Iron deficiency

What it does

Iron deficiency affects photosynthesis and leads to reduced yield and dry matter production.

Why and where it occurs

Fe deficiency is relatively rare in Assam, especially in irrigated rice systems.

Soils particularly prone to Fe deficiency include:

- Neutral, calcareous, and alkaline upland soils having high pH
- Akaline and calcareous lowland soils with low organic matter status
- Lowland soils irrigated with alkaline irrigation water
- Coarse-textured soils derived from granite
- Soils having higher percentage of copper, manganese or zinc

How to identify

- Iron is immobile within plant and deficiency appears on the young newly emerging tissue
- Interveinal yellowing and chlorosis of emerging leaves
- Whole leaves become chlorotic and then very pale
- Entire plant becomes chlorotic with stunted growth and dies if deficiency is very severe
- Decreased dry matter production

To confirm iron deficiency, send soil and plant sample to lab for Fe deficiency test.

Why is it important

Fe deficiency is relatively rare especially in irrigated rice systems, but can occur throughout the growth cycle of the plant. It can be a source of yield loss in alkaline or calcareous soils (especially in the uplands).

How to manage

- Grow Fe-efficient varieties. Contact your nearest local agriculture office/extension functionaries for an up-to-date list of available varieties.
- Apply organic matter (e.g., crop residues, manure).
- Apply waste materials from mining and other industrial operations provided that they do not contain other pollutants at toxic concentrations.
- Use acidifying fertilizers (e.g., ammonium sulfate instead of urea) on high-pH soils.
- Use fertilizers containing Fe as a trace element.



Grow Fe- efficient varieties





Fe-deficiency





Assam Agribusiness and Rural Transformation Project (APART)

The opinions expressed in this publication are those of the authors. They do not purport to reflect the opinions or views of the IRRI. Attribution – Non Commercial-Share Alike 3.0 (Unported) APART

The World Bank is the funding agency of APART Department of Agriculture, Assam is the nodal department for implementation of APART ARIAS Society is the State Level coordinating and monitoring agency for APART Assam Agricultural University is the leading Agricultural University of the state and implementing agency of APART, imparting research and scientific support.

IRRI is the rice global leader providing technical and hand holding support in the implementation of APART





www.rkbassam.in