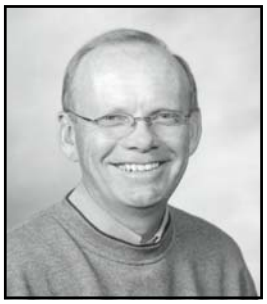
AGRONOMY NEWS

Grasslands for Tomorrow

Volume 8, Issue 1 **February 2008**



Blake Vander Vorst
Regional Agronomist
Ducks Unlimited, Inc.
2525 River Road
Bismarck, ND 58503-9011
701-355-3533
Cell: 701-391-2251

Roger Knapp,
DU Field Agronomist
Wild Rice Soil
Conservation Dist.
8991 Hwy 32 North
Forman, ND 58032-9702
701-724-3247 Ext. 115
Cell: 701-678-4311

CCSP Report
Kelly Cooper, Farm Manager

The Conservation Cropping Systems Project (CCSP) was initiated in the fall of 2001, on a 160-acre tract of farm land, located two miles south of Forman, ND along highway 32. The soils are a silty clay loam. The geographic location was selected because of the heavy soils and greater rainfall compared to other no-till crop rotations study locations. A 14-member Board of Directors composed of local producers from Northeastern South Dakota and Southeastern North Dakota advises the CCSP staff. Professionals from ag research, natural resources conservation agencies and non-profit interest groups, including DU, assist the Board with technical advice and support.

Diverse crops are grown in no-till rotations that range from 2 to 6 years on 176 plots, 60-foot by 200-foot, and several "bulk" areas ranging in size from less than ½ acre to over 8 acres. Rotations are studied to compare their effect on water and wind erosion, soil tilth, soil moisture retention, organic matter changes, infiltration and most importantly, profitability. Each crop in each rotation is grown each year and replicated three times. The goal is for this project to go on indefinitely.

The CCSP farm has brought the realization that no-till farming promotes wildlife. The winter wheat plots seem to be alive with nesting ducks in early spring. Each winter wheat plot will have 1 to 2 duck nests. The pheasant population is to the point that they do significant damage to emerging corn. Greater Canada geese consistently nest around the farm and there are the ever present jack rabbits keeping us company.

Ideas are exchanged anytime a group of farmers get together and the CCSP board is no exception. These individuals are also true conservationists with a great concern for keeping the land and the all the good things associated with a healthy environment around for the future generations to enjoy.

In October of 2006 a radio commentary on the ag markets was analyzing the recent increase in the price of corn. They said there were no fundamental reasons for the price increase of corn save the influx of cash from the money funds. That was over 14 months ago and now we know the price increase has far more to do with demand than anybody realized. The world is demanding energy, be that in a form to power a car, heat a home, to turn the wheels of industry, or to provide food. Agriculture produces and transforms energy. What you produce will matter, but the efficiency of an operation is what will become more important.

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NDSU and SDSU Cooperative Ext. Service

Figure 1. CCSP average crop yields for 2007

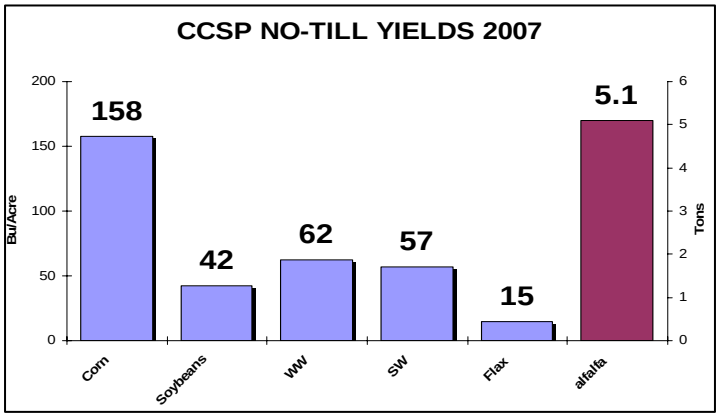


Figure 2. CCSP 4-year average crop yields

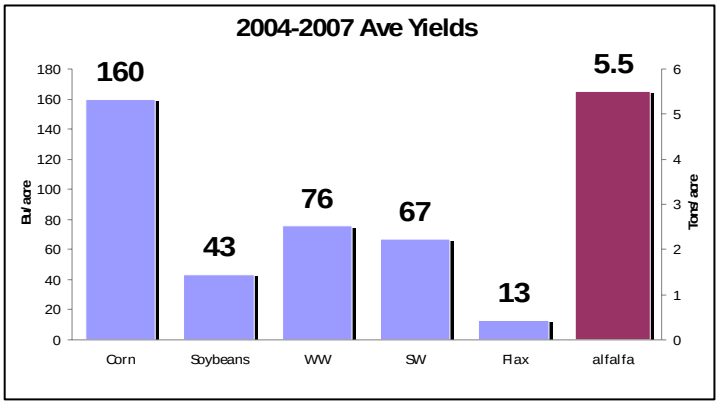
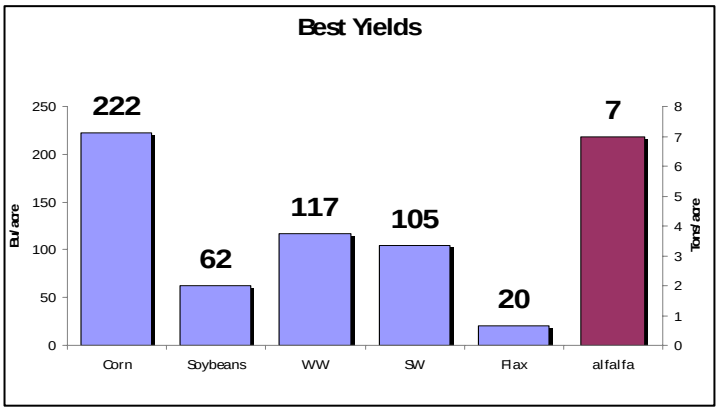


Figure 3. CCSP highest individual crop yield recorded



The first 3 figures, (Fig. 1, 2 & 3) show the individual crop yield averages for 2007, the 2004 through 2007 average yield, and the best yield recorded for a given crop.

The main economic driving force for crop selection before the CCSP project began was the USDA farm program. Those crops which the government would pay the most benefits for were the crops being planted. The value of production was actually second to farm program payments in some cases. Then came 2007 and it looked as if corn would be the only crop planted. More corn on corn will definitely be planted but the CCSP project has experienced lower yield when corn follows corn in the rotation. Many farmers have also experienced substantially lower yield when corn is planted on corn.

Spring wheat, winter wheat and soybean are at historic prices. With crops being priced by market forces, not government programs, a new set of rules have emerged. The market is competing to buy acres. The cost of production of any given crop this coming year could be considerably higher, but let's look at what has been learned at the CCSP.

Strip tilling soybean ground in the fall of 2006 yielded 7 more bushels of corn in 2007. Having alfalfa in the rotation yielded the highest corn and soybean yields in 2007, 191 (figure 4) and 45 bu/a (not shown) respectively. Strip tilling wheat stubble results in better or comparable yields to planting corn on soybean ground in 2007 (figure 4). The spring wheat planting date was as early as any conventional tillage farmer. The wheat yield has been better when the wheat can be planted early. The CCSP crop yields are equal to the surrounding conventional tillage farms. The CCSP no-till corn on corn is yielding less than when corn follows another crop (figure 4).

Figures 4, 5 and 6 show the differences that year to year climatic and soil conditions can have on the yield of corn following winter wheat when comparing strip-tilled verses non-strip-tilled winter wheat stubble. Corn yield following fall strip-tilled winter wheat stubble was greater than corn planted no-till in winter wheat stubble without strip till. The four year corn yield advantage for the fall strip-tilled winter wheat stubble is 12 bushels/acre (figure 6).

Figure 4. Previous crop effect on corn yield in 2007

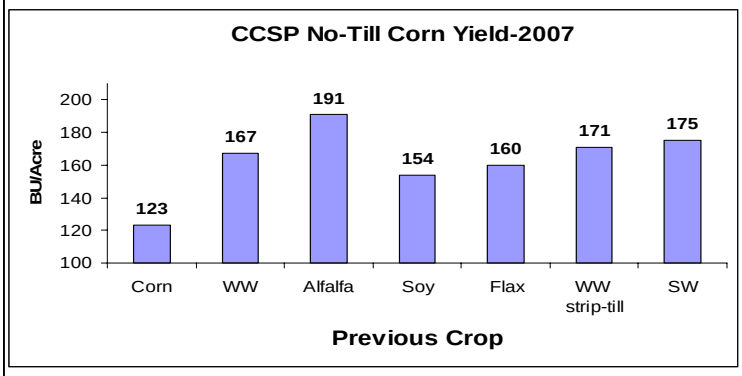


Figure 5. Effect of fall strip tillage in winter wheat stubble

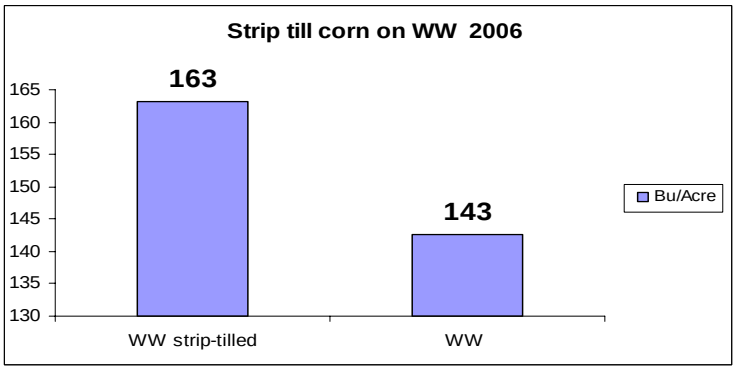
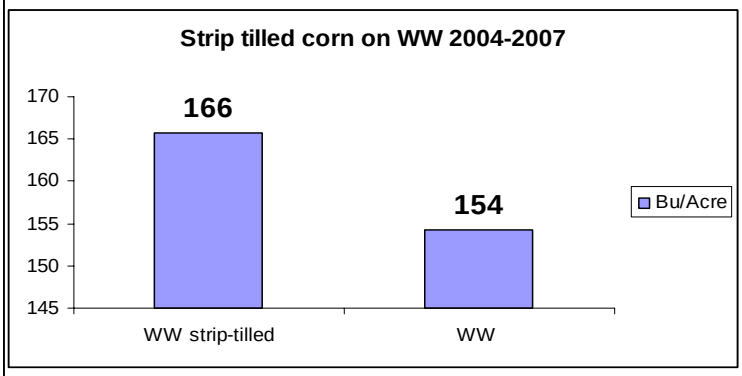


Figure 6. Effect of fall strip tillage in winter wheat stubble on corn yield from 2004-2007



A new trial established in 2007 includes a bulk area of switchgrass. There is a lot of discussion about the conversion of switchgrass to ethanol and this will help the area gain some experience with the crop. The previous "H" rotation is being converted to several other rotations that will include a continuous corn study, and a winter wheat following soybean rotation.

We also have an opportunity to evaluate fall seeded winter wheat which has the flexibility to be taken to harvest; or serve as a cover crop in front of corn seeded the following spring.

The corn on corn study will serve to illustrate if corn will do better after several years of being planted continuously. Continuous corn seeded no-till has not fared well in other continuous corn studies and that is why strip till has been included in the CCSP rotation studies.

The new corn-soybeans-winter wheat/cover crop rotation will evaluate growing winter wheat behind soybean. Our initial plans are to grow a soybean that will mature on average with soybeans grown locally. There are several winter wheat varieties available with good yield potential and excellent winter hardiness that we hope will work. Being able to plant winter wheat behind soybean would offer unique flexibility to many farmers that are dealing with excessive moisture. Advantages would include ability to avoid planting in muddy conditions in the spring, greater early season moisture uptake and higher winter wheat yields than spring wheat. A cover crop will be planted following winter wheat harvest to increase late season moisture utilization, to build organic matter and increase soil health.

Like any other farm, weeds are always a challenge. Foxtail barley, dandelion, pigweed and Canada thistle are the main concerns. Applying Roundup late in the fall and at higher rates following soybean harvest when the field is going to be planted to spring wheat is a management strategy that will be utilized to assist in the control of the perennial, biennial and winter annual weeds. Everest will be added to the winter wheat herbicide mix for foxtail barley suppression and control. The CCSP farm continues to battle volunteer Roundup Ready canola. Valor, 2,4-D and Roundup were applied to recently harvested corn stalks in the fall of 2007. The treatment is targeted at the dandelion and volunteer canola to plots that will be planted to soybean.

The main focus of the CCSP farm is education and to promote viable conservation farming practices. The CCSP field day is the 2nd Thursday in July. **The 2008 field day is July 10.** The largest field day attendance occurred at the last field day held in 2007. The CCSP also conducted two mini educational tours for the NRCS and for an ag class from the North Dakota State College of Science at Wahpeton, ND.

Visitors are welcome to tour the CCSP farm as an individual or a group. Please contact the staff at the Wild Rice Soil Conservation District office (701-724-3247, Ext. 3) if you are interested in a tour. The CCSP project serves to demonstrate the ideas of the farmer board members in a real world setting. Some practices fail, but sometimes helping a farmer steer clear of these practices is as valuable as those that are successful. More information on the CCSP can be found at ***www.notillfarm.org*.**

The CCSP board members are from six counties:

Mark Wyum, Chairman, Sargent Co.-ND
Joe Breker, SCD Representative, Sargent Co.-ND
Gerry Bosse, Sargent Co.-ND
Kent Carpenter, SCD Representative, Sargent-ND
Doug Rotenberger, Ransom Co.-ND
Pat Freeberg, Ransom Co.-ND
Jesse Frolek, Richland Co.-ND
Jennifer Klostreich, Richland Co. - ND
David Kinzler, Dickey Co.-ND
Marty Visto, Dickey Co.-ND
John Rabenberg, Marshall Co.-SD
Joel Erickson, Marshall Co.-SD
Ron Simonson, Day Co.-SD
Kevin Anderson, Day Co.-SD

CCSP Financial Partners

ND Community Foundation	*Farmers Union Insurance*	*Farmers Union Enterprises*	*Farm Credit Services - SD*
Northern Plains Ag-Cayuga	*Sargent Co. Farm Bureau*	*Sargent Co. Pheasants Forever*	*Sargent Co. Farmers Union*
Cenex	*Frank Farrar*	*Arthur Companies*	*ND Corn Utilization*
Crete Grain	*Monsanto*	*RDO Equipment*	*Syngenta*
Dakota Valley Electric	*James Valley Grain*	*Ransom Co. SCD*	*Titan Machinery*
Dickey Co. CIA	*James Valley SCD*	*Richland Co. SCD*	*Wensman Seed*
Ducks Unlimited	*Marshall Co. CD*	*Sargent Co. Bank*	*Wolf River Seeds*

Product Partners:

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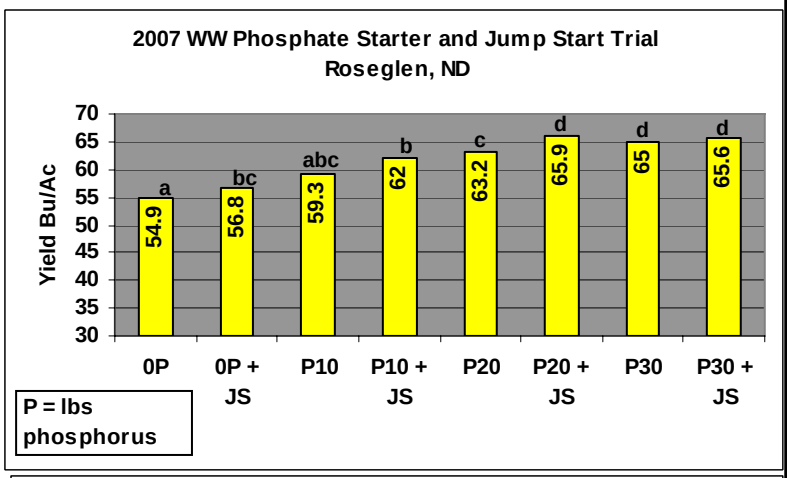
Amity Technology	*David Kinzler*	*Joe Breker*	*Syngenta*
Arysta Life Science	*DairyLand Seeds*	*K&S Soil*	*Simplot*
Bayer CropScience	*Dennis Fleihs*	*Kent Carpenter*	*Titan Machinery*
Bill Smith	*1st National Bank-Milnor*	*Marty Visto*	*Valent*
Brampton Farm Service	*Gerry Bosse*	*Wally Marti*	*Walt Albus*
Cenex	*Hanson Brothers*	*Monsanto*	*Wheat Growers*
Crete Grain	*Neiber Auctioneering*	*Pioneer Hybrids*	
Dave and Julie Hassebroek	*Northern Plains Ag*	*RDO Equipment*	

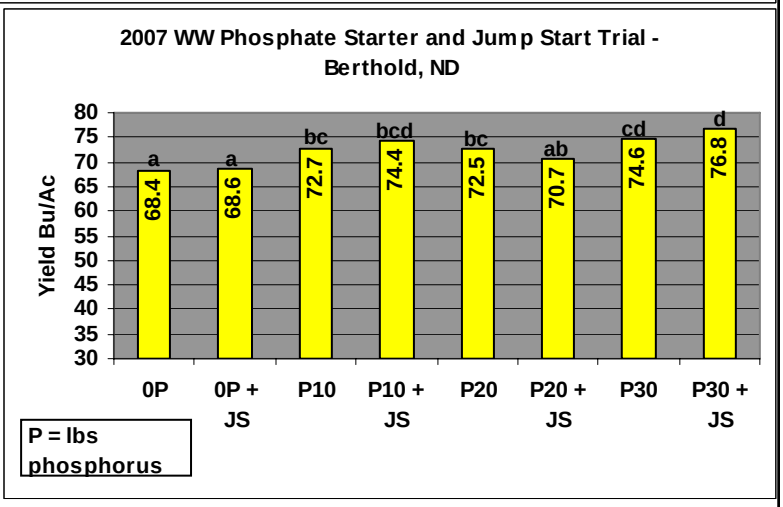
2007 Winter Wheat Starter Fertilizer Trial Results
NDSU North Central Research Extension Center/Novozymes Co./DU
Don & Edith Bauman and Alan & Terrie Lee, cooperators

Kent McKay & Lee Novak
NDSU North Central Research Extension Center

The objective of these trials was to evaluate the response of phosphate (P) starter fertilizer with and without Jump Start in winter wheat. Treatments were replicated six times. Phosphate treatments consisted of four starter rates of 0, 10, 20, and 30 pounds of actual P per acre placed with the seed, with and without Jump Start inoculated to the seed. 'Jerry' winter wheat was used at both locations. Roseglen was no-till planted September 21, 2006 and Berthold September 26, 2006 into previous spring wheat residue. The Olsen phosphorous test was 15ppm and 12 ppm for the Roseglen and Berthold sites, respectively. Plots were harvested July 21 and August 3, 2007 at Roseglen and Berthold, respectively. All plots received Prosaro fungicide at full heading to the early flower stage of winter wheat growth.

Bars with the same letter on top indicate that there is not a significant difference in yields at the LSD 5% level.





2008 Research Sites

The following are the winter wheat research locations and subject matter areas being studied by Ducks Unlimited, SDSU, NDSU, other partners and the Conservation Cropping Systems Project.

Andover, SD – 2.5 miles east on the south side of Highway 12 on the **Kevin Anderson** farm. BASF, DU and Horsch Anderson are the sponsors. Six varieties are seeded into soybean and spring wheat stubble. Several fungicide treatments will be applied to the winter wheat varieties in each crop sequence.

Forman, ND – The CCSP is one mile south on Highway 32 on the **Arlen Hanson** farm. The study consists of 10 no-till crop rotations on a heavy silty-clay soil in a higher rainfall environment. Crops include corn, soybean, winter wheat, spring wheat, flax and alfalfa. Fall strip-till is compared to no-till seeded corn in one of the comparisons. There is also a single disk verses a shank opener comparison for small grains and soybeans. A switchgrass area was added in 2007. The tour is July 10, 2008. The web site is **http://notillfarm.org**

Lisbon, ND – 7.5 miles south on Highway 32 at the **Randy Mairs** farm. Dr. Joel Ransom, Dr. Marcia McMullen and Scott Meyer are comparing foliar fungicide treated to untreated winter wheat and spring wheat varieties. An early maturity soybean trial is also in the planning stages for 2008**.** Bayer CropScience, BASF and seed companies are providing support for this site.

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Ducks Unlimited, Inc.
2525 River Road
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Ellendale, ND – NDSU Carrington Research Extension Center, Greg Endres, and DU are cooperating in a winter wheat trial 9.5 miles east of Ellendale on Highway 11 on the **Larry Anderson** farm. Each variety in each of the prior crops will receive 3 fungicide timing treatments. Syngenta Crop Protection is providing support. A trial containing twenty four winter wheat varieties was planted at the Ellendale site. Dr. David Franzen, NDSU, also has a trial comparing the effects of chloride fertilization and fungicides and their relative effects on disease on two winter wheat varieties.

NDSU North Central Research Extension Center: Kent McKay and Lee Novak, Bayer CropScience, and DU have established three winter wheat research trial sites at the following locations:

Berthold, ND – **Gary Neshem** farm in spring wheat stubble (from southeast corner of Berthold: 1 mile-southeast on south side of railroad tracks then approximately 1.5 miles south, west side)

- Two seed treatment trials
- Variety by fungicide trial with 12 varieties
- Variety by fungicide timing trial
- Jump Start seed inoculant trial with various levels of phosphate starter fertilizer
- EMD CropBioScience experimental growth regulator inoculant study

Underwood, ND – **Alan Ness** farm in canola stubble (2.5 miles west of the junction of Hwy 83 and Hwy 200 W)

- Variety by fungicide timing trial
- Nitrogen source trial
- Jump Start seed inoculant trial with various levels of phosphate starter fertilizer

Steven Heger farm in spring wheat stubble (2.5 miles west of the junction of Hwy 83 and Hwy 200 W)

- Variety by fungicide trial with 12 varieties
- Two seed treatment trials

Ipswich, SD - There will be a new research/demo location established for the 2008 season thank you to a BASF/DU/North Central Farmers Elevator/Pulse USA partnership. The site is located just west of Ipswich, SD on the north side of Highway 12 on the **Arnold and Steven Schurr** farm. The trials consist of a variety by fungicide trial with 24 winter wheat varieties. Each variety has 6 replications and 3 will be treated with fungicide and 3 will be untreated. There is also a winter wheat seed inoculant study coordinated by Steve Dvorak with Pulse USA.

Agronomy News
Editors: Blake Vander Vorst
Janell Rath

Phone: 701-355-3533
E-mail: bvandervorst@ducks.org