

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 apply Duality® herbicide to fodder brassicas in mixture with Uptake Spraying Oil. Aerial and ground broadcast application: Use 500ml Uptake per 100 litres of spray mix. CDA application: Use 500ml/ha Uptake.

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 Duality® herbicide. 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 Duality® herbicide.
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 Duality® herbicide if it will be necessary to sow susceptible crops within the above-suggested periods. Avoid repeat treatments of Duality® herbicide 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 800mm 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 your local distributor.

RADIATA PINE:

WEEDS CONTROLLED	RATE (mL/ha)	COMMENTS
Gorse, Broom	2.0 - 2.5	Add Boost penetrant (500ml/ha).
Woolly nightshade, fleabane, fireweed, foxglove, ragwort, Tree Lucerne, wattles	2.0	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 Duality® with 500ml/ha of Boost penetrant.
Spot Spray: Mix 200ml of Duality® in 10L of water. Apply 10ml 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 10cm high and preferably no more than 50cm 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. Duality® may not adequately suppress new growth from stumps or coppice.
Selectivity: With accurate application, good selectivity to Radiata pine is achieved. In some instances some twisting of needles and stems may occur. This is transient and will not affect long-term growth of the tree. **Duality® herbicide is injurious to legumes such as clovers and lotus.**
Compatibility: Duality® is compatible with Gallant® and Gardoprim® herbicides. Boost penetrant should not be used when Duality® is mixed with other herbicides.

WARNING

KEEP OUT OF REACH OF CHILDREN

Duality®

For the control of certain broadleaf weeds in fodder brassicas and radiata pine.

Active Ingredient: Contains 150g/litre picloram and 225g/litre clopyralid as the monoethanolamine salt, in the form of a soluble concentrate.

GROUP 03 HERBICIDE

Registered pursuant to the ACVM Act 1997 No. P7670
See www.foodsafety.govt.nz for registration conditions

In a transport emergency dial 111, Police or Fire Brigade.
For specialist advice in an emergency only call:
0800 734 607 (24 hours).



Net Contents: 5 litres



Approved under the HSNO Act 1996, HSR000762. See www.epa.govt.nz for controls.
HSNO Classifications: 6.4A, 9.1C, 9.2A, 9.3C
This product must be under the care of an approved handler at all times.
This substance may cause serious eye irritation.
PRECAUTIONS: Store in original container, tightly closed, away from foodstuffs in a cool dry, secured area. Avoid contact with skin and eyes, and inhalation of spray mist. Wash hands and exposed skin before meals and after work. Avoid contamination of any water supply with chemical or empty container. Apply this product carefully. Spray drift may cause serious damage to desirable plants. Ensure compliance with relevant regional air management plans.
ENVIRONMENTAL INFORMATION: Harmful to terrestrial vertebrates. Very toxic to the soil environment. Harmful to aquatic life with long-lasting effects. A strategy to minimise spray drift should be employed at all times when applying spray near aquatic environments.
DISPOSAL OF CONTAINER: Triple rinse container and add residue to spray tank. Return empty container to a nearby AgRecovery point for disposal. Avoid contamination of any water supply with chemical or empty container.



FIRST AID: If swallowed do NOT induce vomiting. For advice, contact the National Poisons Centre on 0800 POISON (0800 764766) or a doctor immediately. **If in eyes:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. **If on skin:** Remove Contaminated clothing. After contact with skin, wash immediately with soap and water. Call a poison control center or doctor for treatment advice. **If inhaled:** Keep patient calm. Remove to fresh air and seek medical attention. **SPILLS:** Wear appropriate protective clothing and prevent material from entering waterways. Absorb spills with inert material and place in waste containers. Wash area with water and absorb with further inert material. Dispose of waste safely (such as to a suitable landfill).
Batch No. and Manufacturing Date: See on packaging
Registered to and Distributed by: Adria New Zealand Limited.
P.O. Box 535, 407 State Highway 16 Kumeu, Auckland.
Ph: 09 412 9817. Fax: 09 412 9807. www.adria.nz



Notice to Buyer: Careful tests have proved that the product is suitable for the recommended purposes when used in accordance with our instructions. However, since storage and use of product are beyond our control, we do not therefore accept any liability for damage or loss of efficacy which may result from the use of this product, whether used in accordance with the directions or not. We are liable for a consistent quality of the product, but the risk of its storage and use is not borne by us.
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: Duality can be applied using conventional ground or aircraft spraying equipment. Equipment should be decontaminated **before and after** using Duality herbicide, particularly if herbicides such as MCPA, MCPB, 2,4-D or sulfonyleurea herbicides have been used prior to Duality or if susceptible crops are to be sprayed after use of Duality (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 Duality® 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:

- Wash the tank and rinse the system as above, then refill the tank and add an alkali detergent (e.g. liquid SURF®, DRIVE®, at 500mL/100L of water or the powder equivalent at 500g/100L of water) and circulate through the system for at least 15 minutes. 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 minimise spray drift this product must be applied in accordance with The New Zealand Standard for the Management of Agrichemicals (NZS 8409).

Aerial and boom spraying (Brassicas only): Use a minimum 100-300 litres of water per hectare applied as a course 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 litres of 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 litres of water per hectare using the double pass, overlap flying system and applied as a course 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 Duality®. 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.

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.

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

IT IS AN OFFENCE TO USE THIS PRODUCT ON ANIMALS.