Making Waves to Manage Water More Sustainably

SOYBEAN RESEARCH & INFORMATION NETWORK

Soybean farmers proactively use conservation practices such as no-till, grass filter strips, cover crops and drainage water management to improve water quality and protect water resources. Funding from the soybean checkoff provides education to help farmers advance and expand these efforts and supports research to further enhance soybean production sustainability.

DIVING DEEPER INTO IRRIGATION INNOVATION

Limited water availability, especially at critical growth points, can reduce soybean yield and quality. Efficient use of irrigation and soil moisture can maximize return on water investments. Research is exploring the value and best use of soil moisture sensors, variable rate irrigation technology, best irrigation management practices based on soil type and even safe reuse of recovered tailwater during the growing season. ***There's now even an app for smart irrigation!***

SHORING UP WATER QUALITY MONITORING

Edge-of-field monitoring stations placed in watersheds allow water samples to be collected for nutrient and sediment analyses after runoff-generating precipitation events. Such projects measure effectiveness of field practices and document and demonstrate continuous improvement farmers can share with the public and environmental regulators. A decline in impaired waters can be documented through long-term studies such as assessing poultry manure application and cover crop implementation and looking at the impact of chisel plows or strip tillage on runoff.

TAKING NUTRIENT LOSS TO A TRICKLE

Covers crops are known to benefit soybean farmers by saving soil, improving water storage during the summer, suppressing weeds and increasing efficient use of nutrients. Keeping crop inputs out of waterways makes farming more economically and environmentally sustainable. For example, research is exploring improved potassium management in specific soil types to identify best practices to slow nutrient loss. Other studies are evaluating phosphorus application timing, placement, source and rate to single out ways to increase profitability and reduce loss.

best practices TO SLOW NUTRIENT LOSS

SATURATING WATERSHEDS WITH BENEFITS OF CONSERVATION

Data collection can be used to determine if conservation practices have a positive effect on reducing nitrates in groundwater and subsequently improving water quality in watersheds. This includes research into understanding the efficacy of fall cover crops. Scientists are working to accurately document the effect of a variety of conservation practices on environmental conditions in watersheds nationwide to estimate full public and private benefits and costs.

TURNING THE TIDE ON BETTER VARIETY ADAPTATION

Research allows geneticists and breeders to better understand how soybeans manage water, so they can develop varieties that adapt for all water conditions. For instance, transpiration research measures how different soybean varieties under stressful conditions release water through leaves. Flood-tolerant varieties may help farmers who plant low-lying fields or farm in other wet areas.

GET THE 411 ON SOYBEAN RESEARCH AT SOYBEANRESEARCHINFO.COM

Funded by the soybean checkoff

The Soybean Research and Information Network (SRIN) is a joint effort of the North Central Soybean Research Program and United Soybean Board. The online resource contains checkoff-funded soybean production challenge research findings with direct links to the respective underlying scientific studies housed in the National Soybean Checkoff Research Database.