



ALABAMA CHAMPION OF soil health

Annie Dee
Pickens County
10,000 acres
Crops: corn and soybeans
Covers: wheat, rye, oats, clover,
and tillage radish



Efficient irrigation and a healthy soil feeds the world sustainably

Running the Dee River Ranch has always been a family affair. Located on 10,000 acres in Pickens County, Alabama, the Dee family manages row crops, certified USDA beef cattle, and timber. With this large of an operation, the Dees incorporate technology where they can to help them efficiently run the ranch. Annie Dee oversees all operations on the ranch.

They have corn and soybeans on a rotation schedule. "Both crops are very important to our operation," said Annie. "They are rotated to minimize disease, insects and build diversity in soil organisms."

The Dees use cover crops to ensure long-term viability. They plant wheat, rye, oats, clover, and tillage radish, then use chemicals to burn them

down for planting. Annie said that cover crops help prevent erosion, build soil organic matter, improve water holding capacity, reduce water and soil runoff, and allow better uptake of available nutrients. Deep rooted crops break up compacted soils and improve soil quality resulting in better crop yields. As a result, she said, they can easily harvest 20-50 more bushels of corn per acre.

Annie is sold on conservation tillage. She said, "Using conservation tillage we have seen reduced soil erosion and soil compaction, increased organic matter, improved soil structure, and increased earthworm activity that confirms overall improved soil health." The practice allows them to get in the field and plant early. Early planting is important so the corn can pollinate before hot weather damages, or even prevents, pollination. Annie indicated that the no-till field's surface dries out sooner and can hold up the equipment better in case of a wet harvest.

"Using conservation tillage has made a difference in us making a crop or not making a crop in drought



Conservation tillage makes the difference in making or not making a crop on Dee River Ranch.

years," Annie said. "We have averaged 120 bushels per acre when other farmers have averaged less than 20 bushels per acre in the same year."

The Dees usually have abundant rainfall, but Annie said, "It often comes at the wrong time of year." They needed a way to capture the winter and spring rains

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- Annie Dee

that were running off the fields, so they built a 120 acre retention reservoir. The Dees also installed a state-of-the art irrigation system to help move the right amount of water to their fields with as little energy as possible. The system has eighteen center pivots, ranging from about 900 feet to a little over 2,000 feet, to irrigate over 2,700 acres of corn and soybeans. It is fed by a 12,500 gallon per minute computer-controlled pumping station.

The Dees installed moisture sensors under their irrigated crops to identify when they needed water to help them save water and energy. Annie added that the programmable irrigation system helps them reduce risks and makes their farming operation

more efficient and sustainable by releasing the right amount of water at the right time.

An 80-foot tall base station tower was installed that gives WI-FI coverage to 20 square miles covering the entire ranch. The irrigation system can be controlled by a smart phone or computer anywhere in the world with Internet access.

Terry Williamson, Natural Resources Conservation Service (NRCS) District Conservationist for the county, said, "The Dees are good stewards of the land. They value partnerships and work with universities, as well as numerous federal and state agencies to help them use their land in the most efficient ways. They have combined their love of the land with a sound business plan to produce an operation that is both profitable and sustainable."

"Our soil is our most important asset in our farming operation," Annie said. "Improving soil health improves our ability to make a crop, to be sustainable and to help feed the world."

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