONE 3LB, LANDMASTER BW, TOUCHDOWN TOTAL, OR ROUNDUP BRANDS FOR MINIMUM-TILLAGE OR NO-TILLAGE SYSTEMS

In minimum-tillage or no-tillage systems where sorghum (seed treated with Concep) is planted directly into a cover crop, stale seedbed, established sod, or previous crop residues, the contact herbicides Gramoxone 3LB, Landmaster BW, Touchdown Total, or Roundup may be tank mixed with **Mestalin** or **Mestalin** + AAtrex. See Comment No. 7 following Table 2. The **Mestalin** or **Mestalin** + AAtrex portion of the tank mixture provides preemergence control of the weeds listed on this label under the respective sections.

Refer to the label of each product used in combination and observe the planting details, restrictions, and all other precautions and limitations.

Application:

Apply before, during, or after planting, but before sorghum emerges. Add Gramoxone 3LB, Landmaster BW, Touchdown Total, or Roundup brands and apply as directed on the product labels.

Gramoxone 3LB:

Apply as directed on the product label. This treatment will not control weeds taller than 6 inches.

Landmaster BW:

27-54 oz./A depending on weed species and size. See the Landmaster BW label for weeds controlled, recommended rates for specific weeds, and other information concerning use.

Touchdown Total or Roundup Brands:

See the Touchdown Total or Roundup brand labels for weeds controlled, recommended rates, and other use directions.

SWEET SORGHUM (SEED TREATED WITH CONCEP)

Apply **Mestalin** preplant surface, preplant incorporated, preemergence, or postemergence using the appropriate rate specified below. Apply **Mestalin** only when the sweet sorghum seed has been properly treated with Concep seed treatment. Preplant or preemergence applications of **Mestalin** to sweet sorghum not treated with Concep seed treatment will result in crop death.

Soil-Applied:

Apply **Mestalin** up to 45 days before planting. Use only split applications for treatments made 30-45 days prior to planting, with 2/3 of the broadcast rate applied initially and the remaining 1/3 at planting. Treatments less than 30 days prior to planting may be made either as a split or single application. Under dry conditions, irrigation after application is recommended to move **Mestalin** into the soil.

Mestalin Rates for Soil Applications to Sweet Sorghum

Soil Type	30-45 Days Prior to Planting ¹	<30 Days Prior to Planting	At Planting ²
Coarse	Not Recommended	1.33 pts./A	1.0-1.33 pts./A
Medium	1.5 pts./A	1.5 pts./A	1.33-1.5 pts./A
Fine	1.67 pts./A	1.67 pts./A	1.33-1.67 pts./A

¹ Use only as a split application with 2/3 of the broadcast rate applied initially and the remaining 1/3 applied at planting.

² Preplant incorporated or preemergence.

Post-Applied:

Mestalin may be applied postemergence to sweet sorghum for residual control of grasses and small-seeded broadleaf weeds. Postemergence application to sweet sorghum may be made to crop up to 5 inches in height. **Mestalin** will not control emerged weeds. Therefore, emerged weeds must be controlled by cultural or other chemical methods. When applied alone, **Mestalin** will be safe to emerged sweet sorghum. Use of adjuvants is prohibited on sweet sorghum.

Mestalin Rates for Postemergence Applications to Sweet Sorghum

Soil Type	Postemergence Rate
Coarse	1.0-1.33 pts./A
Medium	1.33 pts./A
Fine	1.33 pts./A

Precautions:

1. If sweet sorghum seed is not properly treated with Concep seed treatment, soil applications of **Mestalin** prior to sorghum emergence will severely injure the crop.
2. Under high soil moisture conditions prior to sweet sorghum emergence, injury may occur following soil applications of **Mestalin**. The crop will normally outgrow this effect.
3. Do not use **Mestalin** on sorghum grown under dry mulch tillage, or injury may occur.

Restrictions:

1. Only one application per season is allowed. **Mestalin** may be applied either as a soil-applied treatment or a postemergence treatment, but not both.
2. Do not apply **Mestalin** postemergence within 90 days of harvest.

SOYBEANS – MESTALIN ALONE

Apply **Mestalin** preplant surface-applied, preplant incorporated, preemergence, or postemergence using the appropriate rate specified below. Follow instructions for use of **Mestalin** alone under **Application Procedures** section of this label.

Fall Application for Spring Weed Control:

1. Apply after September 30 in ND, SD, MN, WI, and north of Route 30 in IA.
2. Apply after October 15 north of Route 91 in NE and south of Route 30 in IA.
3. Apply after October 31 north of Route 136 in IL.

In all locations, apply to crop stubble after harvest when the sustained soil temperature at a 4-inch depth is less than 55°F and falling. In minimum-till or no-tillage systems on soils having greater than 2.5% organic matter, use 1.67-2.0 pts./A of **Mestalin** on *medium-textured* and 2.0 pts./A of **Mestalin** on *fine-textured soils*. Do not apply to frozen ground. A tillage operation may precede the application. A fall and/or a spring tillage may follow application, but do not exceed an incorporation depth greater than 2-3 inches. Minimize furrow and ridge formation in the tillage operations.

Restrictions: If a spring application is made, the total rate of the fall plus spring applications must not exceed the maximum total rate for soybeans of 2.5 pts./A depending on soil texture.

Fall Application for Italian Ryegrass Control:

Mestalin may be applied for residual control of glyphosate-resistant Italian ryegrass (*Lolium multiflorum*). Apply **Mestalin** at 1.33-1.67 pts./A in the fall (September 1-December 1) after harvest of the previous crop and prior to Italian ryegrass emergence. Use the lower **Mestalin** rate for *coarse-textured soils* and the higher rate for *fine-textured soils*. A tillage operation may precede the application. Do not incorporate to a depth greater than 2-3 inches if tillage follows the application of **Mestalin**. For fall applications after emergence of glyphosate-resistant

Italian ryegrass, Gramoxone 3LB can be tank mixed with **Mestalin** for control of emerged ryegrass. Refer to the Gramoxone 3LB label for specific rates, application instructions, and restrictions. Other registered herbicides may be tank mixed with **Mestalin** for control of improved control of other weeds present at the time of application.

Restrictions:

1. Do not apply **Mestalin** to frozen ground.
2. If a spring application is made, the combined total amount of **Mestalin** applied in the fall plus the spring must not exceed the maximum seasonal S-metolachlor rate for soybeans (2.5 pts./A, depending on soil texture).

Preplant Surface – Spring Application:

Use on medium and fine soils with minimum-tillage or no-tillage systems in CO, CT, DE, IA, IL, IN, KS, KY, MA, MD, ME, MI, MN, MO, MT, ND, NE, NH, NY, OH, PA, RI, SD, TN, VA, VT, WI, WV, and WY. Apply 2/3 the listed rate of **Mestalin** (1.67 pts./A on *medium soils* and 2.0 pts./A on *fine soils*) as a split treatment 30-45 days prior to planting and the remainder at planting. Applications made less than 30 days before planting may be as either a split or single treatment. Apply 1.33 pts./A of **Mestalin** on *coarse soils* not more than 2 weeks prior to planting.

Restrictions:

1. On soybeans, use up to 2.5 pts./A of **Mestalin** preplant incorporated or preemergence treatment on soils having an organic matter content between 6% and 20%.
2. The total **Mestalin** rate applied to soybeans during any one crop should not exceed 2.5 pts./A.
3. Do not graze or feed treated soybean forage, hay, or straw to livestock 30 days following treatment.

Preplant Incorporated or Preemergence:

On *coarse soils*, apply 1.0-1.33 pts./A of **Mestalin** if organic matter content is less than 3%, or 1.33 pts./A if organic matter content is 3% or greater. On *medium soils*, apply 1.33-1.67 pts./A of **Mestalin**. On *fine soils*, apply 1.33-1.67 pts./A of **Mestalin** if organic matter content is less than 3%, or 1.67-2.0 pts./A if organic matter content is 3% or greater.

Restrictions:

1. On soybeans, use up to 2.5 pts./A of **Mestalin** preplant incorporated or preemergence treatment on soils having an organic matter content between 6% and 20%.
2. The total **Mestalin** rate applied to soybeans during any one crop should not exceed 2.5 pts./A.
3. Do not graze or feed treated soybean forage, hay, or straw to livestock 30 days following treatment.

Postemergence:

Apply 1.0-1.33 pts./A as a postemergence treatment to soybeans from emergence up through the third trifoliate leaf stage. **Mestalin** will not control emerged weeds so it must be applied to a weed-free soil surface or in a tank mixture with products that provide postemergence control of weeds present at the time of application.

Mestalin can also be applied as part of a sequential soybean weed control program. If **Mestalin** was applied as a preplant surface, preplant incorporated, or a preemergence treatment, a second treatment of **Mestalin** can be applied postemergence provided that the total **Mestalin** rate during any one crop does not exceed 2.5 pts./A.

Restrictions: When **Mestalin** is applied postemergence to soybeans:

1. Do not apply more than 1.33 pts./A postemergence.
2. The total **Mestalin** rate applied preplant, preemergence or postemergence to soybeans during any one crop should not exceed 2.5 pts./A (2.4 lbs. a.i./A of S-metolachlor).
3. Make postemergence application at least 90 days before harvest.
4. Do not graze or feed treated forage or hay from soybeans to livestock following a postemergence application of **Mestalin**.

SOYBEANS – MESTALIN COMBINATIONS

Water or fluid fertilizer may be used as carrier for **Mestalin** in combination with Sencor, Lorox, Canopy, Pursuit, Scepter, Sonalan, or Command.

Restrictions:

For all of the following combinations, on soybeans use up to 2.5 pts./A **Mestalin** preplant incorporated or preemergence treatment on soils having an organic matter content between 6% and 20%. The total **Mestalin** rate applied to soybeans during any one crop year should not exceed 2.5 pts./A.

TANK MIXTURE WITH SENCOR

In addition to those weeds controlled by **Mestalin** alone, **Mestalin** + Sencor, when applied as directed, also controls the following broadleaf weeds: cocklebur*, hairy nightshade, hemp sesbania, jimsonweed*, lambsquarters, prickly sida, ragweed, smartweed, velvetleaf, Venice mallow, and wild mustard.

*Partially controlled.

Apply **Mestalin** and Sencor preplant incorporated or preemergence, using the appropriate rates from Table 11.

Preplant Incorporated or Preemergence: Follow instructions for use of **Mestalin** alone under **Application Procedures**.

Sequential:

Apply **Mestalin** alone **Preplant Incorporated**, as specified in Table 11 for this tank mixture. Follow with a preemergence application of Sencor during planting (behind the planter) or after planting, but before weeds or soybeans emerge.

Refer to the Sencor label for planting details and soybean variety restrictions.

Table 11: Mestalin + Sencor - Soybeans

Soil Texture*	Broadcast Rates Per Acre	
	0.5% to Less Than 3% Organic Matter	3% Organic Matter or Greater
	Mestalin + Sencor	Mestalin + Sencor
COARSE Loamy sand (over 2% organic matter), sandy loam	0.8-1.0 pt. + 0.33 lb.	1.0 pt. + 0.5 lb.
MEDIUM	1.0-1.33 pts. + 0.5 lb.	1.33 pts. + 0.67 lb.**
FINE	1.33 pts. + 0.67 lb.	1.33-1.67 pts. + 0.67 lb.
Mississippi Delta only Silty clay, clay	1.33 pts. + 1.0 lb.	1.33-1.67 pts. + 1.0 lb.
Muck or Peat (soils with more than 20% organic matter)	DO NOT USE	

*On all sand and on loamy sand with less than 2% organic matter, do not use this tank mixture preemergence, or the sequential treatment. Do not use the tank mixture preplant incorporated on any sand, loamy sand, or sandy loam, or crop injury may occur.

**Use 0.5 lb./A if applied preplant incorporated.

Precautions:

1. Do not use the tank mix or sequential application on soil with less than 0.5% organic matter or on alkaline soil with a pH over 7.4, or crop injury may occur.
2. If heavy rain occurs soon after application, crop injury may result, especially in poorly drained areas where water stands for several days.

Restrictions:

Follow most restrictive limitations and precautions on the **Mestalin - Soybeans Alone** section of the **Mestalin** label and the Soybean directions on the Sencor label.

TANK MIXTURE WITH LOROX

In addition to those weeds controlled by **Mestalin** alone, **Mestalin** + Lorox, applied preemergence, also controls the following broadleaf weeds: cocklebur*, jimsonweed*, lambsquarters, morningglory*, prickly sida, ragweed, smartweed, velvetleaf*, Venice mallow, and wild mustard.

*Partially controlled.

Preemergence: Apply during planting (behind planter) or after planting, but before weeds or soybeans emerge. Refer to the Lorox label for planting details. Apply the appropriate rates from Table 12.

Precaution: Do not use on soil with less than 0.5% organic matter, or crop injury may occur.

Table 12: Mestalin + Lorox-Soybeans

Soil Texture*	Broadcast Rates Per Acre	
	0.5% to Less Than 3% Organic Matter	3% Organic Matter or Greater
	Mestalin + Lorox DF	Mestalin + Lorox DF
COARSE**	0.8 pt. + 1.0 lb.	1.0 pt. + 1.0-1.5 lbs.
MEDIUM	1.0 pt. + 1.0-1.5 lbs.	1.33 pts. + 1.5-2.0 lbs.
FINE	1.33 pts. + 2.0 lbs.	1.33-1.67 pts. + 2.5-3.0 lbs.
Muck or Peat (soils with more than 20% organic matter)	DO NOT USE	

* Do not use on sand, gravelly soils, or exposed subsoils.

** Do not use on loamy sand, except in the northeastern U.S. on loamy sand with over 1% organic matter.

TANK MIXTURE WITH TREFLAN

Mestalin + Treflan tank mix applied preplant incorporated controls those weeds listed under **Mestalin Applied Alone** and those weeds listed for Treflan Alone on the Treflan label. **Mestalin** + Treflan may be applied by ground or aerial equipment and incorporated up to 14 days before planting. Follow the recommended procedures on the Treflan and **Mestalin** labels, using equipment that provides uniform 2-inch incorporation.

Apply **Mestalin** + Treflan tank mix using the appropriate rate from the **Soybeans - Mestalin Alone** section of this label and the Treflan Alone section of the Treflan label for the specific soil texture/organic matter classification and weed species expected.

To control DNA-resistant goosegrass* and other species on the respective labels where the soil organic matter is 3% or less, apply the rate in Table 13.

Table 13: Mestalin + Treflan - Organic Matter Content Less Than 3%

Soil Texture	Broadcast Rates Per Acre		
	Mestalin	Treflan E.C. **	
	Organic Matter Less Than 3%	Organic Matter	
		Less Than 2%	2-3%
COARSE*	0.8-1.0 pt.	1.0 pt.	1.5 pts.
MEDIUM	1.0 pt.	1.5 pts.	1.5 pts.
FINE	1.33 pts.	2.0 pts.	2.0 pts.

*Where a range of rates is given for **Mestalin**, use the minimum rate where DNA-resistant goosegrass is the predominant species.

**When Treflan 5 is used, use comparable rates. Multiply pts. of Treflan E.C. by 0.8 for Treflan 5.

Restrictions: Follow the most restrictive limitations and precautions on the **Soybeans – Mestalin Alone** section of the **Mestalin** label and the Soybean directions on the Treflan labels.

TANK MIXTURE WITH SCEPTER

This tank mixture controls all weeds controlled by **Mestalin** alone and by Scepter alone. Refer to the **Mestalin Applied Alone** section for weeds controlled by **Mestalin** and to the Scepter label for weeds controlled by Scepter. Refer to the Scepter label for geographical locations where this tank mixture may be applied.

Apply **Mestalin** + Scepter preplant incorporated or preemergence, using rates in Table 14. Follow use directions under **Application Instructions** on the Scepter label. For preplant incorporated applications, apply and incorporate within 30 days before planting. Observe all other precautions and limitations on the Scepter labels.

Table 14: Mestalin + Scepter – Soybeans

Soil Texture	Broadcast Rates Per Acre			
	Less Than 3% Organic Matter		3% or More Organic Matter	
	Mestalin	Scepter	Mestalin	Scepter
COARSE	0.8 pt.	0.67 pt.	1.0 pt.	0.67 pt.
MEDIUM	1.0 pt.	0.67 pt.	1.33 pts.	0.67 pt.
FINE	1.33 pts.	0.67 pt.	1.33-1.67* pts.	0.67 pt.
Muck or Peat (soils with more than 20% organic matter)	DO NOT USE			

*Use the higher rate of **Mestalin** if heavy weed infestations are expected.

Restrictions:

Follow the most restrictive limitations and precautions on the **Mestalin - Soybeans Alone** section of the **Mestalin** label and the Soybean directions on the Scepter label.

TANK MIXTURE WITH CANOPY

This tank mixture controls all weeds controlled by **Mestalin** alone and by Canopy alone. Refer to the **Mestalin Applied Alone** section for weeds controlled by **Mestalin** and to the Canopy label for weeds controlled by Canopy.

Apply preplant incorporated or preemergence, using the appropriate rates from Table 15. **Preplant Incorporated:** Apply within 2 weeks of planting. Uniformly incorporate into the top 1-2 inches of soil before planting soybeans.

Preemergence: Apply after planting, but before soybeans emerge.

Restrictions: Follow the most restrictive limitations and precautions on the **Mestalin - Soybeans Alone** section of the **Mestalin** label and the Soybean directions on the Canopy label, including varietal restrictions.

Table 15: Mestalin + Canopy - Soybeans

Soil Texture	Broadcast Rates Per Acre		
	Less Than 3% Organic Matter	3% or More Organic Matter	
	Mestalin	Mestalin	Canopy
COARSE	0.8 pt.	1.0 pt.	*
MEDIUM	1.0 pt.	1.33 pts.	*
FINE	1.33 pts.	1.33-1.67 pts.	*

*Refer to the Canopy label for appropriate rate according to geographical location, soil and organic matter classification, and pH limitations.

Precaution:

1. Do not apply to sand, or to any soil with less than 0.5% organic matter, or to any soil with pH greater than 7.0, except as noted on the Canopy label.

TANK MIXTURE WITH COMMAND*

This tank mixture controls all weeds controlled by **Mestalin** alone and by Command alone. Refer to the **Mestalin Applied Alone** section for weeds controlled by **Mestalin** and to the Command label for weeds controlled by Command.

Apply **Mestalin** + Command preplant incorporated, using rates in Table 16. Follow all Command application instructions as to incorporation interval, geographical location, equipment operation, soil moisture conditions, etc.

***Restrictions:** Follow the most restrictive limitations and precautions on the **Mestalin - Soybeans Alone** section of the **Mestalin** label and the Soybean directions on the Command label, including rotational.

Table 16: Mestalin + Command - Soybeans

Soil Texture	Broadcast Rates Per Acre	
	Mestalin	
	0.5-3% Organic Matter	Greater Than 3% Organic Matter
COARSE	0.8 pt.	1.0 pt.
MEDIUM	1.0 pt.	1.33 pts.
FINE	1.33 pts.	1.33-1.67 pts.

TANK MIXTURE WITH SONALAN

This tank mixture controls all weeds controlled by **Mestalin** alone and by Sonalan alone. Refer to the **Mestalin Applied Alone** section for weeds controlled by **Mestalin** and to the Sonalan label for weeds controlled by Sonalan.

Apply **Mestalin** and Sonalan preplant incorporated, using the appropriate rates from Table 17.

Preplant Incorporated: Follow recommended soil preparation procedures for Sonalan.

Sequential: Apply Sonalan alone preplant incorporated as specified on the Sonalan label. Follow with a preemergence application of **Mestalin** during planting (behind the planter) or after planting, but before weeds or soybeans emerge.

Table 17: Mestalin + Sonalan – Soybeans

Soil Texture	Broadcast Rates Per Acre			
	Less Than 3% Organic Matter		3% or More Organic Matter	
	Mestalin	Sonalan	Mestalin	Sonalan
COARSE	1.0-1.33 pts.	1.25-2.0 pts.	1.33 pts.	1.25-2.0 pts.
MEDIUM*	1.33-1.67 pts.	1.75-2.5 pts.	1.33-1.67 pts.	1.75-2.5 pts.
FINE*	1.33-1.67 pts.	2.25-3.0 pts.	1.67-2.0 pts.	2.25-3.0 pts.
Muck or Peat (soils with more than 20% organic matter)	DO NOT USE			

*For eastern black nightshade on these soils, apply Sonalan at 3.0 pts./A on *medium* and 3.5 pts./A on *fine-textured soils*, and follow with 2 incorporation passes.

Restrictions:

Follow the most restrictive limitations and precautions on the **Mestalin - Soybeans Alone** section of the **Mestalin** label and the Soybean directions on the Sonalan label.

TANK MIXTURE WITH PURSUIT

This tank mixture controls all weeds controlled by **Mestalin** alone and by Pursuit alone. Refer to the **Mestalin Applied Alone** section for weeds controlled by **Mestalin** and to the Pursuit label for weeds controlled by Pursuit. Refer to the Pursuit label for geographical locations where this tank mixture may be applied.

Apply **Mestalin** + Pursuit early preplant, preplant incorporated, or preemergence after planting, using rates in Table 18. Application can be made in water or liquid fertilizer. Follow all use directions under Soil Applications on the Pursuit label. For early preplant and preplant incorporated applications, apply within 30 days before planting.

Restrictions:

Follow the most restrictive limitations and precautions on the **Mestalin - Soybeans Alone** section of the **Mestalin** label and the Soybean directions on the Pursuit label, including rotational restrictions.

Table 18: Mestalin + Pursuit – Soybeans

Soil Texture	Broadcast Rates Per Acre		
	Less Than 3% Organic Matter	3% or More Organic Matter	Less Than 3% - 3% or More Organic Matter
	Mestalin	Mestalin	Pursuit
COARSE	0.8 pt.	1.0 pt.	0.25 pt.
MEDIUM	1.0 pt.	1.33 pts.	0.25 pt.
FINE	1.33 pts.	1.33-1.67 pts.	0.25 pt.

Sequential:

Apply **Mestalin** early preplant, preplant incorporated, or preemergence after planting at 0.8 pt./A on coarse soils and 1.0 pt./A on *medium-* and *fine-textured soils*. Follow with a sequential postemergence application of Pursuit to control emerged weeds according to the Pursuit label. **Mestalin** will improve the consistency and level of control from Pursuit on most grass species. Refer to the Pursuit postemergence label for a listing of weeds controlled, application rate, and growth stage limitations.

TANK MIXTURE WITH SENCOR, SCEPTER, LOROX, CANOPY, OR PURSUIT, PLUS GRAMOXONE 3LB, TOUCHDOWN TOTAL, OR ROUNDUP BRANDS FOR MINIMUM-TILLAGE OR NO-TILLAGE SYSTEMS

In minimum-tillage or no-tillage systems where soybeans are planted directly into a cover crop, stale seedbed, established sod, or previous crop residues, the contact herbicides Gramoxone 3LB, Touchdown Total, or Roundup brands may be added to a tank mix of either **Mestalin** + Sencor, **Mestalin** + Scepter, **Mestalin** +

Lorox, **Mestalin** + Canopy, or **Mestalin** + Pursuit. When used as directed, the Gramoxone 3LB portion of the tank mixture controls most emerged weeds and suppresses many perennial weeds. Touchdown Total or Roundup combinations will control emerged annual and perennial weeds when applied as directed on the Touchdown Total or Roundup label. The **Mestalin** + Sencor, Scepter, Lorox, Canopy, or Pursuit portion of the tank mixture provides preemergence control of the weeds listed on this label in the tank mixture section for **Mestalin** + Sencor, **Mestalin** + Scepter, **Mestalin** + Lorox, **Mestalin** + Canopy, and **Mestalin** + Pursuit, respectively.

Refer to the label of each product used in combination and observe the planting details, soybean variety restrictions, information regarding application to soybeans, geographical restrictions, and all other precautions and limitations.

Application:

Apply before, during, or after planting, but before the soybeans emerge. Add Gramoxone 3LB, Touchdown Total, or Roundup brands and apply as directed on the product labels.

Gramoxone 3LB:

Apply as directed on the product label. This treatment will not control weeds taller than 6 inches.

Restrictions:

Do not apply combinations containing Gramoxone 3LB in suspension-type liquid fertilizers, as the activity of paraquat will be reduced.

Touchdown Total or Roundup:

See the Touchdown Total or Roundup brand label for weeds controlled, rates, and other use directions.

Apply in 20-60 gals. of water or fluid fertilizer per acre with ground equipment.

Mestalin + Sencor + Gramoxone 3LB, Touchdown Total, or Roundup Brands

On loamy sand with over 2% organic matter, apply 1.0 pt./A of **Mestalin** + 0.33-0.5 lb./A of Sencor. On *medium soils*, apply 1.33 pts./A of **Mestalin** + 0.5-0.67 lb./A of Sencor. On *fine soils*, apply 1.33-1.67 pts./A of **Mestalin** + 0.67 lb./A of Sencor.

Precautions: To avoid crop injury,

1. Do not use this tank mixture on soil with less than 0.5% organic matter, on alkaline soil with a pH over 7.4, or on all sand and on loamy sand with less than 2% organic matter.
2. If heavy rain occurs soon after application, crop injury may result, especially in poorly drained areas where water stands for several days, or where the seeding slit has not been properly closed.

Mestalin + Scepter + Gramoxone 3LB, Touchdown Total, or Roundup Brands

On *coarse soils*, apply 1.0 pt./A of **Mestalin** + 0.67 pt./A of Scepter. On *medium soils*, apply 1.33 pts./A of **Mestalin** + 0.67 pt./A of Scepter. On *fine soils*, apply 1.67 pts./A of **Mestalin** + 0.67 pt./A of Scepter.

Restrictions: (1) Do not apply within 90 days of harvest, and (2) Do not graze or feed treated soybean forage, hay, or straw to livestock.

Mestalin + Lorox + Gramoxone 3LB, Touchdown Total, or Roundup Brands

On *coarse soils**, apply 1.0 pt./A of **Mestalin** + 1.0-1.5 lbs./A of Lorox DF**. On *medium soils*, apply 1.33 pts./A of **Mestalin** + 1.0-2.0 lbs./A of Lorox DF. On *fine soils*, apply 1.33-1.67 pts./A of **Mestalin** + 2.0-3.0 lbs./A of Lorox DF.

*Do not use on loamy sand, except in the northeastern U.S. on loamy sand with over 1 % organic matter, or injury may occur. Do not use on sand, gravelly soils, or exposed subsoils, or injury may occur.

**When using Lorox L or Lorox DF, use equivalent rates. One pt. of Lorox L equals 1.0 lb. of Lorox DF.

Precaution: Do not use on soil with less than 0.5% organic matter, or crop injury may occur.

Mestalin + Canopy + Gramoxone 3LB, Touchdown Total, or Roundup Brands

Use only where soils have 0.5-5% organic matter. On *coarse soils* (except sand), apply 1.0 pt./A of **Mestalin**, on *medium soils*, apply 1.33 pts./A of **Mestalin**, and on *fine soils*, apply 1.33-1.67 pts./A of **Mestalin**. Refer to the Canopy label for appropriate rate, according to geographical location, soil and organic matter classification, pH limitations, and all other use directions.

Precaution: Do not apply to sand, or to any soil with less than 0.5% organic matter, or to any soil with pH greater than 7.0, except as noted on the Canopy label.

Mestalin + Pursuit + Gramoxone 3LB, Touchdown Total, or Roundup Brands

On *coarse soils*, apply 1.0 pt./A of **Mestalin** + 0.25 pt./A of Pursuit. On *medium soils*, apply 1.33 pts./A of **Mestalin** + 0.25 pt./A of Pursuit. On *fine soils*, apply 1.67 pts./A of **Mestalin** + 0.25 pt./A Pursuit.

POSTEMERGENCE USE ON SOYBEANS - MESTALIN TANK MIXTURES

Tank Mixture with Glyphosate Products (e.g., Touchdown Total or Roundup Brands)

Mestalin at 1.0-1.33 pts./A may be tank mixed with glyphosate products at labeled rates and applied from emergence up through the third trifoliate leaf stage of glyphosate-tolerant soybeans. **Mestalin** alone will not control emerged weeds. Use this treatment only on soybeans designated for use with glyphosate (e.g., glyphosate-tolerant soybeans). The glyphosate product must be registered for postemergence use in glyphosate-tolerant soybeans.

Tank Mixture with Pursuit

Mestalin at 1.0-1.33 pts./A may be tank mixed with Pursuit at labeled rates and applied from emergence up through the third trifoliate leaf stage of soybeans. **Mestalin** alone will not control emerged weeds.

Tank Mixture with Liberty Herbicide or Ignite 280 SL

Mestalin at 1.0-1.33 pts./A may be tank mixed with Liberty Herbicide or Ignite 280 SL Herbicide at labeled rates and applied from emergence up through the third trifoliage leaf stage of soybeans. **Mestalin** alone will not control emerged weeds. Use this treatment only on soybeans designated for use with glufosinate (e.g., LibertyLink).

Restrictions: Follow the tank mix product label for adjuvant recommendations. The use of COC or UAN with **Mestalin** may result in temporary crop injury. When **Mestalin** is applied postemergence to soybeans:

1. Do not apply more than 1.33 pts./A postemergence.
2. Make postemergence application at least 90 days before harvest.
3. Do not graze or feed treated forage or hay from soybeans to livestock following a postemergence application of **Mestalin**.

SUGAR BEETS – MESTALIN ALONE

Postemergence Applications

Mestalin may be applied postemergence to sugar beets after the sugar beets have reached the first true-leaf stage. However, because **Mestalin** is primarily a soil-active herbicide, it must be applied prior to weed emergence in order to provide consistent control of listed weeds. As such, weeds that are emerged with or before the crop, or that are present at the time **Mestalin** is applied, must be controlled with another appropriately labeled herbicide. Apply **Mestalin** at 1 pt./A on *coarse soils*, 1.33 pts./A on *medium soils*, and 1.67 pts./A on *fine soils*. More than one postemergence application may be applied, but the total should not exceed 2.6 pts./A. Weeds present at the time of application will not be controlled.

Restrictions:

1. Do not apply more than 2.6 pts./A postemergence.
2. Do not harvest within 60 days after the last application.

Precaution: In coarse soils, **Mestalin** applied before emergence of sugar beets (i.e., other than postemergence) may cause injury.

SUGAR BEETS - MESTALIN TANK MIX COMBINATIONS

Mestalin may be tank mixed with Assure® II, Select®, Stinger®, or Upbeet® and applied to sugar beets. Tank mixtures of these products with **Mestalin** will increase the risk of crop injury over that of either product applied alone, as the **Mestalin** formulation has some adjuvant properties. The addition of a spray adjuvant such as crop oil concentrates (COC's) or methylated seed oils (MSO's) can further increase the risk of crop injury. Injury risk can be reduced by using the lowest effective rate of the tank mix partner(s) and/or adjuvant and by avoiding applications under adverse growing conditions or high soil or air humidity. Refer to the individual product labels and follow all use restrictions and limitations.

SUGARCANE[*] – MESTALIN ALONE

[*Not for Use in California]

Mestalin can be applied as a preplant, preemergence, or postemergence treatment for weed control in sugarcane.

Mestalin can also be used in a treatment program that includes a preplant/preemergence application followed by a postemergence/post-directed application.

Preplant and Preemergence Applications

Apply **Mestalin** at a rate of 0.89 – 1.22 qt/A prior to planting, preemergence after new plantings, or after harvest, but prior to re-emergence of ratoon-cane. Apply the higher rate on heavier soils and soils with higher organic matter content. For a list of weeds controlled preemergence, refer to Table 1.

If weeds are emerged at the time of application, add a crop oil concentrate (COC) type adjuvant at a rate 1% v/v (1 gallon/100 gallon) or a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v (1 quart/100 gallon) to the spray solution. In addition to COC or NIS, a spray grade UAN (e.g. 28-0-0) at a rate of 2.5% v/v (2.5 gal/100 gal spray solution) or ammonium sulfate (AMS) at a rate of 8.5 lb/100 gallons of spray solution can be added to the spray solution.

Postemergence Applications

Apply **Mestalin** at a rate of 0.49 – 0.98 qt/A postemergence before the sugarcane reaches 60 inches in height. Refer to Table 1 for a list of weeds controlled.

Postemergence applications may be made as a broadcast post-over-the-top or as a post-directed spray to soil between the rows and the base of the sugarcane. For best postemergence weed control, apply **Mestalin** to actively growing weeds.

If a preemergence application was made earlier in the season (not to exceed 1.22 qt/A), only 0.49 qt/A may be applied postemergence. The total amount of **Mestalin** applied (preemergence + postemergence) cannot exceed 1.71 qt/a/year.

If weeds are emerged at the time of application, add a crop oil concentrate (COC) type adjuvant at a rate 1% v/v (1 gallon/100 gallon) or a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v (1 quart/100 gallon) to the spray solution. In addition to COC or NIS, a spray grade UAN (e.g. 28-0-0) at a rate of 2.5% v/v (2.5 gal/100 gal spray solution) or ammonium sulfate (AMS) at a rate of 8.5 lb/100 gallons of spray solution can be added to the spray solution.

Mestalin Tank Mix Combinations

Mestalin may be tank mixed with other registered sugarcane herbicides, insecticides and fungicides. The tank-mix partners are to be applied by the same methods and at the same timings as **Mestalin** unless otherwise specified in the tank-mix product label. It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture. Perform a compatibility test prior to spraying the tank-mix application.

Restrictions:

1. Do not apply more than 1.71 qt/A of **Mestalin** per year.
2. Do not apply more than 1.22 qt/A of **Mestalin** as a preplant or preemergence application per year.

3. Do not apply more than 0.98 qt/A of **Mestalin** as a postemergence application per year.
4. Do not apply more than 0.49 qt/A of **Mestalin** as a postemergence application if a preplant or preemergence application was made.
5. Do not make more than two applications per year.
6. Do not make applications less than 14 days apart.
7. Do not apply **Mestalin** to sugarcane greater than 60 inches in height.
8. Do not make a postemergence application within 100 days of harvest.
9. Do not exceed the total combined maximum annual sugarcane rates for S-metolachlor containing products (3.34 lb S-metolachlor ai/A).

SUNFLOWERS – MESTALIN ALONE

Preplant Incorporated or Preemergence

Within the rate ranges given below, use the higher rate of **Mestalin** if heavy weed infestations are expected. On *coarse soils* with organic matter less than 3%, apply 1.0-1.33 pts./A of **Mestalin**; apply 1.33 pts./A if organic matter is 3% or greater. On *medium soils*, apply 1.33-1.67 pts./A of **Mestalin**. On *fine soils* with organic matter of less than 3%, apply 1.33-1.67 pts./A of **Mestalin**; apply 1.67-2.0 pts./A if organic matter is 3% or greater.

Restrictions:

1. Do not allow livestock to graze or feed in treated area.
2. Do not exceed the maximum label rates for sunflowers for the soil type.

TOMATOES- MESTALIN ALONE

Transplanted

Mestalin may be applied preplant incorporated or preplant before transplanting. If the latter method is used, keep soil disturbance to a minimum during the transplanting operation. Application may also be post directed to transplants after the first settling rain or irrigation. When an application is made post-directed, apply in a minimum of 20 gallons of water per acre and minimize contact with tomato plants. **Mestalin** will not control emerged weeds. In bedded transplanted tomatoes, apply **Mestalin** preplant non-incorporated to the top of the pressed bed as the last step prior to laying plastic. **Mestalin** may also be used to treat row-middles in bedded tomatoes, as long as the total amount of **Mestalin** does not exceed the maximum allowed per crop.

Seeded

Mestalin may be applied post-directed to direct-seeded tomatoes: Tomato plants must be at least 4 inches tall at the time of application, and the product must be applied in a minimum of 20 gallons of water per acre. Minimize spray contact with tomato plants. **Mestalin** will not control emerged weeds.

Tomato Use Rates:

On *coarse soils*, apply 1.0-1.33 pts./A of **Mestalin** if organic matter is less than 3% or 1.33 pts./A if organic matter is 3% or greater. On *medium soils*, apply 1.33-1.67 pts./A of **Mestalin**. On *fine soils*, apply 1.33-1.67 pts./A of **Mestalin** if organic matter is less than 3% or 1.67-2.0 pts./A if organic matter is 3% or greater.

Precautions:

1. **Mestalin** may damage transplants that have been weakened by any cause. To prevent damage, plant only healthy transplants. Do not plant when wet, cool, or unfavorable growing conditions exist.
2. In transplanted tomatoes, if **Mestalin** is applied preplant incorporated, incorporate to a depth less than the depth of transplanting, and use the lower end of the rate range for the given soil type, or damage may occur.
3. For row-middle applications where tomatoes are grown on sandy soils and where high soil moisture conditions can exist (e.g., low binding and high evaporation conditions), as may be found in the States of Florida, Georgia, Maryland, and Virginia, there is potential for crop injury in the form of leaf epinasty. The risk of this type of injury can be reduced by: a) incorporating the **Mestalin** immediately following application, b) applying the **Mestalin** seven or more days before transplanting (but only after the beds have been formed), c) minimizing the application of **Mestalin** onto the plastic of the bed, or d) any combination of the above.

Restrictions:

1. Do not apply to varieties or cultivars with unknown tolerance to **Mestalin**.
2. 90-Day PHI – If the single application rate of **Mestalin** is greater than 1.33 pt/A (up to 2.0 pt/A), do not harvest tomatoes within 90 days of application.
3. 30-Day PHI – If the application of **Mestalin** does not exceed 1.33 pt/A, do not harvest tomatoes within 30 days of application.
4. When applying at 1.33 pt/A with a 30-day PHI, the following restrictions apply:
 - Do not exceed two applications per growing season.
 - The use of adjuvants is prohibited.
 - Applications may be made using ground equipment, in concentrated spray volumes.
 - Applications may be made as a foliar broadcast spray to the soil within 1 week of transplanting and again at blooming/fruiting to the row middles as a banded/directed application 38-77 days after the first treatment.
5. Do not exceed the maximum label rate for the soil texture per year.
6. Apply only by ground application.

Tank Mix Partner Information

Product Name	Active Ingredient	EPA Registration Number
AAtrex 4L	atrazine	100-497
Aatrex Nine-O	atrazine	100-585
Accent	nicosulfuron	352-560
Assure II	quizalofop-p-ethyl	5481-646
Balance Pro	isoxaflutole	264-600
Banvel®	dicamba	66330-276
Basagran®	sodium bentazon	7969-45
Beacon	primisulfuron-methyl	100-705
Bicep II Magnum	atrazine + S-metolachlor	100-817
Buctril	bromoxynil	264-437
Butyrac®	butyric acid, dimethylamine salt	42750-38
Canopy®	metribuzin + chlorimuron ethyl	352-444
Caparol® 4L	prometryn	100-620
Clarity	diglycolamine salt	7969-137
Command	clomazone	279-3158, 279-3150, 279-3151
Concep	fluxofenim	
Cotoran 4L	fluometuron	66222-181
Eptam® 7E	S-ethyl dipropylthiocarbonate	10163-283
Eradicane	S-ethyl dipropylthiocarbonate	10163-284
Gramoxone 3LB	paraquat	100-1652
Ignite 280 SL Herbicide	glufosinate	7969-448
Landmaster BW	glyphosate + 2,4-D	524-351
Liberty® Herbicide	glufosinate	7969-447
Lorox DF	linuron	61842-23
Marksman®	atrazine + dicamba	7969-136
Princep 4L	simazine	100-526
Princep Caliber 90	simazine	100-603
Prowl	pendimethalin	241-418
Pursuit®	imazethapyr	241-310
Roundup brands	glyphosate	524-445, 524-343, 524-539
Scepter® 70 DG	imazaquin	5481-610
Sonalan	ethalfluralin	10163-356
Stinger	clopyralid	62719-73

Product Name	Active Ingredient	EPA Registration Number
Storm	sodium salt of bentazon + sodium salt of acifluorfen	70506-59
Touchdown Total	glyphosate	100-1169
Treflan	trifluralin	10163-360
Upbeet	triflurosulfuron-methyl	279-9584

STORAGE AND DISPOSAL

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

Pesticide Storage: This product may be stored at temperatures down to 30 degrees below 0°F.

Pesticide Disposal: Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. Wastes resulting from the use of this product are toxic. Improper disposal of unused pesticide, spray mixture, or rinsate is a violation of federal law. Pesticide, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to federal, state, or local procedures. For guidance in proper disposal methods, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office.

Container Handling:

[Nonrefillable Containers 5 gallons or less:] [Non-refillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use and disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration.]

[Nonrefillable Containers larger than 5 gallons:] [Non-refillable container. DO not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure 2 more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill or by incineration.]

[Refillable Containers larger than 5 gallons:] [Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the person refilling. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.]

WARRANTY—CONDITIONS OF SALE

OUR DIRECTIONS FOR USE of this product are based upon tests believed reliable. Follow directions carefully. Timing and method of application, weather and crop conditions, mixture with other chemicals not specifically directed and other influencing factors in the use of this product are beyond the control of the Seller. To the extent consistent with applicable law, Buyer assumes all risks of use, storage and handling of this material not in strict accordance with directions given herewith. To the extent

consistent with applicable law, in no case shall the Manufacturer or the Seller be liable for consequential, special or indirect damages resulting from the use or handling of this product when such use and/or handling is not in strict accordance with directions given herewith. The foregoing is a condition of sale by the Seller and is accepted as such by the Buyer.

AAtrex®, AAtrex Nine-O®, Agrisure® GT, Beacon®, Bicep II Magnum®, Caparol®, Concep®, Cotoran®, Eptam®, Eradicane®, Evik®, Gramoxone®, Princep®, Princep® Caliber 90®, Touchdown® are trademarks of a Syngenta Group Company

Accent®, Assure®, Canopy®, Lorox®, Upbeet®, and Viton® are trademarks of E. I. duPont de Nemours and Company, Inc.

Agsorb® trademark of Oil-Dri Corporation

Stinger®, and Treflan® are trademarks of Dow AgroSciences

Balance® Pro, Buctril®, Butyrac®, Ignite®, Liberty®, LibertyLink®, and Sencor® are trademarks of Bayer CropScience

Basagran®, Clarity®, Marksman®, Prowl®, Pursuit®, Scepter®, and Storm® are trademarks of BASF Ag Products

Celatom MP-79® trademark of Eagle-Picher Industries, Inc.

Command® trademark of FMC Corporation

Compex® trademark of KALO Agricultural Chemicals, Inc.

Cotoran® trademark of Makhteshim Agan of North America, Inc.

Landmaster®, Roundup®, and Roundup Ready® are trademarks of Monsanto Company

Unite® trademark of HACO, Inc.

Weedone® trademark of NuFarm, Inc.

X-77® trademark of Loveland Industries, Inc.

[EPA Approval Date]

{LANGUAGE ON LABEL AFFIXED TO CONTAINER}

Mestalin

Active Ingredient: (% by weight)
S-metolachlor*: 81.8%
Other Ingredients: 18.2%
Total 100.0%
*CAS No. 87392-12-9. Contains 7.64 lbs. of active ingredient per gallon.

SALE, USE AND DISTRIBUTION OF THIS PRODUCT IN NASSAU AND SUFFOLK COUNTIES IN THE STATE OF NEW YORK IS PROHIBITED.

KEEP OUT OF REACH OF CHILDREN

WARNING/AVISO

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.)

FIRST AID	
If in eyes:	<ul style="list-style-type: none">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 Poison Control or doctor for treatment advice.
If swallowed:	<ul style="list-style-type: none">Call Poison Control 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:	<ul style="list-style-type: none">Take off contaminated clothing.Rinse skin immediately with plenty of water for 15-20 minutes.Call Poison Control or doctor for treatment advice.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For information on this pesticide product (including general health concerns or pesticide incidents), call the National Pesticide Information Center at 1-800-858-7378, Monday through Friday, 8:00 AM to 12 PM Pacific Standard Time. In the event of a medical emergency, call your poison control center at 1-800-222-1222.	

[See] [inside] [label] [booklet] [for] [additional] [Precautionary Statements][,] [and] [Directions for Use] [including] [Storage and Disposal] [instructions][.]

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS & DOMESTIC ANIMALS

WARNING: Causes substantial but temporary eye injury. Harmful if swallowed. Harmful if absorbed through skin. Do not get in eyes or on clothing. Avoid contact with skin. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

ENVIRONMENTAL HAZARDS: Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash water or rinsate. **Groundwater Advisory:** S-metolachlor is known to leach through soil into groundwater under certain conditions as a result of label use. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow. **Surface Water Advisory:** S-metolachlor has the potential to contaminate surface water through ground spray drift. This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for several weeks or months after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of S-metolachlor from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall or

irrigation is expected to occur within 48 hours. **Non-Target Organism Advisory:** This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated site. Protect the forage and habitat of non-target organisms by following label directions intended to minimize spray drift.

Reporting Ecological Incidents:
To report ecological incidents, including mortality, injury, or harm to plants and animals, call 480-599-6157.

STORAGE AND DISPOSAL

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

Pesticide Storage: This product may be stored at temperatures down to 30 degrees below 0°F.
Pesticide Disposal: Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. Wastes resulting from the use of this product are toxic. Improper disposal of unused pesticide, spray mixture, or rinsate is a violation of federal law. Pesticide, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to federal, state, or local procedures. For guidance in proper disposal methods, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office.

Container Handling:
[Nonrefillable Containers 5 gallons or less:] [Non-refillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows:
Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use and disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration.]
[Nonrefillable Containers larger than 5 gallons:] [Non-refillable container. DO not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure 2 more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill or by incineration.]
[Refillable Containers larger than 5 gallons:] [Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the person refilling. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities

Manufactured for:
INFINICROP, LLC
2364 East Southwood Road
San Tan Valley, AZ 85240

EPA Reg. No. 94144-3
EPA Est. No. _____
NET CONTENTS: