

1982 Morrow Soil & Water Conservation District Annual Report

Methods explored for increased production Morrow SWCD receives \$1,600



A Bettinson no-till drill seeding into 70 bushel wet and matted straw.

The Morrow SWCD received a grant of \$1,600 in March of 1982 to evaluate the feasibility of no-till annual cropping. A two year project was proposed to determine: (1) if a no-till program would significantly reduce soil erosion; (2) if the program is a practical management alternative in the shallow soil, high precipitation dryland farming area; (3) if this program will provide an adequate economic return to growers; and (4) fertilizer requirements.

Two sites were selected on the shallow Morrow silt loam soils with slopes up to 25 percent. Spring barley was seeded using a Bettinson no-till drill. The drill

had the capability of banding dry fertilizer with the seed. A contact herbicide was used for weed control.

First year results of this project are summarized as follows:

(1) The application of contact herbicides should be applied before planting. The action of the double disc openers on the drill caused plant stress and covered the foliage of some plants which reduced the effectiveness of the herbicide.

(2) To no-till, the ground should be relatively free of heavy infestations of weeds.

(3) Heavy matted and wet straw caused problems placing the seed in contact with the soil using double disc openers.

(4) In wet soils (above 100 percent of field capacity), slots made by the openers remained opened causing an undesirable seed condition.

(5) Standing stubble was much more desirable for no-till seeding.

(6) No-till appears to be very effective in reducing erosion problems and water runoff.

(7) Placement, rate, and type of fertilizer is extremely important. Generally, rates of 60 lb. of Nitrogen with phosphorous and sulphur are necessary.

(8) No-till planting will allow growers to plant earlier in the

spring compared to conventional tillage.

(9) Yields from annual cropping can be equivalent to yields with a wheat-fallow rotation.

The second year plan will focus on evaluating several fall-seeded no-till fields and the effectiveness of the USDA no-till opener to be used on a number of fields this spring.

Noxious weeds reduce farm income

By BOB COSTA
OSU Extension Agent
Morrow County



Yellow Starthistle

Noxious weeds can seriously reduce the income of farmers and ranchers. In response to the rapid spread of some problem weeds, Morrow County was declared a weed control district in March 1982.

The Weed Control District came about through the efforts of the Morrow County Resource Committee. The Morrow County SWCD serves as the "weed board" and administers the noxious weed control program.

Weeds declared as "noxious weeds" in the district are Skeleton weed, Yellowstar thistle, and Tansy ragwort. These weeds are targeted for eradication within the district. At this time, only Yellowstar thistle is established in the county, and a cost-share program to control this weed is underway.

A primary purpose of the weed control program is education. The SWCD prepared and published a one page poster with color pictures of seven problem weeds. Also planned is a newsletter outlining control measures for several problem weeds.

Landowners and operators should keep their eyes open for noxious weeds and report any infestations to the SWCD board or the Extension agent.

Nitrogen and phosphorous fertilizers tried on no-till winter wheat

By BOB COSTA
OSU Extension Agent,
Morrow County

Annual cropping is an option in Morrow County. Many wheat fields in the higher elevation areas of the county have less than three feet of soil depth and receive 12 inches or more of annual precipitation. These soils often fill with moisture after the first winter and a fallow period adds little additional moisture for crop use. When fallowed, these fields are often subject to severe erosion.

Recropped winter and spring grains in Morrow County have given mixed results. Annual cropping has generally been accomplished with conventional tillage and fertilizer application. Past experiences indicated the need for more information on the fertilizer requirements for annual cropping.

In the fall of 1981, a fertilizer trial was established at the Frank Anderson farm on a Morrow silt loam soil. On October 22, 'Stephens' wheat was planted with a John Deere HZ "split packer" into undisturbed wheat stubble. Dry ammonium nitrate, nitrogen fertilizer was surface applied along the planted rows on November 20. The nitrogen fertilizer

was placed along the bottom of the furrows to reduce contact with surface residue and to get the nitrogen close to the plant roots. Dry phosphorus fertilizer (25 lbs. P₂O₅ per acre) with the seed in the drill box and placed with the seed in the soil. Sulfur fertilizer was surface applied in the form of gypsum on March 5.

The rainfall for the 1981-82 crop year was close to 13 inches at the Anderson farm. Spring growing conditions were generally favorable with some timely rains.

The yields were as follows:

Nitrogen With (lbs.-ac.)	Average Yield (bushels per acre)	
	No Phos-phorus	Phos-phorus
0	9.5	8.2
50	32.0	30.9
100	43.6	40.4

The yields from the annual cropped, no-till wheat was comparable to the yields from surrounding fields under a wheat-fallow rotation. The average 1982 yield of 'Stephens' wheat on the nearby fallowed fields was 38 bushels per acre.

Yields increased as nitrogen rates increased from 0 to 100 pounds of N per acre in the fertilizer trial. The application of

phosphorus fertilizer with the seed at planting time increased the average yield at all rates of nitrogen fertilizer. No yield response to sulfur fertilizer was evident at the site.

Most of the fertilizer materials were surface applied in the experiment. Surface application of nitrogen fertilizers can be effective but is not recommended for no-till grains. Other researchers have shown that the placement of fertilizer materials in a band 1½ to 2 inches below the seed at planting time is the most efficient method of application.

Current recommendations for annual cropped small grains in Morrow County are:

1) apply 1.5 to 1.7 times the rate of nitrogen fertilizer normally used in your fallow rotation.
2) Apply 15 to 20 pounds of phosphate (P₂O₅) per acre.
3) apply 10 to 15 pounds of sulfur per acre.

4) Apply the fertilizer materials in a band 1½ to 2 inches below or below and to the side of the seed. Some of the fertilizer material can be placed right with the seed, but the amount placed

in contact with the seed should be limited. Some fertilizer materials can damage seedlings. Consult with the Extension agent or your fertilizer fieldmen for suitable forms of fertilizer materials. No-till drills allowing band placement of liquid fertilizer materials are being built in Morrow County.

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Annual Meeting
Tuesday, March 1, 1983
7:30 p.m.
Lexington Grange Hall

Public cordially invited to meet the directors of the Morrow SWCD and participate in our program.

11th Annual Meeting Morrow SWCD
Tuesday March 1, 7:30 p.m.
Lexington Grange Hall

Program
Featured Speaker Paul Rasmussen

Soil Scientists with the Agricultural Research Service (ARS) in Pendleton.

Slide program on fertilization requirements and placement of fertilizer on conventional, annual and no-till cropping systems.

Coffee and donuts will be served