



Company Name: MACROFERTIL AUSTRALIA PTY LTD
Product Name: RAVENSDOWN TRIFLURALIN 480 HERBICIDE
eLabel Application No: DCNV-01734251E62
APVMA Approval No: 56869/101636

Label Name:	Macro Protect Triflur 480 Herbicide
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Signal Headings:	CAUTION KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING
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Constituent Statements:	480 g/L TRIFLURALIN 480 g/L HYDROCARBON LIQUID
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Mode of Action:	GROUP D HERBICIDE
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Statement of Claims:	A PRE-EMERGENCE HERBICIDE FOR THE CONTROL OF ANNUAL GRASSES AND BROADLEAF WEEDS IN HORTICULTURAL AND AGRICULTURAL CROPS AS LISTED IN THE DIRECTIONS FOR USE TABLE.
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Net Contents:	1000L 110L 200L 20L 500L 60L 800L Bulk
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Restrains:	
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Directions for Use:	This section contains file attachment. File Name: DIRECTIONS FOR USE.pdf File Size: 122380 bytes
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Other Limitations:	THIS PRODUCT MUST BE INCORPORATED INTO THE SOIL WITHIN 4 HOURS OF APPLICATION.
Withholding Periods:	NOT REQUIRED WHEN USED AS DIRECTED.
Trade Advice:	
General Instructions:	This section contains file attachment. File Name: OTHER INSTRUCTIONS.pdf File Size: 59780 bytes
Resistance Warning:	<p>RESISTANT WEEDS WARNING GROUP D HERBICIDE</p> <p>Macro Protect Triflur 480 Herbicide is a member of the dinitronilines group of herbicides. Macro Protect Triflur 480 Herbicide has the inhibitors of tubulin formation mode of action. For weed resistance management Macro Protect Triflur 480 Herbicide is a Group D Herbicide. Some naturally-occurring weed biotypes resistant to Macro Protect Triflur 480 Herbicide and other Group D Herbicides may exist through normal genetic variability in any weed population. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds will not be controlled by Macro Protect Triflur 480 Herbicide or other Group D Herbicides.</p> <p>Since the occurrence of resistant weeds is difficult to detect prior to use, Macrofertil Australia Pty Ltd accepts no liability for any losses that may result from the failure of Macro Protect Triflur 480 Herbicide to control resistant weeds.</p>
Precautions:	
Protections:	<p>PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT. DO NOT contaminate streams, rivers or waterways with the chemical or used containers.</p> <p>PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS DO NOT use in high winds. DO NOT exceed rates specified, to avoid crop damage. DO NOT plant sensitive grasses such as oats, sorghum, millet, Phalaris spp., ryegrass, or wheat for 12 months following the use of this product except where wheat follows wheat or other winter crops. DO NOT plant oil seed poppies when a detectable residue of Trifluralin is present in the soil. Levels as low as 0.02 ppm may interact with other unfavourable factors (moisture, stress, disease etc) to reduce poppy growth and vigour. DO NOT apply to orchards and vineyards after first flush of growth or when residues can lodge on or in fruit. Reduced germination of wheat and barley may occur due to combination of following circumstances and the use of this product:</p> <ul style="list-style-type: none"> • Short coleoptile cultivars • Use of seed dressings (except Vitavax) • Shallow or uneven seedling depth. <p>Drift Warning: DO NOT apply under meteorological conditions or from spraying equipment which could be expected to cause spray drift onto nearby susceptible plants, adjacent crops, crop lands or pastures.</p>

Storage and Disposal:	<p>STORAGE AND DISPOSAL</p> <p>Store in the closed, original container in a cool well-ventilated area away from children, animals, food, feedstuffs, seed and fertilisers. Do not store for prolonged periods in direct sunlight. Do not store below 5°C. Extended storage below 5°C can result in formation of crystals on the bottom of the container. If crystallisation does occur stand container on its side at room temperature and rock occasionally until crystals re-dissolve. Ensure any crystals are dissolved before adding to the spray tank.</p> <p>Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and deliver empty packaging for appropriate disposal to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots, in compliance with relevant Local, State or Territory government regulations. DO NOT burn empty containers or product.</p> <p>Returnable Containers (110, 200, 500, 800 & 1000 L ONLY): Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.</p>
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Safety Directions:	<p>SAFETY DIRECTIONS</p> <p>Harmful if swallowed. Will irritate the eyes and skin. Repeated exposure may cause allergic disorders. Sensitive workers should use protective clothing. Avoid contact with the eyes and skin. Do not inhale spray mist. When opening the container and using the prepared spray wear cotton overalls buttoned to the neck and wrist, a washable hat and elbow length PVC gloves and face shield or goggles. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves face shield or goggles and contaminated clothing.</p>
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First Aid Instructions:	<p>FIRST AID</p> <p>If poisoning occurs contact a doctor or Poisons Information Centre (Phone Australia 13 11 26).</p> <p>If swallowing, DO NOT induce vomiting. Give a glass of water.</p>
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First Aid Warnings:	
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DIRECTIONS FOR USE

1. FIELD CROPS

Situation & Crop	Weeds	State	Rate L/ha Soil type			Critical Comments
			Light	Medium	Heavy	
Chickpeas	Annual Ryegrass, Paradoxa Grass (Canary Grass), Wireweed (Hogweed), Black Pigweed, Suppression of Climbing Buckwheat (Black Bindweed), Wild Oats.	Qld only	1.25 – 1.7 L/ha			Use 1.25 L/ha when applying immediately prior to sowing. Use 1.7 L/ha when applying to dry soil before the planting rain
	Annual Ryegrass, Wireweed (Hogweed), Deadnettlles	Vic only	800m L/ha plus 1L/ha Triallate (500g/L)			Incorporate as per recommendations for wheat, barley and tritiale.
	Red & White Fumitory, Rough Poppy, Wireweed, Annual Ryegrass, Barley Grass, Canary Grass, Sand Fescue, Suppression of Deadnettle, Speedwell, Three Cornered Jack, Yellow Burrweed, Brome Grass, Cereal Oats and soil surface Wild Oats	SA only	1.25 L/ha			Apply to level seedbed 0 to 4 weeks before sowing. Incorporate as per Incorporation Table 6.
Adzuki Beans, Cowpeas, Lablab, Mung Beans, Borlotti Beans, Red Kidney Beans	Amaranthus, Annual Ryegrass, Barnyard Grass, Caltrop, Crab Grass, Paradoxa Grass (Canary Grass), Pigweed, Wild Oats, Winter Grass, Wireweed, Suppression of Fumitory.	NSW, ACT only	1.2 – 1.5 L/ha	1.5 L/ha	1.7 L/ha	Apply from 4 weeks up to just prior to sowing. Refer Incorporation Table 3, 4 or 5 for suitable method of incorporation.
		NSW, ACT, Qld only				
Faba Beans	Annual Ryegrass, Barley Grass, Capeweed, Corn Gromwell (Sheepweed), Fumitories, Geranium, Ivy Leaf, Speedwell, Mustards, Turnips, Wireweed, Suppression of Brome Grass, Soursob and Wild Oats	SA, WA only	800 mL/ha plus 1.1g/kg Simazine (900g/kg)			Apply to bare moist soil and incorporate to a depth of 5 cm just prior to sowing. Incorporation should be made within 4 hours of application. Application should not be made to rigid or excessively cloddy soil. For full reliable results, significant rainfall (20 or 30 mm) is necessary within 2-3 weeks of application.
Pigeon Peas	Amaranthus, Barnyard Grass, Canary Grass, Crowsfoot Grass, Pigweed, Spiny Burrgrass, Summer Grass, soil surface Wild Oats, Wireweed (Hogweed), Suppression of Yellow Vine (Caltrop), From seed only: Columbus Grass, Guinea Grass, Johnson Grass, Liverseed Grass.	NSW, ACT only	1.2 L/ha	1.5L/ha	1.7 L/ha	Apply from 4 weeks up to just prior to sowing. Refer Incorporation Table 3, 4 or 6 for suitable method of incorporation.

Situation & Crop	Weeds	State	Rate L/ha Soil type			Critical Comments
			Light	Medium	Heavy	
Lentils	Annual Phalaris, Annual Ryegrass, Wild Oats, Wireweed.	NSW, ACT only	800 mL/ha	1.2 L/ha	1.2 L/ha	Apply 1 to 4 weeks before sowing.
	Fumitory – Red and White, Rough Poppy, Wireweed, Barley Grass, Canary Grass, Annual Ryegrass, Sand Fescue	SA only	1.25 L/ha			
Vetch	Annual Ryegrass, Deadnettle, Wireweed, soil surface Wild Oats, suppression of Brome Grass, Rough Poppy, Speedwell, Three Cornered Jack, Yellow Burr Weed, Sheepweed.	SA, only	1.7 L/ha			Apply to level seedbed 0 to 4 weeks before sowing. Refer to incorporation Table 6 for method of incorporation.
Cotton	Annual Rye Grass, Barnyard Grass, Caltrop (Bullhead, Yellow vine), Crab Grass, Mossman River Grass (Innocent Weed), Pigweed, Phalaris spp., Redroot (Amaranthus), Redshank (Prince of Wales Feather), Summer Grass, soil surface Wild Oats, Winter Grass, Wireweed (Hogweed), Black Pigweed (Qld only)	Qld, NSW, ACT, WA only	1.2 L/ha	1.7 L/ha	2.3 L/ha	Spray between 6 weeks and just before sowing takes place. Refer Incorporation Table 1 & 2 for method of incorporation.
Legume Seed Crop Establishment - Annual Medics - Clover (Berseem, Red, Strawberry, Sub and White)	From seed only: Columbus Grass, Guinea Grass, Johnson Grass, Liverseed Grass (Urochloa)	NSW, ACT, SA, WA, VIC, TAS only	1.2L/ha		1.7L/ha	Autumn Sowing – Use lower rates. Apply from 4 weeks to 7 days before sowing takes place. Refer Incorporation Table 6 for method of incorporation. Spring Sowing – Use higher rates. Apply between 4 weeks and 3 days before sowing takes place. Refer Incorporation Table 6 for method of incorporation. In both cases seedling disease, cold weather, excessive moisture, high salt concentrations and drought could weaken crop seedlings and damage could occur from the use of this product. Temporary crop suppression could result.
Linseed		NSW, ACT, SA, WA, Vic, only	1.2 L/ha	1.5 L/ha	1.7 L/ha	Spray 2-4 weeks before sowing. Sowing depth should be 1.3 to 2.5 cm. Deeper sowing may result in some stand reduction. Refer Incorporation Table 6 for method of incorporation.
Peanuts		WA, Qld only				Spray between 4 weeks and just before sowing takes place. Refer Incorporation Table 3,4 or 5 for suitable method of incorporation.
Peas		All States				Spray between 4 weeks and just before sowing takes place. Refer Incorporation Table 6 for method of incorporation.
Canola Safflower		All States				Spray between 4 weeks and just before sowing takes place. Refer Incorporation Table 6 for method of incorporation.
Sugarcane Early Season Late Season		Qld, NSW, ACT only	2.3 L/ha 3.0 L/ha			Apply to plant cane after emergence to "out of hand" stage. Apply to ratoon cane immediately after harvest. Refer Incorporation Table 3, 7 or 10 for suitable method of incorporation.
Sunflowers	All States	1.2 L/ha	1.5 L/ha	1.7 L/ha	Spray between 4 weeks and just before sowing takes place. Refer Incorporation Table 3, 4 or 5 for method of incorporation.	

Situation & Crop	Weeds	State	Rate L/ha Soil type			Critical Comments
			Light	Medium	Heavy	
Lupins	Weeds as listed above	All States	1.2 L/ha	1.5 L/ha	1.7 L/ha	Spray between 4 weeks and just before sowing takes place. Refer Incorporation Table 6 for method of incorporation.
	Annual Grasses and Broadleaf Weeds	NSW, ACT, Vic, Qld only	800 mL/ha plus 1.7kg/ha of Simazine (900g/kg)			Use a low volume boom applying 50-100 litres spray mixture per hectare. Apply to bare moist soil and incorporate to a depth of 5 cm just prior to sowing the crop. Incorporate within 4 hours of application. Do not spray to a ridged soil.
	Capeweed, Turnip, Radish, Doublegee and Suppression of Annual Ryegrass and soil surface Wild Oats	WA only	1.25 L/ha plus 560-830g/ha Simazine (900g/kg)			Rate for yellow sands.
	As above plus suppression of Brome Grass		1.25 L/ha plus 1.1kg/ha Simazine (900g/kg)			Rate for all other soil types. Apply to bare moist soil and incorporate to a depth of 5cm just prior to sowing. Incorporation should be made within 4 hours of application. Application should not be made to rigid or excessively cloddy soil. For Simazine to be effective sufficient rainfall (20 to 30 mm) to wet the soil through the weed root zone is necessary within 2-3 weeks of application. Results with Simazine can be variable if seasonal conditions are dry prior to sowing and Lupins are sown into dry or low moisture seedbeds.
	Capeweed, Doublegee, Wild Radish, Wild Turnip, Wild Oats, Brome Grass plus suppression of Annual Ryegrass		1.25 L/ha plus 1.1kg Macro Protect Diuron 900 WG Herbicide			DO NOT use on white or grey sands as severe crop damage may result. Use tank mix of Diuron & Trifluralin where Annual Ryegrass is present. Apply at pre-sowing stage. DO NOT apply Diuron by air.
	Red & White Fumitory, Rough Poppy, Wireweed, Barley Grass, Canary Grass, Annual Ryegrass, Sand Fescue, suppression of Deadnettle, Speedwell, Three Cornered Jack, Yellow Burr Weed, Brome Grass, Cereal Oats, soil surface Wild Oats.		1.25 – 1.7 L/ha			Spray between 4 weeks and just before sowing takes place. Refer Incorporation Table 6 for method of incorporation.
	Above weeds plus Capeweed, Common Fumitory, Geranium, Indian Hedge Mustard, Sheepweed, Shepherd's Purse, Toadrush, Turnips, Soursob, suppression of Ice Plant.		1.25 L/ha to 1.7 L/ha plus 1.1 to 2.2kg/ha Simazine (900g/kg)			Use a low volume boom applying 50-100 litres spray mixture per hectare. Apply to bare moist soil and incorporate to a depth of 5 cm just prior to sowing the crop. Incorporate within 4 hours of application. Do not apply to a ridged soil

Situation & Crop	Weeds	State	Rate L/ha Soil type			Critical Comments
			Light	Medium	Heavy	
Tobacco	Summer Grass, Crowsfoot Grass, Red Natal Grass, Love Grass, Button Grass, Rhodes Grass, Pigweed.	Qld only	800 mL/ha	1.2 L/ha	-	Apply to soil 3-4 weeks prior to transplanting. The longer period to be used for applications made during June and July. Incorporate to a depth of 10 cm.
	Crowsfoot Grass	NSW, ACT only			1.2 L/ha	Apply to light sandy soil 14-21 days before transplanting. DO NOT incorporate to a depth greater than 6 cm. Apply to loam (medium soil) 14-21 days before transplanting. DO NOT incorporate to a depth of greater than 6cm.
Wheat, Barley & Triticale	Annual Ryegrass, Wireweed (Hogweed), Phalaris spp.	NSW, ACT, WA & Vic only	800 mL/ha			Apply 1-4 weeks before sowing. Sowing depth should be at least 5cm. Use cover harrows behind combine. Ground should be left flat. DO NOT use pre-sowing on self-mulching soils as damage may occur from wheel tracking and poor control of wild oats. Refer Incorporation Table 6 for method of incorporation. Pre-sowing – Apply more than 4 weeks before sowing to prevent crop damage. Post sowing – Self Mulching Soils: Apply within 2 days after sowing to well prepared seedbed. Refer Incorporation Table 6 for suitable method of incorporation.
Pre-Sowing Only	Fumitory	WA only				
Pre-Sowing and Post-Sowing (Self Mulching Soils)	Canary Grass	Vic only				
	As above except for Fumitory					
Wheat	Annual Ryegrass, Paradoxa Grass (Canary Grass), soil surface Wild Oats, Wireweed (Hogweed)	Qld only	1.25 L/ha			On non-self mulching soils apply 1-4 weeks before sowing. Sowing depth should be at least 5 cm. Use cover harrows behind combine. Ground should be left flat. On self mulching soils as above except apply more than 4 weeks before sowing to prevent crop damage. Refer Incorporation Table 6 for method of incorporation.
Barley						Apply to self-mulching and non-self mulching soils from 1-4 weeks before sowing. Sowing depth should be at least 5 cm. Use cover harrows behind combine. Ground should be left flat. Refer Incorporation Table 6 for method of incorporation.
Wheat, Triticale, Rye	Annual Ryegrass, Red & White Fumitory, Phalaris spp, Wireweed, suppression of Deadnettle, Rough Poppy, Yellow Burr Weed	SA only	1.25 L/ha			Apply 14 weeks before sowing. Sowing depth should be at least 5cm. Use cover harrows behind combine. Ground should be left flat. DO NOT use pre-sowing on self-mulching soils as damage may occur from wheel tracking and poor control of wild oats. Refer Incorporation Table 6 for method of incorporation.
Barley	As above for SA plus Sand Fescue and suppression of Brome Grass					
Wheat & Triticale only	Annual Phalaris	NSW, ACT only	800 mL/ha plus 20 g/ha Chlorsulfuron (750g/kg)			If possible spray and incorporate into the soil in one operation. If this is not possible, incorporation should take place within 4 hours of spraying. Delay may cause inferior weed control.

2. VEGETABLES, ORCHARDS AND VINEYARDS

Situation & Crop	Weeds	State	Rate L/ha Soil type			Critical Comments
			Light	Medium	Heavy	
Transplants only Broccoli, Cabbage, Cauliflowers, Tomatoes	Annual Ryegrass, Barnyard Grass, Canary Grass, Caltrop, (Bullhead Yellow Vine), Crab Grass, Mossman River Grass (Innocent Grass), Pigweed, Redroot (Amaranthus), Redshank (Prince of Wales Feather), Summer Grass, Wild Oats, Winter Grass, Wireweed (Hogweed) From seed only: Columbus Grass, Guinea Grass, Johnson Grass, Liverseed Grass (Urochloa)	All States	1.2 L/ha	1.7 L/ha	2.3 L/ha	Spray between 4 weeks and just before sowing takes place. Refer Incorporation Table 3, 4 or 5 for suitable method of incorporation.
Direct Seeded only Broccoli						
Brussels Sprouts, Cabbage						
Cauliflower		Vic only				
Carrots		All States				
Chicory		Vic only				
Green Beans, Navy Beans		All States	1.5 L/ha	1.7 L/ha		
Soybeans		1.7 L/ha	2.3 L/ha			
Orchards and Vineyards		Qld, SA, WA, Vic, Tas only				Apply to new planting during pre plant cultivation. Apply to established crops in spring after weeds and green manure crop has been ploughed into the ground. Refer Incorporation Table 8 or 9 for suitable method of incorporation.

**NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS
AUTHORISED UNDER APPROPRIATE LEGISLATION.**

METHOD OF INCORPORATION TABLE

1. Prior to furrowing out: 2 workings at an angle required using Offset OR tandem disc harrows.
2. After furrowing out: 2 workings required using Go-Devil discs or Lilliston cultivators set at 10 cm depth.
3. Rotary Hoe: 1 working required at 5-7.5 cm depth. Sugar Cane: 7.5-13 cm depth.
4. Offset OR Tandem Disc Harrows: (Preferably with spiked harrows in tandem) 2 workings at an angle required at 7.5-15 cm depth at 6.5-10 km per hour.
5. Heavy diamond OR Stump Jump Harrows: (Weighted 20-30 kg per section) at 10 -13 km/hr speed. Then cross work with offset or tandem disc harrows set to 7.5-15 cm depth at speed 6.5-10 km per hour.
6. Weighted Heavy Diamond or Stump Jump Harrows (Weighted with 20-30 kg per section) at 10-13 km per hour. Cross work with combine at 5-7.5 cm depth at speed of 10-13 km/hr.
7. Disc Ratoon Cultivator: 2 workings needed with discs and cultivator set at 7.5-13 cm depth.
8. Offset OR Tandem Disc Harrows: Set at 7.5-15 cm depth. A second discing is required working in opposite direction with discs set to throw treated soil into tree or vine row.
9. Rotary Hoe: 1 working needed at 5 - 10 cm depth.
10. Offset Discs (Bumpers): 2 workings needed at depth 7.5-13 cm.

MIXING

This product is an emulsifiable concentrate which mixes readily with water. Add the recommended amount to the spray tank during filling operation and apply 70 – 450 L of water per hectare (broadcast basis) dependent on soil type. Under hot conditions and whenever possible spray and incorporate into the soil in one operation. Delay may cause inferior weed control. Use properly calibrated standard low pressure 170-340 kilopascal boom type sprayer with flat fan tips.

TANK MIXTURES

Read and follow all label directions including restraints, spray drift restraints, mandatory no-spray zones, critical comments, withholding periods, regional use restrictions and safety directions for the tank mix products.

DO NOT apply when wind speed is less than 3 or more than 20 kilometres per hour as measured at the application site

CONDITIONS FOR BEST RESULTS

This product must be thoroughly incorporated as recommended. Soil should be well worked and free of weeds at time of application. Product effectiveness may be reduced by inadequate incorporation, high organic matter, excess clods, crop or trash residues, stones or other foreign matter and in areas of unnaturally high weed seed population such as header tracks or livestock rest areas. Trifluralin is volatile and disappears from exposed surfaces. Loss is hastened by high temperatures, winds or warm moist soil. Under hot conditions and whenever possible spray and incorporate into the soil in one operation. Delay may cause inferior weed control. Use properly calibrated standard low pressure 170-340 kilopascal boom type sprayer with flat fan tips.

Integrated Weed Management

The use of Integrated Weed Management techniques in conjunction with Macro Protect Triflur 480 Herbicide is always recommended. Agronomic practices that reduce the weed seed bank in the soil prior to the use of Macro Protect Triflur 480 Herbicide will result in higher weed control levels from Macro Protect Triflur 480 Herbicide. Failure to use agronomic and Integrated Weed Management practices that reduce the weed seed bank in the soil will result in higher weed seed populations. Paddocks with excessively high weed seed banks may have sufficient weed numbers surviving such that final weed control may be considered below a commercially acceptable level and additional herbicide treatments may be necessary. The use of Integrated Weed Management techniques will also reduce potential for the development or survival of Group D herbicide resistant weed biotypes.

WILD OATS

Germinating wild oats seeds lying on soil surface will not be controlled. Therefore, specific wild oat control is only possible with shallow cultivation. Poor control will occur on self mulching soils and all soil types where deep cultivation is practiced.

EQUIPMENT MAINTENANCE AND USAGE

Keep the spray unit for herbicides only if possible; otherwise, spray tanks, pumps, lines and nozzles should be thoroughly rinsed several times with clean water following application. Spraymate Tank & Equipment Cleaner is suitable for this purpose and will also remove Trifluralin stains.