

METALLIS™



Contains s-metolachlor, the active ingredient used in Dual Magnum®.

FOR WEED CONTROL IN CORN; COTTON; GRASSES GROWN FOR SEED;
HORSERADISH; PEANUTS; BEANS, PEAS, AND LENTILS; POTATOES; PUMPKIN; RHUBARB;
SAFFLOWERS; SUGAR BEETS; SUGARCANE*; SUNFLOWERS; SWEET, GRAIN OR FORAGE SORGHUM; SOYBEAN;
SOYBEAN, IMMATURE SEED; 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 (CAS No. 87392-12-9)	83.7%
OTHER INGREDIENTS:	16.3%
TOTAL:	100.0%

Formulated as an Emulsifiable Concentrate (EC). Contains 7.62 lbs. of active ingredient per gallon.

EPA Reg. No.: 91234-52

KEEP OUT OF REACH OF CHILDREN CAUTION

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 below for additional Precautionary Statements.

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 a poison control center or doctor for treatment advice.
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 a poison control center or doctor for treatment advice.
If swallowed:	<ul style="list-style-type: none">▪ Call a poison control center or doctor immediately for treatment advice.▪ Do not give any liquid to the person.▪ Do not induce vomiting unless told to do so by the poison control center or doctor.▪ Do not give anything by mouth to an unconscious person.
If inhaled:	<ul style="list-style-type: none">▪ Move person to fresh air.▪ If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.▪ Call a poison control center or doctor for further 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. You may also contact SafetyCall at 1-844-685-9173 for emergency medical treatment information.	

For Chemical Emergency: Spill, Leak, Fire, Exposure, or Accident,
Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 or +1 703-527-3887 (collect calls accepted)

Metallis™ is not manufactured, or distributed by Syngenta Crop Protection, LLC, seller of Dual Magnum®.

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS & DOMESTIC ANIMALS

CAUTION

Causes moderate eye irritation. Harmful if swallowed or absorbed through skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid contact with eyes, skin, or clothing.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of barrier laminate or Viton® ≥ 14 mils
- Shoes plus socks

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

Engineering 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:

- Wash hands thoroughly after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.
- 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.

PHYSICAL AND CHEMICAL HAZARDS:

Do not mix or allow contact with oxidizing agents. Hazardous chemical reactions may occur.

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:

The active ingredient in **MetalliS** 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.

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 rinsates.

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

This product must not be mixed or loaded within 50 ft. of perennial or intermittent streams and rivers, natural or impounded lakes and reservoirs. This product must 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.

Reporting Ecological Incidents:

To report ecological incidents, including mortality, injury, or harm to plants and animals, call 984-465-4800.

DIRECTIONS FOR USE

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

MetalliS must be used only in accordance with directions on this label or in separately published EPA accepted supplemental labeling for this product.

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 or Viton ≥ 14 mils
- Shoes plus socks

FAILURE TO FOLLOW THE DIRECTIONS FOR USE, RESTRICTIONS 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

Observe all precautions and restrictions on the labels of each product used in tank mixtures. Tank mixtures are permitted only in those states where the tank mix partner is registered. Follow the most restrictive of the labeling limitations and precautions of all products used in mixtures.

MetalliS is a selective herbicide that can be applied as a preplant surface-applied, preplant incorporated, preemergence, or postemergence treatment for control of most annual grasses and certain broadleaf weeds in corn (all types); cotton; grasses grown for seed; peanuts; beans, peas, and lentils; potatoes; safflowers; sugar beets; sugarcane; sunflowers; grain or forage sorghum; soybeans; soybean, immature seed; and tomatoes.

Use Site Restriction: 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:

- Avoid treating powdery dry or light sand soils when conditions are favorable for wind erosion. Under these conditions, settle the soil surface first by rainfall or irrigation.
- Do not apply to impervious substrates, such as paved or highly compacted surfaces.
- 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 **MetalliS** tank mixture with AAtrex® formulations, other brands of atrazine may be used. Follow all use rates and other use restrictions on the AAtrex or respective atrazine product label if other brands of atrazine are used.

Note: 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.

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

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.

MetalliS 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 use directions and restrictions, 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.

METALLIS APPLIED ALONE

Weeds Controlled:

MetalliS 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, **MetalliS** will not control emerged weeds. Control weeds that are present by another means, e.g., mechanical means or by another herbicide.

If **MetalliS** is incorporated, do not exceed a 2 - 3 inch depth. Any tillage after the **MetalliS** incorporation and before planting may not exceed 2 - 3 inches, or the depth of incorporation.

Dry weather following application of **MetalliS** 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**:

- Thoroughly till soil to destroy germinating and emerged weeds.
- Plant crop into moist soil immediately after tillage. If **MetalliS** is to be used preemergence, apply at planting or immediately after planting.
- 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 **MetalliS**.

- 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, make a uniform, shallow cultivation as soon as weeds emerge.

Table 1: Weeds Controlled or Partially Controlled by MetalliS 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	PC
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 aegyotium</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	PC
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	PC
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	PC
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 echinatus</i>	Grass	PC
Shattercane	<i>Sorghum bicolor</i>	Grass	PC

(continued)

Table 1: Weeds Controlled or Partially Controlled by MetalliS Applied Prior to Weed Emergence (continued)

Common Name	Scientific Name	Weed Type	Control (C) or Partial Control (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 corn section of this label for additional use directions.

Weed Resistance Management

For resistance management, **MetalliS** is a Group 15 herbicide. Any weed population may contain or develop plants naturally resistant to **MetalliS** and other Group 15 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Appropriate resistance-management strategies should be followed.

To delay herbicide resistance, take one or more of the following steps:

- Rotate the use of **MetalliS** or other Group 15 herbicides within a growing season sequence or among growing seasons with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group if such use is permitted; where information on resistance in target weed species is available use the less resistance-prone partner at a rate that will control the target weeds equally as well as the more resistance-prone partner. Consult your local extension service or certified crop advisor if you are unsure as to which active ingredient is currently less prone to resistance.
- Adopt an integrated weed-management program for herbicide use that includes scouting and uses historical information related to herbicide use and crop rotation and that considers tillage or other mechanical control methods, cultural, biological and other management practices.
- Scout after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include:
 - 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.
 - Surviving plants mixed with controlled individuals of the same species.

If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method such as hoeing or tillage prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.
- If a weed pest population continues to progress after treatment with this product, discontinue use of this product and switch to another management strategy or herbicide with a different mode of action, if available.
- Contact your local extension specialist or certified crop advisors for additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
- For further information or to report suspected resistance contact Atticus at 984-465-4800.

PREPLANT 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 **MetalliS**.

If a crop treated with **MetalliS** is lost, any crop on this label, or on a supplemental **MetalliS** label, may be replanted immediately provided that the rate of **MetalliS** 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 **MetalliS** 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 **MetalliS** is applied after June 1, rotating to crops other than corn (all types), grain sorghum or sugarcane the next spring, may result in crop injury.

Restrictions:

1. Do not apply more than 1.9 lbs. active ingredient per acre (2.0 pts. of **MetalliS**) in the previous crop.
 2. Do not make lay-by or other postemergence applications of **MetalliS** 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.

Precaution: Rotating to crops within these crop groupings at less than 60 days may result in crop injury.

Restrictions:

1. Do not make a second application of a S-metolachlor containing product to the rotational crops listed in subsections A through C below within 60 days of the original application.
2. If the rate of **MetalliS** 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 **MetalliS** was applied to the field, the following crops (as well as any listed under subsections B or C below) may be planted 60 days after the last application. A second application of a S-metolachlor containing product to the following crops is prohibited within 60 days of the original application.
 - 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.
 - Crop Group 3 Bulb Vegetables (if to be harvested green)** - garlic, great-headed garlic, leek, green onion, Welsh onion, shallot. Winter squash (including pumpkins)
 - B. If not more than 1.67 pts./A of **MetalliS** 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 a S-metolachlor containing product to the following crops is prohibited within 60 days of the original application.
 - Crop Group 8 Fruiting Vegetables, except Cucurbits** - 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 **MetalliS** was applied to the field, the following crops may be planted 60 days after the last application. A second application of a S-metolachlor containing product to the following crops is prohibited within 60 days of the original application.
 - 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, taniar, tumeric, yam bean, yam, true.
 - Crop Group 3 Bulb Vegetables (if to be harvested dry)** - garlic, great-headed garlic, leek, dry bulb and green onion, Welsh onion, shallot.
 - Crop Subgroup 4B Leaf Petiole Vegetables** - cardoon, celery, Chinese celery, celtuce, Florence fennel, rhubarb, and Swiss chard.
 - Crop Subgroup 5A Head and Stem Brassica Vegetables** - broccoli, Chinese broccoli, brussel sprouts, cabbage, Chinese (napa) cabbage, Chinese mustard, cauliflower, cavalo broccolo and kohlrabi.

APPLICATION PROCEDURES

Application Timing:

MetalliS alone or in tank mixtures with other labeled herbicides may be applied for weed control in certain crops at various times. Refer to the crop-specific use directions section of the label to determine which of the following application timings listed below are allowed. 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 on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Preplant Surface-Applied: For minimum-tillage or no-tillage systems only, **MetalliS** alone and some **MetalliS** 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 listed 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-specific use directions section on this label to determine if early preplant surface application may be made for that crop. If weeds are present at the time of treatment, apply in a tank mixture combination with a contact herbicide (for example, Gramoxone® brands, Touchdown® brands, 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.

SPRAY EQUIPMENT

LOW CARRIER APPLICATION

For Broadcast Ground Application Only:

Use sprayers, such as Ag-Chem RoGator®, Hagie, John Deere Hi-Cycle™, Melroe Spra-Coupe, Tyler Patriot™, or Willmar Air Ride®, that provide accurate and uniform application. **Only water may be used as a carrier.** Use screens in suction and in-line strainers that are 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. To achieve best results, apply at a maximum sprayer speed of 15 mph. Rinse sprayer thoroughly with clean water immediately after each use.

Note: Low pressure nozzles will reduce drift and increase application accuracy. Use care when using automatic rate controlling devices to spray the material within the rated working pressure and flow ranges of the nozzles selected. Use nozzle screens when instructed by the manufacturer. Place all nozzles on 20-inch centers, except flooding types. Place flooding type nozzles on 40-inch centers. When Flat Fan-type nozzles are used, use angles of 80° or 110°. Always read and follow the manufacturer's directions for optimum setup and performance of their nozzles or tips.

Aerial Application:

Apply **MetalliS** in water alone or in tank mixtures with AAtrex, Lorox®, or TriCor® in a minimum total volume of 2.0 gals./A by aircraft. **MetalliS** may also be applied by air in combination with Prowl® or Treflan®. Avoid application 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 10 mph. To assure that spray will not adversely affect adjacent sensitive nontarget plants, apply **MetalliS** alone or **MetalliS** + AAtrex by aircraft at a minimum upwind distance of 400 ft. from sensitive plants, or apply **MetalliS**, Lorox, or TriCor at a minimum upwind distance of 300 ft. from sensitive plants.

Aerial Drift Management:

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

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

1. The distance of the outermost nozzles on the boom must not exceed 3/4 the length of the wing-span or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downward more than 45 degrees.

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

Ensure that the applicator is familiar with and takes into account the information covered in the **MANDATORY SPRAY DRIFT MANAGEMENT** and **Spray Drift Advisories** sections below.

Preplant Incorporated: Apply **MetalliS** 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 **MetalliS** after bed formation, unless specified otherwise.

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

Postemergence: **MetalliS** will not control emerged weeds. Control weeds that are present by another means, e.g., mechanical means or by another herbicide.

SPECIAL APPLICATION PROCEDURES

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

Preplant Incorporated: Broadcast **MetalliS** 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 to ensure that only soil from the **MetalliS** treated zone is used (i.e., do not bring untreated soil to soil surface). If the application is made to preformed beds, incorporate **MetalliS** with a tillage implement set to till 2 - 4 inches deep. Use care during tilling to keep the tilled (**MetalliS** treated) soil on the beds. **Preemergence:** Apply **MetalliS** 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 CORN; SOYBEANS; and BEANS, PEAS, AND LENTILS sections of this label for timing of application and other information): 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:

1. Do not apply **MetalliS** to frozen ground.
2. 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 planted.

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): **MetalliS** 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 **MetalliS**. All crops on the **MetalliS** label may be planted the following spring after application. Refer to the crop sections on this label for specific directions.

Restrictions:

1. Do not apply **MetalliS** to frozen ground.
2. If a spring application is made, the combined total amount of **MetalliS** applied in the fall plus the spring must not exceed the maximum seasonal S-metolachlor rate for the specific crop planted.

Ground Application:

Apply **MetalliS** 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 **MetalliS** tank mixtures with wettable powder or dry flowable formulations, use screens and strainers 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 **Aerial Drift Management** and **Aerial Drift Reduction Advisory Information** sections.

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

For information on application using variable-rate technologies, see **Variable-Rate Application** section.

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 S572.3) 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.

TEMPERATURE AND HUMIDITY

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

TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature 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.

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.

CENTER PIVOT IRRIGATION APPLICATION

MetalliS 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. **MetalliS** 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 pesticide residues in the crop can result from nonuniform distribution of treated water. If you have questions about calibration, 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 when needed.

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



When applying **MetalliS** or **MetalliS** mixtures with dry bulk granular fertilizers, follow all directions for use, restrictions 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 **MetalliS** and **MetalliS** mixtures onto the fertilizer must be placed to provide uniform spray coverage. Use care 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 **MetalliS**, AAtrex + Princep®, Balance® Pro, Princep, TriCor, or Sonalan® by the following formula:

$$\frac{2,000}{\text{lbs. of fertilizer per acre}} \times \text{pts./A of liquid or flowable product} = \text{pts. of liquid or flowable product per ton of fertilizer}$$

$$\frac{2,000}{\text{lbs. of fertilizer per acre}} \times \text{lbs./A of dry product} = \text{lbs. of dry product per ton of fertilizer}$$

Pneumatic (Compressed Air) Application (MetalliS 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 **MetalliS** with Exxon Aromatic 200 at a rate of 1.0 - 4.0 pts./gals. of **MetalliS**. Aromatic 200 is a noncombustible/nonflammable petroleum product. Aromatic 200 may be used in either a fertilizer blender or through direct injection systems. Avoid drying agents when using Aromatic 200.

Restrictions:

1. Use mixtures of **MetalliS** 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.
2. When impregnating **MetalliS** in a blender before application, a drier mixture can be attained by substituting a drying agent for Aromatic 200. Agsorb FG or drying agents of 6/30 particle size will provide best results.
3. When possible, avoid drying agents when using On-The-Go impregnation equipment.

Precautions: To avoid potential for explosion:

1. Do not impregnate **MetalliS** or **MetalliS** mixtures on ammonium nitrate, potassium nitrate, or sodium nitrate, either alone or in blends with other fertilizers.
2. Do not use **MetalliS** or **MetalliS** mixtures on straight limestone, since absorption will not be achieved. Fertilizer blends containing limestone can be impregnated.

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

MetalliS Alone:

Mix **MetalliS** 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 **MetalliS**, 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, Cotoran®, Eptam®, Liberty® Herbicide, Lorox, Marksman®, MSMA, Princep, Prowl, Pursuit®, AAtrex + Princep, Sonalan, Treflan, or TriCor, and allow it to become dispersed; then add **MetalliS**; then add a Gramoxone brand, Landmaster® BW, Touchdown 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, Cotoran®, Eptam, Lorox, Marksman, Princep, Prowl*, Pursuit, AAtrex + Princep, Sonalan, Treflan, or TriCor 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.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the application restrictions, limitations, and directions for use and precautionary statements of each product in the tank mixture. When tank mixing this product with other pesticides, observe the more restrictive label limitations and precautions. Do not exceed any label dosage rates. This product cannot be mixed with any product containing a label prohibition against such mixing.

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

For directions on how to conduct a compatibility test, see the **COMPATIBILITY TEST** section.

COMPATIBILITY TEST

To achieve best results, conduct a jar test before tank mixing to ensure compatibility of **MetalliS** with other pesticides. The following test assumes a spray volume of 25 gals./A. For other spray volumes, make appropriate changes in the ingredients.

Note: 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. **Note:** 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 listed 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 1/2 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) - METALLIS ALONE

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

Preplant Surface Applied:

Refer to instructions for use of **METALLIS 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*. A tillage operation may precede the application. When a fall and/or a spring tillage follows application, avoid exceeding an incorporation depth greater than 2 - 3 inches. Minimize furrow and ridge formation in the tillage operations.

Restrictions:

1. Do not apply **MetalliS** to frozen ground.
2. If a spring application is made, the total rate of the fall plus spring applications must not exceed the maximum total rate for corn (3.9 pts./A depending on soil texture).

Fall Application for Italian Ryegrass Control:

MetalliS may be applied for residual control of glyphosate-resistant Italian ryegrass (*Lolium multiflorum*). Apply **MetalliS** 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 **MetalliS** rate for coarse-textured soils and the higher rate for fine-textured soils. A tillage operation may precede the application. If tillage follows the **MetalliS** application, avoid incorporating to a depth greater than 2 - 3 inches. For fall applications after emergence of glyphosate-resistant Italian ryegrass, a Gramoxone brand can be tank mixed with **MetalliS** to control emerged ryegrass. Refer to the Gramoxone brand label for specific rates, application instructions and restrictions. Other registered herbicides may be tank mixed with **MetalliS** for control or improved control of other weeds present at the time of application.

Restrictions:

1. Do not apply **MetalliS** to frozen ground.
2. If a spring application is made, the combined total amount of **MetalliS** applied in the fall plus the spring must not exceed the maximum total rate for corn per crop season (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 **MetalliS** in the fall after the harvest of the previous crop but before freeze-up. Fall applications of **MetalliS** can be surface-applied or incorporated.

Restrictions:

1. Make no more than one fall application per crop.
2. Apply no 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 **MetalliS** 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).

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 listed rate of **MetalliS** (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 prior to planting.

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 Magnum, Bicep II Magnum®, Accent®, Banvel, Basagran, bromoxynil (Buctril®), or 2,4-D. Observe all directions for use, precautions, and restrictions on the label of the postemergent herbicide.

PREPLANT INCORPORATED OR PREEMERGENCE

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

Restrictions for all preplant and preemergence corn applications:

1. If a spring application is made, the total rate of the fall plus spring application must not exceed the maximum total rate for corn (3.9 pts./A depending on soil texture).
2. If a postemergence treatment is made and includes the herbicide used preplant surface-applied, do not exceed the total labeled rate for corn on a given soil texture.

POSTEMERGENCE OR LAY-BY

To extend the duration of weed control in corn, a maximum rate of 2.0 pts./A of **MetalliS** 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 **MetalliS**. For best results, make applications to soil free of emerged weeds and directed toward the base of corn plants in excess of 5 inches tall.

Restrictions for all applications to corn:

1. Preharvest Interval (PHI): Do not harvest sweet corn ears from treated areas for 30 days following application.
2. Do not graze or feed forage from treated areas for 30 days following application.
3. The total **MetalliS** rate applied on corn during any one crop year must not exceed the maximum total rate for corn (3.9 pts./A depending on soil texture).

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 **MetalliS** preplant incorporated followed by 1.0 - 1.33 pts./A of **MetalliS** preemergence. Make the preemergence application during or after planting, but before weeds and corn emerge. Apply the 1.33 pts./A rate of **MetalliS** 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 **MetalliS** 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 or Exceed at 1 packet per 4 acres 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; and (3) Cultivate 14 - 21 days after the postemergence application.

In corn, **MetalliS** may be used up to 2.6 pts./A as either a preplant surface, preplant incorporated, or preemergence treatment on soils having an organic matter content between 6% and 20%. In the event of escape of annual weeds following a preplant surface, preplant incorporated, or preemergence treatment of **MetalliS**, follow with a postemergence application of an appropriately labeled broadleaf and/or grass weed herbicide, i.e., AAtrex, Beacon, Bicep II Magnum, Exceed, Accent, Banvel, Basagran, Brominal, Buctril, or 2,4-D. Brominal or Buctril may be applied postemergence alone or in tank mix combination with AAtrex. Refer to the labels of all herbicides applied postemergence and follow all directions for use, restrictions and precautions.

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. 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.
3. Do not exceed 1.2 lbs. a.i./A of AAtrex in tank mix combination with Buctril postemergence.
4. Do not use **MetalliS** on peat or muck soils.

CORN - METALLIS COMBINATIONS

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

Restrictions: For all applications to corn:

1. Preharvest Interval (PHI): Do not harvest sweet corn ears from treated areas for 30 days following application.
2. Do not graze or feed forage from treated areas for 30 days following application.

IMPORTANT: FOR TANK MIXTURES WITH AATREX (OR OTHER BRANDS OF ATRAZINE) - If applying MetallIS 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.

Table 2: MetallIS Tank Mixtures for Corn - Additional Weeds Controlled and Special Instructions

	MetallIS + AAtrex and/or Princep (Preplant Surface, PPI, PRE)	MetallIS + AAtrex (Post)	MetallIS + Banvel (Field Corn)	MetallIS + AAtrex + Lorox	MetallIS + AAtrex or Princep + Prowl	MetallIS + Marksman	MetallIS + 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		
Cocklebur	X	0	0	X	X	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				X	
Ragweed	X	X	X	X	X	X	X
Smartweed	X	X	X	X	X	X	X
Velvetleaf	X	X	0	X	X	X	0 - X

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

* Field corn only

Comments:

1. Special Mixing Instructions for MetallIS + AAtrex or Princep and Prowl:

- a. Fill the spray tank 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 **MetallIS** 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 **MetallIS**, other brands of atrazine may be used. Follow the rates, and other use directions and restrictions 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 brand herbicide 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 brands or Roundup brands for control of most emerged annual and perennial weeds.

8. Refer to the **CORN - METALLIS 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.

MetallIS in any tank mixture for corn may be applied in water or fluid fertilizer, except as noted. Refer to **CORN (ALL TYPES) - METALLIS ALONE**, for directions for sequential postemergence treatments if escape weeds develop.

Restrictions:

1. Preharvest Interval (PHI): 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 **MetallIS** in tank mixture with AAtrex, do not exceed a total of 2.5 lbs. a.i. of atrazine per acre per year.

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

In addition to the weeds controlled by **MetallIS** alone, **MetallIS** + AAtrex or Princep, or **MetallIS** + 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 **MetallIS** + AAtrex or Princep, or **MetallIS** + AAtrex + Princep either preplant surface, preplant incorporated, or preemergence.



Preplant Surface-Applied:

Follow instructions for use of **MetallIS** alone under **Application Procedures** and under application instructions for **MetallIS** alone on corn. Apply **MetallIS** + AAtrex or Princep, or **MetallIS** + AAtrex + Princep on *medium soils* (1.67 pts./A of **MetallIS** + 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 **MetallIS** + 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 **METALLIS ALONE - Preplant Surface-Applied** section of the label for corn. On *coarse soils*, apply 1.33 pts./A of **MetallIS** 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 **MetallIS** alone under **Application Procedures**. Apply **MetallIS** + AAtrex or Princep, or **MetallIS** + AAtrex + Princep, using the appropriate rates from **Table 3**.

Restriction: 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 **MetallIS** 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 **MetallIS** + 2.0 lbs. a.i./A of AAtrex or Princep preplant incorporated, followed by 1.0 - 1.33 pts./A of **MetallIS** preemergence. Make the preemergence application during or after planting, but before weeds and corn emerge.
2. Apply **MetallIS** 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 listed in combination with **MetallIS** for corn grown on a given soil texture. Follow with a post-directed application of Evik® 80 WDG at the labeled rate. Refer to the Evik 80 WDG label for specific directions for the post-directed application.
3. Apply Eradicane® (or equivalent EPTC or butylate formulations) at labeled rates preplant incorporated, followed by a preemergence application of **MetallIS** 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 **MetallIS**) in the preplant incorporated plus preemergence application on soils with less than 6% organic matter, or crop injury may result.

Table 3: MetallIS + AAtrex or Princep, or MetallIS + 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			
	MetallIS + AAtrex Nine-0* or Princep Caliber 90*	OR	MetallIS + AAtrex Nine-0** + Princep Caliber 90**	MetallIS + AAtrex Nine-0* or Princep Caliber 90*	OR	MetallIS + AAtrex Nine-0** + 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 pt. + 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.
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, **MetallIS** may be used up to 2.33 pts./A in tank mix combination with 2.2 lbs./A of AAtrex Nine-0, or equivalent rates of AAtrex 4L. Refer to the AAtrex label for weeds controlled at this reduced rate.

** When using the tank mixture of **MetallIS** + AAtrex Nine-0 + 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-0 + 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-0, or equivalent rates of AAtrex 4L, or the same total amount of AAtrex + Princep with 1.33 - 1.67 pts./A of **MetallIS**.

TANK MIXTURE WITH AATREX - POSTEMERGENCE

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

Apply 1.0 pt./A of **MetallIS** + 1.3 lbs./A of AAtrex Nine-0* on *coarse soils*, 1.33 pts./A of **MetallIS** + 1.8 lbs./A of AAtrex Nine-0 on *medium soils*, or 1.33 - 1.67 pts./A of **MetallIS** + 1.8 - 2.2 lbs./A** of AAtrex Nine-0 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. Make applications to corn in excess of 5 inches 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 will likely 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-0 = 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-0, or equivalent rate of AAtrex 4L, with 1.33 - 1.67 pts./A of **MetallIS**.

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

Restriction: The total **MetalliiS** 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 **MetalliiS** alone, **MetalliiS** + Banvel, applied preemergence, also controls lambsquarters, ragweed, smartweed, cocklebur*, jimsonweed*, morningglory*, and velvetleaf*.

* Partially controlled.

Apply **MetalliiS** + Banvel preemergence. Broadcast the labeled rate of Banvel with 1.33 pts./A of **MetalliiS** on *medium soils*, or with 1.33 - 1.67 pts./A of **MetalliiS** on *fine soils*. 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.

If it is necessary to rotary hoe to break the soil crust, do not disturb the soil more than 1/2 inch deep.

Restrictions:

1. Do not apply on *coarse soils* or on soils with less than 2.5% organic matter.
2. Do not incorporate before corn emergence.

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

Apply 1.0 - 1.5 pts. of **MetalliiS** + 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.

Precaution:

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

Restriction:

Do not apply with aircraft.

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, **MetalliiS** 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 **MetalliiS**, AAtrex, or Princep to be applied. Apply Prowl 4E according to the following rates in **Table 4**.

* Do not apply **MetalliiS** 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 restrictions 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 OF METALLIS WITH AATREX OR PRINCEP, OR AATREX + PRINCEP WITH GRAMOXONE BRANDS, LANDMASTER BW, TOUCHDOWN 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, stale seedbed, established sod, or previous crop residues, tank mix the contact herbicides Gramoxone brands, Landmaster BW, Touchdown brands or Roundup brands with **MetalliiS** + AAtrex, **MetalliiS** + Princep, or **MetalliiS** + AAtrex + Princep. See **Comment No. 7** following **Table 2**. The **MetalliiS**, **MetalliiS** + AAtrex or Princep, or **MetalliiS** + AAtrex + Princep portion of the tank mixture provides preemergence control of the weeds listed on this label in the tank mixture section for **MetalliiS**, **MetalliiS** + AAtrex or Princep, or **MetalliiS** + AAtrex + Princep - Preplant Surface, Preplant Incorporated, or Preemergence.

Application:

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

Gramoxone Brands:

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

Precaution:

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

Landmaster BW:

See the Landmaster BW label for weeds controlled, listed rates for specific weeds, and other use directions.

Touchdown Brands or Roundup Brands:

See the Touchdown brand or Roundup brand labels for weeds controlled, listed 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 **MetalliiS** with 1.3 lbs. of AAtrex Nine-0* or Princep Caliber 90*, or with 0.7 lb. of AAtrex Nine-0** + 0.7 lb. of Princep Caliber 90**. On *medium soils*, apply 1.33 pts./A of **MetalliiS** with 1.8 lbs. of AAtrex Nine-0 or Princep Caliber 90, or with 0.9 lb. of AAtrex Nine-0 + 0.9 lb. of Princep Caliber 90. On *fine soils****, apply 1.33 - 1.67 pts./A of **MetalliiS** with 1.8 - 2.2 lbs. of AAtrex Nine-0 or Princep Caliber 90, or with 0.9 - 1.1 lbs. of AAtrex Nine-0 + 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 **MetalliiS** + AAtrex Nine-0 + 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-0 + 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-0, or equivalent rate of AAtrex 4L, or the same total amount of AAtrex + Princep, with 1.33 - 1.67 pts./A of **MetalliiS**.

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, **MetalliiS** applied in combination with AAtrex will kill most emerged small annual weeds. Apply **MetalliiS** + 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. Therefore, for best results use nitrogen solutions or complete liquid fertilizers as carriers instead of water. Add X-77 surfactant at 1.0 - 2.0 qts./100 gals. of diluted spray, or another appropriate surfactant at its labeled 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., bromegrass, orchardgrass, rye, or timothy), when existing weeds exceed 3 inches in height or when very dry conditions exist, add Gramoxone brands 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 brands in suspension-type liquid fertilizer. Observe all directions for use, precautions, and restrictions on the respective product labels when applying these products in tank mix combination. Use Balance combinations only on field corn.

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, **MetalliiS** + Marksman will kill most emerged small annual weeds. Apply **MetalliiS** + 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 brands at its standard rate. **MetalliiS** + 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 brands in suspension-type liquid fertilizer or use on emerged corn.

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



TANK MIXTURE WITH BALANCE PRO - FIELD CORN ONLY

MetalliS and Balance PRO have a complementary crop 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. **MetalliS** improves both the duration and spectrum of annual grass and small seeded broadleaf weed control, in particular foxtails (yellow foxtail), 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.

Listed below are compensating rate options for combinations of **MetalliS** and Balance PRO, i.e. higher rates of **MetalliS** are combined with lower rates of Balance PRO, and vice versa. Select a rate option for **MetalliS** 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 are 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 **MetalliS** 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 listed 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 **MetalliS** and Balance PRO product labels.

MetalliS plus Balance PRO tank mix rate options when applied preplant (incorporated or surface applied) up to 7 days before planting or preemergence in field corn:

For coarse-textured soils, where 1.5 or 1.88 ozs./A of Balance PRO is used, 1.0 - 1.33 pts./A of **MetalliS** 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 ozs./A of Balance PRO is used, rates as low as 1.33 pts./A of **MetalliS** may be applied. Where 1.88 or 2.25 ozs./A of Balance PRO is used, rates as low as 1.0 pt./A of **MetalliS** may be applied. **MetalliS** 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 ozs./A of Balance PRO is used, rates as low as 1.33 pts./A of **MetalliS** may be applied if the soil organic matter is less than 3% - if the soil organic matter content is 3% or greater, 1.67 pts./A of **MetalliS** may be applied. Where 1.88 or 2.25 ozs./A of Balance PRO is used, rates as low as 1.33 pts./A of **MetalliS** may be applied. Where 3.0 ozs./A or more of Balance PRO are used, rates as low as 1.0 pt./A of **MetalliS** may be applied. **MetalliS** can be used in combinations with Balance PRO at rates up to 2.0 pts./A on *fine-textured* soils if the soil organic matter content 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 **MetalliS** 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.

Precautions:

1. In-row weed control may be reduced because of lack of coverage when applied to corn over 4 inches tall.
2. Avoid using fluid fertilizer with these mixtures, or corn injury may occur.

Restrictions:

1. Follow all label directions, instructions, precautions, and restrictions for each product used.
2. For each tank mixture with **MetalliS**, apply only to the specific field corn type specified on the tank mix product label.

MetalliS + 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 **MetalliS** provides residual control of grasses and certain broadleaf weeds listed in the label section **METALLIS APPLIED ALONE - Weeds Controlled**. Refer to the **METALLIS ALONE - Preplant Incorporated or Preemergence** section and use the minimum rate per soil texture and organic matter classification for season-long residual control from this tank mix combination with Liberty. Refer to the Liberty Herbicide or Ignite 280 SL Herbicide labels 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 Liberty rate listed to control the species and growth stages present.

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

MetalliS + Touchdown Brands or Roundup Brands for Postemergence Application to Glyphosate-Tolerant Corn

The tank mixture of **MetalliS** + Touchdown 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 brand or Roundup brand label and residual control of weed species on the **MetalliS** label. Use the minimum **MetalliS** rate postemergence with Touchdown or Roundup in glyphosate-tolerant corn as specified in the **CORN - METALLIS ALONE - Preplant Incorporated or Preemergence** section of this label according to soil texture and organic matter. Refer to the Touchdown brand or Roundup brand label and follow appropriate use directions, application procedures, precautions, and restrictions. Refer to the Touchdown brand or Roundup brand label for directions for control of problem species.

Follow all applicable use directions, limitations, precautions, and restrictions regarding application to corn on the **MetalliS** and Touchdown brand or Roundup Ultra brand labels, and on the **Supplemental Labeling of Roundup Ultra for Postemergence Application to Corn with the Roundup Ready Gene**. Where difficult species and/or severe weed populations are expected, use the maximum rate where rate ranges are listed.

MetalliS + Touchdown Brands or Roundup Brands + AAtrex for Postemergence Application to Glyphosate-Tolerant Corn

The tank mixture of **MetalliS** + AAtrex + Touchdown brands 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 brand or Roundup brand label and residual control of weed species on the **MetalliS** + AAtrex label. Use the minimum **MetalliS** + AAtrex rate postemergence with Touchdown or Roundup in glyphosate-tolerant corn as specified in the **CORN - METALLIS 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 restrictions regarding application to corn on the **MetalliS**, AAtrex, and Touchdown brand 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 - METALLIS ALONE

Application:

Apply **MetalliS** preemergence only in Area 1* at the rate of 0.5 - 1.0 pt./A on sandy loams, 0.66 - 1.33 pts./A on *medium soils*, or 1.0 - 1.33 pts./A on *fine soils*. Apply **MetalliS** 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 **MetalliS** postemergence to cotton and preemergence to weeds at 0.5 - 1.33 pts./A, according to the state rate limitations in the following **Postemergence** section. **Do not use on sands and loamy sand.**

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

** Area 2 = NM, OK, and TX

Fall Application for Italian Ryegrass Control:

MetalliS may be applied for residual control of glyphosate-resistant Italian ryegrass (*Lolium multiflorum*). Apply **MetalliS** 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 **MetalliS** rate for coarse-textured soils and the higher rate for *fine-textured* soils. A tillage operation may precede the application. If tillage follows the application of **MetalliS**, avoid incorporating to a depth greater than 2 - 3 inches. For fall applications after emergence of glyphosate-resistant Italian ryegrass, Gramoxone brands can be tank mixed with **MetalliS** to control emerged ryegrass. Refer to the Gramoxone brands label for specific rates, application instructions and restrictions. Other registered herbicides may be tank mixed with **MetalliS** for control or improved control of other weeds present at the time of application.

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 weeds 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. Plant cotton 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.

Note:

For best control of yellow nutsedge and suppression of seedling johnsongrass, apply **MetalliS** 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 **MetalliS** broadcast over-the-top or directed to the soil surface according to the rate restrictions listed below by state. Application before weeds emerge or after clean cultivation to remove existing weeds is necessary since **MetalliS** will not control emerged weeds.

MetalliS 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 **MetalliS**. In furrow-irrigated areas, apply **MetalliS**, 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 **MetalliS**.

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

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

TX, OK, NM, AZ, CA, and Clay Soils in AR: Apply **MetalliS** 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 reinfestation may occur, and a weed control program is used, multiple applications of **MetalliS** 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 **MetalliS** will not control emerged weeds. Apply **MetalliS** postemergence over a previous preplant or preemergence **MetalliS** application as shown in the following table.

State	Multiple MetalliS 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 **MetalliS**. In furrow-irrigated areas, apply **MetalliS**, 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 **MetalliS**.

Precautions for all **MetalliS cotton applications:**

- For best control of yellow nutsedge and suppression of seedling johnsongrass, apply **MetalliS** 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.
- To avoid concentration in the seed furrow, do not make broadcast applications of **MetalliS** to cotton planted in furrows more than 2 inches deep. When making band applications to cotton planted in furrows deeper than 2 inches, ensure that band width does not exceed the width of the bottom of the furrow.
- Applying over-the-top in fluid fertilizer or any other adjuvant, surfactant, oil, or other pesticide not listed in the **COTTON** section of this label may result in crop injury.
- In furrow-planted cotton, to avoid concentration in the furrow and potential injury, do not apply **MetalliS** postemergence until after first "knifing" or cultivation to level soil surface.

Restrictions for all **MetalliS cotton applications:**

- Do not apply more than a total of 2.0 pts./A on coarse soils or 2.6 pts./A of **MetalliS** on medium and fine soils during a growing season. These treatments may be applied over previous registered herbicide treatments.
- Do not apply **MetalliS** on sand or loamy sand soils, or in areas where water is likely to "pond" over the bed.
- Do not apply on Taloka silt loam.
- Do not use in Gaines County, TX.
- Do not graze or feed forage or fodder from cotton to livestock.
- Do not apply **MetalliS** to frozen ground.
- Do not make over-the-top postemergence applications later than 100 days before harvest.
- Do not make directed-postemergence applications later than 80 days before harvest.

COTTON - METALLIS COMBINATIONS**TANK MIXTURE WITH CAPAROL 4L**

MetalliS 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 **MetalliS**, either alone or in combination with Caparol 4L, mix only the amount that will be sprayed in one operation. Do not allow these mixtures to stand without agitation. Only water may be used as a carrier for postemergence-directed application.

In addition to those weeds controlled by **MetalliS** alone, **MetalliS** + 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 (tea-weed), purslane, ragweed, and shallow-germinating seedlings of cocklebur and coffeeweed. As a postemergence-directed application, Caparol provides postemergence control and residual control of weeds on its label, while **MetalliS** provides residual control of weed species on its label. **MetalliS** will not control emerged weeds.

Preplant Incorporated or Preemergence: Apply **MetalliS** + 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: **MetalliS + Caparol 4L - Cotton (NM, OK, TX)**

Use Areas	Soil Texture	Broadcast Rates Per Acre	
		MetalliS	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.
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):

MetalliS 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 **MetalliS** and Caparol 4L. Alternatively, application may be made after cultivation for residual preemergence control. These treatments may be applied over previous registered treatments, including **MetalliS**, provided the maximum label rate of any product is not exceeded.

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

Precautions:

- To avoid concentration in the seed furrow, do not make broadcast applications of **MetalliS** + Caparol 4L to cotton planted in furrows more than 2 inches deep. When making band applications to cotton planted in furrows deeper than 2 inches, ensure that the band width does not exceed the width of the bottom of the furrow.
- Do not apply postemergence over-the-top of cotton, or injury may occur.

Restrictions:

- Do not apply on sand or loamy sand soils, or in areas where water is likely to "pond" over the bed.
 - Do not apply in cut areas of newly leveled fields, or in areas of excess salt.
 - Do not apply to glandless cotton varieties.
 - Do not apply on Taloka silt loam.
 - Do not use in Gaines County, TX.
 - Do not graze or feed forage or fodder from cotton to livestock.
- Refer to the Caparol 4L label for further instructions and restrictions.

TANK MIXTURE WITH COTORAN 4L

MetalliS may be applied in tank mixture with Cotoran 4L preemergence for control of those weeds controlled by **MetalliS** alone and those as listed on the Cotoran 4L 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**. The tank mixture may be applied postemergence to cotton, but preemergence to weeds, or it may be applied postemergence to both cotton and broadleaf weeds for control of weeds on the Cotoran label. Apply as a directed, semi-directed, or over-the-top spray. **MetalliS** will not control emerged weeds, but will provide preemergence control of species on its label.

Mixing Instructions: Incompatibility may occur when tank mixing **MetalliS** and Cotoran 4L. 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 **MetalliS** 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: MetalliS + Cotoran 4L - Cotton

Soil Texture	Broadcast Rates Per Acre		
	MetalliS (pts.)		Cotoran 4L (pts.)
	Area 1*	Area 2**	
Sand, loamy sand	DO NOT USE		
Sandy loam	0.5 - 1.0	0.8 - 1.0	2.04
Loam, silt loam, silt	0.66 - 1.33	1.0 - 1.33	2.04 - 3.23
Fine soil	1.0 - 1.33	1.33	3.23 - 4.08

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

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

Postemergence:

This tank mixture may be applied postemergence to cotton, but preemergence to weeds or postemergence to both cotton and weeds for control of weeds on the Cotoran label. Apply as a directed, semi-directed, or over-the-top spray. **MetalliS** will not control emerged weeds, but will provide preemergence control of species on its label. Where rate ranges are given for Cotoran 4L, 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 **MetalliS**, provided the maximum label rate of any product is not exceeded.

Precautions:

1. The use of Cotoran following the use of a systemic insecticide at planting may result in crop injury.
2. To avoid concentration in the seed furrow, do not make broadcast applications of **MetalliS** + Cotoran to cotton planted in furrows more than 2 inches deep. When making band applications to cotton planted in furrows deeper than 2 inches, ensure that the band width does not exceed the width of the bottom of the furrow.

Restrictions:

1. Do not apply **MetalliS** + Cotoran on sand or loamy sand soils, or in areas where water is likely to "pond" over the bed.
2. Do not use on Taloka silt loam.
3. Do not use in Gaines County, TX.
4. Do not feed treated forage or gin trash to livestock, or graze treated areas.

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

TANK MIXTURE OF METALLIS OR METALLIS + COTORAN WITH GRAMOXONE BRANDS, TOUCHDOWN BRANDS 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 brands, Touchdown brands or Roundup brands may be added to a tank mix of either **MetalliS** or **MetalliS** + Cotoran. When used as directed, the Gramoxone brands portion of the tank mixture controls most emerged weeds and suppresses many perennial weeds. Touchdown or Roundup brand combinations will control emerged annual and perennial weeds when applied as directed on the Touchdown or Roundup label. The **MetalliS** and **MetalliS** + Cotoran portion of the tank mixture provides preemergence control of the weeds listed on this label in the **MetalliS** and **MetalliS** + 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 restrictions. Refer to **Mixing Instructions** under **TANK MIXTURE WITH COTORAN 4L** section.

Application:

Apply before, during, or after planting, but before the cotton emerges. Apply **MetalliS** 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 Brands:

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

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

Touchdown Brands or Roundup Brands:

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

Restrictions:

1. Do not apply **MetalliS** + 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 stands 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 DF** section of this label for further instructions, precautions, and restrictions.

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

MetalliS 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 **MetalliS**. 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 **MetalliS** + MSMA postemergence-directed to cotton at least 3 inches tall according to the directions, restrictions, and precautions on the MSMA product label, as well as the directions, restrictions, and precautions for use of **MetalliS** in the section for **COTTON - METALLIS ALONE - Postemergence**. These treatments may be applied over previous registered treatments, including **MetalliS**, provided the maximum label rate of any product is not exceeded. Cotoran or Caparol may be added to the **MetalliS** + 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 **MetalliS** + Caparol or Cotoran and then add the MSMA product.

Restrictions:

1. Do not use **MetalliS** in tank mix with premixes of MSMA plus herbicides other than those registered for use in tank mixture with **MetalliS** on cotton.
2. Do not apply after first cotton bloom.

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

MetalliS 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 BRANDS OR ROUNDUP BRANDS FOR USE ON GLYPHOSATE-RESISTANT COTTON ONLY

Apply **MetalliS** as a tank mixture with Touchdown or Roundup in water postemergence over-the-top or postemergence-directed for control of emerged weeds listed on the Touchdown or Roundup labels and for residual preemergence control of weeds listed on the **MetalliS** label. See the **COTTON - METALLIS ALONE - Postemergence** section of this label for rates and timings of **MetalliS** and follow the Touchdown or Roundup label for their respective rates, application method, and application timing restrictions. Refer to the Touchdown brand or Roundup brand label and follow appropriate use directions, application procedures, precautions, and restrictions.

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.
2. 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.

Restrictions:

1. Do not apply this tank mixture postemergence to any cotton variety unless it is designated glyphosate-resistant and unless the Touchdown or Roundup formulation being used is registered for postemergence use in Glyphosate-resistant Cotton.
2. Do not apply Touchdown 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.

SOYBEAN, IMMATURE SEED

Metallis may be applied preplant or preemergence for the control or suppression of grass and small seeded broadleaf 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, **Metallis** 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 listed 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 (for example, Gramoxone brands, Touchdown, 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 **Metallis** 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 **Metallis** after bed formation, unless specified otherwise.

Preemergence:

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

Metallis Broadcast Rates Per Acre

Soil Texture	Percent Organic Matter in Soil	
	< 3%	≥ 3%
Coarse	1 - 1.33 pts.	1.33 pts.
Medium	1.33 - 1.67 pts.	1.33 - 1.67 pts.
Fine	1.33 - 1.67 pts.	1.67 - 2.0 pts.

Precaution: **Metallis** will not control emerged weeds. Control weeds that are present by another means, e.g., mechanical means or by another herbicide.

Restrictions:

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

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

To control weeds and volunteer grasses in established grasses grown for seed, apply **Metallis** to established stands of tall fescue, orchardgrass, 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. Evenly spread, remove, or burn the post-harvest residue (straw) before applying **Metallis**. Rainfall or irrigation is required after application and before weed emergence for best control. **Metallis** will provide preemergence control/suppression of volunteer seedlings of perennial ryegrass, fine fescue spp., tall fescue, orchardgrass, bentgrass and Kentucky bluegrass. **Metallis** will control those weed species listed in the **METALLIS ALONE** section of the **Metallis** label and will suppress or control rattail fescue, annual bluegrass, Italian ryegrass, California brome, downy brome, and roughstalk bluegrass.

Apply **Metallis** by ground equipment in a minimum of 10 gallons of water per acre using the rate listed below according to grass species. Hay may be harvested anytime between seed harvest and the next application of S-metolachlor.

Established Grass Crop Grown for Seed	Pts./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. Avoid application after the 15th of November or poor control may result.
2. Tank mixtures with other pesticides, or the addition of an adjuvant, can increase the risk of crop injury.
3. Application to perennial ryegrass and fine fescue stands under stress may cause crop injury.
4. If weed escapes occur following a **Metallis** application, an application of a postemergence herbicide may be necessary to control escapes. When making such an application, follow all directions, precautions and restrictions on the label of the postemergence herbicide.
5. 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 graze forage regrowth for 60 days following application west of the Cascades.
2. In areas east of the Cascades, do not graze forage regrowth for 150 days following application.
3. Do not apply **Metallis** more than once per crop year.

HORSERADISH

Apply a single application of **Metallis** at a broadcast rate of 1.0 - 1.33 pts./A to the soil surface after planting, but before weeds 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. **Metallis** will not control emerged weeds. Control emerged weeds with an appropriate registered foliar herbicide or by mechanical means. Harvest horseradish at normal timing.

Restrictions:

1. Make only one application of **Metallis** per crop.
2. Do not apply more than 1.33 pts./A of **Metallis** per crop.

PEANUTS - METALLIS ALONE

Apply **Metallis**, either preplant incorporated, postplant incorporated, preemergence, or lay-by, using the appropriate rate specified below. **Preplant Incorporated or Preemergence:** Follow instructions for use of **Metallis** alone under **Application Procedures**. **Postplant Incorporated:** Apply and shallowly incorporate **Metallis** into the soil after planting, but before peanut germination. Incorporation depth and incorporating implements must be kept above the seed, or seed will be damaged. **Lay-by:** Apply **Metallis** to the soil immediately after the last normal cultivation.

Apply **Metallis** alone, preplant incorporated, postplant incorporated, preemergence, or lay-by, 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. **Metallis** alone may be applied as directed after any of the following preplant incorporated herbicides when used according to their label use rates, directions, and restrictions: Treflan E.C.; Sonalan; Pursuit; or Prowl.

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

Restrictions:

1. Preharvest Interval (PHI): Do not apply within 90 days of harvest.
2. Do not graze or feed peanut forage or fodder to livestock for 30 days following application.

PEANUTS - METALLIS COMBINATIONS

TANK MIXTURE OR SEQUENTIALLY WITH PURSUIT

The tank mixture or sequential treatment of **MetalliS** and Pursuit controls all weeds controlled by **MetalliS** alone and by Pursuit alone. Refer to the **METALLIS APPLIED ALONE** section for weeds controlled by **MetalliS** 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. **MetalliS** will not control emerged weeds.

TANK MIXTURE WITH SONALAN

The tank mixture controls all weeds controlled by **MetalliS** alone and by Sonalan alone. Refer to the **METALLIS APPLIED ALONE** section for weeds controlled by **MetalliS** and to the Sonalan label for weeds controlled by Sonalan.

Apply **MetalliS** + Sonalan preplant incorporated using the appropriate rate from **Table 7**. Follow the directions for soil preparation procedures for Sonalan.

Table 7: MetalliS + Sonalan - Peanuts

Soil Texture	Broadcast Rates Per Acre			
	Southeast		NM, OK, TX	
	MetalliS	Sonalan	MetalliS	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.

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

TANK MIXTURE WITH PROWL

MetalliS + Prowl applied preplant incorporated controls all weeds controlled by **MetalliS** alone plus Texas panicum, field sandbur, johnsongrass from seed, lambsquarters, kochia, annual spurge, and other species on the Prowl label. Apply **MetalliS** + 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 **MetalliS** + Prowl preplant incorporated, using the appropriate rates from **Table 8**.

Table 8: MetalliS + Prowl - Peanuts

Soil Texture	Broadcast Rates Per Acre	
	NM, OK, TX	Other Peanut Growing States
	MetalliS + Prowl	MetalliS + 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 + 1.0 - 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.

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

TANK MIXTURE OR SEQUENTIALLY WITH GRAMOXONE BRANDS

MetalliS + Gramoxone brands applied at ground cracking or sequentially will control or suppress small (1 - 6 inch) emerged annual grass and broadleaf weeds and provide residual control of weed species listed in the **METALLIS APPLIED ALONE** section of this label. Apply Gramoxone brands plus the appropriate **MetalliS** rate from the **PEANUTS - METALLIS ALONE** section in a minimum spray volume of 20 gals./A with ground equipment. A second application of **MetalliS** + Gramoxone brands may be made 28 days after ground cracking. (Refer to the **PEANUTS - METALLIS COMBINATIONS - Multiple Applications** section of this label for geographical areas where multiple applications are allowed.) Refer to the Gramoxone brands label and follow all directions, limitations, and restrictions.

TANK MIXTURE OR SEQUENTIALLY WITH GRAMOXONE BRANDS + BASAGRAN

The addition of Basagran to the **MetalliS** + Gramoxone brands mixture will result in improved control of such problem broadleaf weeds as prickly sida, cocklebur, smartweed, and bristly starbur. **MetalliS** + Gramoxone brands + 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 **METALLIS APPLIED ALONE** section of this label. Apply Basagran + Gramoxone brands with the appropriate **MetalliS** rate from the **PEANUTS - METALLIS ALONE** section in a minimum spray volume of 20 gals./A with ground equipment. Refer to the Gramoxone brands and Basagran labels and follow all directions, limitations, and restrictions.

TANK MIXTURE OR SEQUENTIALLY WITH GRAMOXONE BRANDS + BUTYRAC 200

The addition of Butyrac 200 to the **MetalliS** + Gramoxone brands mixture will result in improved control of such problem broadleaf weeds as sicklepod, morningglory, and cocklebur. **MetalliS** + Gramoxone brands + Butyrac 200 applied at ground cracking or sequentially will control or suppress small (1 - 6 inch) emerged annual grass and broadleaf weeds and provide residual control of weed species listed in the **METALLIS APPLIED ALONE** section of this label. Apply Gramoxone brands + Butyrac 200 with the appropriate **MetalliS** rate from the **PEANUTS - METALLIS ALONE** section in a minimum spray volume of 20 gals./A with ground equipment. A second application of **MetalliS** + Gramoxone brands + Butyrac 200 may be made 28 days after ground cracking. (Refer to the **PEANUTS - METALLIS COMBINATIONS - Multiple Applications** section of this label for geographical areas where multiple applications are allowed.) Refer to the Gramoxone brands and Butyrac 200 labels and follow all directions, limitations, and restrictions.

TANK MIXTURE OR SEQUENTIALLY WITH BASAGRAN

MetalliS + Basagran applied at ground cracking or sequentially will control species on the Basagran label and provide residual control of species listed in the **METALLIS APPLIED ALONE** section of this label. Apply the labeled rate of Basagran in 20 gals./A, depending on weed species and stage of growth as specified on the Basagran label, with the appropriate **MetalliS** rate from the **PEANUTS - METALLIS ALONE** section. A second application of the combination may be made before peanut pegging. (Refer to the **PEANUTS - METALLIS COMBINATIONS - Multiple Applications** section of this label for geographical areas where multiple applications are allowed.) 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 OR SEQUENTIALLY WITH BASAGRAN + BUTYRAC 200

MetalliS + Basagran + Butyrac 200 applied at ground cracking or sequentially will control species on the Basagran label and on the Butyrac label, especially morningglories. Apply the labeled rate of Basagran + the labeled rate of Butyrac 200 in 20 gals./A, depending on weed species and stage of growth as specified on the Basagran label, with the appropriate **MetalliS** rate from the **PEANUTS - METALLIS ALONE** section. A second application of the combination may be made before peanut pegging. (Refer to the **PEANUTS - METALLIS COMBINATIONS - Multiple Applications** section of this label for geographical areas where multiple applications are allowed.) 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.

TANK MIXTURE OR SEQUENTIALLY WITH STORM®

MetalliS + Storm applied at ground cracking through 2 expanded tetrafoliate leaves or **MetalliS** applied according to the directions for **METALLIS ALONE** and followed with an at-cracking through postemergence treatment of Storm as specified on its label will control species on the Storm label and provide residual control of species listed in the **METALLIS APPLIED ALONE** section of this label. **MetalliS** will not control emerged weeds. Control weeds that are present by another means, e.g., mechanical means or by another herbicide. Refer to the **PEANUTS - METALLIS ALONE** section and to the Storm label and follow all directions, limitations, and restrictions for each product.

BEANS, PEAS, AND LENTILS - METALLIS ALONE

Beans, peas, and lentils, including garbanzo, great northern beans, kidney beans, lima beans, mung beans, navy beans, peas (English*; southern peas, including blackeye, pinkeye, crowder), 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*. A tillage operation may precede the application.

When a fall and/or a spring tillage follows application, avoid exceeding an incorporation depth greater than 2 - 3 inches. Minimize furrow and ridge formation in the tillage operations.

Restrictions:

1. 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.
2. Do not apply to frozen ground.

Spring Application:

Apply **MetallIS**, either preplant incorporated or preemergence, using the appropriate rate specified below. **Preplant Incorporated or Preemergence:** Follow instructions for use of **MetallIS** alone under **Application Procedures**. On *coarse soils* with less than 3% organic matter, apply 1.0 - 1.33 pts./A of **MetallIS** or 1.33 pts./A if organic matter is 3% or greater. On *medium soils*, apply 1.33 - 1.67 pts./A of **MetallIS**. On *fine soils*, apply 1.33 - 1.67 pts./A of **MetallIS** 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 **MetallIS** may delay maturity and/or reduce yields.

Restrictions:

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

BEANS, PEAS, AND LENTILS - METALLIS COMBINATIONS

Restriction: When applying **MetallIS** 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 **MetallIS** alone and by Eptam alone. Refer to the **METALLIS APPLIED ALONE** section of this label for weeds controlled by **MetallIS** alone and to the Eptam label for weeds controlled by Eptam.

Preplant Incorporated: Follow instructions for use of **MetallIS** alone under **Application Procedures**. **Sequential:** Apply Eptam alone preplant incorporated, as specified on that label. Follow with a preemergence application of **MetallIS**, at rates specified for **MetallIS** 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 the labeled rate of Eptam 7E* with **MetallIS** as specified. On *coarse soils*, apply 0.8 pt./A of **MetallIS** 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 **MetallIS** 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 **MetallIS** 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.

Follow all restrictions and precautions on the respective Eptam 7E label and in the Beans, Peas, and Lentils - **METALLIS ALONE** section of this label.

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

MetallIS + Treflan tank mix applied preplant incorporated controls those weeds listed under **METALLIS APPLIED ALONE** and those weeds listed for Treflan alone on the Treflan label.

MetallIS + Treflan may be applied by ground or by aerial equipment and incorporated up to 14 days prior to planting. Follow the most restrictive procedures on this label and on the respective Treflan label, using equipment that provides uniform 2-inch incorporation.

Apply **MetallIS** + Treflan tank mix using the appropriate **MetallIS** rate specified for **MetallIS** 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.

Follow all restrictions and precautions on the respective Treflan label and in the **BEANS, PEAS, AND LENTILS - METALLIS ALONE** section of this label.

POTATOES - METALLIS ALONE

Apply **MetallIS**, 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 applications by center pivot irrigation, see the **CENTER PIVOT IRRIGATION APPLICATION** section of this label.

Incorporated:

Apply **MetallIS** 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. During planting and later cultural practices, avoid bringing 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 **MetallIS** in the top 2 inches of soil. Do not damage potato seed pieces or sprouts with incorporation equipment.

Preemergence:

Apply **MetallIS** 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 2.6 pts./A of **MetallIS** alone may be used where soil organic matter is between 6% and 20%.

Postemergence After Hilling/Lay-by:

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

Precautions:

1. If cool, wet soil conditions occur after application, **MetallIS** 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.

Restrictions:

1. Preharvest interval: Do not harvest potatoes treated with **MetallIS** within 60 days after the at-planting to drag-off application, or within 40 days after a lay-by application.
2. Do not use on muck or peat soils.
3. Do not apply both as a preemergence and an incorporated treatment.
4. Do not apply more than 3.6 pts./A of **MetallIS** in a single crop season.

POTATOES - METALLIS COMBINATIONS

TANK MIXTURE WITH TRICOR

In addition to those weeds controlled by **MetallIS** alone, **MetallIS** applied in tank mix combination with, or sequentially with, any of the registered TriCor 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.

MetallIS at 1.0 - 2.0 pts./A plus the labeled TriCor use rate may be used preemergence or postemergence to potatoes through after last hilling. Apply 1.0 - 1.33 pts./A of **MetallIS** 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. **MetallIS** will not control emerged weeds.

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

Precaution:

Postemergence applications to potatoes, with the exception of center pivot application, can be made only as a directed or semi-directed spray to avoid chlorosis, minor necrosis, or leaf distortion. These directions for use do not apply to sweet potatoes or yams.

Restriction:

Do not use this tank mixture on muck or peat soils.

Refer to the **PRODUCT INFORMATION** section of this label and to the TriCor label for precautionary statements, restrictions, application information, and weeds controlled.

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

MetallIS 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: MetallIS + Lorox DF - Potatoes (East of Rocky Mountains)

Soil Texture	Broadcast Rates Per Acre			
	1% to Less Than 3% Organic Matter		3 - 5% Organic Matter	
	MetallIS	Lorox DF	MetallIS	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.

Restrictions:

1. Do not use on sands or loamy sands.
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 **MetallIS** 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 **MetallIS** + 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: MetallIS + Prowl 4E - Potatoes

Soil Texture	Broadcast Rates Per Acre	
	Less Than 3% Organic Matter	More Than 3% Organic Matter
	MetallIS + Prowl 4E*	MetallIS + 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 **MetallIS** 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 **MetallIS** alone, this tank mixture will control those species on the Prowl 4E and Eptam labels. Refer to the **MetallIS** + Prowl 4E labels for rates of those products and add Eptam 7E at the labeled rate, depending on geographical area. Refer to the respective **MetallIS**, 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 - METALLIS ALONE

Preemergence

Apply **MetallIS** 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 **MetallIS** rate on soils light in texture (loamy sand or lighter) and low in soil organic matter (less than 3%). **MetallIS** applied as a broadcast spray over the planted row or hill, or applications made directly to crop foliage will increase the risk of injury to the pumpkin crop such as stand loss, delayed maturity, and loss of yield.

MetallIS will not control emerged weeds. Control weeds that are present by another means, e.g., by mechanical means or by another herbicide.

Restriction: Preharvest Interval (PHI): Do not harvest pumpkin within 30 days of the **MetallIS** application.

RHUBARB - METALLIS ALONE

Apply **MetallIS** 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. **MetallIS** will not control emerged weeds. Control emerged weeds with an appropriate registered foliar herbicide or by mechanical or physical means.

Restrictions:

1. Preharvest Interval (PHI): Do not harvest rhubarb within 62 days of the **MetallIS** application.
2. Make only one application of **MetallIS** per crop.
3. Do not apply more than 1.33 pts./A of **MetallIS** per crop.

SAFFLOWERS - METALLIS ALONE

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

On *coarse soils*, apply 1.0 - 1.33 pts./A of **MetallIS** 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 **MetallIS**. On *fine soils*, apply 1.33 - 1.67 pts./A of **MetallIS** 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®) - METALLIS ALONE

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

Fall Application for Italian Ryegrass Control:

MetalliS may be applied for residual control of glyphosate-resistant Italian ryegrass (*Lolium multiflorum*). Apply **MetalliS** 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 **MetalliS** rate for coarse-textured soils and the higher rate for fine-textured soils. A tillage operation may precede the application. If tillage follows the **MetalliS** application, avoid incorporating to a depth greater than 2 - 3 inches. For fall applications after emergence of glyphosate-resistant Italian ryegrass, Gramoxone brands can be tank mixed with **MetalliS** to control emerged ryegrass. Refer to the Gramoxone brands label for specific rates, application instructions and restrictions. Other registered herbicides may be tank mixed with **MetalliS** for control or improved control of other weeds present at the time of application.

Restrictions:

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

Preplant Surface-Applied:

Refer to instructions for use of **MetalliS** under the **Application Procedures** section on this label. For minimum-tillage or no-tillage systems only, **MetalliS** may be applied 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 **MetalliS** 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 **MetalliS** on *coarse soils* not more than 2 weeks prior to planting. Under dry conditions, irrigate after application to move **MetalliS** into the soil.

Preplant Incorporated or Preemergence:

Refer to instructions for use of **MetalliS** under the **Application Procedures** section on this label. Broadcast 1.0 - 1.33 pts./A of **MetalliS** 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 **MetalliS** under the **Application Procedures** section on this label. **MetalliS** 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*. **MetalliS** will not control emerged weeds. Therefore, emerged weeds must be controlled by cultural or chemical means. When applied alone, **MetalliS** 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 **MetalliS**.

Precautions:

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

Restrictions:

1. Preharvest Interval (PHI): Do not apply **MetalliS** postemergence within 75 days of harvest.
2. Except for the split preplant surface treatment, do not make more than one application per year.

GRAIN OR FORAGE SORGHUM (SEED TREATED WITH CONCEP) - METALLIS TANK MIXTURES

MetalliS preplant or preemergence (prior to sorghum emergence) tank mixtures with AAtrex may be applied in water or fluid fertilizer. Apply **MetalliS** preplant or preemergence tank mixtures only when the sorghum seed has been properly treated with Concep seed treatment. Preplant or preemergence applications of **MetalliS** 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 MetalliS 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 **MetalliS** + 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, preplant and preemergence applications of **MetalliS** + AAtrex may severely injure the crop.
3. Under high soil moisture conditions prior to sorghum emergence, injury may occur following the use of preplant and preemergence applications of **MetalliS** + AAtrex. The crop will normally outgrow this effect.
4. Avoid use of **MetalliS** + AAtrex on sorghum grown under dry mulch tillage, or injury may occur.

Restriction: 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 **MetalliS** alone, **MetalliS** + 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 **MetalliS** under **Application Procedures** on this label. For minimum-tillage or no-tillage systems only, **MetalliS** + 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 **MetalliS** + 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 **MetalliS** + 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 **MetalliS** + 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 may be made to move **MetalliS** + AAtrex into the soil.

Restrictions:

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 **MetalliS** under **Application Procedures** on this label. On *medium soils* with 1.5% organic matter or greater, apply 1.0 pt./A of **MetalliS** + 1.3 lbs./A of AAtrex Nine-O*. On *fine soils* with less than 1.5% organic matter, apply 1.0 pt./A of **MetalliS** + 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 **MetalliS** + 1.6 - 1.8 lbs./A of AAtrex Nine-O.

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

Restrictions:

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 METALLIS OR METALLIS + AATREX WITH GRAMOXONE BRANDS, LANDMASTER BW, TOUCHDOWN BRANDS 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 brands, Landmaster BW, Touchdown or Roundup may be tank mixed with **MetalliS** or **MetalliS** + AAtrex. See **Comment No. 7** following **Table 2**. The **MetalliS** or **MetalliS** + 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 brands, Landmaster BW, Touchdown brands or Roundup brands and apply as directed on the product labels.

Gramoxone Brands:

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

Landmaster BW:

Apply as directed on the product label. See the Landmaster BW label for weeds controlled, listed rates for specific weeds, restrictions and other information concerning use.

Touchdown Brands or Roundup Brands:

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

SWEET SORGHUM (SEED TREATED WITH CONCEP)

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

Soil-Applied:

MetalliiS may be applied 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 may be made to move **MetalliiS** into the soil.

MetalliiS 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:

MetalliiS 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. **MetalliiS** will not control emerged weeds. Therefore, emerged weeds must be controlled by cultural or chemical methods. When applied alone, **MetalliiS** will be safe to emerged sweet sorghum. Use of adjuvants is prohibited on sweet sorghum.

MetalliiS 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 **MetalliiS** 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 **MetalliiS**. The crop will normally outgrow this effect.
3. Avoid use of **MetalliiS** on sorghum grown under dry mulch tillage, or injury may occur.

Restrictions:

1. Preharvest Interval (PHI): Do not apply **MetalliiS** postemergence within 90 days of harvest.
2. Do not make more than one application per season. **MetalliiS** may be applied either as a soil applied treatment or a postemergence treatment but not both.

SOYBEANS - METALLIS ALONE

Apply **MetalliiS** in the fall for spring weed control, in the fall for Italian ryegrass control or in the spring as a preplant surface-applied, preplant incorporated, preemergence, or postemergence application for control or partial control of weeds in **Table 1**.

The combined total amount of **MetalliiS** from all applications in the fall plus the spring must not exceed 2.6 pts./A. The combined total amount of S-metolachlor from all applications to soybeans must not exceed 2.5 lbs. a.i./A.

Follow instructions for use of **METALLIS ALONE** under the **Application Procedures** section of this label.

Read and follow all restrictions in the **Restrictions For All MetalliiS Soybean Applications** section below.

Fall Application for Spring Weed Control

- Apply after September 30 in ND, SD, MN, WI, and north of Route 30 in IA.
- Apply after October 15 north of Route 91 in NE and south of Route 30 in IA.
- 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 **MetalliiS** on *medium-textured* and 2.0 pts./A of **MetalliiS** on *fine-textured* soils. A tillage operation may precede the application. When a fall and/or a spring tillage follows application, avoid exceeding an incorporation depth greater than 2 - 3 inches. Minimize furrow and ridge formation in the tillage operations.

Fall Application for Italian Ryegrass Control:

MetalliiS may be applied for residual control of glyphosate-resistant Italian ryegrass (*Lolium multiflorum*). Apply **MetalliiS** 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 **MetalliiS** rate for coarse-textured soils and the higher rate for fine-textured soils. A tillage operation may precede the application. If tillage follows a **MetalliiS** application, avoid incorporating to a depth greater than 2 - 3 inches.

For fall applications after emergence of glyphosate-resistant Italian ryegrass, a Gramoxone brand herbicide can be tank mixed with **MetalliiS** to control emerged ryegrass. Refer to the Gramoxone brand herbicide label for specific rates, application instructions and restrictions. Other registered herbicides may be tank mixed with **MetalliiS** for control or improved control of other weeds present at the time of application.

Spring Preplant Surface 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 **MetalliiS** (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 **MetalliiS** on *coarse* soils not more than 2 weeks prior to planting.

MetalliiS may be used up to 2.6 pts./A as a preplant surface treatment on soils having organic matter content between 6% and 20%.

Preplant Incorporated or Preemergence:

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

MetalliiS may be used up to 2.6 pts./A as a preplant incorporated or preemergence treatment on soils having an organic matter content between 6% and 20%.

Postemergence:

Apply 1.0 - 1.33 pts./A of **MetalliiS** as a postemergence treatment to soybeans. **MetalliiS** 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.

MetalliiS can also be applied as part of a sequential soybean weed control program. If **MetalliiS** was applied as a preplant surface, preplant incorporated, or a preemergence treatment, a second treatment of **MetalliiS** can be applied postemergence provided that the total **MetalliiS** rate during any one crop does not exceed 2.6 pts./A.

Restrictions for All MetalliiS Soybean Applications:

1. Preharvest Interval (PHI): Do not apply within 90 days of harvest.
2. Do not graze or feed treated soybean forage, hay, or straw to livestock for 30 days following a preplant surface, preplant incorporated or preemergence application.
3. Do not graze or feed treated forage or hay from soybeans to livestock following a postemergence application of **MetalliiS**.
4. The combined total amount of **MetalliiS** from all applications in the fall plus the spring must not exceed 2.6 pts./A per year.
5. The combined total amount of S-metolachlor from all applications to soybeans must not exceed 2.5 lbs. a.i./A per year.
6. Do not apply more than 1.33 pts./A per year of **MetalliiS** postemergence to soybeans.
7. Do not apply **MetalliiS** to frozen ground.

SOYBEANS - METALLIS COMBINATIONS

MetallIS may be tank mixed with other herbicides for improved residual control of the weeds listed in **Table 1**. For **MetallIS** application rates, refer to the **SOYBEANS - METALLIS ALONE** section above.

The combined total amount of **MetallIS** from all applications in the fall plus the spring must not exceed 2.6 pts./A. The combined total amount of S-metolachlor from all applications to soybeans must not exceed 2.5 lbs. a.i./A.

The tank mixtures with **MetallIS** identified in **Table 11** may be applied to soybeans for improved residual control. Refer to individual product labels for precautionary statements, restrictions, rates, approved uses, rotational restrictions and a list of weeds controlled. Follow the most restrictive label.

Table 11: MetallIS Tank Mixtures for Application in Soybeans

Tank-Mix	Application Timing	Comments
Gramoxone Brands Roundup Brands Touchdown Brands	Preplant Surface Preemergence	<ul style="list-style-type: none"> Use this tank mixture for burndown plus residual control in reduced or no-till systems.
TriCor	Preplant Surface Preemergence	<ul style="list-style-type: none"> Use this tank mixture for additional residual control. Do not use this tank mix on soil with less than 0.5% organic matter. Do not use this tank mix on alkaline soil with a pH over 7.4. If heavy rain occurs soon after application, crop injury may result. Use of this tank mix is not recommended for soybean varieties known to be metribuzin sensitive.
Canopy Authority [®] Maxx Classic [®] FirstRate [®] Sonic [®]	Preplant Surface Preemergence	<ul style="list-style-type: none"> Use this tank mixture for additional residual control.
Classic FirstRate Flexstar [®] Fusilade [®] DX Fusion [®] Prefix [®] Python [®] Reflex [®]	Postemergence	<ul style="list-style-type: none"> MetallIS alone will not control emerged weeds. Use this tank mixture for control of emerged weeds plus residual control of grasses and small seeded broadleaf weeds. Follow the tank mix product label for adjuvant use instructions. The use of COC or UAN with MetallIS may result in temporary crop injury.
Flexstar [®] GT Roundup Brands Touchdown Brands	Postemergence	<ul style="list-style-type: none"> MetallIS alone will not control emerged weeds. Use this mixture for residual control. Use this mixture only on glyphosate tolerant soybeans. Follow the tank mix product label for adjuvant use instructions.
Liberty	Postemergence	<ul style="list-style-type: none"> MetallIS alone will not control emerged weeds. Use this mixture for residual control. Use this mixture only on soybeans that are tolerant to glufosinate (e.g. LibertyLink). Follow the Liberty product label for adjuvant use instructions. The use of COC or UAN with MetallIS may result in temporary crop injury.

Restrictions for All MetallIS Soybean Tank Mixture Applications:

- Preharvest Interval (PHI): Do not apply within 90 days of harvest.
- Do not graze or feed treated soybean forage, hay, or straw to livestock for 30 days following a preplant surface, preplant incorporated or preemergence application.
- Do not graze or feed treated forage or hay from soybeans to livestock following a postemergence application of **MetallIS**.

- For all tank mixtures, refer to individual product labels for precautionary statements, restrictions, rates, approved uses, rotational restrictions and a list of weeds controlled. Follow the most restrictive label.
- The combined total amount of **MetallIS** from all applications in the fall plus the spring must not exceed 2.6 pts./A per year.
- The combined total amount of S-metolachlor from all applications to soybeans must not exceed 2.5 lbs. a.i./A per year.
- Do not apply more than 1.33 pts./A per year of **MetallIS** postemergence to soybeans.
- Do not apply **MetallIS** to frozen ground.

SUGAR BEETS - METALLIS ALONE

Postemergence Applications

MetallIS may be applied postemergence to sugar beets after the sugar beets have reached the first true leaf stage. However, because **MetallIS** 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 **MetallIS** is applied, must be controlled with another appropriately labeled herbicide. Apply **MetallIS** 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 must not exceed 2.6 pts./A. Weeds present at the time of application will not be controlled.

Restrictions:

- Preharvest Interval (PHI): Do not harvest within 60 days after the last application.
- Do not apply more than 2.67 pts./A postemergence.

Precaution:

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

SUGAR BEETS - METALLIS TANK MIX COMBINATIONS

MetallIS may tank mixed with Assure[®] II, Betamix[®], Betanex[®], Poast[®], Progress[®], Stinger[®], or Upbeet[®] and applied to sugar beets. Tank mixtures of these products with **MetallIS** will increase the risk of crop injury over that of either product applied alone, as the **MetallIS** 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* - METALLIS ALONE

* Not for Use in California

MetallIS can be applied as a preplant, preemergence, or postemergence treatment for weed control in sugarcane. **MetallIS** 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 **MetallIS** at a rate of 0.89 - 1.22 qts./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 of 1% v/v (1 gallon/100 gallons) or a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v (1 quart/100 gallons) 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 gals./100 gals. spray solution) or ammonium sulfate (AMS) at a rate of 8.5 lbs./100 gallons of spray solution can be added to the spray solution.

Postemergence Applications

Apply **MetallIS** 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 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 **MetallIS** to actively growing weeds.

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

If weeds are emerged at the time of application, add a crop oil concentrate (COC) type adjuvant at a rate of 1% v/v (1 gallon/100 gallons) **or** a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v (1 quart/100 gallons) 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 gals./100 gals. spray solution) **or** ammonium sulfate (AMS) at a rate of 8.5 lbs./100 gallons of spray solution can be added to the spray solution.

MetallIS Tank Mix Combinations

MetallIS 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 **MetallIS** 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: To avoid possible illegal residues:

1. Do not apply more than 1.71 qts./A of **MetallIS** per year.
2. Do not apply more than 1.22 qts./A of **MetallIS** as a preplant or preemergence application per year.
3. Do not apply more than 0.98 qt./A of **MetallIS** as a postemergence application per year.
4. Do not apply more than 0.49 qt./A of **MetallIS** 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 **MetallIS** 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 lbs. S-metolachlor a.i./A).

SUNFLOWERS - METALLIS ALONE

Preplant Incorporated or Preemergence

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

TOMATOES - METALLIS ALONE

Transplanted

MetallIS 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 made 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. **MetallIS** will not control emerged weeds. In bedded transplanted tomatoes, apply **MetallIS** preplant non-incorporated to the top of the pressed bed, as the last step, prior to laying plastic. **MetallIS** may also be used to treat row-middles in bedded tomatoes, as long as the total amount of **MetallIS** does not exceed the maximum allowed per crop.

Seeded

MetallIS 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. **MetallIS** will not control emerged weeds.

Tomato Use Rates:

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

Precautions:

1. Application to varieties or cultivars with unknown tolerance to **MetallIS** may result in crop injury.
2. **MetallIS** may damage transplants that have been weakened by any cause. To prevent damage, plant only healthy transplants and avoid planting when wet, cool, or unfavorable growing conditions exist.

3. In transplanted tomatoes, if **MetallIS** 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.

4. 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 **MetallIS** immediately following application,
- b. applying the **MetallIS** seven or more days before transplanting (but only after the beds have been formed),
- c. minimizing the application of **MetallIS** onto the plastic of the bed, or
- d. any combination of the above.

Restrictions:

Do not exceed the maximum label rate for the soil texture per year. Apply only by ground application.

90 Day PHI - If the single application rate of **MetallIS** is greater than 1.33 pts./A per year (up to 2.0 pts./A per year) do not harvest tomatoes within 90 days of application.

30 Day PHI - If the application rate of **MetallIS** does not exceed 1.33 pts./A per year, do not harvest tomatoes within 30 days of application.

When applying at 1.33 pts./A per year 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 a week of transplanting and again at blooming/fruitletting to the row middles as a banded/directed application 38 - 77 days after the first treatment.

Tank Mix Partner Information

Product Name	Active Ingredient	EPA Registration Number
AAtrex 4L	atrazine	100-497
Aatrex Nine-0	atrazine	100-585
Accent	nicosulfuron	352-560
Assure II	quizalofop-p-ethyl	5481-646
Authority Maxx	sulfentrazone + chlorimuron	279-9560
Balance Pro	isoxaflutole	264-600
Banvel®	dicamba	66330-276
Banvel SGF	Dicamba	66330-277
Basagran®	sodium bentazon	7969-45
Beacon	primisulfuron-methyl	100-705
Betamix	desmedipham	264-621
Betanex	desmedipham	264-620
Bicep Magnum	atrazine + S-metolachlor	100-886
Bicep II Magnum	atrazine + S-metolachlor	100-817
Buctril	bromoxynil	264-437
Butyrac® 200	butyric acid, dimethylamine salt	42750-38
Canopy®	metribuzin + chlorimuron ethyl	352-444
Caparol® 4L	prometryn	100-620
Clarity	diglycolamine salt	7969-137
Concep	fluxofenim	
Cotoran 4L	fluometuron	66222-181
Eptam® 7E	S-ethyl dipropylthiocarbamate	10163-283
Eradicane	S-ethyl dipropylthiocarbamate	10163-284
Evik®	ametryn	100-786

(continued)

Tank Mix Partner Information (continued)

Product Name	Active Ingredient	EPA Registration Number
FirstRate	cloransulam-methyl	5481-676
Fusilade DX	fluazifop-P-butyl	100-1070
Fusion	fluazifop-P-butyl + fenoxaprop-p-ethyl	100-1059
Gramoxone brands	paraquat	100-1652, 100-1431
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
Poast	sethoxydim	7969-176
Prefix	S-metolachlor + fomesafen	100-1268
Princep 4L	simazine	100-526
Princep Caliber 90	simazine	100-603
Progress	phenmedipham + desmedipham + ethofumesate	264-632
Prowl	pendimethalin	241-418
Pursuit®	imazethapyr	241-310
Python	flumetsulam	62719-277
Reflex	fomesafen	100-993
Roundup brands	glyphosate	524-445, 524-343, 524-539
Sonalan	ethalfluralin	10163-356
Sonic	sulfentrazone + cloransulam-methyl	62719-680
Stinger	clopyralid	62719-73
Storm	sodium salt of bentazon + sodium salt of acifluorfen	70506-59
Touchdown brands	glyphosate	100-1169, 100-1157, 100-1212
Treflan	trifluralin	10163-360
Tricor	metribuzin	70506-103, 70506-68
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: 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): Nonrefillable 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 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 or 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, or by other procedures approved by state and local authorities.

Nonrefillable Containers (> 5 gallons): Nonrefillable 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 two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

Refillable Containers: 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 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. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

LIMITATION OF WARRANTY AND LIABILITY

IMPORTANT: READ BEFORE USE. Read the entire Directions for Use, Conditions of Warranties and Limitations of Liability before using this product. If these terms and conditions are not acceptable, return the unopened product container at once. By using this product, user or buyer accepts the following Disclaimer of Warranties and Limitations of Liability. **CONDITIONS:** The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Ineffectiveness, injury, and other unintended consequences may result because of such factors as manner of use or application (including misuse), the presence of other materials, weather conditions, and other unknown factors, all of which are beyond the control of ATTICUS, LLC. All such risks shall be assumed by the user or buyer.

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