



Agronomic Spotlight

Management Practices for Continuous Soybean

Though planting soybeans after soybeans is generally not recommended, some farmers report success with long-term continuous soybean production. Growing the same crop year after year in the same field can result in yield penalties due to a build-up of pathogens and insect pests and potential difficulties with weed control. Without crop rotation to break pest and pathogen life cycles, other management approaches will be needed.

WHAT TO CONSIDER

Though continuous soybean production is generally not recommended, some farmers have reported stable yields with no downward trend after nearly 20 years or more of planting soybeans continuously in the same field.¹ Farmers may face greater yield penalties and smaller profit margins due to increased pest control costs when

soybeans are planted continuously in fields that have a history of insect and disease problems. Selecting products with resistance to key insects and diseases is critical for success in continuous soybean production. Other important selection criteria include yield potential and maturity rating.

YIELD IMPACT

Planting the same crop year after year can encourage disease inoculum to build up on crop debris and in the soil. Dramatic reductions in yield can occur by the third or fourth year soybeans are planted into a field with disease or nematode issues.² Even after the crop is removed,

diseases such as white mold, stem canker, sudden death syndrome (SDS), brown stem rot (BSR), certain root rots and soybean cyst nematode (SCN) can remain in the soil or crop residue for several years.

MANAGEMENT OPTIONS

Without crop rotation to break pest and pathogen life cycles, other management options will be needed. Alternative control strategies for managing diseases

include lower seeding rates or wider row widths to increase air flow in the canopy for suppression of foliar diseases. Planting later in the season or planting soybean



Figure 1. Soybean seedlings damaged by Phytophthora root rot.



Figure 2. White mold infected soybean plants.



Figure 3. Soybeans damaged by sudden death syndrome.



Figure 4. Soybean cyst nematodes on soybean roots.

products with shorter relative maturities can help to avoid disease outbreaks during sensitive growth stages. Often, planting a product with disease or insect resistance is the most effective management approach. There are no soybean products with complete resistance to white mold and SDS, but selection of products with partial resistance may help reduce damage.

Soybean cyst nematode can be difficult to manage in

continuous soybean production. The use of SCN resistant soybean products may help to minimize damage but will not provide complete control. Roots are still attacked by these nematodes, but resistant soybean limit reproduction of SCN.

Seed treatments are especially important in continuous soybean production. Broad-spectrum fungicidal and insecticidal seed treatments can protect soybeans from early-season diseases and insects. Some seed treatments can also protect against early-season SCN damage by making young soybean roots unattractive to the nematodes.

Weed control can be challenging in continuous soybean production systems. A weed control plan including residual herbicides and multiple sites of action should be in place to ensure effective weed control.

Soil nutrient levels should be carefully monitored to ensure that adequate phosphorus (P) and potassium (K) are available to the crop. A soybean grain harvest typically removes more K than a corn grain harvest, so this nutrient may need to be supplied more often in continuous soybean production. Nutrient inputs should be based on soil test recommendations, which should be conducted every three to four years.

Sources

¹Howe, D. 2006. Risky business or good business? Corn and Soybean Digest. <http://cornandsoybeandigest.com/risky-business-or-good-business>.

²Soybean following soybean. 2008. www.extension.org.

Other sources: Dorrance, A.E. and Mills, D. 2009. Phytophthora damping off and root rot of soybean. Fact Sheet AC17-09. Ohio State University Extension. <http://ohioline.osu.edu>.

Koenning, S. 2000. Management of soybean cyst nematode. North Carolina State University Extension. www.ces.ncsu.edu.

Davidson, D. 2014. Planting continuous soybeans. Illinois Soybean Association. www.ilsoyadvisor.com/agronomy/2014/december/planting-continuous-soybeans.

Pedersen, P. 2009. Soybean after Soybean. Iowa State University Extension. <http://crops.extension.iastate.edu/cropnews/2009/04/soybean-after-soybean>.

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Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.

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