



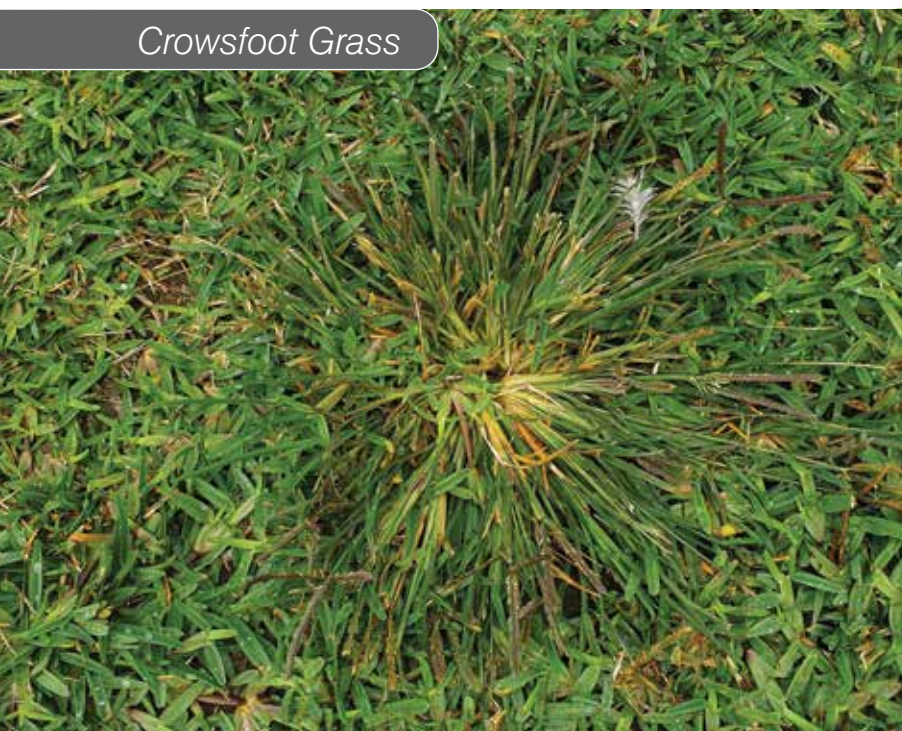
Battalia 435

Herbicide

Proven pre-emergent weed control

with predictable residual performance

Crowsfoot Grass



Mode of Action

GROUP 3 HERBICIDE

Pendimethalin, the active ingredient in Battalia 435 is a member of the dinitroaniline (DNA) herbicide Group 3 (previously Group D). The primary mode of action of Battalia 435 Herbicide is to inhibit microtubule formation in cells of susceptible weeds which are an important part of the cell division process.

As a result of restricted cell division, growth of the emerging weed seedling is prevented, eventuating in death due to lack of available food reserves.

Because Battalia 435 does not translocate a great deal from the site of uptake within the plant, it is necessary for the emerging weed seedling's roots to absorb pendimethalin from the soil. Pendimethalin binds to organic matter and clay materials and primarily stays within the top few centimetres of soil.

Selectivity in turf is caused by differences in germination depth of susceptible grass seedlings that absorb the pendimethalin in the top layer of soil, compared to the growing points in the turf's roots system that is at a greater depth and is unable to uptake the pendimethalin.

Product Overview

Battalia 435 Herbicide is a pre-emergent herbicide containing 435g/L of the active ingredient Pendimethalin.

It is registered for the control of Summergrass, Crowsfoot Grass and Wintergrass in a range of warm and cool season turfgrass species.

This formulation of Pendimethalin is a proven performer and offers an economical and reliable option for pre-emergent weed control for turf and irrigation channel situations.

Key Features

- > Offers an economical form of pre-emergent weed control for turf and irrigation channels.
- > Low chemical scheduling (Schedule 5 – Caution), lower PPE requirements.
- > High loaded formulation, 435g/L.
- > Good turf safety characteristics, when used on established, high cut turf situations.
- > Predictable residual performance with a half life of around 30-40 days.
- > Reduced hydrocarbon solvent loading in the product, over some other forms of pendimethalin.
- > Low solubility and very high soil binding capacity, offering limited leaching potential.
- > No withholding period.
- > Possesses useful tank mix compatibility with other herbicides. Stable in a pH of 4-9.
- > Available in HPDE drums.



Summer Grass



Winter Grass

Maximising performance

- > Apply prior to germination of weeds.
- > Weed Germination Temperature Ranges are as follows:
 - Winter Grass: 10-15°C
 - Summer Grass: 12-15°C
 - Crowsfoot: 16-18°C
- Soil Temperature based off daily average (9am temp + 3pm temp / 2) at a 10cm depth.

Battalia 435 Herbicide – Use Rates & Label Recommendations

ESTABLISHED TURF	WEEDS CONTROLLED	RATE	CRITICAL COMMENTS
Warm Season Turf Kikuyu, Salt Water Couch, Buffalo Grass, Bahia Grass, Zoysia	Summer Grass (<i>Digitaria sanguinalis</i>), Crowsfoot (Crab Grass) (<i>Eleusine indica</i>), Winter Grass (<i>Poa annua</i>)	3.4L per hectare or 34mL per 100m ²	Incorporate as soon as possible, by 10-15 mm of spray irrigation or when rainfall is expected, within one day of application. Apply once every 10 weeks from early September to the end of February.
		2.3L per hectare or 23mL per 100m ²	
Queensland Blue Couch, Hybrid Couch c.v Tifdwarf		3.4L per hectare or 34mL per 100m ²	The product should be incorporated by 10-15 mm of spray irrigation or rainfall as soon as possible, within one day of application. Apply Battalia 435 Herbicide only once per year to control weeds in Perennial Rye Grass and Bent Grass.
		2.3L per hectare or 23mL per 100m ²	
Cool Season Turf Kentucky Bluegrass			
Perennial Ryegrass, Bentgrass			
Irrigation Channels Cotton Irrigation Banks, Channels, Drains	Barnyard Grass (<i>Echinochloa</i> spp.), Silvertop Grass (Brown Beetle Grass) (<i>Diplachne reptatrix</i>)	3.4-6.8L per hectare	Use the lower rate when short-term control is required. Apply in late winter or early spring after regrading or clearing channels. The soil should be loose and free of large clods. If 25-50 mm of rainfall has not fallen within 14 days of application, the channel should be filled with water and allowed to stand for 1 day. The water in the channel should then be drained off and used to pre-irrigate cotton fields. DO NOT use water in channel to irrigate or pre-irrigate susceptible crops.

Pendimethalin – Important Properties

Parameter	Koc – Soil binding Capacity (mL/g)*	DT 50 – Soil Half Life: Field*	Vapour Pressure (mPa)	Aqueous Stability	Acute Oral LD50 – Mammals (mg/kg)
Pendimethalin	17,531	40 days	3.34	Stable at pH of 4 - 9	4,665
Interpretation	Very high soil binding capacity. Limited potential to move into ground water or lower down in the soil environment to reach established turf roots.	Predictable residual performance. Providing up to 60 days pre emergent activity.	Non volatile. However, it is likely to go into a vapour phase in the soil environment, potentially improving movement and distribution in the soil after incorporation.	Stable in a wide range of water pH's. Limited issues with water pH for spraying.	Higher LD50 than salt. Considered to be slightly hazardous.