

Corn-Soybean Rotation

Overview

Soybeans offer economic and agronomic benefits that complement corn production. The varied planting time and growing season for each crop helps spread the workload over a wide window of time. Additional benefits of crop rotation include increased nitrogen (N) availability and improved soil health and tilth.

What you should know

- Crop rotation can decrease the risk of certain crop diseases by breaking the cycle of many overwintering, yield-limiting diseases. It also helps break pest cycles that are common in continuous corn operations.
- Soybeans are non-host plants to many overwintering diseases that significantly impact corn yields, such as gray leaf spot, northern corn leaf blight and Goss's wilt.
- Corn residue immobilizes higher concentrations of soil nitrogen (N) than soybean residue.
- Soybeans protect corn from yield-robbing pests such as corn rootworm (CRW). Entomologists recommend adding soybeans into a corn rotation as the most effective means of controlling *Bt*-resistant CRW. CRW beetles lay eggs in the fall, primarily in corn residue, but if corn is not present the following spring, hatching rootworm larvae will die.

Action steps

1. **Increase nitrogen:** Corn-on-corn fields require higher nitrogen fertilizer applications compared with corn following soybeans. Corn following soybeans benefit from more soil-available N, particularly early in the season, which can lead to increased yield potential.
2. **Rotate weed control:** Use multiple modes of action to reduce development of herbicide-resistant weeds and the need for additional herbicide applications.
3. **Improve soil health:** Rotate crops with fibrous root systems (corn) and taproot systems (soybeans) to improve soil aggregation, especially in no-till systems. This helps increase water infiltration to improve soil health and soil tilth.

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Corn and soybean rotations can complement production by breaking yield-limiting diseases and pest cycles.



30-Second Summary

- Rotating to soybeans can help manage pest populations, reduce the spread of crop diseases and improve growing conditions for corn.
- Crop rotation prevents the buildup of pathogens and diseases in the soil.
- Rotating corn and soybeans improves soil aggregation.

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