LOUISIANA: SOYBEAN RESPONSE TO FLOODING

Farmer Blog

By David Moseley, LSU AgCenter Extension Soybean Specialist

The recent rainstorms have brought heavy precipitation to some soybean fields in Louisiana. The core-block demonstration trial in Natchitoches parish has standing water that covers part of the plants, especially in low-lying areas.

The damage to soybean plants due to flooding depends on several factors including the plant's growth stage, the duration of the flood, and other environmental conditions.

The long-term effect of a flood is difficult to predict because the following environmental factors are unknown. In general, reports suggest the reproductive stages, and possibly early vegetative stages, are more sensitive to flooding. Depending on the ambient and soil temperatures, soybean plants may be able to resist damage in flooded conditions for 2 – 3 days.

The soil oxygen concentration will begin to drop in sustained flooded and saturated soils. In sunny and high temperature conditions, the respiration rate of the plants and soil microbes will increase, further depleting the soil oxygen concentration. If debris is covering soybean leaves after a flood, the yield can be reduced due to a decrease in photosynthesis.

If a field is flooded, there are a few items to consider. If possible, clear any obstructions in areas such as water furrows or ditches to promote surface drainage. However, to prevent soil compaction, it is good to limit unnecessary traffic on saturated fields.

When possible, reduce applications that can burn leaves. Continue to protect the yield potential by scouting for pest and evaluate activity of the nitrogen-fixing nodules. A sustained flood can reduce the activity of nodules; however, the activity can recover after the flooded or saturated conditions subside.

Search the database for projects in breeding, disease, weed management and soil fertility to find more information about weather issues and environmental stress.

Photo: Flooded soybean field. Photo: Randall Mallette, LSU AgCenter

SOYBEAN RESEARCH & INFORMATION NETWORK

This website is funded by the soybean checkoff