TOUGH R®

PYRIDATE GROUP 6 HERBICIDE

MESOTRIONE GROUP 27 HERBICIDE

For the postemergence control of annual broadleaf weeds in Field Corn, Seed Corn and Yellow Popcorn.

ACTIVE INGREDIENTS:

Pyridate (Carbonothioic acid, O-(6-chloro-3-phenyl-4-pyridizinyl) S-octyl ester):	27.22%
Mesotrione:	8.17%
OTHER INGREDIENTS:	64.61%
TOTAL:	100.00%

Contains 2.5 lbs of pyridate and 0.75 lbs of mesotrione per gallon of product

KEEP OUT OF REACH OF CHILDREN/
MANTENER FUERA DEL ALCANCE DE LOS NIÑOS

DANGER / PELIGRO

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.)
READ THE LABEL AND ATTACHED BOOKLET BEFORE USING

V0502223051223

SHAKE WELL BEFORE USING

See Inside Booklet or Back Panel for First Aid Statement

See Inside Booklet for Directions for Use

For Chemical Emergency, Spill, Leak, Fire, Exposure or Accident Call CHEMTREC Day or Night
1-800-424-9300

EPA REG. NO. 91746-11

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Belchim USA
GROWING TOGETHER

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FIRST AID	
IF IN EYES	• Hold eye open and rinse slowly and gently with water for 15 to 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 SWALLOWED	• Call a poison control center or doctor immediately for treatment advice. • Have a person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by poison control center or personnel. • Do not give anything by mouth to an unconscious person.
IF ON SKIN	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 20 minutes. • Call a poison control center or doctor for treatment advice.
IF INHALED	• 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.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact (800) 424-9300 for emergency medical treatment information. **Notes to Physician:** Probable mucosal damage may contraindicate the use of gastric lavage.	
HOT LINE NUMBER For Hazardous Materials Incident Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night 1-800-424-9300	

ATTENTION
Although this label may appear similar to the label on a product you may have used, there may be important label differences. Users must read, understand and strictly follow all label directions, precautions and restrictions. It is the user's responsibility to be sure the product is approved for sale or use on the intended crop and for use in the specific geographic area. It is the user's responsibility to be aware of and to follow all State or local precautions or restrictions not appearing on this product label. Prior to purchase or use of this product, read the Conditions of Sale and Limitation of Warranty and Liability of this label. If the terms and conditions are unacceptable, return the product immediately in the original and unopened container.

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

DANGER /PELIGRO

Corrosive. Causes irreversible eye damage. Do not get in eyes or on clothing. Harmful if swallowed or absorbed through the skin. Avoid contact with the skin or clothing. Wear appropriate eyewear (goggles, face shield or safety glasses).

Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, made of barrier laminate or butyl rubber ≥ 14 mils
- Chemical-resistant footwear plus socks
- Protective eyewear (goggles, face shield or safety glasses)
- Chemical-resistant apron.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Discard clothing and other absorbent materials that have been drenched or contaminated with this product. 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, or 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.

This product (mesotrione) 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.

Surface Water Advisory:

This product may impact surface water quality due to runoff of rain water and may contaminate water through drift of spray in wind. This product has a high potential for runoff for several weeks, months or more after application. This is especially true for poorly draining soils and soils with shallow ground water. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product.

This product is classified as having high potential for reaching aquatic sediment via runoff for several days 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 pyridate 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. Sound erosion control practices will reduce this product's potential to reach aquatic sediment via runoff.

Ground Water Advisory:

This product (mesotrione) 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.

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:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, made of barrier laminate or butyl rubber ≥ 14 mils
- Chemical-resistant footwear plus socks
- Protective eyewear (goggles, face shield or safety glasses)

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

PRODUCT INFORMATION

Tough R Herbicide is an oil dispersion formulation containing 2.5 lbs. of pyridate and 0.75 lbs. of mesotrione per gallon of product.

Tough R is a postemergence herbicide for the selective contact control or suppression of actively growing annual broadleaf weeds in field corn, seed corn and yellow popcorn. Susceptible weeds, which emerge soon after application of Tough R, may be controlled after they absorb the herbicide from the soil.
Use Tough R sequentially and/or tank mixed with other herbicides as part of a complete weed control program. 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:

- Tough R is not effective for the control of most grass weeds. Postemergence grass herbicides can be tank mixed with Tough R to provide broad spectrum weed control in corn (see appropriate section of label for this information).
- Tough R can be applied following a preemergence grass herbicide application.
- Tough R can be used in combination with a burndown herbicide, prior to planting, to provide added burndown and residual weed control in field corn, seed corn and yellow popcorn

Tough R provides contact and residual weed control. Optimal weed control will be achieved when weeds have emerged at the time of application. Sensitive weeds show symptoms of marginal yellowing, followed by yellowing and browning of the entire leaf and growth cessation within 4-10 days after application. The speed of action is increased at higher temperatures and under good growing conditions. Application should be made when the majority of weeds have emerged, provided the crop is within the correct stage of growth and not under stress. Best results are obtained from a medium or coarse droplet size spray applied when the weeds are small and actively growing and before the crop forms a canopy of foliage over the weeds. Weed control may be decreased under adverse conditions such as drought, low temperatures, etc. Under good conditions, Tough R is rainfast within 60 minutes following the application.

RESISTANCE MANAGEMENT

Tough R is a group 6 and group 27 Herbicide (containing the active ingredients pyridate and mesotrione).

For resistance management, please note that Tough R contains both a Group 6 and Group 27 herbicide. Any weed population may contain plants naturally resistant to Group 6 and/or Group 27 herbicides. The resistant individuals may dominate the weed population if these herbicides are used repeatedly in the same fields. Appropriate resistance-management strategies should be followed.

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

- Rotate the use of Tough R or other Group 6 or 27 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 weed(s) 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 (e.g., higher crop seeding rates; precision fertilizer application method and timing to favor the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.
- Scout after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with a 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 Belchim Crop Protection at 855-445-7990 or at www.belchimusa.com.

INTEGRATED PEST (WEED) MANAGEMENT

Tough R should be integrated into an overall weed and 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.

Scout and know your field

- Know weed species present in the field to be treated through scouting and field history. An understanding of weed biology is useful in designing a resistance management strategy. Ensure the weed management program will control all weeds present.
- Fields should be scouted prior to application to determine species present and growth stage. Always apply this herbicide at the full labeled rate and correct timing for the weeds present in the field.

Utilize non-herbicidal practices to add diversity

- Use diversified management tactics such as cover crops, mechanical weed control, harvest weed seed control, and crop rotation as appropriate.

Use good agronomic practices, start clean and stay clean

- Use good agronomic practices that enhance crop competitiveness.
- Plant into weed-free fields utilizing tillage or an effective burndown herbicide for control of emerged weeds.
- Sanitize farm equipment to avoid spreading seed or vegetative propagules prior to leaving fields.

Difficult to control weeds

- Fields with difficult to control weeds should be planted in rotation with crops that allow the use of herbicides with an alternative mode of action or different management practices.
- Difficult to control weeds may require sequential applications, such as a broad spectrum preemergence herbicide followed by one or more postemergence herbicide applications. Utilize herbicides containing different modes of action effective on the target weeds in sequential applications.

Do not overuse the technology

- Do not use more than two applications of this or any other herbicide with the same mode of action in a single growing season unless mixed with an herbicide with a different mode of action which provides overlapping spectrum for the difficult to control weeds.

Scout and inspect fields following application

- Prevent an influx of weeds into the field by controlling weeds in field borders.
- Scout fields after application to verify that the treatment was effective.
- Suspected- herbicide resistant weeds may be identified by these indicators:
  - Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds;
  - A spreading patch of non-controlled plants of a particular weed species; and
  - Surviving plants mixed with controlled individuals of the same species.
  - Report non-performance of this product to your Belchim retailer, Belchim representative, or call 1-855-445-7990. If resistance is suspected ensure weed escapes are controlled using an herbicide with an effective mode of action and/or use non-chemical means to prevent further seed production.

Prevent weed escapes before, during, and after harvest

- Do not allow weed escapes to produce seed or vegetative structures such as tubers or stolons which contribute to spread and survival. Consider harvest weed seed management and control weeds post-harvest to prevent seed production.

Resistant weeds

Contact your local Belchim representative, retailer, crop advisor or extension agent to determine if weeds resistant to this mode of action are present in your area. If resistant biotypes have been reported, use the full labeled rate of this product, apply at the labeled timing, and tank-mix with a different mode of action product so there are multiple effective modes of application for each suspected resistant weed.

USE PRECAUTIONS

- The temperature of the diluted spray solution and air should be above 50°F at spraying
- Overdosing (spray boom overlap) and spray drift should be avoided
- Do not apply to crops under stress e.g. from drought, nutrient deficiency or where a previous treatment has de-waxed the leaves
- Severe corn injury resulting in yield loss may occur if Tough R is applied postemergence to corn that was treated with Counter® - EPA Reg. No. 5481-562, terbufos or Lorsban® - EPA Reg. No. 62719-591, chlorpyrifos.
- Severe corn injury resulting in yield loss may occur if Tough R Herbicide is applied foliar postemergence to corn in a tank mix with any organophosphate or carbamate insecticide.
- Severe corn injury resulting in yield loss may occur if any organophosphate or carbamate insecticide is applied foliar postemergence within 7 days before or 7 days after TOUGH R Herbicide application.
- When weeds are stressed due to drought, heat, lack of fertility, flooding, or prolonged cool temperatures, control can be reduced or delayed since the weeds are not actively growing. Weed escapes or regrowth may occur when application is made under prolonged stress conditions. Optimum weed control will be obtained if an application of Tough R is made following label directions when weeds are actively growing. Tough R may be applied with pyrethroid type insecticides (e.g., Warrior® - EPA Reg. No. 100-1295, lambda cyhalothrin).

MANDATORY SPRAY DRIFT MANAGEMENT

Ground Boom Applications:

- Apply with a release height no more than 3 feet above the ground or crop canopy.
- Applicators are to select nozzle and pressure that deliver medium or coarser droplets in accordance with the American Society of Agricultural & Biological Engineers Standard 572 for ground application.
- These practices can further reduce drift:
  a. Use spray nozzles that provide medium-coarse droplets (250-400 microns VMD). Nozzles that produce extremely small droplets are more likely to cause spray drift.
  b. Apply as close to target plants as practical while maintaining a good spray pattern for adequate spray coverage.
  c. Apply with the nozzle height recommended by the manufacturer, but no more than 3 feet above the ground or crop.
  d. For applications prior to the emergence of crops and target weeds, applicators are required to use a Coarse or coarser droplet size (ASABE S572).
  e. For all other applications, applicators are required to use a Medium or coarser droplet size (ASABE S572).
- **DO NOT** apply when wind speeds exceed 15 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.

SPRAY DRIFT MANAGEMENT ADVISORIES

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 spray drift. The applicator is responsible for considering all these factors when making a decision.

DO NOT apply during temperature inversions. If an inversion is suspected, consult the local weather service before applying Tough R. Use extreme caution when conditions favor drift (high temperatures, low relative humidity). Do not allow spray to drift onto adjacent land or crops.

Sensitive areas

The pesticide must only be applied 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).

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.

Boom Height – Ground Boom

Use the lowest boom height that is compatible with the spray nozzles that will provide uniform coverage. For ground equipment, the boom should remain level with the crop and have minimal bounce.

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.

Windblown Soil Particles

Tough R Herbicide has the potential to move off-site due to wind erosion. Soils that are subject to wind erosion usually have a high silt and/or fine to very fine sand fractions and low organic matter content. Other factors which can affect the movement of windblown soil include the intensity and direction of prevailing winds, vegetative cover, site slope, rainfall, and drainage patterns. Avoid applying Tough R Herbicide if prevailing local conditions may be expected to result in off-site movement.

APPLICATION INFORMATION

Tough R is noncorrosive to spray equipment. Before preparing spray mixture, be sure all equipment is clean to prevent uneven applications, clogging of spray nozzles, or crop injury.

Apply Tough R with a boom sprayer calibrated to a constant speed and constant, uniform delivery.

Apply Tough R in sufficient water (15 gal/A minimum; 20-30 gal/A recommended), at a pressure of 30- 40 psi to ensure proper coverage. Thorough coverage of target weeds is required for optimum results. When weed foliage is dense, use a minimum of 20 gal.

Always ensure that agitation is maintained until spraying is completed, even if stopped for brief periods of time. If the agitation is stopped for more than 5 minutes, suspend the spray solution again by running on full agitation prior to spraying.

RESTRICTIONS:

- DO NOT apply this product through any type of irrigation equipment
- DO NOT apply this product by aerial application
- Removable chemical extraction probes (also known as "stingers" used in suction/extraction systems must be rinsed within the pesticide container prior to removal.

SPRAY ADDITIVES

POSTEMERGENCE ADJUVANTS

When an adjuvant is to be used with this product, the use of an adjuvant that meets the standards of the Chemical Producers and Distributors Association (CPDA) adjuvant certification program is recommended. Adjuvants (nonionic surfactants, crop oil concentrate or liquid fertilizers) may be used with Tough R.

- A nonionic surfactant with a minimum of 80% of the constituents effective as a spray adjuvant, at the rate of 1 qt./100 gals. of spray volume (0.25% volume/volume) or
- A petroleum- or vegetable based crop oil concentrate containing not less than 12% emulsifier at 1-4 pts./A as specified on the crop oil adjuvant label. The concentration of the crop oil concentrate should not exceed 2.5% volume/volume.
- A liquid nitrogen fertilizer (28-34% nitrogen ammonium form) may also be added at 2-4 qts./A.
- A spray grade ammonium sulfate may be used at the rate of 2-4 lbs./A. Liquid nitrogen fertilizers or ammonium sulfate should not be used as a substitute for crop oil concentrate or nonionic surfactant in the spray mixture.

POSTEMERGENCE APPLICATIONS TO FIELD CORN AND SEED CORN

For postemergence applications made after the crop has emerged, add crop oil concentrate (COC) to the spray solution at the rate of 1.0 gal/100 gal of water (1.0% v/v). The use of a nonionic surfactant (NIS) at 1 qt/100 gallons of water (0.25% v/v) instead of COC is allowed, but the weed control achieved with COC is consistently better than NIS. The use of methylated seed oil (MSO) adjuvants or MSO blend adjuvants for postemergence applications of TOUGH R Herbicide may cause severe crop injury to occur. Do not use MSO adjuvants for postemergence use unless directed for a specific tank mix under the Tough R Herbicide TANK MIXTURES FOR CORN section of this label, or unless permitted by a supplemental Tough R Herbicide label. In addition to COC, always add spray grade UAN (e.g., 28-0-0) to the spray solution at a rate of 2.5% (v/v) or AMS at 8.5 lb/100 gal of spray solution, except if precluded elsewhere on this label or by a supplemental Tough R Herbicide label.

POSTEMERGENCE APPLICATIONS TO YELLOW POPCORN

Do not add UAN or AMS when making postemergence applications of Tough R Herbicide to yellow popcorn or severe crop injury may occur. For postemergence applications to yellow popcorn the use of a nonionic surfactant (NIS) instead of a crop oil concentrate (COC) is recommended, to minimize the risk of crop injury. A COC may be used, and will increase the level of weed control achieved, especially under dry growing conditions, but the risk of crop injury is increased significantly under lush growing conditions. For optimum control, the addition of atrazine is recommended wherever rotational or local atrazine restrictions allow.

PREPLANT BURNDOWN ADJUVANTS

For Tough R herbicide preplant burndown applications, and where weeds are present, the use of any adjuvant for agricultural use is permitted. In these situations, MSO type adjuvants are typically better than COC type adjuvants, which are typically better than NIS type adjuvants for enhancing weed control. UAN or AMS can be added and typically provides better weed control than not adding one of these. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow all 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.

RESTRICTIONS

1. DO NOT use liquid fertilizer as the complete spray carrier when applying Tough R, after crop emergence, since crop injury may occur.

SPRAY EQUIPMENT

Cleaning Equipment After Tough R Herbicide Application

The sprayer must be cleaned before and after use of Tough R. Failure to clean sprayer may result in unsatisfactory results with Tough R or injury to other crops sprayed with the equipment. Refer to the label of the product used previously, or tank mixed with Tough R for additional cleaning instructions.

1. Drain sprayer tank, hoses, spray boom and spray nozzles. Use a high-pressure detergent wash to remove physical sediment and residues from the inside of the sprayer tank and thoroughly rinse. Then, thoroughly flush sprayer hoses, spray boom and spray nozzles with a clean water rinse. Remove and clean spray tips and all filters and screens (tank, spray hose and spray tips) separately in the ammonia solution of Step 2.

2. Next, prepare a sprayer cleaning solution by adding three gallons of ammonia (containing at least 3% active) per 100 gallons of clean water. Prepare sufficient cleaning solution to allow the operation of the spray system for a minimum of 15 minutes to thoroughly flush hoses, spray boom and spray nozzles. If a pressure washer is not available, completely fill the sprayer with the cleaning solution to ensure contact of the cleaning solution with all internal surfaces of the tank and plumbing. Start agitation in the sprayer and thoroughly recirculate the cleaning solution for at least 15 minutes. All visible deposits must be removed from the spraying system.
3. Shut down sprayer and keep sprayer system charged with ammonia solution left in the spray tank, hoses, spray booms and spray nozzles overnight or during storage.
4. Before using the sprayer, completely drain the sprayer system. Rinse the tank with clean water and flush through the hoses, spray boom, and spray nozzles with clean water. Remove and clean spray tips and all filters and screens (tank, spray hose and spray tip) separately in an ammonia solution.
5. Properly dispose of all cleaning solution and rinsate in accordance with Federal, State, and local regulations and guidelines. Do not apply sprayer cleaning solutions or rinsate to sensitive crops. Do not store the sprayer overnight or for any extended period of time with Tough R spray solution remaining in the tank, spray lines, spray boom plumbing, spray nozzles or strainers. If the sprayer has been stored or idle, purge the spray boom and nozzles with clean water before beginning any application. Should small quantities of Tough R remain in inadequately cleaned mixing, loading and/or spray equipment, they may be released during subsequent applications potentially causing effects to certain crops and other vegetation. When Tough R has been tank mixed refer to the label of the product used previously, or tank mixed with Tough R for cleaning.

MIXING INSTRUCTIONS

Always refer to the labels of tank mix partner pesticide products for mixing directions and precautions which may differ from those outlined here. Use in accordance with the most restrictive of label limitations and precautions. No label dosage rates may be exceeded. This product cannot be mixed with any product containing a label prohibition against such mixing. Do not tank mix Tough R with any other insecticide, fungicide, herbicide, fertilizer solution or adjuvant not recommended on the label without testing compatibility of any tank mix combination, as poor mixing may result. It is recommended that the compatibility of any tank mix combination be tested on a small scale such as a jar test before actually tank mixing.

Follow the correct mixing order and mixing instruction or the material may not mix properly. Poor mixing may result in crop injury or poor product performance.

1. Make sure the spray tank is clean before mixing. If it is contaminated with other materials, mixing problems and/or clogging may occur, or injury to the crop may result.
2. Fill the spray tank ¼ - ½ full with clean water and begin agitation.
3. Make certain that the agitation system is working properly and creates a rippling effect or rolling action on the liquid surface. Maintain agitation throughout the mixing and spraying process.
4. Add any products packaged in water-soluble film to the tank first. Allow the packets to completely dissolve and the contents of the packets to fully and uniformly disperse into the mix water. Important: Water-soluble packets must always be the first material put into the spray tank after water. For products packaged in water-soluble packaging, do not tank mix with products containing boron and do not mix in equipment previously used to apply a product mixture containing boron unless the tank and spray equipment have been thoroughly cleaned.
5. While maintaining agitation, continue filling the spray tank. When the tank is ¾ full, add desired tank mix partners. Water-dispersible granules or other dry formulations should be added first. Allow material to disperse. Then add liquid flowables followed by Tough R and finally other labeled emulsifiable concentrate tank mix partners.

6. Follow by adding either:
   - A nonionic surfactant with a minimum of 80% of the constituents effective as a spray adjuvant, at the rate of 1 qt./100 gals. of spray volume (0.25% volume/volume) or
   - A petroleum- or vegetable based crop oil concentrate containing not less than 12% emulsifier at 1-4 pts./A as specified on the crop oil adjuvant label. The concentration of the crop oil concentrate should not exceed 2.5% volume/volume.
   - Field Corn: The use of methylated seed oil (MSO) adjuvants or MSO blend adjuvants for postemergence applications of Tough R Herbicide may cause severe crop injury to occur. Do not use MSO adjuvants for postemergence use unless directed for a specific tank mix under the TOUGH R HERBICIDE TANK MIXTURES FOR CORN section of this label, or unless permitted by a supplemental Tough R Herbicide label.
   - Yellow Popcorn: Do not add UAN or AMS when making postemergence applications of Tough R Herbicide to yellow popcorn or severe crop injury may occur.
   - In addition to crop oil concentrate or nonionic surfactant, a liquid nitrogen fertilizer (28-34% nitrogen ammonium form) may also be added at 2-4 qts./A.
   - Instead of the liquid nitrogen fertilizer, a spray grade ammonium sulfate may be used at the rate of 2-4 lbs./A. Liquid nitrogen fertilizers or ammonium sulfate should not be used as a substitute for crop oil concentrate or nonionic surfactant in the spray mixture.

     Do not use the liquid fertilizer as the complete spray carrier after crop emergence.

7. If flowable or liquid formulations appearing on the Tough R label are desired as tank mix partners, add them next while continuing to agitate. When Tough R is used alone or in tank mix combinations, either crop oil concentrate or a nonionic surfactant should be included, with or without liquid nitrogen fertilizer or ammonium sulfate, as described in item 6 above. Do not use crop oil concentrate as the spray adjuvant when using tank mixtures with products containing the active ingredient dicamba. Use a nonionic surfactant with or without liquid nitrogen fertilizer or ammonium sulfate as the additive in tank mixtures containing these products.

8. Complete filling the tank, maintaining sufficient agitation at all times to ensure surface action until the spray tank mixture is uniform.

9. An anti-foaming agent may be added to reduce excessive foaming if needed.

10. Do not leave contents in the spray tank without continuous agitation. Always maintain agitation to avoid separation and buildup of undesirable residues on the walls of the spray tank.

11. Tough R will remain active in the spray solution for at least 12 hours. However, make only sufficient mixture that will be sprayed the day in which it will be mixed. In case the spray solution remains in the tank for more than 12 hours, make sure to agitate for 30 minutes before making the application.

WEEDS CONTROLLED

Tough R applied as directed in this label will control or partially control the weeds listed in Table 1.

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

For optimum control of weeds, apply Tough R to actively growing weeds by the 4-leaf stage. A delay in spraying which permits weeds to grow beyond the proper application stage may results in decreased control. If weeds are under stress and not actively growing, they will be more difficult to control. Scout fields often to determine the exact timing for application.

If treatments must be made under adverse conditions or to larger weeds, use the higher rate allowed in this label. Cultivation may be necessary after application if all weeds are not properly controlled or if weeds regrow.

Tough R can be applied in band application and in tank mix with other herbicides that are labeled for band applications.

Table 1. General Weed List

Tough R Herbicide, when applied as directed in this label, will control or suppress many annual broadleaf weeds <5" tall, including but not limited to:

Amaranth, Palmer (Carelessweed)
Amaranth, powell
Amaranth, spiny (Spiny pigweed)
Atriplex Broadleaf, signalgrass[1]
Buckwheat, wild (Partial Control)
Buffalobur
Burcucumber[1]
Carpetweed
Carrot, wild
Chickweed, common
Cocklebur, common
Crabgrass, large[1]
Dandelion, common (seedling) (Partial Control)
Dock, curly (Partial Control)
Galinsoga, hairy
Hemp sesbania
Horseweed (marestail)
Jimsonweed
Knotweed, prostrate (Partial Control)
Kochia[1]
Lambsquarters, common
Morningglory, entireleaf
Morningglory, ivyleaf
Morningglory, pitted
Mustard, wild
Nightshade, black
Nightshade, eastern black
Nutsedge, yellow (Partial Control)
Pigweed, redroot
Pigweed, smooth
Pigweed, tumble
Pokeweed, common (Partial Control)
Potatoes, volunteer
Puncturevine, common
Pusley, Florida[1]
Ragweed, giant
Sesbania, hemp
Smartweed, ladysthumb[1]
Smartweed, pale[1]
Smartweed, Pennsylvania[1]
Sunflower, common
Velvetleaf
Waterhemp, tall[2]
Waterhemp, common[2]

[1] Apply before weed exceeds 3 inches in height
[2] Under certain situations weeds can be controlled at larger than listed sizes; however, to protect crop yield, manage weed resistance and provide consistent control, treat weeds before they exceed 5 inches in height

CROP REPLANT & ROTATIONAL CROPS

When Tough R Herbicide is applied as directed on this label, follow the crop rotation intervals in Table 2. If TOUGH R is tank mixed with other products, follow the most restrictive product's crop rotation interval. 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.

Table 2. Time Interval Between Tough R Herbicide Application and Replanting or Planting of Rotation

Crop	Replant/Rotational Interval
Asparagus Corn (all types) Cranberry Flax Kentucky bluegrass grown for seed Millet, pearl Oats Rhubarb Ryegrass (perennial and annual) grown for seed Sorghum (grain and sweet) Sugarcane Tall fescue grown for seed	Anytime
Small grain cereals including wheat, barley and rye	4 Months
Alfalfa Blueberry Canola Cotton Currant Lingonberry Okra Peanuts Peas[1,2] Potato Rice Snap beans[1,2] Soybeans Sunflowers Tobacco	10 Months
Cucurbits Dry beans Red clover Sugar beets All other rotational crops	18 Months

[1] Plant these rotational crops only if the following criteria below have been met. If all criteria are not met, plant peas and snap beans a minimum of 18 months following Tough R application.

- A minimum of 20" of rainfall plus irrigation has been received between application and planting of the rotational crop.
- Soil pH is 6.0 or greater.
- Application of Tough R at 3.25 fl oz/A (0.094 lb ai/A) or less applied no later than June 30th the year preceding rotational crop planting.

– No other HPPD herbicides (e.g., Callisto® Xtra, Halex® GT, Lexar® EX, Lumax® EX, Zemax®, Armezon®, Balance® Flexx, Capreno®, Corvus®, Impact®, or Laudis®) were applied the year prior to planting peas and snap beans.

[2]Do not plant peas or snap beans on sand, sandy loam or loamy sand soils in Minnesota or Wisconsin.

TOUGH R TANK MIXTURES

Tough R Herbicide may be tank mixed with other registered herbicides for control of additional broadleaf weeds and/or grasses. Additionally, tank mixing with other herbicides labeled for corn can be used to include a different mode of action to help control or manage the development of resistant weed biotypes.

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. Refer to individual product labels for precautionary statements, restrictions, rates, approved uses and a list of weeds controlled.

Precaution: Some products available for tank mixing with Tough R may cause injury to corn when applied.

CROP USE DIRECTIONS

CORN

Tough R may be applied by ground at 16-32 oz/A for preplant burndown or postemergence weed control in field corn, seed corn and yellow popcorn. Split applications of Tough R may be made but do not exceed a total of 32 fl. oz. per treated acre per year.

Refer to seed company directions for use on field corn inbred lines. Special adjuvant restrictions must be followed for postemergence applications of Tough R in yellow popcorn (see the SPRAY ADDITIVES section of this label).

Postemergence applications (after crop emergence) of Tough R may cause crop bleaching in some yellow popcorn hybrids. Crop bleaching is typically transitory and has no effect on final yield or quality. However, sensitivity in yellow popcorn varies widely, and not all yellow popcorn hybrids have been tested. Contact your popcorn company, Fieldman, or University Specialist about hybrid recommendations before making a postemergence application of Tough R to yellow popcorn. Do not include nitrogen-based adjuvants (UAN or AMS) when making postemergence applications of Tough R to yellow popcorn.

Temporary crop response (transient chlorosis) from postemergence applications to field corn, seed corn and yellow popcorn may occur under extreme weather conditions or when the crop is suffering from stress. Corn quickly outgrows these effects and develops normally.

RESTRICTIONS

- Do not apply more than a total of 32 fl. oz of Tough R (0.625 lb ai pyridate and 0.188 lb ai mesotrione) per acre per year.
- Do not exceed 16 fl. oz/A (0.313 lb ai/A pyridate and 0.094 lb ai/A mesotrione) in a single postemergence application.
- Do not make more than two applications of Tough R per year.
- Do not apply more than a total of 0.94 lb a.i./A pyridate and 0.24 lb ai/A of mesotrione per acre per year.

RESTRICTIONS

- Do not make a second application within 14 days of the first application.
- To avoid excess residues, do not apply within 68 days of harvest.
- DO NOT apply this product through any type of irrigation equipment.
- DO NOT apply this product by aerial application.
- DO NOT apply this product when wind conditions will allow drift to adjacent susceptible vegetation.
- DO NOT apply to corn past the 8-leaf stage.
- Do not feed or harvest for forage, grain, or stover within 45 days after application.
- Do not apply TOUGH R to white popcorn or ornamental (Indian) corn.
- Do not include nitrogen-based adjuvants (UAN or AMS) when making postemergence applications of Tough R to yellow popcorn.

Apply Tough R for the control of broadleaf and grass weeds listed in Table 1.
Corn may be treated preplant burndown or up to the 8-leaf stage of corn.

TOUGH R – PREPLANT BURNDOWN

Tough R may be applied prior to planting corn for emerged broadleaf weed control with limited residual at 16 fl oz/A. For greater residual control, use 32 fl oz/A. The use of an MSO type adjuvant is typically better than COC or NIS type adjuvants for enhancing weed control.

Tough R may be applied in tank mixture with other registered herbicides for burndown and residual control. Use the adjuvant system recommended by the burndown herbicide. Refer to individual product labels for precautionary statements, restrictions, rates, approved uses, and a list of weeds controlled. 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 of 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.

TOUGH R USED ALONE – POST EMERGENCE (after crop emergence)

Apply Tough R at 16 fl. oz./A per application. Always add an appropriate adjuvant to the spray tank (see the SPRAY ADDITIVES section of this label).

For best results, apply Tough R to actively growing weeds and when weeds are small (before the 4-leaf stage). Susceptible weeds which emerge after application of Tough R may be controlled by Tough R after they absorb the herbicide from the soil.

For a list of weeds controlled by an application of Tough R see Table 1. Application of Tough R at rates less than 16 fl. oz./A (0.94 lb a.i./A) postemergence may result in incomplete weed control.

Optimal weed control is obtained when Tough R is used in a weed control program following a broad spectrum preemergence herbicide. Refer to individual product labels for precautionary statements, restrictions, rates, approved uses and a list of weeds controlled.

Only one postemergence application may be made if Tough R has been applied preplant burndown. Do not exceed a total of two applications per year. Do not exceed a total of 32 fl oz/A of Tough R per year.

Do not make the second application within 14 days of the first application.

TOUGH R TANK MIXTURES – POSTEMERGENCE

Apply Tough R Herbicide at 16 fl. oz./A in tank mixture with other corn labeled products. Use this mixture for additional weed control. Use the lower rates of Tough R and the specified labeled rate of the tank mix partner when weeds have fewer than 4 leaves. For broadleaf weeds above the 4-leaf stage, heavy weed infestations, or use under adverse conditions such as drought stress, use the higher labeled rates.

Table 3. Tank Mix Partners

Tank Mix Partner	Directions
Atrazine (e.g. AAtrex® 4L, EPA Reg. No. 100-497; AAtrex® nine-O, EPA Reg. No. 100-585)	Use this mixture for additional broadleaf weed control. Refer to product label for list of weeds controlled. The addition of a crop oil concentrate is recommended for optimum control. Do not apply this tank mixture to corn greater than 12 inches tall.
Nicosulfuron (e.g. DuPont™ Accent®Q Herbicide, EPA Reg. No. 352-773)	Use this mixture for additional grass control. Refer to product label for list of weeds controlled. The addition of a crop oil concentrate is recommended for optimum control.
Dicamba (e.g. Clarity®, EPA Reg. No. 7969-137)	Use this mixture for additional broadleaf weed control. Refer to product label for list of weeds controlled. Use only nonionic surfactant with or without liquid nitrogen. fertilizer or ammonium sulfate.
Glufosinate-ammonium (e.g. Liberty® 280 SL Herbicide, EPA Reg. No. 7969-448)	Use this mixture for additional grass and broadleaf weed control. Refer to product label for list of weeds controlled. For use only on corn warranted as being tolerant to glufosinate. Application of this mixture to a corn hybrid that is not glufosinate tolerant will result in severe crop injury or death.
Primisulfuron-methyl + Dicamba (e.g. Northstar® Herbicide, EPA Reg. No. 100-923)	Use this mixture for additional broadleaf and grass weed control. Refer to product label for list of weeds controlled. If the corn is less than 12 inches tall, use crop oil concentrate or nonionic surfactant if an adjuvant needs to be added. If the corn is bigger than 12 inches, use only nonionic surfactant with or without liquid nitrogen fertilizer or ammonium sulphate.
Glyphosate (e.g. RoundUp® WeatherMAX Herbicide, EPA Reg. No. 524-537; RoundUp® PowerMAX Herbicide, EPA Reg. No. 524-549; RoundUp® PowerMAX II Herbicide, EPA Reg. No. 524-537)	Use this mixture for additional grass and broadleaf weed control. Refer to product label for list of weeds controlled. For use only in glyphosate tolerant corn. Application of this mixture to a corn hybrid that is not glyphosate tolerant will result in crop death. Add spray grade ammonium sulphate (AMS) at a rate that delivers 8.5-17.0 lbs. of AMS/100 gallons of water. If the glyphosate product label calls for an adjuvant in addition to AMS, add a non-ionic surfactant (NIS), crop oil concentrate (COC) or methylated seed oil (MSO) type adjuvants to this tank mixture.
Dicamba + Diflufenzopyr (e.g. Status® Herbicide, EPA Reg. No. 7969-242)	Use this mixture for additional broadleaf weed control. Refer to product label for list of weeds controlled.
Nicosulfuron + Rimsulfuron (e.g. DuPont™ Steadfast® Herbicide, EPA Reg. No. 352-608; DuPont™ Steadfast® Q Herbicide, EPA Reg. No. 352-774)	Use this mixture for additional broadleaf weed control. Refer to product label for list of weeds controlled.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Keep container tightly sealed when not in use. This product should be stored in its original container in a cool, dry locked place out of reach of children and pets. Keep away from heat and flame.

PESTICIDE DISPOSAL: To avoid waste, use all material in this container by application according to label directions. If waste cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments).

CONTAINER HANDLING:

Nonrefillable Containers 5 Gallons or Less :
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 ¼ 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 or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration. Do not burn unless allowed by state and local ordinance. If burned stay out of smoke.

Do not transport if container is damaged or leaking. If the container is damaged, leaking or obsolete, or in the event of a major spill, fire or other emergency, call CHEMTREC Day or Night at 1-800-424-9300.

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 fully refunded. Otherwise, to the extent consistent with applicable law, use by the buyer or by any other user constitutes acceptance of the terms and conditions of the Conditions of Sale and Limitation of Warranty and Liability stated herein.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks associated with the use of this product. Plant injury, lack of performance 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 the product, which are beyond the control of BELCHIM 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 BELCHIM and Seller harmless for any claims relating to such factors.

BELCHIM 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 this product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or BELCHIM, and Buyer and User assume the risk of any such use. **To the extent consistent with applicable law, BELCHIM 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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