

Southwest Florida Water Management District (SWFWMD); Facilitating Agricultural Resource Management Systems (FARMS) Success Story – Jones Potato Farm, Inc.

Alan Jones understands the importance of farming to not only his home county of Manatee, but to the entire state and country. He has addressed Manatee County commissioners to highlight the significant economic impact and need for farming in the area, and the need to safely and responsibly produce food and fiber for consumption.

It almost naturally follows that Alan would be attracted to the innovative program, Facilitating Agricultural Resource Management Systems (FARMS) at the South Florida Water Management District (SWFWMD). FARMS, which was started in 2003 and formally recognized by rule in 2009, is an agricultural incentive cost-share reimbursement program that promotes conservation and alternative water supply Best Management Practices (BMPs) to reduce groundwater withdrawals from the Upper Floridan aquifer in Southwest Florida. FARMS operates as a public/private partnership of the SWFWMD and the Florida Department of Agriculture and Consumer Services (FDACS). To date, FARMS has funded undertaken dozens of projects covering virtually every commodity grown in the SWFWMD offsetting millions of gallons of groundwater per day.

Jones Potato Farm operates within the SWFWMD's Southern Water Use Caution Area's (SWUCA) Most Impacted Area (MIA). Accordingly, growers operating in the MIA are especially alert to the need for long-term conservation related to the SWFWMD's recovery strategy for the SWUCA/MIA and to the sustainability of their operations. Alan took the initiative and sought alternative irrigation strategies and BMPs.

In 2011, after investigating alternative approaches, Alan entered into his first FARMS project with the SWFWMD. What would turn out to be a three-phase project consisted of 1,190 acres of potatoes and green beans on four fields under three different SWFWMD water-use permits. The highly ambitious goal of the project was to reduce the overall use of groundwater by more than 50 percent of the permitted quantities per year by replacing the farms' existing semi-enclosed seepage irrigation systems (the predominant irrigation practice on potatoes in Florida) with center pivot irrigation systems.

At that time, there were very few center pivot systems in use anywhere in the SWFWMD and none for potatoes. However, Alan decided that center pivot systems could help him achieve his conservation goals while preserving the productivity and yield on his farm.

With its goal of reducing water use by 50 percent or more, the project was eligible for a 75 percent cost share, which is 25 percent beyond the incentive for projects below that threshold. Given that goal, the innovative nature of the project and the significant investment to be undertaken by the SWFWMD, a special provision was included in the FARMS contract requiring Jones Potato Farm to repay SWFWMD the 25 percent in incremental funding in the event the water savings did not reach the level required by the project's scope – a provision unprecedented in the history of the FARMS program.

To emphasize the importance of this project and the risks taken by both Jones Potato Farm and the SWFWMD, the University of Florida / Institute of Food and Agricultural Sciences (UF/IFAS) conducted a study of the project from 2012 to 2015 (three growing seasons). The goal of the study, supported by the SWFWMD and the National Science Foundation, was to explore the feasibility of converting seepage to center pivot irrigation for potatoes and snap beans, with simultaneous evaluations of water savings, crop growth and development and outreach of the findings. The study was presented to the SWFWMD Project Manager Patricia Robertshaw in December 2015, and included the following key findings:

1. Overall water savings exceeded 50 percent on average, with a savings of more than 1 billion gallons of water during the three seasons.
2. The overall irrigation approach did undergo certain modifications related to water and nutrient management that resulted in retaining about one-third of the seepage irrigation, which is factored into the savings achieved. The UF/IFAS research team noted that additional water savings may be achievable with further exploration of nutrient delivery under the center pivot system.
3. Potato quality was similar between the old and new systems, although yields were very slightly lower with the center pivot system related to the nutrient issues observed and were addressed subsequent to the completion of the study.
4. Root zones had more favorable soil moisture with the center pivot systems.
5. The potential for runoff and nutrient leaching is reduced with center pivot systems.

In addition, Alan also noted that the center pivots help in managing wind erosion, provide a significant potential for freeze protection, and provide for a far more efficient wetting solution for bedding and planting.

To Alan and Jones Potato Farm, these outcomes confirmed the water-saving and environmental promise of center pivot irrigation and validated the risk and efforts involved in the project. The overriding goal in the SWUCA/MIA is to be able to farm sustainably and to contribute to the recovery strategy in the high-risk region of the SWFWMD. These efforts hold the additional promise of applicability for other potato growers as well as for other commodities.

As it relates to Alan and the future of his farming operation, this is certainly not the end of the story. He is clearly aware of the reality that he is farming in a special and challenging area of Florida and takes what he calls a “holistic approach” toward his business strategies. In part, that means involvement in various aspects of business outside the confines of agriculture, including paying attention to urban expansion, economic development and other local environmental issues.