

ECOTOXIC HERBICIDE
Not to be used on turf



Radiate™

HERBICIDE

ACTIVE INGREDIENT: Contains 150 g/L picloram and 225 g/L clopyralid, both as the monoethanolamine salt, in the form of a soluble concentrate.

GROUP 03 HERBICIDE

Controls certain broadleaf weeds in fodder brassicas and radiata pine

READ THIS LABEL COMPLETELY BEFORE MIXING OR APPLYING

Dow AgroSciences (NZ) Ltd

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www.corteva.co.nz

Telephone 0800 803 939

HAZARD CLASSIFICATION

6.4A, 9.1C, 9.2A, 9.3C

APPROVED HANDLER

This product must be under the personal control of an approved handler when any quantity is:

- (a) Applied in a wide dispersive manner; or
- (b) Used by a commercial contractor.

The person in charge of a place where RADIATE is sold may sell it to a person only if he or she has received confirmation that there is an approved handler at the place where RADIATE is to be used.

RECORD KEEPING

Records of use, as described in relevant HSNO regulations and the New Zealand Standard for the Management of Agrichemicals (NZS8409), must be kept if more than 3 L is applied or discharged within 24 hours in a place where members of the public may be present or where the substance may enter air or water and leave the place.

TOXICITY

MAY CAUSE EYE IRRITATION. Avoid contact with eyes.

ECOTOXICITY

HARMFUL IN THE AQUATIC ENVIRONMENT. **DO NOT** contaminate an aquatic environment with chemical or empty container. **DO NOT** spray over or allow drift over, an aquatic environment.

SELECTIVE HERBICIDE - VERY TOXIC TO SOME PLANT SPECIES. Some plants may be damaged or killed by contact with this product. **DO NOT** allow drift outside the target area to occur.

2

Decontaminate equipment before use on sensitive plants (see Application section).

DO NOT use **RADIATE** on the bottoms of drains, ditches or irrigation channels.

Treated vegetation shall not be disposed of at any green waste recycling centre.

HARMFUL TO TERRESTRIAL VERTEBRATES. Store chemical and empty containers away from animals and birds.

HANDLING PRECAUTIONS

EQUIPMENT

Apply using accurately calibrated and maintained equipment in accordance with the New Zealand Standard for the Management of Agrichemicals (NZS8409).

Flush equipment thoroughly with clean water after use according to the Cleaning Spray Equipment instructions below. Dispose of the cleaning water according to the Disposal instructions below.

STORAGE

Store in the original container, tightly closed, away from foodstuffs. Avoid contamination of seeds, fertilisers and other pesticides. Storage must be generally in accordance with the New Zealand Standard for the Management of Agrichemicals NZS8409.

Stores containing 100 L or more of **RADIATE** require bunding and are subject to signage. See the New Zealand Standard for the Management of Agrichemicals NZS8409 and relevant Hazardous Substances Emergency Management and Identification Regulations for further information.

3

PERSONAL PROTECTION

When mixing or applying, wear eye protection, waterproof gloves, chemical resistant boots made of a material such as rubber, nitrile, polyethylene or polyvinyl chloride and cotton overalls buttoned to the neck and wrist.

SPILLAGE

DO NOT touch or walk through spilled material. Wear the protective equipment recommended above. Stop leak when safe to do so. Dam area and prevent entry into waterways, and drains. **Small spills/leaks:** Absorb with proprietary absorbent suitable for chemical spills or inert material such as sand, soil or sawdust. Collect spilled product and place in sealable container for disposal. Spill residues may be cleaned using water and detergent. Contain and absorb wash water for disposal. Absorb and collect washings and place in the same sealable container for disposal. **Large spills/leaks:** Dam the area off and report them to Corteva Agriscience Emergency Services at 0800 844 455.

DISPOSAL

Triple rinse empty container and add rinsate to spray tank. Triple rinsed containers containing the Agrecovery logo on the label and that are free of all residues (liquid and dry) and have an intact legible label may be taken to an **Agrecovery** collection site. Otherwise crush or puncture and bury in a suitably approved landfill. **DO NOT** burn empty containers.

Dispose of this product only by using according to the label, at an approved landfill or via Agrecovery (visit www.agrecovery.co.nz or call 0800 AGRECOVERY (247 326) for information about the type and quantity of chemical acceptable for disposal). **DO NOT** burn.

Dispose of equipment cleaning water onto ground away from susceptible crops and plants.

DO NOT dispose of this product; spray mix or equipment cleaning water down drains or sewers.

FIRST AID

If swallowed **DO NOT** induce vomiting. For advice contact the National Poisons Centre 0800 POISON (0800 764 766) or a doctor immediately. If splashed in eyes, flush out immediately with running water for at least 15 minutes. If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

SAFETY DATA SHEET

A Safety Data Sheet for **RADIATE** is available from Corteva Agriscience on request. Call Customer Service Toll Free on 0800 803 939 or visit www.corteva.co.nz.

TRANSPORT

DO NOT carry more than 1 L on a passenger service vehicle. Quantities of 1 L or less carried on a passenger service vehicle must be contained within sealed packaging.

NOTICE

Important: You **must** read the warning and conditions given on this label. If they are not acceptable, or if you are in doubt as to the proper handling of this product (including its transport, storage, use, disposal and requirements for approved handlers [if applicable]) then return the unopened product to the supplier at once.

Warning: This product is subject to controls and could be hazardous if handled incorrectly. The **user is responsible** for ensuring that the handling of this product is in accordance with the law (including the *Hazardous Substances and New Organisms Act 1996* and the *Agricultural Compounds and Veterinary Medicines Act 1997*) and with the directions provided. The Registrant declines all liability (whether in contract, tort (including but not limited to negligence), or otherwise) to the maximum extent permitted by law in relation to the handling of this product in a manner which is contrary to the directions given or to any applicable Acts, Regulations or Guidelines.

Further information regarding the applicable Acts, Regulations and Guidelines for the proper handling of this product may be obtained by contacting EPA New Zealand (www.epa.govt.nz) or the Ministry for Primary Industries (MPI) (www.foodsafety.govt.nz).

This product is warranted to contain the specified active ingredients within accepted analytical tolerance when packed.

RESISTANCE MANAGEMENT

GROUP 03 HERBICIDE

RADIATE is a pyridine carboxylic-acid herbicide (Group 03). Some naturally occurring individual weeds may become resistant when excessive use of the same herbicide occurs. To maximize the effectiveness of herbicides, products containing alternate modes of action should be used in the spray program. Consult <http://resistance.nzpps.org/> for alternate modes of action and the details of resistance management strategies (if any) for the crops listed on the label.

ANIMAL SAFETY

Poisonous plants (including but not limited to black nightshade, ragwort and thornapple) may become more palatable after spraying. If concerned that stock health may be affected, stock should be kept away from the area until the plants have died down.

APPLICATION:

RADIATE can be applied using conventional ground or aircraft spraying equipment. Equipment should be decontaminated **before and after** using **RADIATE**, particularly if herbicides such as Maestro™ (MCPA), Select™ (MCPB), Pasture-Kleen™ Xtra (2,4-D) or sulfonyleurea herbicides have been used prior to **RADIATE** or if susceptible crops are to be sprayed after use of **RADIATE** (see Crop Rotations in the brassica use directions section below). Small amounts of the above herbicides can severely affect brassica crops.

Cleaning spray equipment:

Rinsing

After using **RADIATE** or any of the above-mentioned herbicides:

- Empty the spray tank completely and drain the whole system. Thoroughly wash inside the unit using a pressure hose. Drain spray unit and clean any filters in the tank, pump, lines, hoses and nozzles.
- After cleaning the spray unit as above, quarter fill with clean water and circulate the water through the pump, lines, hoses and nozzles. Drain and repeat the rinsing procedure twice.
- Discard rinse water on land already sprayed or on wasteland away from desirable plants and water sources.

Decontamination

Before using equipment:

- Quarter fill the tank and add a standard alkali based laundry detergent at 500g (or mL)/100 L water and circulate throughout the system for at least 15 minutes. If using a concentrated laundry detergent use 250g (or mL)/100L water. **DO NOT** use chlorine based cleaners.
- Drain the whole system. Remove filters and nozzles and clean them separately.
- Finally, flush the system with clean water and allow to drain.

The effectiveness of decontamination should be checked by applying water from the decontaminated sprayer to sensitive plants such as beans or peas and observing if any symptoms develop in the sprayed plants over 10 days. If sulfonyleurea herbicides have been used, follow the directions on the relevant herbicide label for decontamination of spray equipment.

Cleaning water should be discharged onto a designated disposal area, or onto unused land away from water sources and desirable plants.

Using the spray equipment:

IMPORTANT: In order to select the appropriate nozzles for the required spray quality and operate the equipment to minimize spray drift this product must be applied in accordance with the New Zealand Standard for the Management of Agrichemicals (NZS8409).

Aerial and boom spraying (Brassicas only): Use a minimum 100-300 L of water per hectare applied as a coarse quality spray as defined by the British Crop Protection Council (BCPC) system or

the American Society of Agricultural Engineers (S572) (ASAE). Use higher water rate where weeds are dense.

CDA Spraying (Brassicas only): Use not less than 30 L water per hectare using spray equipment which will produce a droplet size of 250-300 microns. Trials indicate that CDA application may result in less effective weed control than conventional boom spraying.

Aerial spraying (Radiata Pine only): Use a minimum 150 L of water per hectare using the double pass, overlap flying system and applied as a coarse quality spray as defined by the British Crop Protection Council (BCPC) system or the American Society of Agricultural Engineers (S572) (ASAE). Select a nozzle configuration to ensure thorough coverage. Disc and core nozzles are recommended. In calculating area treated, allow for topography to ensure the correct herbicide rate per hectare is applied.

Spot Spraying (Radiata pine): Use a pressure of 1000-2000 kPa through a No. 6-8 tip and apply to give full coverage of leaves and stems from all directions.

MIXING:

Half fill the spray tank and add the required amount of **RADIATE**. Add the remainder of the water, with the agitator running. If required add the Uptake™ Spraying Oil or Boost™ Penetrant. Maintain agitation during spraying. Only mix sufficient spray solution for immediate use and avoid storing.

WITHHOLDING PERIODS

It is an offence for users of this product to cause residues exceeding the relevant MRL in the Food Notice: Maximum Residue Levels for Agricultural Compounds.

Other than for animal safety or crop rotation purposes a withholding period is not required when used as directed.

The restraint on sending treated green material to a green waste recycling centre is not required 12 months after treatment.

DIRECTIONS FOR USE:

FODDER BRASSICAS:

WEEDS	RATE (mL/ha)	COMMENTS
Fathen, Black nightshade, thorn apple Redroot (suppression only)	350	Apply to actively growing 2-8 true leaf seedlings. See Timing and Uptake Spraying Oil sections below.

Uptake Spraying Oil: Always use Uptake Spraying Oil at 1 L/h with **RADIATE**. The only oil recommended for use with **RADIATE** is Uptake Spraying Oil.

Timing: Time of application should be determined by the growth stage and activity of the weed and not the crop.

Soil Residues And Crop Rotations:

Crop	Comments
Clovers	Establishment and growth are possible in pastures sown after brassicas treated with recommended rates of RADIATE . To minimise potential damage to clovers from picloram soil residues, allow a minimum of 6 months after treatment, deep plough and surface cultivate before sowing pasture.
Cereal crops	May be sown following brassicas treated with RADIATE .
Potatoes, peas, lucerne, beans, cucurbits, tomatoes and other crops which are highly susceptible to picloram	DO NOT sow for at least 1 year and not until it has been demonstrated that it is safe to do so. DO NOT use RADIATE if it will be necessary to sow susceptible crops within the above-suggested periods. Avoid repeat treatments of RADIATE to successive brassica crops as this can increase the potential for soil residues.

The rate of decline of soil residues is dependent on several factors (including soil type and rainfall) and will vary from district to district. Under low rainfall conditions (less than 800 mm per year) or in heavy, poor draining soil, delay planting of susceptible crops for at least 2 years. If in doubt regarding other crops, or for further information consult a Corteva Agriscience representative.

RADIATA PINE:

WEEDS	RATE (L/ha)	COMMENTS
Gorse, Broom Woolly nightshade, fleabane, fireweed, foxglove, ragwort, tree lucerne, wattles	2.0 - 2.5 2.0	Add Boost Penetrant (500 mL/ha). See Timing and Selectivity below.
Thistles	1.0	

RADIATA PINE RELEASE FROM GORSE AND BROOM:

Aerial Application: Apply 2.0-2.5 L/ha of **RADIATE** with 500 mL/ha Boost Penetrant.

Spot Spray: Mix 200 mL of **RADIATE** in 10 L of water. Apply 10 mL of mix per square metre over the tree.
DO NOT add Boost Penetrant to spot mixes.

Timing: For maximum suppression of gorse and broom, apply during the period of soft active growth when there is good soil moisture. At treatment, gorse and broom should be no less than 10 cm high and preferably no more than 50 cm high. Application outside these conditions may result in reduced weed suppression. For effective weed suppression, **DO NOT** apply beyond the end of February in the growth season.

In some situations, retreatment during the following active growth season will be beneficial.

Selectivity:

RADIATE may not adequately suppress new regrowth from stumps or coppice.

Compatibility:

RADIATE is compatible with Gallant™ Ultra and Gardoprim® herbicides. Boost Penetrant should not be used when **RADIATE** is mixed with other herbicides. Use Uptake Spraying Oil when mixing **RADIATE** with Gallant Ultra.

Registered pursuant to the ACVM Act 1997, No P4767.
See www.foodsafety.govt.nz for registration conditions.

Approved pursuant to HSNO Act 1996, EPA Approval Code HSR000762
See www.epa.govt.nz for approval controls.

Registered to:

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EMERGENCY RESPONSE

(All hours)

Ring from anywhere in New Zealand

0800 844 455 or

Globally +64 6 751 2407

IN A TRANSPORT EMERGENCY

DIAL 111

FOR POLICE OR FIRE

GMID: 99043914 09/19