

READ SAFETY DIRECTIONS BEFORE OPENING OR USING

Brodal[®]

SELECTIVE HERBICIDE

Active Constituent: 500 g/L DIFLUFENICAN

GROUP F HERBICIDE

For control of certain weeds in clover-based Pasture Field Peas, Lentils, Lupins and Oilseed Poppy.

RESISTANT WEEDS WARNING:

Brodal is a member of the Nicotinanalide group of herbicides and acts by inhibiting carotenoid biosynthesis. For weed resistance management Brodal is a group F herbicide. Some naturally occurring weed biotypes resistant to Brodal and other Nicotinanalides 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 Brodal or other Nicotinanalide herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use, Bayer CropScience accepts no liability for any losses that may result from the failure of Brodal to control resistant weeds.

GENERAL INSTRUCTIONS

For use as an early post-emergence spray in clover-based pasture, field peas, lentils, and lupins. Brodal may also be used as a pre-emergence spray on lupins in NSW, Vic, SA and Tas.

This product provides both contact and residual activity. Residual activity can be expected for up to 8 weeks after application under favourable growing conditions.

This product is taken up by the shoots of germinating seeds and seedlings. Susceptible weeds germinate but show immediate chlorosis followed by a mauve-pink discolouration. The chlorosis spreads with the aerial growth and the plants become necrotic and die back.

After application, some transient crop discolouration may occur. In lentils and lupins, this usually appears as yellow or white banding on the leaves, while in clover and field peas, white/pink coloration of the leaf veins and tips may occur. Some crop height reduction may also occur.

Provided the crop is not under stress from pre-emergent herbicide, disease, insect damage, nutrient deficiency, frost, extremes of pH, dry or excessively moist conditions, the development of the crop and all subsequent growth will not be affected.

Some pre-emergence herbicides, such as atrazine, can cause stress to certain crops resulting in an increase in crop damage when using this product. Field peas are particularly sensitive.

Clover Tolerance Table

VARIETY	EFFECT ON VEGETATIVE GROWTH
Arrowleaf (Zulu)	Moderate
Balansa (Paradana)	Moderate
Persian (Kyambro)	Minimal
Strawberry (Palestine)	Moderate
Subterranean (Clare)	Moderate
Subterranean (June)	Moderate
Subterranean (Karridale)	Moderate
Subterranean (Larissa)	Moderate
Subterranean (Mt Barker)	Moderate
Subterranean (Seaton Park)	Minimal
Subterranean (Trikkala)	Minimal
Subterranean (Woogenellup)	Moderate
White (Haifa)	Moderate
Reduction in growth - Minimal (0-20%), Moderate (20-50%)	

The following varieties of subterranean clover have been tested for effects on seed yield: Seaton Park, Trikkala and Woogenellup. Some reduction in seed yield may occur with cv. Trikkala.

Subsequent Crop Tolerance: To reduce the effect on subsequent susceptible crops (eg. canola), ensure thorough cultivation of soil prior to the sowing of these crops.

Mixing

Stir product or invert container several times before use as settling may occur after storage for some weeks. To ensure even mixing, half fill the spray tank with clean water and add the required amount of product. Agitate thoroughly then add the remainder of the water. Agitate thoroughly while carrying out spray operations. Reseal part-used container immediately after use.

Application

Ground: A minimum water rate of 50 L/ha should be used, however, for optimum results water rates of 70-100 L/ha are recommended. Increase the water volume where weed infestation is heavy or the crop cover is dense. Complete coverage of weeds is essential. Higher water volumes (up to 100 L/ha) will ensure improved activity of the product on the weeds but may increase the symptoms of crop damage.

The following settings are examples that will ensure excellent coverage of exposed weeds:

WATER RATE	50 L/ha	75 L/ha	75 L/ha
NOZZLE	Hardi No. 10 or equivalent	Hardi No. 12 or equivalent	Hardi No. 14 or equivalent
SPEED	10 KpH	10 KpH	12 KpH
PRESSURE	240 KpA (2.4 bar)	220 KpA (2.2 bar)	210 KpA (2.1 bar)

COMPATIBILITY:

Brodal is physically compatible with most currently registered grass herbicides as two-way tank mixtures.

BRODAL	COMPATIBLE PRODUCT
Up to 150 mL	Simazine (500g/L product) up to 1.0 L/ha.
All rates	Decis Forte 25EC [#] , Dimethoate formulations, Dominex 100EC [#] , Hallmark 50EC [#] , Karate [#] , Le-Mat 290 SC [#] , Lexone [#] , Sencor [#] , Talstar [#] and Targa [#] .

Warning: For tank-mixtures with grass herbicides, use the recommended rates for both herbicides as well as the surfactant recommendations of the grass herbicide. Read the label for the grass herbicide before mixing and using the tank mixtures. DO NOT use crop oils with Brodal or Brodal/grass herbicide tank-mixtures. Applications to lupins and field peas under stressed conditions may cause significant damage to the crop. Tank mixes with simazine should be applied post-emergence to lupins crops only. Increased crop effects may be experienced with the tank mix. DO NOT apply tank-mixtures to clover. When tank-mixing Brodal and Targa, use a surfactant only. Mixtures of Brodal and Verdict[#] applied to lupins or field peas can cause damage which may result in yield losses. Consult your local Bayer CropScience representative or the relevant grass herbicide manufacturer for advice on application and timing of tank-mixtures.

As formulations of other manufacturers' products are beyond the control of Bayer CropScience, all mixtures should be tested prior to mixing commercial quantities.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

DO NOT contaminate streams, rivers or waterways with the chemical or used containers. DO NOT apply under weather conditions, or from spraying equipment, that may cause spray to drift onto nearby susceptible plants/crops, cropping lands or pastures.

STORAGE AND DISPOSAL

Keep out of reach of children. Store in the closed, original container in a dry, cool, well-ventilated area, out of direct sunlight. Triple or preferably pressure rinse containers before disposal. Add rinsings to the spray tank. Do not dispose of undiluted chemicals on site. Break, crush, or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the empty 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

Avoid contact with eyes and skin. Wash hands after use.

FIRST AID

If poisoning occurs, contact a doctor or Poisons Information Centre (telephone 13 11 26).

MATERIAL SAFETY DATA SHEET

Additional information is listed in the Material Safety Data Sheet available from Bayer CropScience Pty Ltd.

CONDITIONS OF SALE

The product as supplied is of high quality and is believed to be suitable for the purposes for which it is recommended. The buyer or user is responsible for any misuse or negligence in the handling, storage and use of this material. This product must only be used in strict compliance with the directions given on this label. No representatives of the manufacturer or seller has authority to add to or alter these conditions.

For use in Australia only. Bayer CropScience prohibits re-export.

NRA Approval No.: 31674/0500

Brodal is a Registered Trademark of Bayer.

IN A TRANSPORT EMERGENCY DIAL 000 POLICE OR FIRE BRIGADE
FOR 24 HOUR SPECIALIST ADVICE IN EMERGENCY ONLY PHONE 1800 033 111

DIRECTIONS FOR USE

RESTRAINTS

DO NOT apply if crop or weeds are stressed due to dry or excessively moist conditions.

DO NOT apply to crops under stress due to pre-emergence herbicide, root disease, insect damage, nutrient deficiency, excessively moist or dry conditions or extremes of pH.

DO NOT apply to frost affected crops or if frosts are imminent.

DO NOT apply if heavy rain is expected within 4 hours.

CROP	WEEDS CONTROLLED	STATE	WEED STAGE	RATE	CRITICAL COMMENTS
Clover-based Pasture Field Peas, Lentils, Lupins	Wild Radish (<i>Raphanus raphanistrum</i>)	WA only	Up to 2 leaf stage and not more than 60mm in diameter	100mL/ha	<p>CROP STAGE Sow crop evenly to a depth of 20 to 50mm.</p> <p>CLOVER-BASED PASTURE: Apply post-emergence, not before the 3 trifoliolate leaf stage. Warning: Some species and varieties of clover may be more sensitive than others. Refer to legume tolerance table in the general instructions. DO NOT apply to medics or yellow serradella.</p> <p>FIELD PEAS: Apply early post-emergence after the third node stage and before the start of flowering. Warning: Field peas grown on high pH soils in the presence of free lime may be less tolerant to Brodal®.</p> <p>LENTILS: Apply early post-emergence after the third node stage of the crop. Warning: Some lentil varieties may be more sensitive than others. DO NOT apply to Northfield variety. Avoid spray overlap.</p> <p>LUPINS: Post-emergence of Crop: Apply post-emergence from the 2 leaf to the 6 leaf stage of crop (40 to 100mm high). Post-sowing, Pre-emergence of Crop (Not WA): Apply in a tank mix with the recommended rate of post-sowing pre-emergence treatment of simazine. (Brodal® should not be incorporated).</p> <p>APPLICATION AND WEED CONTROL Apply when weeds are actively growing. For optimum results apply 4 to 6 weeks post-sowing.</p> <p>Application beyond 8 weeks post-sowing may result in reduced levels of weed control. In most situations the rate specified for each weed size will give satisfactory control. Under certain conditions such as:</p> <ul style="list-style-type: none"> * high crop and weed density, * late season germinations, * abnormal weed growth (including early flowering); <p>higher rates of product (up to the maximum rate of application specified for that weed) may be required.</p>
			Up to 4 leaf stage and not more than 120mm in diameter	150mL/ha	
			Up to 6 leaf stage and not more than 180mm in diameter	200mL/ha	
	Hedge Mustard (<i>Sisymbrium officinale</i>) Indian Hedge Mustard (<i>Sisymbrium orientale</i>) Wild Turnip (<i>Brassica tournefortii</i>)	NSW, Vic, Tas, SA only	Up to 2 leaf stage and not more than 60mm in diameter	100mL/ha	
			Up to 4 leaf stage and not more than 120mm in diameter	150mL/ha	
	Turnip Weed (<i>Rapistrum rugosum</i>)	NSW, Vic, Tas, SA, WA only	Up to 6 leaf stage and not more than 180mm in diameter	200mL/ha	
			Up to 4 leaf stage and not more than 120mm in diameter		
	Charlock (Wild Mustard) (<i>Sinapis arvensis</i>) Deadnettle (<i>Lamium amplexicaule</i>)	NSW, Vic, Tas, SA only	Up to 2 leaf stage and not more than 60mm in diameter		
	Prickly Lettuce (<i>Lactuca serriola</i>)				
	Pheasants Eye (<i>Adonis microcarpa</i>)	SA only			

CONTINUED OVERLEAF

CROP	WEEDS CONTROLLED	STATE	WEED STAGE	RATE	CRITICAL COMMENTS	
Field peas	Prickly lettuce (<i>Lactuca serriola</i>)	NSW, Vic, Tas, SA only	4 leaf	125 plus 125mL/ha MCPA amine (500g/L)	CONTINUED FROM PREVIOUS PAGE Brodal® will not effectively control : * regrowth of suppressed weeds, * transplanted weeds, * regrowth from rhizomes or roots, * weeds growing under stress from previous herbicide applications. The level of effective residual control may be reduced where: * rates lower than 200mL/ha are used, * dry conditions prevail, poor coverage of the soil surface is achieved, * crop is planted in non-wetting sand, * soils have a high content of clay or organic matter. Where weeds are present at application, good spray coverage of the weeds is important. Apply before weeds are obscured by the crop canopy. Weed control may be reduced in areas where trash or burnt straw from previous harvest is dense, such as in header trails. Best results will be obtained if good soil moisture exists at and after application.	
			6 leaf	150 plus 150mL/ha MCPA amine (500g/L)		
	Charlock (Wild mustard) (<i>Sinapis arvensis</i>)		4 leaf	125 plus 125mL/ha MCPA amine (500g/L)		
			6-8 leaf	150 plus 150mL/ha MCPA amine (500g/L)		
Suppression of the Following Weeds						
Clover-Based Pasture, Field Peas, Lentils, Lupins	Capeweed (<i>Arctotheca calendula</i>) Crassula (<i>Crassula spp.</i>) Corn Gromwell (<i>Buglossoides arvensis</i>) Marshmallow (<i>Malva parviflora</i>) Shepherd's Purse (<i>Capsella bursa-pastoris</i>)	NSW, Vic Tas, SA, WA only	Up to 4 leaf stage and not more than 120mm in diameter	200mL/ha		
	Chickweed (<i>Stellaria media</i>) Hyssop Loosestrife (<i>Lythrum hyssopifolia</i>) Mouse-eared Chickweed (<i>Cerastium glomeratum</i>) Night-scented Stock (<i>Matthiola longipetala</i>) Skeleton Weed (<i>Chondrilla juncea</i>) Speedwell (<i>Veronica hederifolia</i>)					NSW, Vic, Tas, SA only
	Amsinckia (<i>Amsinckia spp.</i>) Wireweed (<i>Polygonum aviculare</i>)	NSW, Vic, Tas, SA only				
	Paterson's Curse (Salvation Jane) (<i>Echium plantagineum</i>) Rough Poppy (<i>Papaver hybridum</i>)					NSW, Vic, SA only
	Sorrel (<i>Rumex acetosella</i>) Toad Rush (<i>Juncus bufonius</i>)	NSW, Vic, Tas, SA only				
	Stinging Nettle (<i>Urtica urens</i>)					NSW only

CROP	WEEDS CONTROLLED	STATE	WEED STAGE	RATE	CRITICAL COMMENTS
Oilseed Poppy	Charlock (<i>Sinapis arvensis</i>) Hedge Mustard (<i>Sisymbrium officinale</i>) Indian Hedge Mustard (<i>Sisymbrium orientale</i>) Wild Radish (<i>Raphanus raphanistrum</i>) Wild Turnip (<i>Brassica tournefortii</i>)	Tas only	Early post-emergence up to the 4 leaf stage and not more than 120mm in diameter	150mL/ha (4-6 leaf crop stage) and/or 200mL/ha (6-10 leaf crop stage)	<p><u>CROP STAGE</u> Brodal® may be mixed with Reglone# or Asulox® based on recommendations from poppy contracting companies. DO NOT use in mixtures with Tramat#.</p> <p><u>APPLICATION AND WEED CONTROL</u> See comments on Clover-based Pasture Field Peas, Lentils and Lupins.</p>

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

**WITHHOLDING PERIOD
NOT REQUIRED WHEN USED AS DIRECTED**