It is expected that, given the range of historical input and output prices, optimal N input recommendations and profits under the stochastic plateau model will differ from the conventional models.

Winter Wheat after Fallow Yield Survey Results for Ritzville Growers, 2001-2004

ELIZABETH NAIL, DOUGLAS YOUNG, AND WILLIAM SCHILLINGER, DEPT. OF AGRICULTURAL ECONOMICS, WSU AND DEPT. OF CROP AND SOIL SCIENCE, WSU

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From 2001 to 2004, Washington State University conducted the second phase of an eight-year continuous no-till cropping system project on the Jirava farm near Ritzville, WA. One purpose of this project was to compare the profitability of no-till cropping systems with that of the conventional winter wheat/summer fallow system traditionally practiced in the area. In order to determine the profitability of the conventional system, yields of soft white winter wheat (SWWW) after fallow were surveyed on fields within a five-mile radius of the Jirava experiment site. The economic comparison of winter wheat/summer fallow and no-till annual cropping systems is presented in a separate paper in this section.

Ten farmers responded to the survey. Yield values varied over years and between farmers. The lowest annual yield average was 38 bu/ac in 2001 and the highest annual yield average was 52 bu/ac in 2003. These yield patterns correlate with precipitation over the four years. The average yield across farms and years was 45.9 bu/ac. Standard deviations of yields across years had a low value of 3.5 bu/ac in 2001 and a high value of 8.5 bu/ac in 2004. Standard deviations of yields across farmers had a greater range with a low of 3.9 bu/ac and a high of 12.4 bu/ac.

A similar survey was conducted in the same region for 1997-2000. During 1997-2000 annual precipitation at the Jirava farm average averaged 12.04 inches, compared to 8.88 inches in 2001-2004, a 26 percent drop. During 1997-2000 SWWW after fallow yields averaged 62.1 bu/a with a standard deviation of 10.2 bu/ac. These compare to the average 45.9 and standard deviation of 8.2 for 2001-2004. This reflects a 26 percent drop in average yields from the first to the second four-year period. The shortfall in precipitation in 2001-2004 probably explains a substantial share of the decline.

Multi-Faceted Approach to Teaching Freshman about Sustainable Food Systems

CATHY PERILLO (WSU-CROP & SOIL SCIENCES), RICK PARKER (COLLEGE OF SOUTHERN IDAHO AND UNIVERSITY OF IDAHO), COLETTE DEPHELPS (RURAL ROOTS), CINDA WILLIAMS (UNIVERSITY OF IDAHO-PLANT, SOIL AND ENTOMOLOGICAL SCIENCES), AND DARCEL SWANSON (WSU-FOOD SCIENCE AND HUMAN NUTRITION)

There is a documented distancing of Americans from the source of their foods – both in geography and knowledge. A group of educators in Washington and Idaho recognized this, and developed a course for university freshman to increase the connection between students, their community, and regional food systems. Student exploration of the issues and concept of 'sustainability' was included to facilitate this connection. The course was piloted at WSU (cross-listed with neighboring UI) Fall 2002 as *Science, Society, and Sustainable Food Systems* (Soils 150) and is now in its third offering. This class fulfills a "science for non-science majors" general education requirement, which brings in largely non-agricultural students (a goal). The class introduces production, environment, and socioeconomic issues through 2 lecture/discussion hours and one 2-h hands-on session each week, is open to community members for continuing education credit, and fulfills the Sustainable Food Systems module of the *Cultivating Success* educational program and recently approved Certificate in Sustainable Small Acreage Farming and Ranching. Understanding and implementing the scientific method and the role of science are key components. In addition to agriculture and food-related experiments, we take field trips exploring the university's food system including dining services, on-campus creamery, child-care center, and composting facility. The "lecture" component includes discussions, numerous guest speakers as well as traditional lectures on food system components such as soils, crop and animal production, and socioeconomic issues.

The web site for the class is at: http://classes.css.wsu.edu/soils150/.