Agronomy Profile

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Guide to Nutrient Deficiencies

Overview

Nitrogen (N), phosphorus (P) and potassium (K) are the three most important soil-supplied nutrients for soybeans, but several other nutrients are also important for plant growth, such as magnesium (Mg), iron (Fe), manganese (Mn), zinc (Zn) and sulphur (S).

What you should know

Use the following key to help identify nutrient disorders that may be affecting your soybeans.

Nitrogen deficiency	Pale green plants, pale yellow leaves, veins are not prominent. Symptoms appear first or are more severe on older and/or fully expanded leaves. Symptoms are uniform across leaves.
Phosphorus deficiency	Dark green to bluish green leaves, often with interveinal, small lesions. Dry soybeans may have marginal chlorosis.
Potassium deficiency	Green plants with chlorosis along leaf margins leading to brown interveinal necrosis. Veins stay green. Symptoms appear first or are more severe on older and/or fully expanded leaves.
Magnesium deficiency	Pale green plants with interveinal pale yellow mottling of leaves followed by interveinal necrosis-or necrosis along the underside of the main veins in dry soybeans. Symptoms appear first or are more severe on older and/or fully expanded leaves.
Iron deficiency	Symptoms are prominent interveinal chlorosis or necrosis. Veins are prominent over length of leaf. Pale green to yellow plants, often with pale brown or bronze necrosis.
Manganese deficiency	Pale yellow leaves with mottled interveinal chlorosis leading to dark brown necrosis. Pale green to yellow plants, often with pale brown or bronze necrosis.
Zinc deficiency	Pale green plants; interveinal mottling (or interveinal chlorosis in dry soybeans) of older leaves leading to bronze necrosis; green veins. Symptoms appear first or are more severe on older and/or fully expanded leaves.
Sulfur deficiency	Pale green to yellow leaflets without prominent veins or necrosis. Pale green to yellow plants, often with pale brown or bronze necrosis.

https://cropwatch.unl.edu/soils/soybean-nutrients
https://crops.extension.iastate.edu/soybean/production_soilfert.html

Nitrogen deficiency is common in soybeans and is characterized by yellowing leaves.

30-Second Summary

- N, P and K are the essential nutrients for soybeans.
- Mg, Fe, Mn, Zn and S can also be important to soybean growth.
- Appearance of soybean leaves and pods offers a guide to potential nutrient deficiencies.

NOTES:

For more information, contact:

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