Agronomy Profile

Maximize yield in high-pH soils

Overview

Corn hybrid selection and fertility planning are key to maximizing yield in alkaline, or high-pH, soils. High-pH soils reduce the availability of plant nutrients, including zinc, iron and phosphorus. However, with the genetic advances of today's hybrids, it's possible to raise a viable crop in high-pH soils.

What you should know

- Soil pH is a measure of the relative acidity or alkalinity of the soil solution.
  - Soil pH is expressed on a 14-point scale where 7.0 is considered neutral. (Below 7.0=acidic Above 7.0=alkaline)
- High-pH soils require higher levels of zinc, sulfur, iron and phosphorus.
- Nutrient deficiencies can show up as visual characteristics:
  - Iron deficiency: yellow stripes on middle to upper leaves
  - Zinc deficiency: white stripes on young leaves
  - Phosphorous deficiency: dark green or purple coloring of lower leaves

Action steps

1. **Choose hybrids for high-pH soils:** Select a hybrid with the right combination of visual chlorosis rating score and above-average yield potential under these conditions.
2. **Collect soil samples at least every 2 years:** After harvest, sample the top 6 to 12 inches of soil and send to a professional soil laboratory for complete analysis.
3. **Apply the right nutrients in the correct location:** Follow the soil lab's recommendation for your yield goal and gather input from your trusted agronomist. For a healthy crop, combine zinc, iron, sulfur and some phosphorus in a starter fertilizer blend during planting. The sulfur will amend the soil and lower pH in the root zone, making the zinc, iron and phosphorus more available to the corn plant.

The advanced genetics in today's hybrids make it possible to raise a viable corn crop in high-pH soils.

30-Second Summary

- Proper nutrients plus the right hybrids are critical to reaching full yield potential in high-pH soils.
- Soil sampling and analysis can help you determine the right nutrient mix for your high-pH soils.
- Look for hybrids with a good visual chlorosis score and those selected to perform in high-pH conditions.

NOTES:

For more information, contact:

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