

READ SAFETY DIRECTIONS BEFORE OPENING OR USING



Spartan Herbicide

ACTIVE CONSTITUENT: 480 g/L PRODIAMINE

GROUP

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HERBICIDE

For Pre-Emergent Control of Weeds in Established Turf

IMPORTANT: READ THIS LEAFLET BEFORE USING THIS PRODUCT

APVMA Approval No.: 88727/129957

TURF
culture



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DIRECTIONS FOR USE

Restraints

DO NOT blend Spartan 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 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.

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

Spray Drift Restraints

Specific definitions for terms used in this section of the label can be found at:

www.apvma.gov.au/spraydrift

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

DO NOT apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. The buffer zones in the relevant buffer zone table below provide guidance but may not be sufficient in all situations. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.

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 hazardous 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.

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

DO NOT apply by a boom sprayer unless the following requirements are met:

- spray droplets not smaller than a **COARSE** spray droplet size category
- minimum distances between the application site and downwind sensitive areas (see 'Mandatory Downwind Buffer Zones' section in the following table titled 'Buffer Zones for Boom Sprayers') are observed.

Buffer Zones for Boom Sprayers

Application rate	Mandatory Downwind Buffer Zones	
	Natural Aquatic Areas	Vegetation Areas
Up to maximum label rate	120 metres	10 metres

Situation	Weeds Controlled	Rate	Critical Comments
<p>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></p>	Barnyard Grass <i>(Echinochloa crus-gali)</i> , Crab Grass <i>(Digitaria sanguinalis)</i> , Parramatta Grass <i>(Sporobolus africana)</i> , Rat's Tail Fescue <i>(Vulpia myuros)</i> , Summer Grass <i>(Digitaria sanguinalis)</i>	1 to 3 L per ha (10 to 30 mL per 100 m ²)	Apply prior to weed emergence in early spring for residual control of up to 6 months. 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.
	Crowsfoot Grass <i>(Eleusine indica)</i>		Apply prior to weed emergence in early spring. For residual control of up to 4 months use 1 to 2 L/ha. For residual control of up to 6 months use 2 to 3 L/ha. 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. 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. Refer to Application section for detailed information.

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</i> x <i>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>)	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 100 m ²)	Apply prior to weed emergence in early spring. Residual control of up to 6 months. 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.
	Paspalum (<i>Paspalum dilatatum</i>)	2 to 4 L per ha (20 to 40 mL per 100 m ²)	
	Winter Grass (<i>Poa annua</i>)	1 to 2 L per ha (10 to 20 mL per 100 m 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.
		4 L per ha (40 mL per 100 m 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.

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

WITHHOLDING PERIOD

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

GENERAL INSTRUCTIONS

Spartan Herbicide contains 480 g/L proflaminate in the form of a suspension concentrate (SC).

Spartan Herbicide is a selective pre-emergent herbicide that provides residual control of weeds in established turf. Spartan Herbicide controls susceptible weeds by interfering with cell division in the root tips of newly germinated weeds.

Spartan 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 Herbicide will be safe to use on existing turf swards where established Bahia Grass plants can be tolerated or are desirable. Spartan Herbicide will only control newly germinating seed of Bahia Grass after it has been sprayed. Weed control in turf is most effective when Spartan Herbicide is activated by at least 6 mm of rainfall or irrigation before weed seeds germinate and within 7 days after application.

Mixing

Add the required quantity of Spartan 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

Apply prior to weed emergence in early spring (summer weeds) or late summer to early autumn (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.

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. Spartan Herbicide is compatible with Coliseum Herbicide and Skeletor Herbicide.

Clean Up

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

Replanting / Overseeding Interval

DO NOT replant any crop, ornamentals or overseed / oversow turf grasses to treated areas for a period of;

Amount of Spartan Herbicide Rate	Interval - Months Before Replanting / Overseeding
1 L / ha (10 mL / 100m ²)	6 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 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.

RESISTANT WEEDS WARNING

GROUP	D	HERBICIDE
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Spartan Herbicide is a member of the dinitroaniline group of herbicides and has the inhibitor of microtubule assembly mode of action. For weed resistance management this product is a Group D herbicide. Some naturally occurring weed biotypes resistant to Spartan Herbicide and other Group D 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 Spartan Herbicide or other Group D herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use, Turf Culture Pty Ltd accepts no liability for any losses that may result from the failure of Spartan Herbicide to control the resistant

weeds. Advice as to strategies and alternative treatments that can be used should be obtained from your local supplier, consultant, local Department of Agriculture, Primary Industries Department or a Turf Culture representative.

Integrated Pest Management

The possible effects of Spartan 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 Herbicide may have an adverse effect on non-target beneficial turfgrass invertebrates where such IPM is practised.

PRECAUTIONS

Re-entry Period

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.

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.

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-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 deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots, in compliance with relevant local, state or territory government regulations. DO NOT burn empty containers or product.

SAFETY DIRECTIONS

May irritate the eyes and skin. Repeated exposure may cause allergic disorders. Avoid contact with eyes and skin. When opening the container, preparing spray and using the prepared spray; wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and elbow-length chemical resistant gloves. If product on skin, immediately wash area with soap and water. Wash hands after use. After each day's use, wash gloves and contaminated clothing.

FIRST AID INSTRUCTIONS

If poisoning occurs, contact a doctor or Poisons Information Centre. *Phone Australia 13 11 26.*

SAFETY DATA SHEET

For further information refer to the Safety Data Sheet (SDS), which is available from the supplier or from the manufacturer's website: www.turfculture.com.au

CONDITIONS OF SALE

The use of Spartan Herbicide being beyond the control of the manufacturer, no warranty expressed or implied is given by Turf Culture Pty Ltd 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 Pty Ltd accepts with no responsibility for any consequences whatsoever resulting from the use of this product.

In a Transport Emergency Dial 000 Police or Fire Brigade