Scientific Irrigation Scheduling: Has Evaluation Pulled us Out of the Mud?

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Introduction

This poster presents several key areas where research and evaluation has provided clarity to the Northwest's approach to scientific irrigation scheduling (SIS). SIS, sometimes known as irrigation water management is known for improving crop quality but is also saving water and saving energy. In the Northwest, utilities and irrigators have been working on SIS of some type for nearly 20 years. However, with erratic utility funding, dynamic crop prices and low acceptance, the utility incentive funds were often not available.

For much of this time, the SIS program has been considered a pilot because of the unknown impacts and low acceptance by the growers. In the past several years, BPA has conducted significant research, including market characterization and evaluation, as well as funding the development of an energy savings calculator. Since 2006, program participation has increased exponentially.

In 2010, BPA completed an evaluation of the program and this poster will report on its findings and also explore what BPA has learned over the 20 years of implementation and report on what still remains to be understood.

Findings

Since 2007, BPA and its partner utilities have been using a regionally-approved calculator to estimate energy savings. Our experience has shown that key farm and irrigation factors affect the energy savings, leading to a range of savings from 30 to 300 kWh/acre. From a market perspective, we more clearly understand the role of service providers, their ways of working with the farmer and their cost structure. From a baseline perspective, we now understand the practices to which farmers are likely to revert, as well as areas of likely free-ridership in the market.

The recent evaluation shed light on the issue of SIS's one-year measure life. This short duration measure, similar to other behavioral and O&M measures, has caused problems for program implementation over the years for several reasons, including baseline questions, cost effectiveness and integration with utility planning. This paper will outline the research findings and the approaches used internally to integrate SIS into the portfolio.

What is still unknown? Although we have conducted significant research and been in the field for many years, there are still unknowns. For example, the evaluation showed the market is still dependent on incentives, so additional research is needed to clarify how to transform the market. In addition, the energy and water savings have provided a real benefit to the producer, crop purchaser, the electric utility and to BPA.