

WARNING

**Read Safety Directions Before Opening or Using
Keep Out of Reach of Children**



Spartan NZ Herbicide

Active Ingredient: contains 480 g/Litre Prodiamine in the form of a suspension concentrate

GROUP	3	HERBICIDE
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**For Pre-Emergent Control of Weeds in Established Turf,
Garden beds and Nursery containers**

IMPORTANT: READ THIS LEAFLET BEFORE USING THIS PRODUCT

Approved pursuant to the HSNO Act 1996, Approval Code HSR101240
See www.epa.govt.nz for approval conditions.

NZ Supplier Contact: Greenshed NZ Ltd (trading as Living Turf) 24D Allright Place Mt Wellington, Auckland 1060, New Zealand Ph: +64 0800 428 268 https://livingturf.co.nz	Turf Culture Pty Ltd ACN: 117 986 615 43 Gap Road Sunbury Vic 3429 Australia Ph: +61 1300 11 8873 Fax: +61 3 8888 9991 www.turfculture.co.nz	The logo for Turf Culture, featuring the word "TURF" in large green letters with a stylized grass blade, and "culture" in smaller green letters below it.
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NZ Emergency Number: 0800 764 766 (0800 POISON)



		<p>WARNING</p> <p>May cause damage to the liver through prolonged or repeated exposure. Very harmful to aquatic organisms. Very toxic to the soil environment.</p> <p>Ecotoxic: Very toxic to aquatic organisms. DO NOT apply into or onto water.</p>
Chronic Toxic	Ecotoxic	
<p>QUALIFIED PERSON: This product must be under the control of a qualified person (or qualified contractor) during use. Use of this product in any manner contrary to this label may be an offence under the HSNO Act.</p> <p>Record keeping: If 3 kg or more of the substance is applied within 24 hours, in a place where the substance is likely to enter air or water and leave the application area, a PCBU with management or control of the substance must ensure that a written record is kept of each application of the substance.</p>		
<p>PRECAUTIONS</p> <p>DO NOT eat, drink or smoke while using. DO NOT breathe spray. Get medical advice if you feel unwell. Full personal protective equipment, including respirator, must be worn by operators during mixing, loading and application by ground boom. Personal protective equipment must be worn by operators during mixing, loading and application by backpack. Remove protective clothing and wash hands and face thoroughly before meals and after work. Apply with well maintained and calibrated spray equipment. Collect spillage. Store in original container, tightly closed, away from foodstuffs. Application and storage should be as described in the Management of Agrichemicals NZS8409. DO NOT carry on a passenger service vehicle. Avoid contamination of any water supply with chemical or empty container. DO NOT apply into or onto water.</p> <p>Storage: Store in the closed, original container in a cool, well-ventilated area away from food or feedstuffs. DO NOT store for prolonged periods in direct sunlight.</p> <p>Container disposal: Ensure the container is empty. Triple rinse empty container and add rinsate to spray tank. Recycle punctured container without caps through Agrecovery (0800 247 326, www.agrecovery.co.nz). Otherwise crush and bury in a suitable landfill. DO NOT reuse this container for any other purpose.</p> <p>Product Disposal: Disposal of this product only by using according to this label, or at an approved landfill or other approved facility.</p>		

Spartan NZ Herbicide must not be applied into, onto or over water.

Spartan NZ Herbicide must not be used on or around food or feed crops.

PRODUCT INFORMATION

Spartan NZ Herbicide contains 480 g/L proflaminate in the form of a suspension concentrate (SC). Spartan NZ Herbicide is a selective pre-emergent herbicide that provides residual control of weeds in established turf. Spartan NZ Herbicide controls susceptible weeds by interfering with cell division in the root tips of newly germinated weeds. Spartan NZ Herbicide is safe to use on established turf species listed in the Situation column of the Directions for Use table. In the case of Bahia Grass, Spartan NZ Herbicide will be safe to use on existing turf swards where established Bahia Grass plants can be tolerated or are desirable. Spartan NZ Herbicide will only control newly germinating seed of Bahia Grass after it has been sprayed. Weed control in turf is most effective when Spartan NZ Herbicide is activated by at least 6 mm of rainfall or irrigation before weed seeds germinate and within 7 days after application.

Turf

Spartan NZ Herbicide is safe to use on established turf species listed in the Directions for Use. Weed control in turf is most effective when Spartan NZ Herbicide is activated by at least 6 mm of rainfall or irrigation before weed seeds germinate and within 7 days after application. Spartan NZ Herbicide is safe to use on existing turf swards where Bahia Grass is established, but will control newly germinating seeds of Bahia Grass after application.

Garden Beds under Mulch and Potted Plants

Spartan NZ Herbicide controls susceptible weeds by preventing growth and development of newly germinated weeds. Weed control is most effective when Spartan NZ Herbicide is activated by at least 3mm of rainfall or irrigation before weed seeds germinate. Weed control in garden beds and potted plants is most effective when Spartan Herbicide is activated by irrigation immediately post-application.

DIRECTIONS FOR USE

Restraints

DO NOT blend Spartan NZ Herbicide onto dry fertiliser or any other granular material.

DO NOT apply to turf under stress.

DO NOT apply to golf course putting greens or bowling greens.

DO NOT apply to newly seeded, sodded or sprigged turf. Delay application until turf is at 100% cover and root system is developed beyond a 3 cm depth.

DO NOT apply to garden beds over the top of mulch.

DO NOT apply to recently re-potted or newly potted seeds, cuttings, divisions or plants. Allow a period of establishment within which a substantial root system can be developed.

DO NOT apply if heavy rain has been forecast within 48 hours.

DO NOT apply to waterlogged soil.

DO NOT irrigate to the point of run-off within 3 days of application.

DO NOT apply to turf which is not well-established.

Spartan NZ Herbicide **MUST NOT** be applied at rates exceeding 1.9 kg ai/ha when using ground-based boom equipment on turf or 3.84 kg ai/ha when using hand-held equipment.

DO NOT apply to the same area more than twice in any 365 day period; and an interval of at least 90 full days must be observed before Spartan NZ Herbicide is re-applied to the same area.

DO NOT apply with aircraft or through any type of irrigation equipment, Spartan NZ Herbicide must be applied by ground-based methods only.

Spartan NZ Herbicide **MUST NOT** be applied within 50 metres of a downwind water body or non-target vegetation.

Situation	Weeds Controlled	Rate	Critical Comments
Established turf as listed: Bahia Grass (<i>Paspalum notatum</i>), Buffalo Grass (<i>Stenotaphrum secundatum</i>), Carpet Grass (<i>Axonopus affinis</i> , <i>Axonopus compressus</i>), Couch, Common (<i>Cynodon dactylon</i>), Couch, Hybrid (<i>Cynodon dactylon x Cynodon transvaalensis</i>), Kikuyu (<i>Pennisetum clandestinum</i>), Qld Blue Couch (<i>Digitaria didactyla</i>), Seashore Paspalum (<i>Paspalum vaginatum</i>), Zoysia (<i>Zoysia japonica</i> , <i>Zoysia matrella</i>)	Barnyard Grass (<i>Echinochloa crus-gali</i>), Crab Grass (<i>Digitaria sanguinalis</i>), Crowsfoot Grass (<i>Eleusine indica</i>), Parramatta Grass (<i>Sporobolus africanus</i>), Rat's Tail Fescue (<i>Vulpia myuros</i>), Summer Grass (<i>Digitaria sanguinalis</i>), Vulpia Hair Grass (<i>Vulpia myuros</i>)	1 to 3 L per ha (10 to 30 mL per 100m ²)	Apply prior to weed emergence. For residual control of up to 6 months use the higher rate listed. A repeat application (3 to 4 months after initial application) may be needed if lower rates are used in high weed pressure situations or during extended germination periods due to environmental conditions. Refer to Application section for detailed information. Wash in with at least 6 mm rain or irrigation within 7 days of application. Note: Crowsfoot Grass germinates later than Crab Grass and/or Summer Grass. In situations with multiple weeds present use higher rates to ensure adequate residual control.
	African Lovegrass (<i>Eragrostis curvula</i>), Bahia Grass* (<i>Paspalum notatum</i>), Kentucky Blue Grass (<i>Poa patensis</i>)	2 to 3 L per ha (20 to 30 mL per 100m ²)	*In the case of Bahia Grass, Spartan NZ Herbicide will be safe to use on existing turf swards where established Bahia Grass plants can be tolerated or are desirable. Spartan NZ Herbicide will only control newly germinating seed of Bahia Grass after it has been sprayed.
	Paspalum (<i>Paspalum dilitatum</i>)	2 to 3.95 L per ha (20 to 39.5 mL per 100m ²)	

Situation	Weeds Controlled	Rate	Critical Comments
Established turf as listed: Bahia Grass <i>(Paspalum notatum)</i> , Buffalo Grass <i>(Stenotaphrum secundatum)</i> , Carpet Grass <i>(Axonopus affinis, Axonopus compressus)</i> , Couch, Common <i>(Cynodon dactylon)</i> , Couch, Hybrid <i>(Cynodon dactylon x Cynodon transvaalensis)</i> , Kikuyu <i>(Pennisetum clandestinum)</i> , Qld Blue Couch <i>(Digitaria didactyla)</i> , Seashore Paspalum <i>(Paspalum vaginatum)</i> , Zoysia <i>(Zoysia japonica, Zoysia matrella)</i>	Winter Grass <i>(Poa annua)</i>	1 to 2 L per ha (10 to 20 mL per 100m ²)	In the absence of emerged <i>Poa annua</i>. A repeat application (3 to 4 months after initial application) may be needed if lower rates are used in high weed pressure situations or during extended germination periods due to environmental conditions. Refer to Application section for detailed information. Wash in with at least 6 mm rain or irrigation within 7 days of application.
		3.95 L per ha (39.5 mL per 100m ²)	In areas where post-emergent herbicides for Winter Grass control may pose a high risk of tracking or off site damage (i.e. greens surrounds, slopes on high side of greens, etc.). Apply prior to weed emergence in late summer to early autumn for residual control of up to 6 months. A repeat application (3 to 4 months after initial application) may be needed in high weed pressure situations or during extended germination periods due to environmental conditions. Refer to Application section for detailed information. Wash in with at least 6 mm rain or irrigation within 7 days of application.

Situation	Weeds Controlled	Rate	Critical Comments
<p>Garden beds (under mulch) and potted plants in nurseries, public open spaces and residential or commercial gardens</p> <p>DO NOT use on food producing trees, vines, or plants.</p>	<p>Various garden and nursery weeds including: African Lovegrass (<i>Eragrostis curvula</i>), Barnyard Grass (<i>Echinochloa crus-galli</i>), Bittercress (<i>Cardamine hirsute</i>), Capeweed (<i>Arctotheca calendula</i>), Chickweed (<i>Ceratium glomeratum</i>), Cotula (<i>Cotula Australia</i>), Cotula [Creeping Yellow Buttons] (<i>Cotula lineariloba</i>), Crab Grass (<i>Digitaria sanguinalis</i>), Creeping Tickfoil (<i>Desmodium triflorum</i>), Crowsfoot Grass (<i>Eleusine indica</i>), Creeping Oxalis (<i>Oxalis corniculata</i>), Cudweed (<i>Gnaphalium spp</i>), Dandelion (<i>Taraxacum officinale</i>), Dock, Narrow Leaf (<i>Rumex tenax</i>), Emilia or Purple Sow Thistle (<i>Emilia sonchifolia</i>), Flatweed (<i>Hypochaeris radicata</i>), Flickweed [Willow herb] (<i>Epilobium ciliatum</i>), Florida Beggar-weed (<i>Desmodium tortuosum</i>), Fumitory, Pink (<i>Fumaria officinalis</i>), Nightshade, Black (<i>Solanum nigrum</i>), Nightshade, Deadly (<i>Solanum dulcamara</i>), Paspalum (<i>Paspalum dilatatum</i>), Pearlwort (<i>Sagina procumbens</i>), Prairie Grass (<i>Bromus wildenowii</i>), Prickly Lettuce (<i>Lactuca serriola</i>), Rat's Tail Fescue (<i>Vulpia myuros</i>), Ryegrass (<i>Lolium perenne</i>), Siratro (<i>Macroptilium atropurpureum</i>), Sow Thistle (<i>Sonchus spp</i>), Summer Grass (<i>Digitaria ciliaris</i>), Willowherb (<i>Epilobium ciliatum</i>), Winter Grass (<i>Poa annua</i>)</p>	<p>2 to 4 L per ha</p> <p>(20 to 40 mL per 100m²)</p>	<p>Apply prior to weed emergence for residual control of up to 4 months in potted plants and 6 months in garden beds under mulch. Use higher rates in situations of high weed pressure or for difficult to control weeds.</p> <p>Apply the product to garden beds and wash in before applying mulch so that the herbicide reaches the soil.</p> <p>Refer to Application section for detailed information.</p> <p>For Garden Beds (under mulch): An addition of a soil penetrant wetting agent is recommended to ensure an even matrix flow through the soil profile.</p> <p>When used on garden beds or potted plants wash in immediately with minimum 3 mm rain or irrigation.</p>

WITHHOLDING PERIOD

DO NOT graze treated turf/lawn or feed turf/lawn clippings from any treated area to poultry or livestock.

MIXING

Add the required quantity of Spartan NZ Herbicide directly to a spray tank containing 2/3 of the required spray volume. Add the rest of the water and ensure the mix is thoroughly agitated before application.

APPLICATION

Turf

Apply prior to weed emergence, a general guide is early spring (for summer weeds) or late summer to early autumn (for Winter Grass, *Poa annua*).

Ensure product placement as close to soil surface as possible. Total application volume should not be lower than 500 L/ha (5 L per 100 m²). Use extremely coarse droplets, [Turbo FloodJet (TF5) or TurfJet (TTJ10) or Air Induction 08 nozzles], use strainers with no less than a 50-mesh rating. Wash in with at least 6 mm rain or irrigation within 7 days of application.

Spray nozzles should be uniformly spaced and of the same size and should provide accurate and uniform application. To ensure accuracy, calibrate sprayer at the beginning of the season before use and recalibrate frequently. Apply at a volume of greater than 500 L water/ha (5 L water per 100 m²). Observe sprayer nozzles frequently during the spraying operation to ensure that the spray pattern is uniform. Avoid overlapping of spray runs. Ensure that boom height for broadcast application does not

exceed 50 cm above the leaf blades of the turf. Avoid application under conditions when uniform coverage cannot be obtained or when spray drift may occur.

Garden Beds and Potted Plants

DO NOT apply with aircraft or through any type of irrigation equipment

DO NOT apply over the top of existing mulch

Apply prior to weed emergence. Ensure product placement as close to soil surface as possible. Total application volume should not be lower than 500 L/ha. For best results use extremely coarse droplets eg Air Induction 08 nozzles, use strainers with no less than a 50-mesh rating. When used on garden beds or potted plants wash in immediately with minimum 3 mm rain or irrigation. Consideration must be given to the impacts of foliage and canopy densities on placement of herbicide in the soil. Where canopy densities may pose a problem, use higher total application volumes and higher wash in volumes.

Newly Transplanted Container or Field Nursery Stock:

- Delay application until soil and or potting medium has settled around transplants.
- Irrigate transplants thoroughly before application.
- Apply after cuttings form roots and are established.
- To avoid inhibition of the tissue union, apply before budding/grafting or after buds/grafts have taken.

Landscape (or Ornamental) Plantings:

- Delay applications to newly transplanted ornamentals until soil has settled around transplants.

COMPATIBILITY

As formulations of other manufacturers' products are beyond the control of Turf Culture, and water quality varies with location, all mixtures should be tested prior to mixing commercial quantities.

SPRAY DRIFT

DO NOT apply with aircraft or through any type of irrigation equipment, Spartan NZ Herbicide must be applied by ground-based methods only.

Spartan NZ Herbicide **MUST NOT** be applied within 50 metres of a downwind water body or non-target vegetation.

The person applying this substance must not cause adverse effects beyond the boundary of the treated property, and must also avoid adverse effects from spray drift occurring. Mitigation measures employed must be recorded as part of the application records.

DO NOT allow bystanders to come into contact with the spray cloud.

DO NOT apply with a nozzle height greater than 50 cm above the ground.

DO NOT apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.

DO NOT apply if there are surface temperature inversion conditions present at the application site during the time of application. Surface temperature inversion conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.

Use only nozzles rated COARSE, VERY COARSE and or EXTREMELY COARSE spray droplet size category as referenced to ASABE S572 (American Society of Agricultural and Biological Engineers ASABE Standard S572) or BCPC (British Crop Production Council guidelines).

APPLICATION RECORDS

Users of this product **MUST make an accurate written record** of the details of each spray application within 24 hours following application and keep this record for a minimum of 2 years. The spray application details to be recorded are:

1. Date, with start and finish times of application
2. Location / address of area(s) sprayed
3. Full name of the product, product batch number (BN) and date of manufacture (DOM)
4. Amount of product used per hectare and the number of hectares treated
5. Turf species/situation and weed/pest
6. Wind speed and direction during application
7. Air temperature and relative humidity during application
8. Spray irrigation or rainfall after application, start time, duration and amount (mm)
9. Equipment used; nozzle brand, type, spray angle, operating pressure and total water volume applied per hectare
10. Name of person applying this product

(Additional record details may be required by the New Zealand Government where this product is used)

CLEANING SPRAY EQUIPMENT

To avoid injury to following crops, immediately after spraying, thoroughly remove all traces of Spartan NZ Herbicide from mixing and spray equipment. This can be achieved by using a specialist boom-cleaning product.

REPLANTING / OVERSEEDING INTERVAL

DO NOT plant / replant any crop, ornamentals or seed to treated areas for a period of;

Rate Applied of Spartan Herbicide	Interval - Months Before Planting / Replanting & Seeding / Overseeding
1 L / ha (10 mL / 100m ²)	4 Months
2 L / ha (20 mL / 100m ²)	7 Months
3 L / ha (30 mL / 100m ²)	10 Months
4 L / ha (40 mL / 100m ²)	13 Months

Spartan NZ Herbicide will inhibit the development of turfgrass species overseeded too soon after application. Follow rates and intervals in the table above for best overseeding / reseeding results.

RESISTANCE MANAGEMENT

GROUP	3	HERBICIDE
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Spartan NZ Herbicide contains a member of the dinitroaniline group of herbicides, it contains a Group 3 herbicide. Resistance to this herbicide could develop from repeated use. To minimise this risk use strictly in accordance with label instructions and resistance management strategies. Since the occurrence of resistant weeds is difficult to detect prior to use, Turf Culture accepts no liability for any losses that may result from the failure of Spartan NZ Herbicide to control resistant weeds. Consult your local supplier, consultant, a Turf Culture representative or New Zealand Plant Protection Society (Inc), www.resistance.nzpps.org for alternate modes of action and the details of resistance management strategies for the crops listed on the label.

INTEGRATED PEST MANAGEMENT

The possible effects of Spartan NZ Herbicide on integrated pest management (IPM) strategies in the turf industry have not been studied at the proposed rates. However, based on available information, it cannot be ruled out that Spartan NZ Herbicide may have an adverse effect on non-target beneficial turfgrass invertebrates where such IPM is practised.

RE-ENTRY STATEMENT

General Public: DO NOT allow public entry into treated areas until the spray has dried.

Professional Operators: DO NOT allow entry into treated areas until spray has dried. If prior entry is necessary, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Clothing must be laundered after each day's use.

FIRST AID

If SWALLOWED, DO NOT induce vomiting. Rinse Mouth. Get medical advice if you feel unwell.

If SKIN or HAIR contact occurs, remove contaminated clothing and flush skin and hair with running water. DO NOT scrub the skin.

If splashed in the EYES, wash out immediately with water. 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 INHALED, move the victim to fresh air immediately. Begin artificial respiration if breathing has stopped. Use mouth to nose rather than mouth to mouth. Obtain medical attention. Take to hospital without delay.

For advice, contact the National Poisons Centre 0800 POISON (0800 764 766) or a doctor. If medical advice is needed, have product container or label at hand.

STORAGE

Store in the closed, original container in a cool, well-ventilated area away from food or feedstuffs. DO NOT store for prolonged periods in direct sunlight. Stores containing quantities of 100 L or more require signage and secondary containment.

SPILLAGE

Move non-essential people from the area. Wear appropriate protective clothing and prevent material from entering waterways. Absorb spills with inert material and place in waste containers. Sweep up

solids without creating dust. Wash area with water and absorb with further inert material. Dispose of waste safely (such as to a suitable landfill).

PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS

DO NOT apply or drain or flush equipment on or near native or non-target trees or other plants or on areas where their roots may extend or in locations where the chemical may be washed or moved into contact with their roots.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

Very toxic to aquatic life. DO NOT contaminate streams, rivers or waterways with the chemical or used containers.

SAFETY DATA SHEET

If additional hazard or safety information is required, refer to the Safety Data Sheet (SDS), which is available from the supplier or from the manufacturer's website: www.turfculture.co.nz

CONDITIONS OF SALE

The use of Spartan NZ Herbicide being beyond the control of the manufacturer, no warranty expressed or implied is given by Turf Culture regarding its suitability, fitness or efficiency for any purpose for which it is used by the buyer, whether in accordance with the directions or not and Turf Culture accepts with no responsibility for any consequences whatsoever resulting from the use of this product.

	<p>UN-3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains: prodiamine 48%) PACKING GROUP III, HAZCHEM 3Z CONTAIN SPILLAGE In a transport emergency dial 111, Police or Fire Brigade. For specialist advice in an emergency only, call 0800 764 766 (24 hours)</p>
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