

The South Dakota No-Till/Pulse Newsletter

The Official Newsletter of The SD No-Till Association and The SD Pulse Growers, Inc.

PO Box 2, Pierre, South Dakota 57501 Ph. No. 224-5650/6357

Volume 2

June 2000

Tour Dates-2000

June 25→ 2:00 MDN Field pea and chickpea varieties. Wall, SD Exit 109, behind state highway shop. For further information call West River Ag Center @ 605-394-2236 or e-mail rickertsen.john@ces.sdstate.edu

June 29→ Dakota Lakes Research Farm. Tour the **west farm at 9:30am** Central Time. **Main farm** tour starts at **1:00pm**. For further information call 605-224-6357.

June 30→ 6:00pm MDT Oelrichs Crop Tour. Chickpea Varieties. Just south of Oelrichs, SD

July 6→ 3:00pm CDT Selby Crop Tour. Field Pea Varieties. Mark Stiegelmeier Farm. Travel 4 miles south of Selby on hiway 83 and 1 1/4 mi. west.

July 11→ 10:00am CDT Bison Crop Tour. Field Pea Varieties. Gary Wunder, 3 mi. east and 1 mile south of Bison.

For further information on the pea and chickpea variety trial tours please call West River Ag Center @ 605-394-2236 or e-mail rickertsen.john@ces.sdstate.edu

North Dakota Dry Pea and Lentil Tour- July 18 at 4:30pm at the North Central Research Center in Minot, ND. This years topics include fertility, diseases, weed control and new varieties. Call 701-857-7677 for more information.

Attention No-Tillers and Pulse Growers!

Jason Miller will be relocating to the USDA-NRCS Pierre Field Office. This change will be effective July 2, 2000. His new address, phone no. and e-mail is as follows;

USDA-NRCS
Pierre Field Office
316 South Coteau Street, Suite 103
Pierre, SD 57501
Phone: 605-224-1694 Ext. 3
Fax: 605-224-6689
Voice mail: 1-800-872-7502 mail box 7110
Email: jason.miller@sd.usda.gov

Jason's presence shall be missed at Dakota Lakes, but although his office is moving, his duties are to remain the same. **So don't hesitate to keep him busy with lots of phone calls and requests!!!**



Early Pea Seeders Reap The Rewards

Excerpted from Grainews/ April 2000

When it comes to seeding and spraying your pea crop, timing is everything, say some of Western Canada's top field pea producers. Agronomic trends gleaned from over 500 Western Canadian pea growers in 1999 indicates that early seeding results in consistently higher yields across all soil types. Likewise the best weed control window is early in the season-one to three weeks after emergence.

Of 519 participants in the 1999 Pea Masters Challenge program, those seeding their peas in the April 17-23 window had the highest yields-versus later seedlings up to the end of June.

Dr. Al Slinkard, from The University of Saskatchewan, explains that early seeding helps the pea crop weather mid-summer heat at the hardier pod stage versus the sensitive flowering stage. As always, however spring weather conditions will dictate how early a farmer can get on the land.

Weed control was another area where the program identified some key trends in peas, known to be poor early season competitors. Target application was one to three weeks after the pea crop emerged-in line with 1996-98 trials by Neil Harker the Ag Canada Research Center in Lacombe, AB, which also showed that early weed removal resulted in dramatically higher pea yields.

The Pea Masters Challenge program is sponsored by Cyanamid Crop Protection, to foster the exchange of information among pea growers across the Canadian prairies.

Market Outlook for Peas, Chickpeas and Lentils

By Ruth Beck

Current pea prices are historically low. The prices reached a peak in the spring of last year, but fell over the summer and never recovered this winter. The market for peas has been sliding sideways all winter and finally showed some upward movement the past couple of weeks. However, it is uncertain that this upward movement will continue. There appears to be ample supply of yellow and green peas in farmers' bins to meet current demand, there remains a glut of protein meal in the world market and Australia had a good pulse crop this past winter. Canadian farmers plan to seed more than 3 million acres of peas. This is a substantial increase from last year and would set a record. If this was to materialize with normal yields, the prices for the new crop year would be under some pressure to move down. The USA Dry Pea & Lentil Council predicted a 19% decrease in pulse acreage. They forecast that green pea acres would decline by 50% but estimated that yellow pea acres would increase by about 20%. All in all, although there are some negative factors playing out in the market, there continues to be some good reasons to be optimistic about peas. The pea market has matured and demand is no longer so much a seasonal thing, as a year round business.

The market outlook for chickpeas is bullish this spring. There is good demand coming from south Asia where the crop was below average because of drought conditions. The USA Dry Pea & Lentil Council indicated this spring that chickpea acres would increase by over 40%, from 16,200 acres in 1999 to 23,000 acres in 2000 in the Pacific Northwest. The North Dakota Dry Pea & Lentil Newsletter (May 2000) indicated that there could be as much as 20,000 acres of chickpeas in ND and Mt this year. This is a 50% increase from last year. Muslim countries import a substantial share of their pulse imports prior to the religious period of 'Ramadan' in November. This gives the USA and Canada an export advantage just after harvest, as their harvest is 2-3 months ahead of Australia's.

Lentil prices in the new crop year will largely depend on production from a few significant markets, such as Canada, Australia, USA, North Africa, Turkey, the Middle East, and South Asia. As of this spring, people in the industry are quite optimistic that exports and market prices will remain strong in the new crop year.

Information contained in this article has been obtained from the Alberta Agriculture Web Site, the US Dry Pea & Lentil Web Site and the ND Dry Pea & Lentil and Montana Pulse Growers Newsletter.

1999 Soybean Inoculant Trial

By Jason Miller, NRCS Agronomist; Paul Weeldreyer, Sully County, CES agent; and Dwayne Beck, Dakota Lakes Research Farm Manager.

A soybean inoculant trial was conducted in 1999 in Sully County with Jamie Lamb. The purpose of the trial was to evaluate the impact of inoculant types on soybean yields on first-year soybean ground. The following treatments were tested and evaluated:

1. No inoculant
2. Recommended rate of Rhizo-flo granular inoculant at 7 lbs./acre
3. One-half recommended rate of Rhizo-flo granular inoculant at 3.5 lbs./acre
4. Recommended rate of Cell-tec liquid inoculant at 4.2 oz/100 pounds of seed

The plots were planted in a randomized complete block design on May 20, 1999, at 173,600 seeds/acre. The variety was Asgrow – AG1901. No starter fertilizer was applied. The plots were planted with a flexicoil no-till air seeder equipped with Barton openers. The liquid inoculant was applied with flexicoil's on-the-go seed treater.

Soil test levels were 14 lbs/acre of total nitrate-nitrogen with 2 lbs/acre in the top 6 inches and 6 ppm of phosphorus.

Results

The plots received approximately 50% hail damage in September. The following are the results:

| Treatment | Yield (bu/acre) |
|--------------------|------------------------|
| Check | 6.8 |
| Full Rate Granular | 22.1 |
| Half Rate Granular | 20.3 |
| Liquid | 21.4 |

Discussion

Statistical analysis indicated no significant yield differences between the Full Rate Granular versus Half Rate Granular versus Liquid treatments; however, significant yield differences were indicated when all three of these treatments were compared to the check treatment.

The check plots showed definite signs of plant yellowing and stunting and had no nodules. The plants in the Full Rate Granular, Half Rate Granular, and Liquid treatments were darker green and taller than the check treatment. These three treatments also had adequate nodulation. The nodules in the Full Rate Granular and Half Rate Granular treatments were dispersed more, throughout the upper root system, as compared to those in the Liquid treatment, which were located, more so, in the immediate vicinity of the seed. The flexicoil on-the-go seed treater did an excellent job of inoculating the soybeans with the liquid Cell-tec; especially compared to conventional methods of inoculating soybeans. This may or may not explain the equal results of the liquid treatments compared to the granular treatments.

Other inoculant studies for 2000 will include: (1) chickpea inoculant study at Mike Arnoldy's farm – Lyman County (2) soybean inoculant studies at Karlens Family Farm – Lyman County, Leo Vojta's farm – Walworth County, and Dakota Lakes Research Farm.

Dormant Seeding Wheat

The idea behind dormant seeding wheat is to shift some workload away from the normal (early spring) seeding time period. This is important for those producers wishing to grow field peas, lentils, chickpeas, flax, or canola in central and

western SD since these crops, like spring wheat, have to be seeded early. Dormant seeding also has value for producers in central and eastern SD who often face wet soil conditions at the proper seeding time for spring wheat. For these producers, dormant seeding reduces the risk that a wet spring will delay planting and reduce yields. Attempting to seed winter wheat in the fall immediately after soybean or sunflower harvest produces inconsistent results and increases workload at an already busy time of the year. Inclusion of wheat in rotations will be a valuable tool for preventing or controlling resistant weeds, disease, and soybean cyst nematode problems in eastern SD.

Advantages

1. Workload spreading – allows seeding to be done at times other than the spring if your wanting to grow other cool season crops such as, field peas, lentils, flax, canola or chickpeas. It also allows for wheat to get back in the rotation for producers in eastern South Dakota – a) not planting winter wheat right behind soybean or sunflowers and b) it is already a busy time of the year with the remainder of corn harvest.
2. It allows the cool season crop whether it is spring wheat or canola to utilize ideal growing conditions in April and May.
3. It also helps crops avoid insects and diseases. Dormant seeded wheat, for example, head out sooner than spring seeded wheat (at least in our environment). Therefore, it is not as likely to be damaged by scab or orange wheat blossom midges.

Items to Consider

1. Only plant in fields that have been no tilled for a number of years –there needs to be residue. The residue layer insulates the seed from temperature fluctuations.
2. The ideal time would be to plant the crop right before soil freeze-up. In our environment, the mid December time frame has worked very well for us the last two years.
3. The jury is still out on canola. It appears that dormant seeding may work, but it may be necessary to use a seed coat to delay emergence until the threat of frost is past.
4. Dormant seed the crop, such as, wheat and canola with a low disturbance drill. Leave as much surface residue as possible to prevent the “falsing out” of the crop and/or soil crusting.
5. Treat wheat seed with a fungicide.
6. Seed at normal depth. Planting too shallow exposes the seed to temperature fluctuations.
7. Seed wheat and canola at about the same rate used in spring plantings. At Pierre we are planting spring wheat at 130-135 lbs./acre and canola at 6-8 lbs./acre.
8. Use a dry starter fertilizer if possible. We use 50-70 lbs./acre of 10-50-0. Some producers have experienced problems with liquid fertilizer in the past. Although we have not substantiated this experimentally.
9. When dormant seeding wheat, choose spring wheat varieties – they grow more quickly in cool soils than most winter wheat varieties.
10. Be careful of dormant seeding when the air temperature is colder than the soil temperature and the soil surface has adequate to above adequate moisture. Disk openers will freeze-up from the small amount of soil buildup between the disk and seed boot in a short period of time (i.e. filling the drill with more seed or fertilizer depending on the air temperature).

Seeded Dormant Crops Status for 2000 – Dakota Lakes Research Farm

Spring Wheat

This year's dormant seeded spring wheat looks good at both farm locations. We did plant some spring seeded spring wheat March 6th as a comparison at the main station.

Past results have favored dormant seeded spring wheat by approximately 4 bushels/acre. Data from 1996, 1998, and

1999 crop years indicated dormant seeded spring wheat to yield 65.8 bushels/acre compared to late March and early April seeded spring wheat at 62.0 bushels/acre. All crop years had the spring wheat (both dormant seeded and spring seeded) into soybean and sunflower residue. Average yields for both dormant seeded and spring seeded spring wheat averaged better behind soybeans versus sunflowers by approximately 4-6 bushel/acre.

Canola

This is the first year that we have experimented with dormant seeding canola and also with the poly coated canola.

We dormant seeded canola (coated versus non-coated) into stripped wheat stubble on three different dates in randomized and replicated plots at 6 lbs./acre without starter fertilizer at the main station. The seeding dates were November 22, 1999; December 2, 1999; and December 13, 1999. It is still a little too early to evaluate the treatments in this study. This study was not reseeded this spring.

However, the rest of the canola at the main station and the west river site was reseeded due to cold temperatures on March 28th and April 6th of 13.4 and 12.0 degrees respectively. The majority of the canola in the heavy, stripped wheat stubble was not emerged and therefore protected from the cold temperatures.

How Can We Stop Wind Erosion?

By Jason Miller, NRCS Agronomist, and Dwayne Beck, Dakota Lakes Research Farm Manager.

Again this year, most of South Dakota experienced its fair share of wind erosion during March and April. As you all know, wind erosion causes soil degradation, which results in decreased crop yields. Wind erosion also causes off-site problems such as buried fences, road ditches where it can impact water quality and even car accidents caused by reduced visibility. According to the 1997 National Resources Inventory (NRI), an estimated 13,743,200 tons of soil is lost each year due to wind erosion alone on 1,792,100 acres in South Dakota. Therefore, how can this type of erosion be stopped or at least minimized? Let's first look at the wind erosion process.

Wind Erosion Process

Wind erosion is similar to water erosion in some ways. Forces flowing over the soil surface cause both.

Field conditions conducive to soil erosion include:

1. Loose, dry, and finely granulated soil;
2. Smooth soil surface with little or no vegetation present;
3. Large field size
4. Sufficient wind velocity to move soil.

Winds that are considered to be erosive are those with velocities that reach 13 miles per hour at a height of one foot above the soil surface. The wind transports soil particles in three ways – saltation, suspension, and surface creep. However, due to limited space we will not discuss each of the transport processes.

The threshold wind velocity required to begin the erosion process is higher across surfaces protected by surface residue. The threshold velocity varies depending on many aspects including quantity of surface residue, orientation, and surface roughness. Surface residue is more effective in reducing wind erosion if the residue orientation is standing compared to lying flat. However, in **most** no-till situations, the orientation of residue is not as critical because large quantities of residue are present. In other systems when some full width tillage is used, surface residue is significantly reduced and upright orientation is changed to flat. This drastically reduces effectiveness. The threshold wind velocity required to begin the erosion process is higher across surfaces roughened by tillage operations.

With low residue crops, residue orientation and row orientation become more important. Residue should be left standing and rows oriented perpendicular to the prevailing wind direction in areas where the forces of wind can cause serious soil erosion or severe crop damage.

Now, back to the original question of how can wind erosion be controlled? Conservation tillage should be considered the “foundation” for controlling wind erosion. Properly designed no-till systems will significantly reduce and/or eliminate wind erosion without the need for additional conservation practices. Other conservation practices that reduce wind erosion include field windbreaks, herbaceous wind barriers, and cross wind trap strips. However, when a producer elects only to install one of these “other” conservation practices and not in conjunction with conservation tillage he/she is only treating the *symptom* (which is wind erosion) and not addressing the *problem* (which is tillage).

The majority of the wind erosion that annually occurs in South Dakota takes place on conventionally tilled cropland. However, this last spring we saw wind erosion occur on cropland fields which had a spring cereal no-tilled into sunflower stalks. These situations occurred for one or both of the following reasons:

1. In many cases, sunflowers were planted in 1999 via conventional tillage and then spring wheat direct seeded into the sunflower residue. This was perceived to be no-till, but yet wasn't a true no-till system.
2. A few long-term no-till fields blew that were planted to a spring cereal into sunflower residue using a JD750/1560/1850/1860 drill. This occurred due to the opener gauge wheel flattening the residue and pulverizing the soil surface. This problem is real and is of great concern to us. We have attempted to minimize this problem by swapping the front right and left openers on our JD750 in 1993 and rearranging it into a 10-inch X 5-inch paired-row pattern. We now only powder a 5-inch band between the openers since they push to the middle. Now the 10-inch band between the twin rows is left with undisturbed standing (or at least attached) residue. This assumes the residue was standing before seeding began. In the near future, we are going to attempt to use a 2-inch wide gauge wheel versus the 4-inch wide gauge wheel on the openers.

Additional “areas” that we will be examining for reducing wind erosion include:

1. Planting cover crops the same time as sunflowers with or without poly coating technology.
2. Implement rotation strategies and harvest techniques that promote and retain residue cover such as (a) differences in corn hybrids (b) grain sorghum versus corn (c) crop pushers and stripper headers for canola (d) stripper heads in the wheat component.

With the critical wind erosion period coming to an end, keep in mind that the first step in preventing next year's wind erosion is residue management. Residue management starts with the combine. Adequately spreading straw and chaff is the first step in implementing a successful conservation tillage system.

Observations

Fields which had wheat stubble harvested with a stripper header (wheat, corn, sunflowers, wheat sequence) retained more residue and had fewer problems. Narrow rows were an advantage.

Miscellaneous Notes

Monsanto will provide the South Dakota No-Till Association with \$4,560.00 over the next two years for web page updating and storage costs.

The South Dakota Pulse Growers, Inc.

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Ascochyta in Chickpeas

Hopefully by planting clean seed and using crop rotation we will not see a lot of Ascochyta here in South Dakota. Ascochyta blight may attack lentils, field peas, and chickpeas. However the pathogen which causes these diseases is caused by different species of the fungus, Ascochyta, in each of these crops. The pathogen will therefore not cross over from one of these crops to another. **Scouting fields** is a good way to spot early symptoms of this disease. Ascochyta lesions, or spots, develop on leaves and pods, and when the disease becomes advanced the lesions may be found on stems. The lesions are roughly circular, tan in color and are marked by brownish to black pepper specks. The pepper specks in the lesion are the fruiting structures of the fungus. During periods of rain or heavy dews the fields should be scouted more frequently. During field evaluations pay particular attention to low areas and areas with heavier canopies since these areas create environmental conditions more favorable for Ascochyta blight. If the presence of Ascochyta is suspected, verification should be made through SDSU's disease diagnostic laboratory. This can not only reduce the potential for applying unnecessary pesticides it can help extension personnel to alert other producers in the region that the disease is present. Although there are no chemical controls labeled to control Ascochyta blight in peas, lentils and chickpeas in South Dakota, Zeneca is in the process of changing the labels for Bravo. The new labels are not out yet, but it could be possible to get a 'special local needs' label for South Dakota for this years' crop. For further information please call Dr. M. Draper, Extension Plant Pathologist at SDSU; (605) 688-5157, e-mail draperm@ur.sdstate.edu

Label Update

Leon Wrage, Extension Agronomist-Weeds

Basagran- Peas. New supplemental label provides for Basagran at 2 pt/A on succulent peas. Canada thistle is the target weed. A second application can be made 7 to 10 days later. Peas should have 3 pairs of leaves. Do not add COC. The preharvest interval has been reduced to 10 days. *From Field Facts April 2000*

The South Dakota Pulse Growers, Inc. would like to take this opportunity to thank **Monsanto** and **BASF** for supporting us by purchasing corporate memberships.

The tangible gains made by supporting The South Dakota Pulse Growers, Inc. may be difficult to measure and justify in these tighter economic times. However, if any of you have any doubts, one needs only to look at the number of variety trials across South Dakota, the list of tours, the caliber and knowledge of the extension and research people available in South Dakota to help producers and perhaps most of all, the quality of product produced in this state, to realize the inroads that this very small organization has made in the seven years since its beginning! It is primarily a small and devoted group of producers who have kept this organization going and can take credit for these accomplishments.

The South Dakota No-Till Association Board of Directors:

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