

## Field trial conducted on no-till fallow

With a high emphasis in today's no-till movement, a field trial was initiated during the year to investigate the feasibility of no-till wheat-fallow. A two-acre site was selected on a Ritzville silt loam soil in a traditional 10-11 inch precipitation zone on the Jim Swanson farm.

The first year intent was to investigate the moisture differences between complete no-till and conventional fallow programs. In the no-till site, weeds were chemically killed using residual and contact herbicides.

Moisture amounts were monitored using a neutron probe. Results throughout last year showed no significant difference between the two conditions. It was suspected initially that surface moisture would be lower; however, last year this did not develop. In fact moisture in the no-till was generally nearer the surface.

One of the keys to entering into a no-till fallow program is maintaining sufficient residue on the soil surface. On the Swanson site, 90 percent of the ground was covered with grain residue. This amount reduces evaporation losses and also keeps the soil surface at lower temperatures.

Another important consideration before attempting no-till is to select sites without restrictive soil features such as tillage pans or heavy matted buried straw. These limit precipitation from entering into the soil profile more effectively.



Demonstrations and tours were sponsored by the Morrow SWCD such as the one above to promote no-till interest.

Select field conditions where grassy weeds are not a major problem. The economics of using herbicides more than 3-4 times during the season limits the feasibility of the program. Generally, weed populations should decrease as one goes into the

program especially if fertilizer is banded below the seed.

This field trial will continue to evaluate the effectiveness of the no-till program. More effective herbicides will aid in the development of this concept.

### Extension trials continued...

planting. The rates of nitrogen applied were 0, 5, 25, 45 and 65 pounds per acre on the wheat-fallow sites, and 0, 5, 35, 65 and 95 pounds per acre on the annual cropped spring barley. The optimum rates of nitrogen were: Ron Becket winter wheat - 25 lbs. N-acre; Ken Smouse winter wheat 45 lbs. N-acre; Rudy Bergstrom spring barley - 35 lbs. N-acre.

There was not a significant yield response to phosphorous or

sulfur on the Morrow County sites.

This project will continue for two more years. More treatments have been added to the experiments so we can also evaluate;

- nitrogen applied in the summer fallow compared with split N applications;
- spring topdressing nitrogen;
- chloride application;
- a new TVA slow release urea phosphate.

## BPA Report continued...

and their storage capacity, crusting, crops rate of water use and sensitivity to stress, topography, climate - just to name a few.

With the increases in the energy component of production costs, we feel that the information the program provides will be of significant value.

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