

Boron toxicity



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What it does ?

Boron (B) toxicity inhibits the formation of starch from sugars and affects the formation of B-carbohydrate complexes.

Why and where it occurs ?

B toxicity is a rare condition, especially in irrigated rice systems, that usually occur during dry season when there is high boron content in groundwater.

B toxicity is most common in arid and semiarid regions, but has also been reported in rice in other areas. Soils prone to B toxicity include the following types:

- Usually associated with the use of irrigation water pumped from deep wells containing a large B concentration
- Some coastal saline soils

How to identify ?

Plants affected by B toxicity shows:

- Chlorosis of tips and margins of older leaves as initial symptoms
- Dark brown elliptical spots on discolored areas two to three weeks later followed by browning and drying up
- Necrotic spots on leaves prominent at panicle initiation
- Brownish leaf tips and dark brown elliptical spots on leaves

To confirm B toxicity, bring soil and plant sample to the laboratory for testing.

How to manage ?

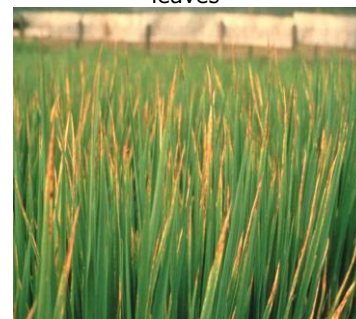
- Plant B-toxicity tolerant varieties. Contact your local agriculture office for an up-to-date list of available varieties.
- Use surface water with a low B content for irrigation. Groundwater must be tested and monitored regularly if used for irrigation.
- Plough the soil when it is dry, so that B accumulates in the top soil. Leach with water containing a small amount of B.



Affected plants have yellowish and discolored leaf



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Field damage caused by Boron toxicity



Large brown elliptical spots are visible on boron toxicity infected leaves