



INNOVATIVE and AUSTRALIAN

MANNI-TURF B

## MANNI-TURF B

Unique foliar nutrition technology providing boron to turf grass



*Boron is important for early growth. It is necessary for cell division, differentiation and shoot and tip growth.*

### MANNI-TURF B

- Researches identified a need for boron in turf, especially in sandy soil situations commonly used in the construction of bowling greens and golf tees.
- High irrigation regimes will also leach boron from surface soil, placing it out of reach to the turfgrass roots.
- Boron is not very mobile and poorly translocated.
- There is little redistribution of boron within the plant.
- **Manni-Turf B**, therefore is a unique foliar fertiliser to solve boron deficiency problems.
- Boron is held in soil organic matter and is released by microbial activity

### MANNITOL COMPLEXED PRODUCTS

**Manni-Turf B** is based on the world patented Mannitol technology. Essential plant micronutrients are complexed in an organic sugar alcohol to create a highly efficient foliar trace element fertilizer. The small molecular size and delivery package containing humectants, spreading and penetrate agents further ensures

that the complexed nutrients are phloem and xylem mobile.

### BORON DEFICIENCIES

- Lead to yellowing of the growing points and failure of roots to spread out and develop properly.
- Deficiency can be very subtle and slowly affect meristem of roots and stems without being aware that a grass species is not growing to its potential.
- Deficiencies are likely in soils with a pH over 7 and in light soils in high rainfall areas.
- Boron deficiencies will occur in dry conditions when microbial activity is reduced.

### BORON MOBILITY IN PLANTS

Boron has been considered a relatively immobile element in plants and that its primary transportation occurred in the xylem stream. **Manni-Turf B** uniquely delivers boron to plants more efficiently than all other sources of boron available today. Manni-Turf sugar alcohol encapsulates the boron enabling it to move into the plant via the phloem, where sugars move more easily towards fruit forming tissue. Once the **Manni-Turf B** reaches the plant growth area the sugar bond breaks down and the boron flows to where it is needed. **Manni-Turf B** mixes well with most pesticides and fungicides.

### ANALYSIS

4.65% (w/v) Nitrogen as Urea Nitrogen, 3.85% (w/v) Boron, as Manni-Turf sugar alcohol complex.

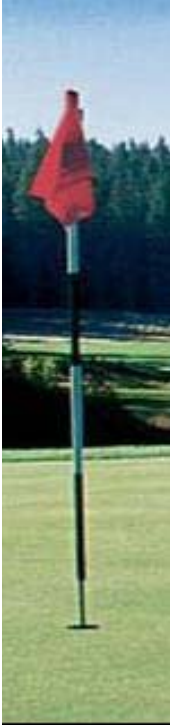
### PACK SIZE

1 Litre

For more information about MANNI-TURF B other BARMAC products visit [www.barmac.com.au](http://www.barmac.com.au) or one of our distributors.  
Barmac Industries Pty Ltd Swanbank Australia

Manni-Turf B. B0707 V1

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## **APPLICATION**

Apply 15-30 mls per 100m<sup>2</sup> of turf (1.5-3 litres per hectare in a convenient volume of water) ( not less than 400 litres per hectare).

A maximum of 3 applications per growing season should be made unless recommended by a laboratory soil test.

Caution: Overuse of boron products can produce detrimental results in turf grass. Do not exceed the above listed rates and application frequency without specific agronomic advice and do not use in conjunction with other sources of boron.

## **MIXING INSTRUCTIONS**

Put 1/3 of water in tank

Add pesticides, other fertilizers and adjuvants. Do not mix with phosphate based fertilizers.

Fill tank with water and agitate.

Add required amount of Manni-Turf B.

Agitate until mixed.

Always conduct a jar test to determine compatibility.

## **RESULTS**

Extensive research has shown that turf grasses will respond to small amounts of boron with colour, root growth and stand density all improving for five weeks following application.