THE ROLE OF RESEARCH AND EXTENSION IN THE ADOPTION OF NO-TILL WHEAT IN KENTUCKY. Lloyd W. Murdock, James H. Herbek, and James R. Martin, Extension Professors, University of Kentucky, Princeton, KY 42445-0469.

During the last 30 years, no-till wheat acres in Kentucky increased from less than one percent to 69 percent of wheat acres in the state. Kentucky growers became interested in no-till wheat in the early 1980's; largely because technology of wheat drills at that time made it possible to plant seed directly through crop residue. Since many growers had already adopted no-tillage practices for corn and soybeans, it seemed logical to move wheat into a no-tillage system. However, grower acceptance of no-till wheat was much slower and more difficult than for corn or soybeans.

The adoption of no-till wheat in Kentucky was largely due to the research and Extension efforts of the University of Kentucky Wheat Science Group (UKWSG). Although private consultants were initially very hesitant to adopt the concept of no-till, some of them gradually accepted it and have worked with the UKWSG on a number of research projects involving no-till.

University of Kentucky Extension specialists initiated research in the mid-1980's to determine the feasibility, yield potential, and management practices required for no-till wheat production. Although initial studies showed favorable results for no-till wheat, many growers remained skeptical. There was a strong perception that yield potential would be reduced due to irregular stand establishment, and increased weeds, insects, and diseases. There was also a concern higher production costs would result in reduced profitability. To respond to these concerns, additional studies were conducted over 20 years to help define parameters that would sustain no-till wheat as a part of the corn and soybean rotation system over the long-term. The Kentucky Small Grains Promotion Council became a partner in this effort by funding several research projects and setting a goal to increase the adoption of no-till wheat in Kentucky.

Research focused on several aspects of the production system including yield comparisons of no-till versus conventional till wheat, stand comparisons, crop residue management, profitability of no-till wheat, planting date, varieties, nitrogen fertility, cold injury, pest control, and long-term rotational effects. Results of these research efforts were published annually in the UK Wheat Science Research Report. Several years of research helped resolve many of the questions and concerns growers had regarding no-till wheat.

No-till wheat would probably not have been adopted in Kentucky without the efforts of Extension. It was the only force which moved the practice forward during the early adoption phase. Some of the initial research on no-till wheat was published in 1986 in the Extension publication "No-till Small Grain Production" (AGR-113) and updated in 2000 as "No-till Small Grain Production in Kentucky (ID-136). In 2009 the UKWSG developed the Extension publication "Comparing No-till and Tilled Wheat" (ID 177) in order to summarize University of Kentucky research over the last 20 years. Many specialists made countless presentations, radio tapes, popular press articles, scientific presentations, and carried out several research projects. Several members of the UKWSG, as well as wheat growers, have discussed the benefits of no-till at the annual winter wheat meeting and spring wheat field day. The UK Wheat Science Newsletter and the Kentucky Pest News also played a role in the education of growers on issues related to no-till wheat.

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