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### SOYBEANS AND CROP ROTATION FACT SHEET

This is one in a series of fact sheets from the Mississippi Soybean Promotion Board and the soybean checkoff. Each sheet presents a brief overview of a topic important to Mississippi soybean production. More information on each topic can be accessed through the link at the bottom of the sheet. To see other fact sheets, click [here](#).

Crop rotation is a term used to describe the pattern of growing two or more crop species in a given field in some consecutive order. Soybeans are commonly rotated with corn, wheat, or grain sorghum in the US. In the midsouthern US, soybeans are also rotated with cotton and rice. Reasons given for growing soybean in rotation rather than continuously are: 1) higher yields of one or both crops; 2) a decreased need for N fertilizer on the grain crop following soybean; 3) increased residue cover following harvest of the grain crop in the rotation; 4) mitigation of pest and weed cycles that are unique to the individual crops; and 5) improved economic potential. Nationally, survey results indicate that 85% of corn acres and 95% of soybean acres are rotated with another crop. Based on results from long-term rotation research, a soybean:grain crop rotation provides positive agronomic, environmental, and economic benefits.

Results from soybean:corn rotation research indicate the following potential outcomes.

- Yields of both crops are increased when grown in rotation with each other.
- The yield increase is greatest when the crops are rotated biennially.
- Corn following soybeans requires less fertilizer N than corn following corn (research indicates that the amount of N supplied by soybeans to a following corn crop is about 60 lb/acre/yr).
- Corn grain yield variability over the long term is reduced by rotation with soybean.
- The energy output:input ratio for corn is greater when grown in rotation with soybeans.
- The soybean:corn rotation likely will be a good fit for Midsouth irrigated systems since there are between 2.25 and 3 million acres of corn harvested annually in Arkansas, Louisiana, Mississippi, and Tennessee.

In a nonirrigated cropping system that utilizes a soybean:grain sorghum rotation, results from research indicate the following potential outcomes.

- Yields of both soybean and grain sorghum will be increased when grown in a biennial rotation.
- This rotation is less affected by the previous crop in a nonirrigated rotation than is corn with limited rainfall.
- Grain sorghum yield variability over the long term is reduced by rotation with soybean.
- The energy output:input ratio for grain sorghum is greater when grown in rotation with soybean than when grown as a monocrop.
- The soybean:grain sorghum rotation will not likely be of consequence in the Midsouth since there are usually less than 25,000 harvested acres of grain sorghum annually in Arkansas, Louisiana, Mississippi, and Tennessee.

In a soybean:rice biennial rotation, results from research indicate the following potential outcomes.

- Yield of nonirrigated soybean following rice will be increased compared to monocropped soybean.
- Yield of irrigated soybean following rice will not be increased compared to monocropped soybean.
- Since this rotation is common in the Delta region of the midsouth states where up to 2 million acres of rice are grown annually, the advantages from its use where both crops are irrigated will accrue from benefits such as enhanced rice yields and disruption of pest and weed cycles in both crops. Where irrigation water is only available for irrigating the rice crop, the increased yield of nonirrigated soybean in this rotation could be an avenue for conserving water that is available for irrigation.

There are not enough results from soybean:cotton rotation research to assess its possible benefits.

Click [here](#) for a detailed discussion of this topic.

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