



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

July 24, 2018

Mr. Mark Gelin  
Manager, International Registrations  
ISK Biosciences Corporation  
7470 Auburn Road, Suite A  
Concord, OH 44077

Subject: Notification per PRN 98-10 – Correction of the first-aid statement related to exposure by swallowing  
Product Name: **Tolpyralate 400SC Herbicide**  
EPA Registration Number: 71512-29  
Application Date: June 1, 2018  
Decision Number: 541704

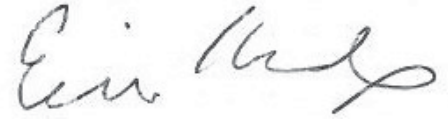
Dear Mr. Gelin:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 for the above referenced product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10.

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

If you have any questions, you may contact Eleanor Thornton at 703-305-6799 or via email at [thornton.eleanor@epa.gov](mailto:thornton.eleanor@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Erik Kraft". The signature is fluid and cursive, with the first name "Erik" being more prominent than the last name "Kraft".

Erik Kraft, Product Manager 24  
Fungicide and Herbicide Branch  
Registration Division (7505P)  
Office of Pesticide Programs

# Tolpyralate 400SC Herbicide

## NOTIFICATION

71512-29

The applicant has certified that no changes, other than those reported to the Agency have been made to the labeling. The Agency acknowledges this notification by letter dated:

07/24/2018

### HERBICIDE

For postemergence weed control in all types of field corn, sweet corn and popcorn.

ACTIVE INGREDIENT:	By Wt.
Tolpyralate*:	35.7%
OTHER INGREDIENTS:	64.3%
Total:	100.0%

\* 1-[[1-Ethyl-4-[3-(2-methoxyethoxy)-2-methyl-4-(methylsulfonyl)benzoyl]-1H-pyrazol-5-yl]oxy]ethyl methyl carbonate

Contains 3.33 pounds active ingredient per gallon of formulated product (400 grams per liter)

### 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 this label, find someone to explain it to you in detail.)

**SEE SIDE PANEL FOR FIRST AID AND ADDITIONAL PRECAUTIONARY STATEMENTS.**

**READ ENTIRE LABEL CAREFULLY AND USE ONLY AS DIRECTED.**

**EPA Reg. No. 71512-29  
EPA Establishment No.**

**Net Contents: xx gallons**

**ISK Biosciences Corporation  
7470 Auburn Road, Suite A  
Concord, Ohio 44077**

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS & DOMESTIC ANIMALS

#### CAUTION

Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

FIRST AID	
<b>If swallowed</b>	<ul style="list-style-type: none"><li>• Call a poison control center or doctor immediately for treatment advice.</li><li>• Have person sip a glass of water if able to swallow.</li><li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li><li>• Do not give anything <b>by mouth</b> to an unconscious person.</li></ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
HOT LINE NUMBER	
For <b>24-Hour Medical Emergency Assistance</b> call <b>1-888-484-7546</b> . [For <b>Chemical Emergency</b> , Spill, Leak, Fire or Accident, call <b>CHEMTREC 1-800-424-9300</b> .]	

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear: long-sleeved shirt and long pants, shoes plus socks, and waterproof gloves.

### USER SAFETY REQUIREMENTS

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

### USER SAFETY RECOMMENDATIONS

#### Users should:

Wash hands 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 rinse water. Do not apply where/when conditions could favor runoff.

## GROUND WATER ADVISORY

Tolpyralate has properties and characteristics associated with chemicals detected in groundwater. Tolpyralate may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

## SURFACE WATER ADVISORY

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 months or more 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 tolypyralate 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.

## DIRECTIONS FOR USE

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

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

### AGRICULTURAL USE REQUIREMENTS

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

Do not enter or allow worker entry into treated areas during the **Restricted Entry Interval (REI)** of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: Coveralls, chemical-resistant gloves made of any waterproof materials, and shoes plus socks.

Sod and seed farms are within the scope of the Worker Protection Standard.

Tolpyralate 400SC must be used only in accordance with directions on this label. To the extent consistent with applicable law, ISK Biosciences Corporation will not be responsible for losses or damage resulting from use of this product in any manner not specifically directed by ISK Biosciences.

## **PRODUCT INFORMATION**

Tolpyralate 400SC is a suspension concentrate used at a rate of 1.0-1.35 fl oz per acre for selective postemergence control of certain grass and broadleaf weeds in field corn, seed corn, sweet corn and popcorn. When applied postemergence, susceptible weeds uptake through treated foliage and cease growth soon after application. Complete death of weeds may take up to 2 weeks but will not compete with the growing crop. Do not make more than two applications of Tolpyralate 400SC per year. The combined dosage of sequential applications must not exceed 2.70 fl oz of Tolpyralate 400SC per acre per year.

### **Mode of Action**

Tolpyralate 400SC is a Group 27 Herbicide that controls weeds by inhibiting HPPD (pigment synthesis) biochemical process.

### **Crop Sensitivity**

Tolpyralate 400SC has exhibited excellent crop sensitivity in development trials. However, Tolpyralate 400SC has not been tested on all inbred lines for sensitivity. Contact your seed corn supplier for specific recommendations.

### **Insecticide Use Information**

Tolpyralate 400SC has no restrictions for registered insecticide use.

## **RESISTANCE MANAGEMENT**

Tolpyralate is an HPPD inhibitor herbicide (Group 27) which inhibits carotenoid biosynthesis in plants. Naturally occurring biotypes of certain weed species with resistance to several herbicide modes of action (triazine (Group 5), ALS (Group 2), PPO (Group 14), glyphosate (Group 9), auxin (Group 4), HPPD (Group 27) and etc.) have been identified. The repeated use of herbicides with the same modes of action allow resistant weeds to be selected and spread. To manage the development and spread of herbicide resistant weed species, it is important to use herbicides with different modes of action either as tank mixes or in sequential applications and in rotations along with altering cultural practices.

To help reduce the development of resistance to HPPD inhibitors (Group 27), always apply the full labeled rate and at the recommended application timing listed on the label. Contact your local sales representative, crop advisor, or extension agent to determine if there is suspected HPPD resistant weeds in your region. If HPPD resistant biotypes of target weeds have been reported, use the specified application rates of this product specified for your conditions and add tank mix products so that there are multiple effective mechanisms of actions for each target weed.

Fields should be scouted prior to application to identify the weed species present and their growth stage to determine if the intended application will be effective. Fields should be scouted after application to verify that the treatment was effective. If suspected weed resistance is observed in a particular weed species contact your retailer representative or call ISK Biosciences at 1-877-706-4640. Lack of weed control is not necessarily an indicator of weed resistance.

Suspected herbicide resistant weeds may be identified by these indicators:

1. Failure to control a weed species normally controlled by the herbicide applied at specified application rates, especially if control is achieved on adjacent weeds.
2. The spreading of a patch of a particular weed species that survives a herbicide application; and

3. Surviving plants mixed with controlled individuals of the same species.

If resistance is suspected, treat weed escapes with an herbicide having a different mechanism of action and/or use non-chemical means to remove escapes, as practical, with the goal of preventing further seed production.

When applying Tolpyralate 400SC as a postemergence treatment after using an HPPD containing preplant/preemergence herbicide always tank mix tolpyralate with another product with a different mode of action. Atrazine is a preferred tank mix partner and other herbicides can be tank mixed as needed to enhance efficacy.

### **Cultivation**

Avoid disturbing treated areas for at least 7 days after Tolpyralate 400SC application to allow maximum herbicide uptake and translocation. Avoid deep cultivation that will move dormant weed seeds into a zone where germination is likely. This is especially critical when tank mixing with an herbicide with soil residual activity.

### **ENVIRONMENTAL CONDITIONS AND BIOLOGICAL ACTIVITY**

Tolpyralate 400 SC provides best results when applied to young, actively growing weeds. Applications made during warm, moist conditions (70°F or more) and adequate soil moisture both before and after application maximizes performance.

The degree and duration of control depend on spray coverage, weed spectrum, weed size, growing conditions before and after treatment and soil moisture.

Tolpyralate 400SC is rainfast in 1 hour. Treating weeds that exceed maximum label height or that are under stress may result in incomplete control. Poor weed control or crop injury may result from applications made to plants under stress from:

- abnormally hot or cold weather
- environmental conditions such as drought, water-saturated soils, hail damage, or frost
- disease, insect, or nematode injury
- prior herbicide, or carryover from a previous year's herbicide application

If the corn or grass weeds are under stress, delay application until stress passes and both weeds and corn resume active growth.

### **INTEGRATED PEST MANAGEMENT (IPM)**

Tolpyralate 400 SC should be integrated into an integrated pest management strategy whenever the use of an herbicide is required. Practices known to reduce weed development (tillage, crop competition) and herbicides use (weed scouting, proper application timing) should be followed whenever possible. Consult local agricultural and weed authorities for additional IPM strategies specific for your area.

### **SPRAY DRIFT MANAGEMENT**

Do not apply more than 2 feet above the ground or crop canopy.

Applicators are required to use a medium to coarse droplet size.

Do not apply when wind speeds exceed 10 miles per hour at the application site.

Do not apply during temperature inversions.

## SPRAY DRIFT ADVISORIES

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

### IMPORTANCE OF DROPLET SIZE

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. **APPLYING LARGER DROPLETS REDUCES DRIFT POTENTIAL, BUT WILL NOT PREVENT DRIFT IF APPLICATIONS ARE MADE IMPROPERLY OR UNDER UNFAVORABLE ENVIRONMENTAL CONDITIONS!** See Wind, Temperature and Humidity, and Temperature Inversions sections of this label.

#### Controlling Droplet Size

- Volume - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure - Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. **WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE.**
- Nozzle Type - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles.

### BOOM HEIGHT

Setting the boom at the lowest referenced height (if specified) which provides uniform coverage reduces the exposure of droplets to evaporation and wind. For ground equipment, the boom should remain level with the crop and have minimal bounce.

### WIND

Drift potential increases at wind speeds of less than 3 mph (due to inversion potential) or more than 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. **AVOID APPLICATIONS DURING GUSTY OR WINDLESS CONDITIONS.** Note: Local terrain can influence wind patterns. Every applicator needs to be familiar with local wind patterns and how they affect spray drift.

### TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, set up equipment to produce larger droplets to reduce effects of evaporation.

### TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified



by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

#### **SHIELDED SPRAYERS**

Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

#### **CALIBRATION**

Equipment should be calibrated regularly according to manufacturer's specifications.

#### **MIXING and LOADING INSTRUCTIONS**

Prepare no more spray mixture than is needed for the immediate application. Avoid overnight storage of Tolpyralate 400SC in spray mixtures.

1. Ensure the spray system is free of residues from previous applications.
2. Fill the tank 1/2 full of clean water.
3. While agitating, add the required amount of Tolpyralate 400SC.
4. Continue agitation until the Tolpyralate 400SC is completely dispersed, at least 5 minutes. Once the Tolpyralate 400SC is fully dispersed, maintain agitation and continue filling tank with water. Thoroughly mix Tolpyralate 400SC with water before adding any other material.
5. As the tank is filling, add the required spray adjuvants (methylated seed oil, crop oil concentrate or ammonium nitrogen fertilizer).
6. If the mixture is not continuously agitated, settling will occur. If settling occurs, thoroughly re-agitate before using.
7. Avoid overnight storage of Tolpyralate 400SC spray mixtures.

For tank mixture mixing instructions see Tank Mixture section below.

#### **Tank Mixtures**

Tank mixes are generally used to broaden or extend control of the weed spectrum present. Tank mix herbicides must be registered for use on the intended crop. A tank mixture with atrazine is recommended unless atrazine is prohibited in the application area. An application of Tolpyralate 400SC at 1.0 to 1.35 fl oz. per acre in combination with atrazine at least 0.5 lb ai per acre will increase the speed of control, the weed spectrum, and consistency of control. Do not apply atrazine if corn is greater than 12 inches.

Tolpyralate 400SC may be tank mixed with other herbicides specified for use on corn. Read and follow all label directions for each tank mix herbicide. 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. Tolpyralate 400SC is generally compatible with insecticides (non-organophosphate), fungicides, fertilizers and micronutrient products provided sufficient free water is available for dispersion of all the tank mix products. However, the physical compatibility of Tolpyralate 400SC with tank mix partners should be evaluated before use. Use tank-mix combinations only when applicator experience indicates that the tank mix will not result in objectionable crop injury.

For tank mixtures, add individual components to the spray tank in the following sequence: water, water dispersible granules, water-soluble bags, dry flowables, emulsifiable concentrates, drift control additives, water-soluble liquids (except in the case of glyphosate or glufosinate which should be added after liquid fertilizer or ammonium sulfate is dispersed), liquid fertilizer and/or ammonium sulfate, and adjuvants.

### **Compatibility Test**

Additives and tank mixes should be tested for compatibility by mixing in a small container prior to mixing in spray tank.

In a glass jar (~1 quart size), add all mix partners, in their relative proportions. Invert, shake or mix the jar thoroughly.

If mixture forms precipitates (flakes or sludge), gels, balls up or forms oily films or layers, this indicates incompatibility. Though signs of incompatibility will typically be seen within 5 minutes of mixing, mixture should be observed for approximately 30 minutes.

Compatibility agents can be used to facilitate mixing. Add ¼ teaspoon of the compatibility agent to the mix (assuming a mixing rate of 2 pints compatibility agent per 100 gallons spray mix). If compatibility agents do not facilitate mixing, the mixture is incompatible and should not be used.

### **SPRAY EQUIPMENT CLEAN OUT:**

After spraying Tolpyralate 400SC and before using sprayer equipment for any other applications, the sprayer must be thoroughly cleaned using the following procedure.

1. Drain tank; thoroughly rinse inside of spray tanks with clean water (rinse about 1 minute per 25 gallons of tank capacity). Loosen and physically remove any visible deposits with a stiff brush.
2. Fill the tank with clean water and add 1 gallon of household ammonia (contains at least 3% active ingredient) for every 100 gallons of water. Circulate the cleaning solution through the tank and hoses for at least 15 minutes. Flush the cleaning solution through the hoses, boom and nozzles (1/4 volume of tank capacity) and then drain the tank.
3. Repeat step 1.
4. Repeat step 2.
5. Remove the nozzles and screen and clean separately in a bucket containing cleaning agent and water.
6. Rinse the tank, boom and hoses with clean water.
7. If only ammonia is used as a cleaner, the rinsate solution from both steps 2 and 4 may be applied back to the crop(s) as specified on the label. Do not exceed the maximum label use rate. If other cleaners are used, consult the cleaner label for rinsate disposal instructions. If no instructions are given, dispose of the rinsate on site or at an approved waste disposal facility.  
(Attention: **Do Not** use Chlorine bleach with ammonia as a dangerous gas will form).

### **APPLICATION INFORMATION**

Many crops are highly sensitive to Tolpyralate 400SC. All direct or indirect contact (such as spray drift) with crops other than corn must be avoided (see also SPRAY DRIFT MANAGEMENT).

### **Sprayer Preparation**

Apply Tolpyralate 400SC with spray equipment that has been cleaned and is free of pesticide deposits from previous pesticide use. Clean spray equipment according to manufacturer's directions, see previous pesticide label for appropriate cleanup directions.

For all application systems, use 50-mesh or larger strainer screens.

### **Postemergence Weed Control**

Tolpyralate 400SC is to be applied by ground application only.

Applications for postemergence weed control should be made in 15 to 50 gallons of water per acre. Use the higher water volumes if vegetation or crop residue is present. Best results are obtained when weeds are small and actively growing. Broadleaf weeds should be no larger than 5 inches and grasses should be no taller than 5 inches and prior to first tillering. Good coverage is essential to achieve optimum weed control. Higher spray volumes should be used under heavy weed populations or under adverse growing conditions.

**Broadcast:** Apply Tolpyralate 400SC using conventional low-pressure ground spray equipment. Follow manufacture's recommendation for spraying pressure and boom height. Check spray equipment daily for proper maintenance and calibration.

**Banded:** Tolpyralate 400SC can also be applied as a banded treatment. Banded rate and volume per treated area can be calculated by multiplying broadcast rate and volume per treated acre by the band width in inches divided by the row width in inches.

**Shielded Sprayers:** Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

### **USE RESTRICTIONS**

DO NOT apply this product by air or through any type of irrigation system.

DO NOT apply more than two applications of Tolpyralate 400SC to corn per year. Do not apply more than a total of 0.07 lb. ai/acre/year.

Allow at least 14 days between applications of Tolpyralate 400SC.

DO NOT apply Tolpyralate 400SC within 45 days of field corn and popcorn grain harvest.

DO NOT apply Tolpyralate 400SC within 35 days of fresh market sweet corn harvest.

DO NOT graze or feed treated corn forage or silage for 21 days after application of Tolpyralate 400SC.

### **FIELD CORN, SWEET CORN, AND POPCORN**

Tolpyralate 400SC may be used in the production of field corn, sweet corn and popcorn.

Tolpyralate 400SC may be applied as a broadcast spray on corn up to 20" tall or that is exhibiting up to and including 6 leaf collars (V6), whichever is more restrictive. While Tolpyralate 400SC has a wide application window in terms of crop safety, research has shown best results are obtained when applications are made early postemergence when corn and weeds are small. Target applications to corn that is less than 12" tall for improved coverage and best overall performance.

## FIELD CORN GROWN FOR SEED

Not all seed corn inbreds have been tested, nor does ISK Biosciences have access to all seed company data. Consequently, ISK Biosciences is not responsible for any crop injury arising from the use of Tolpyralate 400SC on field corn grown for seed. When tank mixing, check the tank mix partner label for instructions for use.

### Timing to Weeds

Apply Tolpyralate 400SC when susceptible weeds are young and actively growing, but before they exceed the sizes indicated in Table 1. Treat heavy infestations of weeds before they become too competitive with the crop, especially where soil moisture and/or fertility are limited. Tolpyralate 400SC provides weed control via foliar absorption. Tolpyralate 400SC has limited pre-emergence activity. For later-emerging weeds, a second application or a timely cultivation is required. Applications made to weeds larger than the size indicated on this label or to weeds under stress may result in unsatisfactory control.

### Rate

Optimum control of the weeds listed can be achieved with 1.0-1.35 fl oz of Tolpyralate 400SC per acre. Use of higher rates for heavier infestations is advised.

## WEEDS CONTROLLED

When applied as directed, Tolpyralate 400SC will control or partially control the weeds listed in tables 1 and 2.

**Table 1. Broadleaf weeds controlled or suppressed with 1.0 to 1.35 fl oz per acre Tolpyralate 400SC**

Broadleaf Weeds Common name	Scientific Name	Tolpyralate + Atrazine <sup>1</sup>	
		1.0 to 1.35 fl oz per acre <sup>2</sup>	
		Apply to weeds < 5 inch tall	
Amaranth, Palmer	<i>Amaranthus palmeri</i>	C	C
Amaranth, Powell	<i>Amaranthus powellii</i>	C	C
Buffalobur	<i>Solanum rostratum</i>	C	C
Carpetweed	<i>Mollugo verticillata</i>	C	C
Cocklebur, common	<i>Xanthium strumarium</i>	PC	C
Dandelion	<i>Taraxacum officinale</i>	NC	PC
Henbit	<i>Lamium amplexicaule</i>	C	C
Kochia	<i>Kochia scoparia</i>	PC	C
Lambsquarters, common	<i>Chenopodium album</i>	C	C
Mallow, Venice	<i>Hibiscus trionum</i>	NC	PC
Marestail/Horseweed	<i>Conyza canadensis</i>	PC	PC
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>	PC	PC
Morningglory, tall	<i>Ipomoea purpurea</i>	PC	PC
Mustard, blue	<i>Chorispora tenella</i>	C	C
Nightshade, black	<i>Solanum nigrum</i>	PC	C
Nightshade, eastern black	<i>Solanum ptychanthum</i>	PC	PC

Nightshade, hairy	<i>Solanum physalifolium</i>	C	C
Pigweed, redroot	<i>Amaranthus retroflexus</i>	C	C
Pigweed, smooth	<i>Amaranthus hybridus</i>	C	C
Ragweed, common	<i>Ambrosia artemisiifolia</i>	C	C
Ragweed, giant	<i>Ambrosia trifida</i>	C	C
Sowthistle, annual	<i>Sonchus oleraceus</i>	C	C
Smartweed, Pennsylvania	<i>Polygonum pensylvanicum</i>	PC	PC
Sunflower, Volunteer	<i>Helianthus annuus</i>	C	C
Sunflower, Wild (Common)	<i>Helianthus annuus</i>	C	C
Thistle, Canada	<i>Cirsium arvense</i>	PC	PC
Velvetleaf	<i>Abutilon theophrasti</i>	C	C
Waterhemp, common	<i>Amaranthus rudis</i>	C	C
Waterhemp, tall	<i>Amaranthus tuberculatus</i>	C	C

C = Control PC = Partial control

<sup>1</sup>Use a minimum of 0.5 lb ai per acre atrazine.

<sup>2</sup>Apply 1.35 fl oz per acre for heavy weed pressure.

**Table 2. Grasses controlled or suppressed with 1.0 to 1.35 fl oz per acre Tolpyralate 400 SC**

Grasses Common name	Scientific Name	Tolpyralate + Atrazine <sup>1</sup>	
		Tolpyralate 1.0 to 1.35 fl oz per acre <sup>2</sup>	
		Apply to grasses < 5 inch tall or before tillering	
Barnyardgrass	<i>Echinochloa crus-galli</i>	PC	C <sup>3</sup>
Crabgrass, large	<i>Digitaria sanguinalis</i>	C	C
Foxtail, giant	<i>Setaria faberi</i>	C	C
Foxtail, green	<i>Setaria viridis</i>	C	C
Foxtail, yellow	<i>Setaria pumila</i>	C	C
Goosegrass	<i>Eleusine indica</i>	PC	C
Millet, wild proso	<i>Panicum miliaceum</i>	PC	C
Shattercane / vol. sorghum	<i>Sorghum bicolor</i>	PC	C <sup>3</sup>
Signalgrass, broadleaf	<i>Urochloa platyphylla</i>	NC	PC

C = Control PC = Partial control NC = Not controlled

<sup>1</sup>Use a minimum of 0.5 lb ai per acre atrazine.

<sup>2</sup>Apply 1.35 fl oz per acre if under heavy weed pressure

<sup>3</sup>Apply 1.35 fl oz per acre for control of these species.

## **SPRAY ADDITIVES**

To increase efficacy it is highly recommended to use an adjuvant when applying this product. For specific adjuvant and nitrogen fertilizer recommendations with tank mixes see the Tank Mix section of this label.

### **Adjuvant Selection**

The use of MSO (methylated seed oil) is recommended with Tolpyralate. The use of COC or NIS will also improve performance of Tolpyralate but have been shown to be less effective than MSO.

### **Methylated Seed Oil (MSO)**

- Apply at 0.5 to 1 gal per 100 gal (0.5 to 1% v/v) of spray solution.
- MSO adjuvants may be used at 0.5% v/v (0.5 gal per 100 gal spray solution) if specifically noted on adjuvant product labeling.
- Oil adjuvants must contain at least 80% high quality, petroleum (mineral) or modified vegetable seed oil with at least 15% surfactant emulsifiers.
- An alternative to traditional MSO adjuvants, High Surfactant Oil Concentrates (HSOC) at recommended rates may be used with Tolpyralate. An HSOC is an emulsifiable oil based product containing 25 to 50% surfactant and a minimum of 50% oil.

### **Nonionic Surfactant (NIS) or Crop oil Concentrate (COC)**

- Apply NIS at 1 qt per 100 gal spray solution (0.25% v/v) or 0.5% under arid conditions.
  - Surfactant products must contain at least 60% nonionic surfactant with a hydrophilic/lipophilic balance (HLB) greater than 12.
- Apply COC at 1.0 gal per 100 gal (1%) spray solution.

### **Ammonium Nitrogen Fertilizer**

- Use 2.5 gal per 100 gal (2.5% V/V) spray solution of a high-quality urea ammonium nitrate (UAN), such as 28% N or 32% N, or 8.5 lb per 100 gal of a spray grade ammonium sulfate (AMS).
- Do not use liquid nitrogen fertilizer as the total carrier solution.

### **Special Adjuvant Types**

- Combination adjuvant products may be used at doses that provide the required amount of NIS, COC, MSO and/or ammonium nitrogen fertilizer. Consult product literature for use rates and restrictions.
- In addition to the adjuvants specified above, other adjuvant types may be used if they provide the same functionality and have been evaluated.

## **TANK MIX APPLICATIONS**

Tolpyralate 400SC may be tank mixed with many herbicides registered for postemergence application in corn for additional control of broadleaf and grass weeds. See the tank mix partner label for weeds controlled, precautions, use restrictions, adjuvant and crop rotation information. The most restrictive language on either label shall apply.

Check with the manufacturer for information on tank mix compatibility prior to using (see TANK MIX COMPATIBILITY TESTING). 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.

**ADDITIONAL DIRECTIONS AND/OR DIRECTIONS FOR SPECIFIC WEED PROBLEMS  
TANK MIXTURES WITH ATRAZINE**

Tank mixtures with atrazine are recommended for additional burndown effect and for limited pre-emergence activity. Unless restricted, Tolpyralate 400SC may be tank mixed with 0.5 to 2.0 lb ai atrazine per acre.

**ROTATIONAL CROP INFORMATION**

The following rotational crops may be planted after applying Tolpyralate 400SC at the labeled application rates in corn as shown in the table. If Tolpyralate is tank mixed with other products, follow the most restrictive crop's rotation interval.

Table 3. Time interval between Tolpyralate 400SC and replanting or planting of rotational Crops

<b>Crop</b>	<b>Replant/Rotational interval</b>
Corn, sweet corn, and popcorn	Immediate
Wheat Barley Oats Rye Grass, grown for seed or forage	3 months
Alfalfa Bean, dry Bean, green (including seed production) Cabbage Canola, rapeseed Cotton Peas, field and edible Peanut Potato Rice Snap beans Sorghum Soybean Cucurbits Sunflower Tomato	9 months
Sugar beets	18 months
All other rotational crops	12 months



## STORAGE AND DISPOSAL

**Pesticide Storage:** Store product in original container only. Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store in a cool, dry place.

**Pesticide Disposal:** Do not contaminate water, food, or feed by disposal. Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**Container Handling:** Non-refillable container. DO NOT reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container  $\frac{1}{4}$  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, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

## LIMITATION OF WARRANTY AND LIMITATION OF DAMAGES

Seller warrants to those persons lawfully acquiring title to this product that at the time of first sale of this product by Seller that this product conformed to its chemical description and was reasonably fit for the express purposes stated on the label when used in accordance with Seller's directions under normal conditions of use as described on the label. To the extent consistent with applicable law, Buyers and users of this product assume the risk of any use contrary to such directions. **TO THE FULLEST EXTENT PERMITTED BY LAW, EXCEPT AS PROVIDED ELSEWHERE IN WRITING CONTAINING AN EXPRESS REFERENCE TO THIS LIMITATION OF WARRANTY AND LIMITATION OF DAMAGES, SELLER MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OR GUARANTY, AND SELLER EXPRESSLY DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE AND EXPRESSLY DISCLAIMS ALL OTHER EXPRESS OR IMPLIED WARRANTIES THAT MAY EXIST UNDER APPLICABLE LAW, COURSE OF DEALING OR USAGE OF TRADE. NO AGENT OF SELLER IS AUTHORIZED TO GRANT ANY WARRANTY IN EXCESS OF THAT GRANTED IN THIS LIMITATION OF WARRANTY AND LIMITATION OF DAMAGES. TO THE FULLEST EXTENT PERMITTED BY LAW, IN NO EVENT SHALL SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES RESULTING FROM THE HANDLING OR USE OF THIS PRODUCT. TO THE FULLEST EXTENT PERMITTED BY LAW, SELLER'S LIABILITY FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE HANDLING OR USE OF THIS PRODUCT SHALL NOT EXCEED THE PURCHASE PRICE OF THE PRODUCT AS TO WHICH A CLAIM IS MADE.** To the fullest extent permitted by law, Buyers and users of this product are responsible for all loss or damage from use or handling of this product that results from conditions beyond the control of Seller, including, but not limited to, incompatibility with other products (unless otherwise expressly provided for in the Directions for Use of this product), weather conditions, cultural practices, moisture conditions or other environmental conditions outside of the ranges that are generally recognized as being conducive to good agricultural and/or horticultural practices.

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