Encouraging the Transition to Organic Grain Production: Linking Research and Extension to Address Knowledge Gaps and Practical Solutions

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Abstract

Annual certified organic soybean production in the U.S. was listed at 125,621 acres in 2011 (USDA NASS, 2012). While this amount seems vast, it remains insufficient to meet the demand for soy-based organic food and animal feed in the U.S. Foreign countries have been increasingly supplying the U.S. with organic grains to meet this demand. According to USDA-FAS-GATS (Global Agricultural Trade System), the following lost income was paid to foreign countries for organic soybean imports in 2014: India - $74,548; China - $39,523; Canada - $16,986; Ukraine - $16,606; and Argentina - $14,183 (USDA FAS, 2015). In the first part of 2015, imports of organic soybeans have increased 50% over the previous period.

In order to increase the transition to organic grain production, producers need science-based results demonstrating the benefits of organic production in terms of yields, soil/water quality improvements, and economic performance. In addition, Extension programs, showcasing best organic management practices, in conjunction with working farms, will help encourage the transition to more sustainable practices.

Across the U.S., long-term organic farming system trials have been established to capture baseline agronomic, economic and environmental data related to organic conversion under varying climatic conditions. These sites have proven useful in providing supporting evidence for successful transition from conventional to organic practices. The Iowa State University Long-Term Agroecological Research (LTAR) experiment was established in 1998 with local farmer input on design and management, and employs annual farmer evaluation of progress and future plans. The organic system in the LTAR, which includes perennial forage crops and small grains rotated with corn and soybeans, has demonstrated increased ecosystem services, such as soil carbon capture, nutrient cycling, and pest suppression, while maintaining yields that are comparable to the conventional system.

Because adequate weed management and soil fertility are cited in Organic Farming Research Foundation (OFRF) and USDA surveys as the greatest constraints to organic transition, this paper examines site-specific correlations in weed populations and soil fertility with crop performance and yields and compares these results to those generated at other long-term sites. As an example, inadequate weed management, triggered by excess rainfall in spring, lowered organic and soybean yields by 20 to 25% in the LTAR experiment, but economic performance remained strong at twice the returns of the conventional system. These long-term experiments serve as valuable demonstrations of the economic viability of organic systems for farmers and

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policymakers interested in observing farm-scale organic operations and crop performance. Linking long-term trials to facilitate greater dissemination of research results will increase the number of farmers transitioning to organic agriculture, which is the long-term goal of the LTAR site.

References

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