

POISON

KEEP OUT OF REACH OF CHILDREN

READ SAFETY DIRECTIONS BEFORE OPENING OR USING

Castrate[®]

Selective Herbicide

ACTIVE CONSTITUENTS: 240 g/L CLODINAFOP-PROPARGYL

60 g/L CLOQUINTOCET-MEXYL

Solvent: 535 g/L LIQUID HYDROCARBONS

GROUP

A

HERBICIDE

Controls Wild Oats, Paradoxa Grass (Annual Phalaris), Canary Grass and Annual Ryegrass in Wheat.

Highly active on Wild Oats and can be mixed with many broadleaf herbicides.

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CONTENTS: 1 L, 5 L

DIRECTIONS FOR USE

Restraints: DO NOT apply if rainfall is expected within 2 hours.

DO NOT apply to weeds or crops which are under stress. For example, due to very dry, very wet, frosty or diseased conditions, nutrient deficiency or high insect pressure.

DO NOT apply to weeds or crops immediately after a prolonged period of frosts.

DO NOT apply under poor growing conditions.

CROP	WEEDS CONTROLLED	STATE	RATE/HA	WEED GROWTH STAGE	CRITICAL COMMENTS
Wheat 2 leaf to late jointing (Zadocks 12 – 37)	Wild Oats	QLD, Nthn NSW, only	65 mL + 1 L of D-C-Trate oil or 500 mL Hasten or Uptake oil per 100 L of water.	2-5 leaf	NOT TO BE MIXED WITH BROADLEAF HERBICIDES AT THESE RATES. Apply at 85 mL/ha when weeds are not actively growing. Where low water volumes are used, DO NOT use less than the minimum oil volumes specified (See Minimum Oil Volumes). Cold water: Under cold water conditions (10°C or less), use Hasten instead of D-C-Trate or Uptake.
			85 mL + 1 L of D-C-Trate oil or 500 mL Hasten or Uptake oil per 100 L of water.	2 leaf to mid tillering	
			85 mL + 1 L of D-C-Trate oil or 500 mL Hasten or Uptake oil per 100 L of water.	2-5 leaf	
			125 mL + 1 L of D-C-Trate oil or 500 mL Hasten or Uptake oil per 100 L of water.	2 leaf to mid tillering	
	Sthn NSW, Vic, SA, WA only	65 mL + 1 L of D-C-Trate oil or 500 mL Hasten or Uptake oil per 100 L of water. Or 100 mL of a 100% non-ionic surfactant per 100 L of water.	2-5 leaf	MAY BE TANK MIXED WITH COMPATIBLE HERBICIDES Apply in mixtures for broadleaf weed control only when weeds are actively growing. When mixing Castrate with certain broadleaf weed herbicides some reduction in grass weed control may occur. Refer to compatibility chart for specific rates for tank mixes. Unless otherwise specified always use D-C-Trate, Uptake or Hasten when tank mixing broadleaf herbicides. Apply at 125 mL/ha when weeds are not actively growing. Where low water volumes are used, DO NOT use less than the minimum oil volumes specified (See Minimum Oil Volumes). Cold water: Under cold water conditions (10°C or less), use Hasten instead of D-C-Trate or Uptake.	
			2 leaf to mid tillering		
	Paradoxa Grass (<i>Phalaris paradoxa</i>) Canary Grass (<i>Phalaris minor</i>)	QLD, NSW, Vic, SA only	85 mL + 1 L of D-C-Trate oil or 500 mL Hasten or Uptake oil per 100 L of water.	2- 3 leaf	NOT TO BE MIXED WITH BROADLEAF HERBICIDES AT BELOW 160 mL/ha Apply in mixtures for broadleaf weed control only when weeds are actively growing. When mixing Castrate with certain broadleaf weed herbicides some reduction in grass weed control may occur. Apply at 160 mL/ha when weeds are not actively growing. Where low water volumes are used, DO NOT use less than the minimum oil volumes specified (See Minimum Oil Volumes). Cold water: Under cold water conditions (10°C or less), use Hasten instead of D-C-Trate or Uptake.
			125 mL + 1 L of D-C-Trate oil or 500 mL Hasten or Uptake per 100 L of water.	2- 5 leaf	
			160 mL + 1 L of D-C-Trate oil or 500 mL Hasten or Uptake per 100 L of water.	2 leaf to early tillering	
	Annual Ryegrass	NSW, Vic, SA, WA only	160 mL + 1 L of D-C-Trate oil or 500 mL Hasten or Uptake per 100 L of water.	2- 4 leaf	MAY BE TANK MIXED WITH COMPATIBLE HERBICIDES Apply in mixtures for broadleaf weed control only when weeds are actively growing. When mixing Castrate with certain broadleaf weed herbicides some reduction in grass weed control may occur. Apply at 210 mL/ha when weeds are not actively growing. Where low water volumes are used, DO NOT use less than the minimum oil volumes specified (See Minimum Oil Volumes). Cold water: Under cold water conditions (10°C or less), use Hasten instead of D-C-Trate or Uptake.
210 mL + 1 L of D-C-Trate oil or 500 mL Hasten or Uptake per 100 L of water.			2 leaf to early tillering		

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

WITHHOLDING PERIODS:

Harvested grain: WITHHOLDING PERIOD NOT REQUIRED WHEN USED AS DIRECTED.

Animal grazing/feeding: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 4 WEEKS AFTER APPLICATION.

GENERAL INSTRUCTIONS

RESISTANT WEEDS WARNING

GROUP	A	HERBICIDE
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Castrate Selective Herbicide is a member of the aryloxyphenoxypropionate ("fop") group of herbicides. Castrate has the inhibition of fat (lipid) synthesis, (or inhibitors of acetyl CoA carboxylase) mode of action. For weed resistance management Castrate is a Group A herbicide. Some naturally-occurring weed biotypes resistant to Castrate and other Group A 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 Castrate or other Group A herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use, Cheminova Australia Pty Ltd accepts no liability for any losses that may result from the failure of Castrate to control resistant weeds.

Weed biotypes resistant to diclofop-methyl and other "grass specific" herbicides can also often be resistant to Castrate. Before using Castrate on a population resistant to or suspected to be resistant to "grass specific" herbicides, have a resistance test conducted to ensure that it is susceptible to Castrate.

Large numbers of healthy surviving weeds can be an indication that resistance is developing. Efforts should be made to prevent seed set of the surviving weeds. DO NOT make more than one application of a Group A herbicide with the inhibition of fat (lipid) synthesis (or inhibitors of acetyl CoA carboxylase) mode of action to a crop in the same season. If the user suspects that the target weed population is resistant to herbicides with this mode of action, Castrate or other Group A herbicides should not be used. Strategies to minimise the risk of herbicide resistance are available. The above recommendations should be incorporated into an Integrated Weed Management (IWM) Program. Consult your farm chemical supplier, consultant, local Department of Agriculture or Primary Industries, or local Cheminova Australia Pty Ltd representative for details.

MIXING

Fill the spray tank to one quarter full. Then add Castrate while adding water to make up the final spray volume. Pour Castrate into the stream of incoming water. Good agitation at the time Castrate is added to the tank will ensure good mixing. Add the required amount of D-C-Trate*, Hasten* or Uptake* oil just before the tank is full of water and with the agitators in motion.

Mixing order: Some products may react with other products if they are not mixed in the correct order. The general mixing order of products should be -

1. Water conditioners or buffers
2. Water dispersible granules (WG)
3. Wettable powders (WP)
4. Flowable or suspension concentrates (SC)
5. Emulsifiable concentrates (EC) (Castrate)
6. Water based or soluble concentrates
7. Oils and wetters - eg Hasten, BS 1000

It is important to ensure that each individual component of the tank mix is fully dissolved and in solution before the next product is added to the tank mix, otherwise mixing problems may occur.

Minimum Oil Volumes: The minimum amount of oil to be applied with Castrate will depend on the type of oil used. When applying Castrate EC using low water volumes, DO NOT use less than the minimum oil volumes specified below:

- For oils normally applied at 1% v/v (eg D-C-Trate), DO NOT apply less than 500 mL oil/ha.
- For oils normally applied at 0.5% v/v (eg Uptake, Hasten), DO NOT apply less than 250 mL oil/ha.

CLEANING SPRAY EQUIPMENT

After using Castrate, empty the tank completely and drain the whole system. Thoroughly wash inside the tank using a pressure hose, drain the tank and clean any filters in the tank, pump, line and nozzles.

To rinse: After cleaning the tank as above, quarter fill the tank with clean water and circulate through the pump, lines, hoses and nozzles. Drain and repeat the rinsing procedure twice.

To decontaminate: Before spraying cereals (except wheat), maize, sorghum or other sensitive crops, wash the tank and rinse the system as above. Drain and repeat the rinsing procedure. Then quarter fill the tank and add a liquid alkali detergent (eg SURF*, OMO*, DRIVE*) at 0.5 L/100 L of water and circulate throughout the system for at least fifteen minutes. Drain the whole system. Remove filters and nozzles and clean them separately. Finally flush the system with clean water and allow to drain. Dispose of all water used for cleaning in a disposal pit specifically marked and set up for this purpose clear of waterways, vegetation and roots.

APPLICATION

Ground Application: Boom spray with flat fan nozzles. Ensure good spray coverage is obtained. Apply using 50 to 110 L water per hectare. The ideal droplet size is 200 to 300 microns VMD.

Aircraft Application: For best results use 20 to 30 L water per hectare and spray at 2 m to 3 m above the crop. Ideal droplet size is 250 to 350 microns VMD. For rotary atomizers (micronairs) this can be achieved using blade angles of 55° to 65°. Where booms and nozzles are attached, flat fan nozzles with a spray angle of 65° to 90° should be used.

Avoid applying Castrate if wind speeds are greater than 5 m/s. If spraying in calm conditions use larger droplets and reduce flying height.

COMPATIBILITY

When Castrate is applied with compatible herbicides always use a recommended oil. Only use a 100% non-ionic surfactant when mixing with diflufenican based products.

Grass Herbicides: Castrate is compatible with diclofop methyl.

Broadleaf Herbicides: Some broadleaf weed herbicides are incompatible with Castrate because they reduce the effectiveness of Castrate or because in mixture they may cause crop yellowing. For the latest information on compatibility of Castrate with broadleaf herbicides refer to supplier.

Incompatible: The following herbicide formulations are known to be incompatible with Castrate: diuron, triasulfuron, bromoxynil + dicamba + MCPA and all 2,4-D formulations.

Herbicides which are incompatible with Castrate must be applied separately. In this situation, apply Castrate first and then allow at least 10 days between its application and application of the broadleaf weed herbicide.

Insecticides: Castrate is compatible with methidathion formulations.

PRECAUTIONS

RE-ENTRY PERIOD

DO NOT enter treated areas without protective clothing until the spray has dried.

PROTECTION OF CROPS, NATIVE AND OTHER NONTARGET PLANTS

DO NOT apply on or near shrubs, trees, lawns or crops other than wheat. DO NOT drain or flush equipment on or near desirable trees or other plants, where their roots may extend, or in situations where by movement of soil or by seepage absorption of the herbicide may occur.

DO NOT apply under meteorological conditions or from spraying equipment which could be expected to cause spray to drift onto nearby susceptible plants, adjacent crops, crop lands or pastures.

DO NOT allow spray to drift onto adjacent fallow land.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

DO NOT apply to irrigation drains or channels.

DO NOT contaminate dams, streams, creeks and rivers with the chemical, spray mixture, used containers or equipment washings.

STORAGE AND DISPOSAL

Store in the closed, original container in a cool, well-ventilated area. DO NOT store for prolonged periods in direct sunlight. 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 bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

SAFETY DIRECTIONS

Harmful if swallowed. Will irritate the eyes and skin. Repeated exposure may cause allergic disorders. Avoid inhaling spray mist. Avoid contact with eyes and skin. When opening the container and preparing spray wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), a washable hat, elbow-length PVC gloves and face shield or goggles. If product on skin, immediately wash area with soap and water. If product in eyes, wash it out immediately with water. 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.

FIRST AID

If poisoning occurs contact a doctor or Poisons Information Centre. Phone Australia 131126. If swallowed, do NOT induce vomiting. Give a glass of water. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

SAFETY DATA SHEET

Additional information is listed in the Safety Data Sheet available from www.cheminova.com.au

WARNING

This product must be used, handled and stored strictly as directed in accordance with this label, packaging and other reference material ("Directions"). To the extent permitted by law Cheminova Australia Pty Ltd and its related companies will have no liability for any injury, loss or damage arising from a failure to follow the Directions.

APVMA Approval No: 61510/0707

Batch No: Date of Manufacture:

140401-T

Drummaster logo (relevant pack sizes)

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FOR 24 HOUR SPECIALIST ADVICE IN EMERGENCY ONLY PHONE 1800 033 111
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