



VILLAIN™

GROUP 15 27 HERBICIDES

An herbicide product for pre-emergence and post-emergence use in corn (field, seed, sweet and yellow popcorn) and grain sorghum on grass and broadleaf weeds

Active Ingredients*:

Metolachlor
Mesotrione

By Wt.

36.80%
3.68%

Other Ingredients:

59.52%

Total:

100.00%

*Equivalent to 3.26 lbs. a.i./gal. metolachlor and 0.33 lb. a.i./gal. mesotrione.

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 inside booklet for complete First Aid, Precautionary Statements and Directions For Use.

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

EPA Reg. No.: 83100-48-89391

121316R011217A

HERBICIDE



Distributed By:
INNVICTIS® CROP CARE, LLC
1880 Fall River Drive, Suite 100
Loveland, CO 80538

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.• 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.• Have person sip a glass of water if able to swallow.• Do not induce vomiting unless told to by the poison control center or doctor.• Do not give anything to an unconscious person.
IF ON SKIN OR CLOTHING:	<ul style="list-style-type: none">• Take off contaminated clothing.• Rinse skin immediately with plenty of water for 15-20 minutes.• Call a poison control center or doctor for treatment advice.
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 by 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. For 24-Hour Medical Emergency Assistance (Human or Animal), call: **1-800-222-1222**. For Chemical Emergency Assistance (Spill, Leak, Fire, or Accident), call CHEMTREC: **1-800-424-9300**.

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS & DOMESTIC ANIMALS CAUTION

Causes moderate eye irritation. Avoid contact with eyes or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wear protective eyewear. Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

All Mixers, Loaders, Applicators, and other handlers must wear:

- Protective eyewear
- Long-sleeved shirt and long pants
- Chemical-resistant gloves (e.g., barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, natural rubber ≥ 14 mils, polyethylene, polyvinyl chloride (PVC) ≥ 14 mils or Viton ≥ 14 mils)
- Shoes and socks

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

ENGINEERING CONTROL STATEMENTS

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

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. If pesticide gets on skin, wash immediately with soap and water.
- 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.

GROUND WATER ADVISORY

The active ingredient, metolachlor, has the potential to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this product in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

SURFACE WATER ADVISORY

The active ingredients in this product have the potential to contaminate surface water through ground spray drift. Under some conditions, the active ingredients may also have a high potential for runoff into surface water (primarily via dissolution in runoff water) for several months post-application. These include poorly drained or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas overlaying extremely shallow ground water, areas with in-field canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas overlaying tile drainage systems that drain to surface water.

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 for contamination of water from runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. Sound erosion control practices will reduce this product's contribution to surface water contamination.

MIXING/LOADING INSTRUCTIONS

This product must be used in a manner that will prevent back siphoning into wells and prevent spills. Dispose of excess pesticide, spray mixtures or rinsates properly.

Mixing equipment must have check valves or anti-siphoning devices in use.

Do not mix or load this product within 50 feet of wells (including abandoned wells and drainage wells), sink holes, perennial or intermittent streams and rivers, and natural or impounded lakes and reservoirs. This restriction does not apply to plugged abandoned well or wells that are properly capped and does not apply to impervious pads or mixing/loading areas that are properly diked.

Mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 feet of any well is strictly prohibited unless on an impervious pad constructed to withstand the weight of the heaviest load that could be on or moved across the pad. The pad must be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or wash water, and rainwater that may fall on the pad. Surface water must not be allowed to flow over or from the pad. To facilitate material removal, the pad must be sloped. A pad that is not under cover must have capacity to hold a minimum of 110% of the capacity of the largest pesticide product container or application equipment that will be on the pad. Covered pads that are completely protected from precipitation must have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment that will be on the pad. The containment capacities must be specified and maintained at all times. Minimum specific containment capacities do not apply to vehicles that deliver pesticides to the mixing/loading site. There may be additional state requirements regarding containment and well setback restrictions. Consult local authorities for additional information.

Physical and Chemical Hazards

Do not use or store near heat or open flame. Do not mix or allow contact with oxidizing agents, as a hazardous chemical reaction may occur.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Read entire label before using 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.

Failure to follow the **DIRECTIONS FOR USE, RESTRICTIONS** and **PRECAUTIONS** on this label may result in reduced weed control, adverse crop response, or illegal crop residues.

NOTE: Not for sale, distribution or use in Nassau or Suffolk Counties in New York.

AGRICULTURAL USE REQUIREMENTS

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

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

The following PPE is required for early entry into 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:

- Protective eyewear
- Coveralls
- Chemical-resistant gloves (e.g., barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, natural rubber ≥ 14 mils, polyethylene, polyvinyl chloride (PVC) ≥ 14 mils or Viton ≥ 14 mils)
- Shoes and socks

PRODUCT INFORMATION

VILLAIN is for use in field corn and seed corn for pre-emergence and early post-emergence control of many annual grass and broadleaf weeds.

VILLAIN may also be applied to sweet corn, yellow popcorn and grain sorghum as pre-emergence control of many annual grass and broadleaf weeds

Refer to the **Weeds Controlled** tables for lists of weeds. This product must be used before weeds emerge to effectively control most grass weeds.

If applications are made according to labeled directions for use and under normal growing conditions, *VILLAIN* will not cause crop injury to the treated crop. During germination and early stages of growth, environmental conditions or other factors that contribute to stress of the crop may cause poor or slow growth and may weaken crop seedlings. Using *VILLAIN* under these conditions can result in crop injury.

Use Restrictions and Precautions

- Do not make applications of this product through any type of irrigation system.
- Do not use flood irrigation to make applications with this product or to incorporate this product.
- Do not apply this product by air.
- Do not contaminate water used for domestic purposes or irrigation water used for crops that are not on this label.
- Do not make applications under conditions that favor runoff or wind erosion to soil that has been treated with this product or drift to non-target areas.
- To prevent movement to off-site areas due to runoff or wind erosion:
 - When conditions are favorable for wind erosion, avoid treating powdery dry or light sand soils. Allow the soil surface to settle by rainfall or irrigation first under these types of conditions.
 - Do not make applications to impervious substrates, such as paved or highly compacted surfaces or snow covered/frozen soils.

Resistance Management

VILLAIN is a combination of two active herbicide ingredients - mesotrione and metolachlor (Group 15 and 27 Herbicides). Two modes of action can be an effective component of a weed resistance management program.

There is potential risk of resistance development in some weeds against the herbicides that have been used repeatedly. While the development of resistance is well understood, it is not easily predicted. Therefore, herbicides must be used in conjunction with resistance management strategies in the area. Consult the local or State agricultural advisors for details. If weed resistance develops in the area, this product used alone may not continue to provide sufficient levels of weed control. If the reduced levels of control cannot be attributed to improper application timing, unfavorable weather conditions or abnormally high weed pressure, a resistant strain may have developed.

To reduce the potential for weed resistance, use this product in a rotation program with other classes of chemistry and modes of action. Always apply this product at the specified labelled rates and in accordance with the use directions. Do not use less than specified label rates alone or in tank mixtures. Do not use reduced rates of the tank mix partner. For optimum performance, scout fields carefully and begin applications when weeds are smaller rather than larger. If resistance is suspected, contact the local or State agricultural advisors.

There are naturally occurring biotypes of broadleaf weeds with known resistance to triazines, ALS, PPO, Glycine (glyphosate) and HPPD herbicides. If weed biotypes that are resistant to triazines, ALS, PPO and glycine inhibitors are in the field, this herbicide should control them if they are listed in the **WEEDS CONTROLLED** tables in this label.

To reduce the potential of weeds developing resistance to HPPD inhibitors, implement a spray program using multiple modes of action that includes both pre-emergence and post-emergence herbicides that provide effective control of all weeds. Consider weed resistance management strategies that includes multiple modes of action where a minimum of two modes of action are labeled for good control of the target weed when either are applied alone. Read and follow all label recommendations.

Integrated Pest (Weed) Management

Integrate *VILLAIN* into an overall weed pest management strategy whenever the use of an herbicide is required. Practices known to reduce weed development (tillage, crop competition) and herbicide use (weed scouting, proper application timing, banding) should be followed wherever possible. Consult local agricultural and weed authorities for additional IPM strategies established for your area.

APPLICATION INFORMATION

Ground Application

Space spray nozzles uniformly using the same size and type nozzle to provide accurate and uniform application. To avoid drift and produce good coverage, use nozzles that will produce medium to coarse size droplets. Only use 50-mesh or coarser screens in all inline strainer and nozzle screens. Using agitation, maintain proper product dispersion in the tank, and use a pump that can maintain pressure of at least 35 to 40 PSI at the nozzles. If using extended range or drift reduction nozzles, reduced pressure may be used provided that adequate coverage is maintained. Ensure proper and consistent agitation during spraying through duration until spraying is complete – even when there are brief periods of time where spraying has stopped. Stop and run a full agitation before resuming spray if the spray tank is allowed to sit for more than 5 minutes to re-suspend the solution.

Pre-Emergence Applications

Make pre-emergence applications of *VILLAIN* in a spray volume of 10 to 80 gals./A.

Post-Emergence Applications

For optimum weed control, good weed coverage is essential. Make applications in a spray volume of 10 to 30 gals./A. If weed pressure is high and foliage is dense, use a minimum spray volume of 20 gals./A. For post-emergence applications, use flat fan nozzles for best coverage. Do not use flood jet or venture type nozzles or controlled droplet application. Use only clean water as a carrier.

Aerial Application

Do not apply this product by air.

Spray Drift

AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR. The interaction of equipment and weather related factors determine the potential for drift. The applicator is responsible for considering these factors when making an application decision.

Do not apply when weather conditions may cause drift to non-target areas. Drift may result in injury to adjacent crops and vegetation. To avoid spray drift, DO NOT apply when the wind speed is greater than 10 mph or during periods of temperature inversions.

Leave a sufficient buffer to avoid drift to sensitive crops. This buffer may be untreated corn rows or field border species maintained for this purpose. The width of the buffer needed for a specific application will depend on the wind speed, distance to sensitive crops, and application equipment parameters.

Information on Droplet Size

The most effective way to reduce spray drift potential is to apply larger droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions.

Controlling Droplet Size

- **Application Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.

Application Height

Applications should be made at the lowest height above the target area that still provides uniform coverage of the target. Making applications at the lowest yet effective height reduces exposure of droplets to wind.

Sensitive Areas

Only apply *VILLAIN* when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

ADDITIVES

For applications where an adjuvant will be used, it is recommended to select one that meets the standards of the Chemical Producers and Distributors Association (CPDA) adjuvant certification.

Post-Emergence Applications - After Corn Has Emerged

Add either a non-ionic surfactant at 0.25% v/v (1 qt./100 gals.) or crop oil concentrate at a rate of 1% v/v (1 gal./100 gals.) after field corn has emerged. Using a COC will provide better control than using an NIS, but temporary crop injury may occur.

If needed, a nitrogen-based adjuvant (AMS or UAN) may also be used to improve consistency of weed control. Risk of adverse crop response and crop injury will increase with the use of AMS or UAN adjuvants and temporary crop injury may occur.

Do not use methylated seed oil (MSO) with this product when applied alone to emerged field corn, or when applied as a post-emergence tank mixture with other products.

Pre-Emergence Applications - Before Corn Emergence

To increase burndown activity on weeds that have emerged, any adjuvant may be used at a pre-emergence or pre-plant timing.

MIXING PROCEDURES

Use either clean water or liquid fertilizers (excluding suspension fertilizers) as carriers for pre-emergence applications. If using fluid fertilizers, a compatibility test must be conducted. See **COMPATIBILITY TEST** section for additional information. Even if *VILLAIN* is determined to be physically compatible with a fluid fertilizer, constant agitation will be necessary to maintain a uniform solution during application. Use only clean water as a carrier.

The spray tank must be thoroughly rinsed, decontaminated and clean before adding either *VILLAIN* alone or with tank mix partners. Use only clean water, if water is used as the carrier.

Refer to specific tank mix recommendation sections in this label. Always refer to the tank mix partner label(s) for mixing directions and precautions. Do not exceed maximum label use rates, or combined total maximum seasonal use rates for mesotrione or metolachlor. Do not mix this product with any product bearing a label prohibition against such mixing. If a tank mixture is used, a compatibility test must be conducted. See **COMPATIBILITY TEST** section below for information on conducting a compatibility test.

COMPATIBILITY TEST

To ensure compatibility of a tank mix partner with *VILLAIN*, a compatibility test should be conducted.

Complete liquid fertilizers or nitrogen solutions (excluding suspension fertilizers) may replace all or part of the water in the spray, as described in directions for use. Always conduct compatibility test and make actual applications according to label directions and use recommended carrier. Always check compatibility of liquid fertilizers with pesticide(s) before use because, even within the same analysis, liquid fertilizers vary. Tank mixtures incompatible is more common with mixtures of fertilizers and pesticides.

COMPATIBILITY TEST PROCEDURE (Assuming a 25 gals./A spray volume)

1. Add 1.0 pt. of water or fertilizer carrier to each of **two** - 1 quart jars with tight lids. It is important to use the same source of water that will be used in the tank mix and to conduct the test at the same temperature the tank mix will be applied as water and temperature can affect compatibility.
2. Add 1/4 tsp. or 1.2 mL of a compatibility agent approved for the intended use to **one of the jars** (1/4 tsp. equals 2.0 pts./100 gals. of spray). Mix by shaking or gently stirring (if shaking place lid on jar).
3. Add the appropriate amount of pesticide(s) based on described label rates to **both jars**. If more than one pesticide product will be used, add them separately in the order as described in the Mixing Procedures section of this label. Shake or stir gently after each addition to thoroughly mix (if shaking place lid on jar).
4. After all ingredients have been added, place lids on tightly, and invert each jar ten times. Allow the mixtures to stand 15 to 30 minutes. Look for separation, precipitates, gels, heavy oily film on the jar, large flakes, or other signs of incompatibility. Compare the two jars to determine if the compatibility agent is needed. If mixtures separate, but can be easily and readily remixed, the mixture can be sprayed but good agitation must be used. If it is determined the mixtures are incompatible, use the following methods to test for improving compatibility:
 - a) Make a slurry of the dry pesticide(s) in water before addition, or
 - b) Add 1/2 of the compatibility agent to the carrier (fertilizer or water) and the other 1/2 to the emulsifiable concentrate (EC) or flowable pesticide before adding to the mixture. If mixture is still not compatible, do not use the mixture.
5. Dispose of any pesticide wastes in accordance with the Storage and Disposal section in this label.

Tank Mix Instructions

Use sprayers and equipment that are in good, clean condition and maintain adequate agitation. 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.

If the tank mix partner is determined to be compatible, fill the tank half full of the carrier. Begin agitation and maintain throughout mixing and application. Make sure all return lines to the spray tank discharge below the liquid level. Prepare the tank mixture components and add to the tank in the following order:

1. If using ammonium sulfate (AMS) – add and continue until it is completely dispersed.
2. If using a wettable powder or dry flowable formulation, make a slurry with water first and then add it slowly through the screen into the tank. Maintain agitation during this step.
3. If using a flowable formulation, add slowly through screen into the tank. Diluting the flowable with water before adding to the tank may improve mixing and compatibility with dry flowable formulations.
4. Add **VILLAIN**.
5. Add any other liquid tank mix products, adding emulsifiable concentrates last.
6. If an adjuvant will be used, add as the final step. Maintain agitation.
7. Complete filling the spray tank with the carrier and maintain agitation. Make application as soon as possible after spray mixture is prepared. Do not leave mixture in spray tank overnight unattended or without agitation.

If **VILLAIN** is added to the spray tank via induction, compatibility of the spray mixture may be compromised. If using an induction tank (or comparable equipment), add each tank mixture product separately and allow each to fully disperse into the spray tank before adding the next product. For optimum compatibility, rinse the induction tank with clean water before adding each component.

The addition of **VILLAIN** to the spray tank via in-line injection is not recommended.

Cleaning Equipment Post Application

Careful attention must be used when cleaning equipment before spraying a crop other than field corn following applications with this product. Mix the volume of spray solution based on the area of application and mix only as much spray solution as needed.

Tank and Sprayer Clean Out

1. Use clean water to flush the tank, hoses, boom, and nozzles.
2. Add 1 gal. of household ammonia per 25 gals. of water. Or alternatively, use a commercially available spray tank cleaner.
3. Using pressure washer, clean the inside of the spray tank with this solution. Wash all parts of the tank, including the inside and top surface. If there is not a pressure washer available, fill the sprayer completely with the cleaning solution to provide contact with all internal surfaces of the tank and plumbing. Begin agitation in the sprayer and thoroughly recirculate the solution in the tank for at least 15 minutes. Remove all visible deposits from the spray equipment.
4. Use the cleaning solution to flush the hoses, spray lines, and nozzles for at least 1 minute.
5. Flush dead space areas with water by removing boom end caps, and then replace caps.
6. Dispose of rinsate from the clean-out according to all local State and federal regulations.
7. Repeat the steps 2 to 5 above.
8. After completing the above procedures, remove and clean the nozzles, screens, and strainers separately in the cleaning solution.
9. Completely rinse the spray tank and equipment with clean water.

WEEDS CONTROLLED

Make applications of *VILLAIN* as directed in this label to control or partially control the weeds listed in the tables below. Tank mixtures may control additional weeds. See the **Tank Mixtures** sections for specific and additional information. Always refer to the tank mix partner label(s) for specific use rates, directions and restrictions.

Weed control may be reduced, if a sufficient rainfall is not received within 7 days after application. Apply 0.5 to 1 inch of water, if irrigation is available. Conduct a uniform, shallow cultivation as soon as weeds emerge, if irrigation is not available. Post-emergence control may be reduced or delayed when weeds are stressed or not actively growing due to drought, heat, lack of fertility, flooding, or prolonged cool temperatures.

Pre-Emergence Applications: Weeds Controlled or Suppressed

Common Name	Scientific Name	C = Control S=Suppression
Amaranth, Palmer	<i>Amaranthus palmeri</i>	C
Amaranth, Powell	<i>Amaranthus powellii</i>	C
Barnyardgrass	<i>Echinochloa crus-galli</i>	C
Buffalobur	<i>Solanum rostratum</i>	C
Carpetweed	<i>Mollugo verticillata</i>	C
Cocklebur, common	<i>Xanthium strumarium</i>	S
Crowfootgrass	<i>Dactyloctenium aegyptium</i>	C
Cupgrass, prairie	<i>Eriochloa contracta</i>	C
Cupgrass, Southwestern	<i>Eriochloa acuminata</i>	C
Cupgrass, woolly	<i>Eriochloa villosa</i>	S
Foxtail, giant	<i>Setaria faberi</i>	C
Foxtail, green	<i>Setaria viridis</i>	C
Foxtail, robust (purple, white)	<i>Setaria spp.</i>	C
Foxtail, yellow	<i>Setaria pumila</i>	C
Galinsoga	<i>Galinsoga parviflora</i>	C
Goosegrass	<i>Eleusine indica</i>	C
Jimsonweed	<i>Datura stramonium</i>	C

(continued)

Pre-Emergence Applications: Weeds Controlled or Suppressed (continued)

Common Name	Scientific Name	C = Control S=Suppression
Johnsongrass, seedling	<i>Sorghum halepense</i>	S
Kochia	<i>Kochia scoparia</i>	S
Lambsquarters, common	<i>Chenopodium album</i>	C
Millet, foxtail	<i>Setaria italica</i>	C
Millet, wild proso	<i>Panicum miliaceum</i>	S
Morningglory, entireleaf	<i>Ipomoea hederacea</i>	S
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>	S
Nightshade, black	<i>Solanum nigrum</i>	C
Nightshade, Eastern black	<i>Solanum ptycanthum</i>	C
Nightshade, hairy	<i>Solanum sarrachoides</i>	C
Nutsedge, yellow	<i>Cyperus esculentus</i>	C
Panicum, browntop	<i>Panicum fasciculatum</i>	C
Panicum, fall	<i>Panicum dichotomiflorum</i>	C
Panicum, Texas	<i>Panicum texanum</i>	S
Pigweed, redroot	<i>Amaranthus retroflexus</i>	C
Pigweed, smooth	<i>Amaranthus hybridus</i>	C
Purslane, common	<i>Portulaca oleracea</i>	C
Pusley, Florida	<i>Richardia scabra</i>	C
Ragweed, common	<i>Ambrosia artemisiifolia</i>	S
Ragweed, giant	<i>Ambrosia trifida</i>	S
Rice, red	<i>Oryza sativa</i>	C
Sandbur, field	<i>Cenchrus incertus</i>	S
Shattercane	<i>Sorghum bicolor</i>	S
Sida, prickly	<i>Sida spinosa</i>	S
Signalgrass, broadleaf	<i>Brachiaria platyphylla</i>	S
Smartweed, ladysthumb	<i>Polygonum persicaria</i>	C
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>	C
Sprangletop, red	<i>Leptochloa filiformis</i>	C
Velvetleaf	<i>Abutilon theophrasti</i>	C
Waterhemp, common	<i>Amaranthus rudis</i>	C
Waterhemp, tall	<i>Amaranthus tuberculatus</i>	C
Witchgrass	<i>Panicum capillare</i>	C

Early Post-Emergence Applications: Weeds Controlled or Suppressed

Applied early post-emergence, *VILLAIN* will provide control or suppression of small emerged broadleaf weeds that are less than 3 inches tall, but will not provide good control of weeds resistant to post-emergence HPPD inhibitors.

Common Name	Scientific Name	C = Control S=Suppression
Amaranth, Palmer	<i>Amaranthus palmeri</i>	C
Amaranth, Powell	<i>Amaranthus powellii</i>	C
Buffalobur	<i>Solanum rostratum</i>	C
Carpetweed	<i>Mollugo verticillata</i>	C
Cocklebur, common	<i>Xanthium strumarium</i>	C
Dandelion	<i>Taraxacum officinale</i>	S
Galinsoga	<i>Galinsoga parviflora</i>	C
Hemp	<i>Cannabis sativa</i>	C
Horsenettle	<i>Solanum carolinense</i>	C
Horseweed (marestail)	<i>Conyza canadensis</i>	C
Jimsonweed	<i>Datura stramonium</i>	C
Kochia	<i>Kochia scoparia</i>	S
Lambsquarters, common	<i>Chenopodium album</i>	C
Morningglory, entireleaf	<i>Ipomoea hederacea</i>	S
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>	S
Mustard, wild	<i>Brassica kaber</i>	C
Nightshade, black	<i>Solanum nigrum</i>	C
Nightshade, Eastern black	<i>Solanum ptycanthum</i>	C
Nightshade, hairy	<i>Solanum sarrachoides</i>	C
Nutsedge, yellow	<i>Cyperus esculentus</i>	S
Pigweed, redroot	<i>Amaranthus retroflexus</i>	C
Pigweed, smooth	<i>Amaranthus hybridus</i>	C
Pokeweed	<i>Phytolacca americana</i>	C
Potatoes, volunteer	<i>Solanum</i> spp.	C
Purslane, common	<i>Portulaca oleracea</i>	S
Pusley, Florida	<i>Richardia scabra</i>	C
Ragweed, common	<i>Ambrosia artemisiifolia</i>	C
Ragweed, giant	<i>Ambrosia trifida</i>	C
Sida, prickly	<i>Sida spinosa</i>	S
Smartweed, ladythumb	<i>Polygonum persicaria</i>	C
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>	C
Thistle, Canada	<i>Cirsium arvense</i>	S
Velvetleaf	<i>Abutilon theophrasti</i>	C
Waterhemp, common	<i>Amaranthus rudis</i>	C
Waterhemp, tall	<i>Amaranthus tuberculatus</i>	C

ROTATIONAL CROPS

The crop rotational intervals listed below should be observed following application of *VILLAIN*. For tank mixtures of other products with *VILLAIN*, follow the most restrictive product's crop rotation interval listed on the tank mix partner label.

Crop Rotational Intervals

Crop	Crop Rotational Interval*
Corn (all types) and grain sorghum**	Anytime
Cereals (barley, oats, rye, wheat)	4.5 Months
Cotton, peanuts, potatoes, and soybeans	Spring following the application
Beans (dry and snap), cucurbits, peas, red clover, sugar beets, tomatoes, and all other rotational crops	18 Months

*Period between *VILLAIN* application and planting of the rotational crop.

**Seed for grain sorghum must be treated with a product safener to provide tolerance to metolachlor.

CORN - Directions for Use

Make a pre-emergence application of *VILLAIN* for control of annual grass and broadleaf weeds in field corn, seed corn, sweet corn, and yellow popcorn. Make an early post-emergence application of *VILLAIN* for the control of broadleaf weeds in field corn and seed corn. See the **WEEDS CONTROLLED** section of this label for a list of weeds controlled or suppressed. Do not make applications of *VILLAIN* to yellow popcorn or sweet corn after the crop has emerged, or crop injury may result.

Application Timings

Reduced Tillage - Burndown Applications

In reduced or no-till corn and prior to crop emergence, *VILLAIN* may be applied alone or in tank mixtures with Gramoxone Inteon® or Touchdown® brands (or equivalent glyphosate products such as Roundup® brands) for the burndown of weeds that have emerged.

- See the **WEEDS CONTROLLED** section of this label for a list of weeds controlled or suppressed.
- Refer to the Gramoxone Inteon, Touchdown® brand, or glyphosate product label for additional information on weeds controlled, directions for use, restrictions and precautions.
- See the **ADDITIVES** and **TANK MIX** sections on this product label for additional information.

Early Pre-Plant and Pre-Emergence Applications

Make an early pre-plant application of *VILLAIN* up to 14 days before planting or pre-emergence application in field corn, seed corn, sweet corn and yellow popcorn.

Post-Emergence Applications

Make a post-emergence application of *VILLAIN* to field or seed corn after emergence up to the time when the plants reach 30 inches in height or up to the 8-leaf stage of corn growth. Use only clean water as the carrier. Do not make post-emergence applications in liquid fertilizer or severe crop injury will result. Do not make applications of *VILLAIN* to emerged yellow popcorn or sweet corn, or severe crop injury may result. See the **ADDITIVES** section on this label for recommendations on adjuvants for burndown applications.

VILLAIN Use Rates

Make application of *VILLAIN* at 2.0 – 2.4 qts./A (1.68 lbs. a.i./A metolachlor and 0.165 lb. a.i./A mesotrione to 2.016 lbs. a.i./A metolachlor and 0.198 lb. a.i./A mesotrione) for control or suppression of the weeds listed in the **WEEDS CONTROLLED** section of this label. Before making applications of this product, determine the soil organic matter content of the field.

For soils with <3% organic matter content – use 2.0 quarts of *VILLAIN* per acre.

For soils with ≥3% organic matter content – use 2.4 quarts of *VILLAIN* per acre.

Use of this product on soils with >10% soil organic matter is not recommended and may result in poor weed control.

Tank Mixtures

Pre-Emergence Applications (before crop has emerged)

Tank mix partners listed in the table below may be used in conventional, reduced, or no-till operations and by the same application methods and the same timings as *VILLAIN* unless otherwise directed in the tank mix partner product label. Follow all tank mix product labels for use rates, precautions and restrictions.

Pre-Emergence Tank Mix Applications *VILLAIN* in Field Corn

Tank Mixture Recommendation*	Target Use
Atrazine 4 L, AAtrex® or other atrazine solo products	Broadleaf and grass weed control improved
Gramoxone Inteon®	Burndown of emerged existing weeds
Metribuzin 75DF or other metribuzin solo products	Broadleaf weed control improved
Sim-Trol®, Princep® or other simazine solo products	Broadleaf and grass weed control improved
Touchdown® Brands	Burndown of emerged existing weeds
Roundup® Brands or equivalents	Burndown of emerged existing weeds
2,4-D	Burndown of emerged existing weeds
Warrior II with Zeon Technology® or equivalents	Insect control (see product label)

* Reference the tank mix partner(s)' product label for directions for use, precautions, and restrictions. 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.

Early Post-Emergence Applications (after crop has emerged)

Tank mix products listed in the table below may be used in conventional, reduced, or no-till systems and applied by the same methods and at the same timings as *VILLAIN* unless otherwise specified in the tank mix product label. Follow all tank mix product labels for use rates and restrictions.

Post-Emergence Tank Mixture Applications *VILLAIN* in Field Corn

Tank Mixture Recommendation ^{1,2}	Target Use
Atrazine 4L, AAtrex or other solo atrazine products	Broadleaf and grass weed control improved
Accent® Q	Emerged grass weed control
Basis®	Emerged grass weed control
Ignite®	Refer to instructions under the “ <i>VILLAIN Spray Programs in LibertyLink® Corn</i> ” section of this label.
NorthStar®	Broadleaf and grass weed control improved
Peak®	Broadleaf and grass weed control improved
Resolve® Q	Emerged grass weed control
Roundup Brands or equivalents	Refer to the instructions under the “ <i>VILLAIN Spray Programs in glyphosate-tolerant Corn</i> ” section of this label.
Spirit®	Broadleaf and grass weed control improved
Status®	Emerged grass weed control
Steadfast® Q	Emerged grass weed control
Touchdown Brands or equivalents	Refer to the instructions under the “ <i>VILLAIN Programs in glyphosate tolerant Corn</i> ” section of this label.
Warrior II with Zeon Technology	Insect control (see product label)

¹ Reference the tank mix partner(s) product label for directions for use, precautions, and restrictions. 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.

² Refer to the **Additives** section of this label for recommendations when making applications of *VILLAIN* alone or in tank mixture to field corn that has emerged.

VILLAIN Spray Programs in Glyphosate-Tolerant Corn

Make early post-emergence tank mixture applications of *VILLAIN* with a solo glyphosate product (example: Touchdown® or Roundup® brands) that is registered for use over-the-top in glyphosate tolerant field corn (example: Roundup® Ready or Agrisure® GT Corn) at rates as low as 1.6 qts./A.

To reduce weed competition with the crop, application of this mixture should be targeted to weeds that are 1 to 2 inches. If the glyphosate product has an adjuvant included in the formulation (the product label does not call for an adjuvant being added), only spray-grade ammonium sulfate (AMS) at 8.5 lbs./100 gals. should be added to the tank mixture. If the glyphosate product label recommends an adjuvant in addition to AMS, add a non-ionic surfactant (NIS) at 0.25% v/v and AMS to this spray tank mixture. Do not use urea ammonium nitrate (UAN), crop oil concentrate (COC), or methylated seed oil (MSO) type adjuvants in these tank mixtures, or crop injury may result. Read and follow all directions for use, precautions and restrictions on the tank mix partner glyphosate label.

As an alternative, a pre-emergence application of *VILLAIN* may be made at rates as low as 1.6 qts/A as part of a two-pass weed control program when followed by a post-emergence application of a glyphosate-containing product in glyphosate-tolerant corn (example: Roundup® Ready or Agrisure® GT Corn). When this type of application is made, *VILLAIN* will provide reduced competition of the weeds listed in the **Pre-Emergence Applications: Weeds Controlled or Suppressed** table for a period of 30+ days, improving the flexibility in application timing and effectiveness of the glyphosate-based product application. Follow all directions for use, precautions and restrictions on the glyphosate product label.

A pre-emergence application of **VILLAIN** may be made at 1.0 to 1.2 qts./A as part of a two-pass weed control program when followed by a tank mix of **VILLAIN** and glyphosate in glyphosate-tolerant corn (example: Roundup® Ready or Agrisure GT Corn). Make application of **VILLAIN** at 1.0 qt./A for soils with less than 3% organic matter, and 1.2 qts./A for soils with greater than 3% organic matter. Follow all directions for use, precautions and restrictions on each product label.

VILLAIN Spray Programs in LibertyLink® Corn

A post-emergence application of **VILLAIN** may be made at 1.6 qts./A in tank mixture with Ignite® and applied over-the-top in field corn designated as LibertyLink®. To reduce weed competition with the crop, application of this mixture should be targeted to weeds that are 1 to 2 inches. Ammonium sulfate (AMS) may be added as an adjuvant as directed on the Ignite® label. However, AMS should be the only adjuvant used in this tank mixture. Do not make tank mixture applications with urea ammonium nitrate (UAN), crop oil concentrate (COC), non-ionic surfactants (NIS), or methylated seed oil (MSO) type adjuvants in these type of spray programs, or crop injury may result. Follow all directions for use, precautions and restrictions on the Ignite® product label.

As an alternative, a pre-emergence application of **VILLAIN** may be made at 1.6 qts./A as part of a two-pass weed control program when followed by a post-emergence application of Ignite® in field corn designated as LibertyLink®. When this type of application is made, **VILLAIN** will provide reduced competition of the weeds listed in the **Pre-Emergence Applications: Weeds Controlled or Suppressed** table for a period of 30+ days, improving the flexibility in application timing and effectiveness of the Ignite® product application. Follow all directions for use, precautions and restrictions on the Ignite® product label.

Restrictions for all Corn Uses

- Do not make applications of more than 2.4 qts. of **VILLAIN** per growing season.
- Do not make applications of **VILLAIN** to corn that is taller than 30 inches in height or corn that is larger than the 8-leaf stage of growth.
- Do not graze or feed forage from treated areas for 45 days following last application.
- Do not harvest corn for grain, forage, or stover within 45 days after a post-emergence application of **VILLAIN**.
- Do not apply **VILLAIN** as a post-emergence application in a tank mix with any organophosphate or carbamate insecticide, or severe corn injury may result.

Precautions for all Corn Uses

- Severe adverse crop response and corn injury can result if applying **VILLAIN** post-emergence to corn that has emerged and that has received an at-plant application of Counter® insecticide. Environmental conditions that promote poor growth will increase the likelihood and risk of severe crop injury.
- Severe corn injury can occur when an organophosphate or carbamate insecticide post-emergence application is made to corn within 7 days before or 7 days after a **VILLAIN** application. Environmental conditions that promote poor growth will increase the likelihood and risk of severe crop injury.

VILLAIN Applications – Grain Sorghum

Make a non-incorporated, pre-plant application of **VILLAIN** in sorghum that has been seed-treated with Concep® III (or equivalent safener that provides tolerance to metolachlor) up to 21 days before planting and up through pre-emergence for weed control. See the **Pre-Emergence Applications: Weeds Controlled or Suppressed** table for a listing of weeds.

Make a broadcast, non-incorporated spray application at 2.0 qts./A starting at 21 days pre-plant and up through planting, but before sorghum has emerged. Making application less than 7 days before the sorghum planting can increase the risk of crop injury, particularly if there is rainfall or irrigation after the application. Symptoms of crop injury include temporary bleaching of young sorghum leaves, or in severe conditions, stunting or partial stand loss. Making the application of **VILLAIN** at greater than 7 days (and no more than 21 days) before the sorghum planting will reduce the risk of adverse crop response.

When **VILLAIN** application is made before planting, do not incorporate and minimize soil disturbance of the treatment area during planting to minimize the potential for reduced weed control.

Split applications of **VILLAIN** may be made to sorghum as an early pre-plant (7 to 21 day prior to planting), non-incorporated application at 1.0 to 1.25 qts./A of **VILLAIN** following with a second application of **VILLAIN** made at 0.75 to 1.0 qt./A before the sorghum has emerged. Do not exceed 2.0 qts./A of product for the split applications.

It is recommended to use a non-ionic surfactant (NIS) type adjuvant at 0.25% v/v or a crop oil concentrate (COC) at 1% v/v in the spray solution if weeds are present at the time of application. A spray grade UAN at 2.5% v/v or AMS at 8.5 lbs./100 gallons of spray may also be added in addition to the COC or NIS to the mixture to improve control of weeds that have already emerged. The addition of additives is not recommended, if weeds have not emerged at the time of application.

Sorghum Use Restrictions:

- Do not make applications of more than 2.0 quarts of **VILLAIN** per growing season.
- Do not make applications of **VILLAIN** to sorghum that is grown on sandy soils (sand, sandy loam, or loamy sand).
- Do not make applications of **VILLAIN** to grain sorghum that has emerged or severe crop injury will result.
- Do not make applications of **VILLAIN** to sorghum grown for forage, sweet sorghum (sorgo), sudangrass, sorghum-sudangrass hybrids, or dual-purpose sorghum.
- Seeds must be treated with Concep® III herbicide or an alternate seed safener that provides tolerance to metolachlor before planting, or severe adverse crop response and injury may result.
- Do not apply **VILLAIN** to sorghum that is grown south of Interstate 20 (I-20) or east of Highway 277 in the state of Texas.

STORAGE AND DISPOSAL

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

Pesticide Storage

Keep container tightly closed when not in use. Do not store near seeds, fertilizers, or foodstuffs. Can be stored at temperatures as low as -10°F. Keep away from heat and flame.

Pesticide Disposal

Open dumping is prohibited. Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Rinse spray equipment. Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of as described above, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

Container Handling [less than 5 gallons]

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

Container Handling [greater than 5 gallon]

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 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.

DO NOT USE CONTAINERS FOR THE STORAGE OF FOOD, FEED, OR DRINKING WATER!

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of this product, which are beyond the control of INNICTIS CROP CARE, LLC or Seller. To the extent consistent with applicable law, all such risks shall be assumed by Buyer and User and Buyer and User agree to hold INNICTIS CROP CARE, LLC and Seller harmless for any claims relating to such factors.

INNICTIS CROP CARE, LLC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent consistent with applicable law, this warranty does not extend to the use of the product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or INNICTIS CROP CARE, LLC, and Buyer and User assume the risk of any such use. **TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, INNICTIS CROP CARE, LLC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.**

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