



QUALI-PRO MARVEL[®] ULTRA 120 ME

Trinexapac ethyl in a micro-emulsion
concentrate formulation.



ADAMA

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What is Marvel® Ultra 120 ME

MARVEL® ULTRA 120 ME is a plant growth regulator formulation containing 120 g/L of the active ingredient Trinexapac ethyl. MARVEL® ULTRA 120 ME is a micro-emulsion formulation possessing a patented, unique emulsification package which enhances product stability, improves rainfastness, spread, coverage and movement of trinexapac ethyl into the plant.

MARVEL® ULTRA 120 ME is a global formulation sold by Adama / Quali-Pro in key turf markets such as the United States, Canada, SE Asia and now Australia. It is marketed as T-Nex in these countries.

MARVEL® ULTRA 120 ME is registered for the regulation of leaf and stem growth, as well as a turf management aid across a range of turfgrass species and growing regimes. MARVEL® ULTRA 120 ME is also registered for the suppression of Bahiagrass and seedhead control in combination with herbicides.

MARVEL® ULTRA 120 ME is registered and safe for use on a very broad range of turfgrass species including; Common and Hybrid Couch, Bentgrass, Kikuyu, Queensland Blue Couch, Carpetgrass, Buffalo, Bahiagrass, Zoysia, Fescues, Perennial Ryegrass, Durban grass and *Poa annua*.

Key Features and Benefits of Marvel® Ultra 120 ME

- Inhibits vertical shoot growth
- Promotes rich colour, lateral stem and root mass development
- Helps produce healthy, durable blades in turfgrass
- Helps turf withstand seasonal stresses
- Odourless, micro-emulsion concentrate, that is petroleum solvent free and tank mix flexible
- Rainfast in 3 hours
- Increases quality of final cut, particularly in high maintenance situations
- Reduced clippings for efficient mowing and reduction in waste
- Registered for use in Bahiagrass management and suppression
- Registered for a very broad range of turf species (more than 11 differing turf species)
- Proven and trusted formulation. Global formulation sold by Quali-Pro / Adama in many countries, including the USA & Canada.



Marvel® Ultra 120 ME Mode of Action

The active ingredient in MARVEL® ULTRA 120 ME, Trinexapac-ethyl inhibits gibberellic acid biosynthesis late in the pathway. This results in a significant reduction in cellular elongation and internode length. After application, new growth has shortened internodes, more tillers, and reduced vertical growth compared to untreated turf.

Trinexapac-ethyl is rapidly absorbed by the plant's leaves and crowns. The majority of uptake occurs within one hour of treatment. Absorption through roots is negligible, as the product is broken down in the soil environment quickly. MARVEL® ULTRA 120 ME is transported acropetally (upwards) in the xylem to the meristem, where cell elongation occurs. The systemic translocation properties of MARVEL® ULTRA 120 ME ensures even distribution of the active ingredient within the plant tissue. Full growth regulation with MARVEL® ULTRA 120 ME begins within 3-5 days of application.





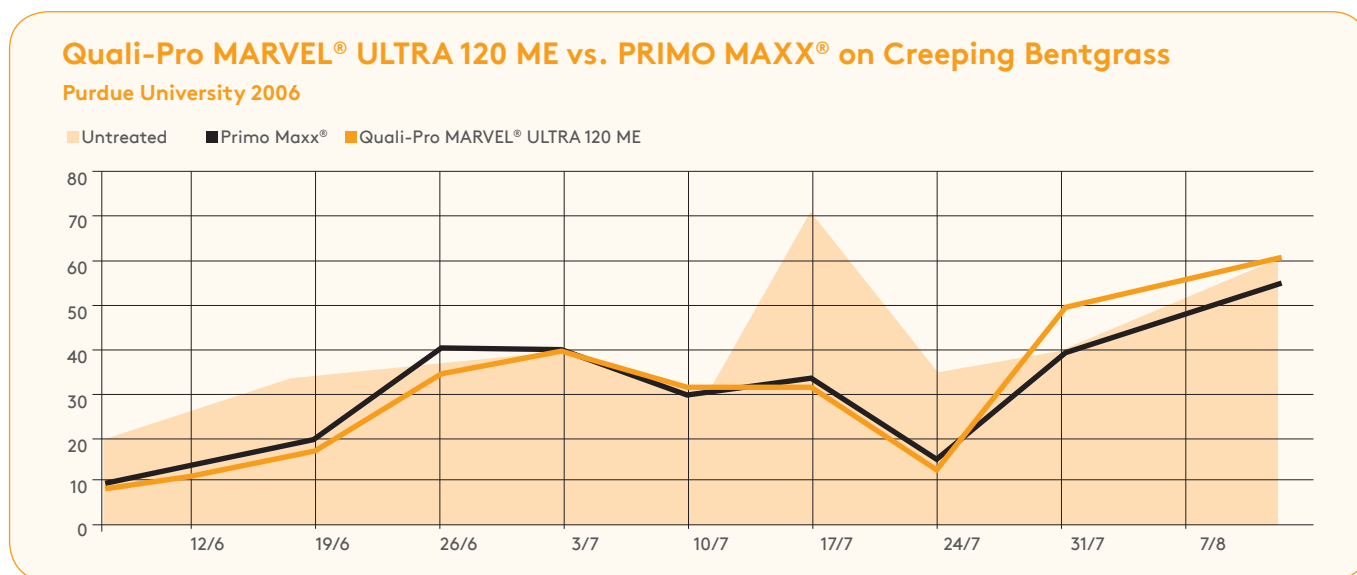
Marvel® Ultra 120 ME - Registered for the broadest range of turf species

MARVEL® ULTRA 120 ME is safe for use on a range of turfgrass species including;

Bentgrass	Kikuyu	Perennial Ryegrass	Durban Grass
Common Couch	Queensland Blue Couch	Fescue	Zoysia
Hybrid Couch	Bahiagrass	Buffalo	

Proven Performer on Greens Grade Turf Species. Bentgrass Field Trial Data with Marvel® Ultra 120 ME v Primo Maxx.

Results of US University Field trials in 2006 have shown that MARVEL® ULTRA 120 ME (marketed as T-Nex in US) performs at least equivalently on Creeping bentgrass (*Agrostis stolonifera*) turf species to the industry standard, Primo MAXX formulation.



Bahiagrass Suppression and Seedhead Control

Bahiagrass is a difficult to control perennial grass weed, that in eastern Qld, eastern NSW, coastal districts of Southern Victoria and Western Australia has become problematic for turf managers. When applied in the spring and summer months in combination with suitable herbicides, MARVEL® ULTRA 120 ME can be effective in reducing Bahigrass spread and seedhead development.

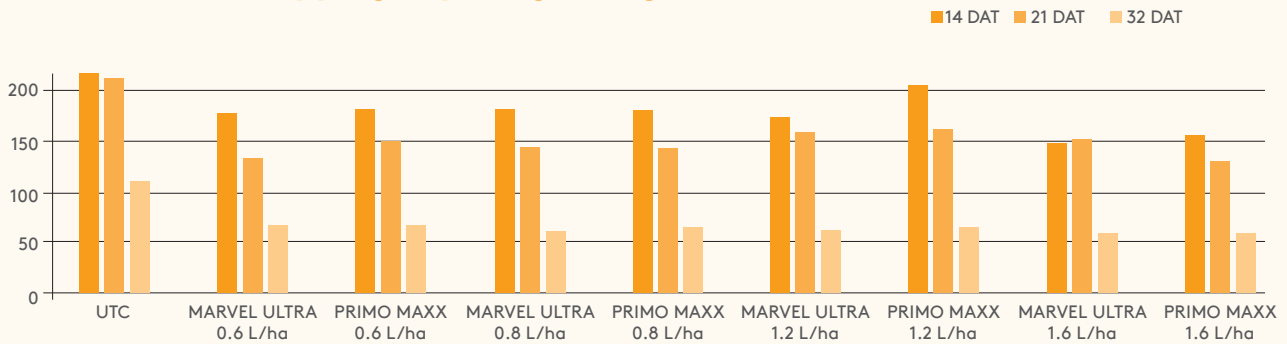
To maximise performance, MARVEL® ULTRA 120 ME must be placed as uniformly as possible onto leaves and into the crowns of the Bahiagrass plant. Ideal application volumes should be 200 to 500 L/ha. For best control it is recommended to use coarse nozzles - Turbo Teejet* or AIXR Teejet* (11004 or 11005) nozzles, at 8 km/h and 3 bar pressure. Boom height should not exceed 50 cm above the ground. To ensure adequate control is achieved, the combination of MARVEL® ULTRA 120 ME and the suitable herbicide should be tank mixed with a non ionic surfactant such as Wetspray 1000 at the rate of 250 mL/100 L of water.



Australian Field Trial Data with Marvel® Ultra 120 ME

Results of Australian Field trials have shown that MARVEL® ULTRA 120 ME performs at least equivalently on multiple turf species to the industry standard, Primo MAXX formulation. Clipping yields (g) of Common Couch (*Cynodon dactylon*) turf following application of MARVEL® ULTRA 120 ME and Primo MAXX.

Comparison of MARVEL® ULTRA 120 ME and Primo Maxx regulation on Couch Turf (Clipping Dry Weights - grams)

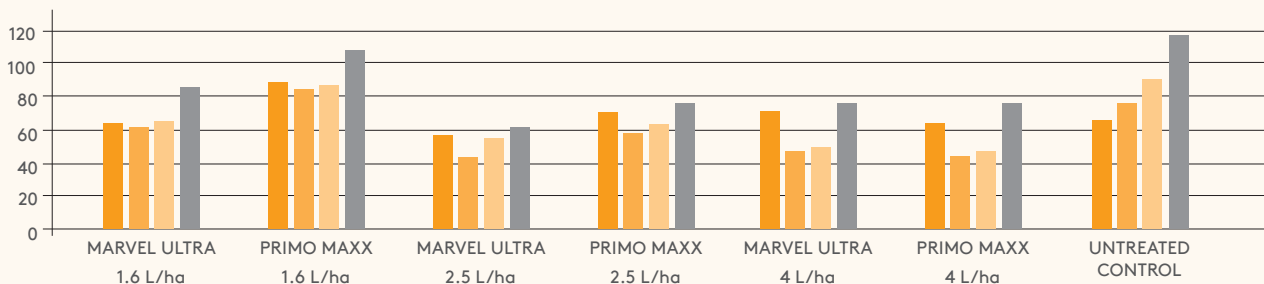


The full efficacy reports of the field trials above can be supplied upon request. Trial conducted by J. McCarthy, Independent Consultant – G-Censeo Pty Ltd.

Kikuyu Turf Regulation Field Trial Data

Clipping yields (g) of kikuyu (*Pennisetum clandestinum*) turf following application of MARVEL® ULTRA 120 ME and Primo MAXX.

Comparison of MARVEL® ULTRA 120 ME and Primo Maxx regulation on Kikuyu Turf (Clipping Dry Weights - grams)



The full efficacy reports of the field trials above can be supplied upon request. Please contact Adama Australia for more information. Trial conducted by A. Leggett, Amgrow Pty Ltd.





Marvel® 120 ME – Key Application Information

The rates recommended on the label are designed to give approximately a 20 - 50% reduction in clippings over a 2 to 6 week period. In practice, the amount of growth regulation achieved will vary due to environmental conditions and turf management regimes. As a result, it is likely that application rates will need adjustment to match growing conditions, management practices and the quantity of growth regulation required.

Repeat applications can be made as soon as turf resumes growth or more suppression is desired. MARVEL® ULTRA 120 ME growth regulator should be applied to actively growing turf, at least 6 hours before or after mowing. Good mowing practices prior to application are required to maximise performance and achieve quality turf swards. Use the lower label rate in situations when turf is going dormant due to high or low temperatures, or lack of moisture.

Marvel® Ultra 120 ME Key Use Rates*

Situation	Rate per 100 m ²	Rate per Hectare (10,000 m ²)
Golf Greens (including Poa management uses).	4 – 20 mL	400 mL – 2 L
Bowling Greens - Bentgrass	10 – 20 mL	1 – 2 L
Bowling Greens - Couch	1.5 – 6 mL	150 – 600 mL
Fairways: Couch Kikuyu Cool Season	6 – 16 mL 16 – 40 mL 16 – 30 mL	600 mL – 1.6 L 1.6 – 4 L 1.6 – 3 L
Short Roughs & Well Maintained Lawns & General Turf Surfaces	10 – 60 mL (turf species dependant)	1 – 6 L
Long Roughs, Parks, Ovals, General Grasses Areas	10 – 80 mL	1 – 8 L
Bunker Facing, Edging, Fencelines, Around Trees:	40 – 80 mL	4 – 8 L

**This information is not intended to replace the product labels. Always read the complete product label appearing on the container before opening or using products.*



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