The South Dakota No-Till/Pulse Newsletter

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

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Volume 1 **November 1999**

Upcoming Events

Dec. 10 - No-Till Workshop, Lake Andes, South Dakota, 9:00AM.

Dec. 14 - SD Pulse Growers meet at 8:30PM at Horizons Conference at the Ramkota Inn in Pierre for a short meeting.

Dec. 16 - No-Till in the 21st Century, Davison County 4-H Grounds, Mitchell, South Dakota, 8:30AM.

No-Till Systems Technology Transfer Project will be holding two seminars in early 2000.
January 21, 2000 - 1:00PM to 4:00PM.

Feb. 8, 2000 - SD Pulse Growers Annual Seminar will be held from 4:00PM to 6:00PM.

Speaker and registration information for these events is included at other locations in this newsletter.

Attention Pulse Growers!!

You should each be receiving the NDDP&LA's newsletter. At the 1999 annual meeting of the SD Pulse Growers we decided to pass this newsletter on to members for a small fee. Please let me know if you like receiving it!

This year I have set the **Annual Pulse Workshop** up a little differently. We have heard wonderful things about Perry Miller, the Cropping Systems Specialist from Montana State University. He has a lot of expertise and knowledge in growing pulse crops. However due to the small size of our organization we would not be able to afford to bring him here to speak to us personally. Therefore, in conjunction with The No-Till Technology Transfer Project and Jason Miller we have set up the workshop, as always, on the same day as the DLRS's Annual Meeting. Dr. Miller will be able to speak to us via satellite from Montana. Those of you who will be in Pierre at the DLRS's Annual Meeting will be able to watch the workshop there and interact with the speakers. Those of you who would like to watch from closer to home can visit the Rural Development Telecommunications Network site nearest you and participate fully in the workshop. After the workshop, as usual, we will hold the **SD Pulse Growers Annual Meeting.**
The line up of speakers for this meeting is excellent and Perry Miller has a wealth of information to offer. So I hope that each of you will mark your calendar and take in this seminar! SEE YOU THERE!! Ruth

No-Till Workshops In 2000

The No-Till Systems Technology Transfer Project will be attempting to disseminate a portion of no-till systems information differently as compared as in the past. To date, one workshop has been held and two more workshops have been planned and will be broadcast via the South Dakota Rural Development Telecommunications Network (RDTN). This means that most of you do not have to travel long distances if at all to participate in these workshops. **The following are the workshop dates and topics (please mark these on your calendars):**

1. **Friday, January 21, 2000, starting at 1:00 PM CST and concluding at 4:00 PM CST. Topics include: (A)** Nutrient Management in No-Till Systems and NRCS Nutrient Management Standards by Jim Gerwing, SDSU extension specialist and Jeff Hemenway, NRCS agronomist. Jim and Jeff will present information from 1:00 – 2:15 PM CST with 15 minutes available for Q&A. **BREAK at 2:30 – 2:40 PM** and then **(B)** Cover Crop Strategies in No-Till Systems by Dwayne Beck and producer panel. Dwayne and the producer panel will discuss strategies from 2:40 – 3:45 PM CST with 15 minutes available for Q&A. **Most satellite locations will be available for this workshop. I will know after December 15th which sites are not available. Please RSVP Jason Miller by January 20, 2000, for your nearest available satellite location.**
2. **The No-Till Systems Technology Transfer Project in conjunction with SD Pulse Growers Association have scheduled a workshop for February 8, 2000, starting at 4:00 PM CST and concluding at 6:00 PM CST. The topics are Pulse Crops in No-Till Systems, Field Pea Feeding Trial Results, and Field Pea and Chick Pea Variety Trial Results, along with field pea and chick pea seeding rate trials and impacts of starter fertilizer on field pea and chick pea germination.** Speakers will be: (1) Perry Miller, Montana State University, cropping systems specialist, (2) Vern Anderson, Carrington Research Center, and (3) John Rickertsen, SDSU research associate. More information will be sent at a later date confirming this workshop. **Please RSVP Jason Miller by February 7, 2000, for your nearest available satellite location.**

If you are watching the workshops from your own TV (available in certain locations) and want to ask a presenter a question please call 1-800-567-8320.

If you plan on participating in any of these workshops, you must contact Jason Miller either via phone, voice mail or e-mail at the addresses below to assure that a site coordinator is present and/or your site receives the transmission. Otherwise, you run the risk of not receiving the broadcast or the satellite location (such as in a high school) is not operational.

Certified Crop Advisor Continuing Education Units (CEU) will be applied for each of the workshops. Instructions on how to receive credit for the CEUs will be broadcasted throughout each workshop.

Please feel free to give Jason Miller a call at 605-224-6357 or voice mail me at 1-800-872-7502 mail box 7110 if you have any questions and/or to RSVP. Or he can be reached via e-mail at jmiller.daklakes@abs.sdstate.edu .

AGRONOMY NOTES by James Bauder, Montana State University

Legume Crop Residue Effects on Soil Microbial Biomass and Diversity

By Newton Z. Lupwayi, Wendell A. Rice and George W. Clayton
Agriculture and Agri-food Canada, Beaverlodge and Lacombe, Alberta

Ecologically sustainable systems - just what are they and how do we get to them? These are systems, which include reduced tillage, crop rotation, and addition of organic materials Research shows that reduced tillage and inclusion of legumes in crop rotations increase soil microbial biomass and diversity (Lupwayi, et al. 1998 and 1999). But, where is the proof?

Recently I came across a summary of a research report which I thought I would share with you, addressing just this issue - ecologically sustainable systems.

Residues of wheat, barley, canola, field peas and red clover were incorporated into potted soils at equivalent rates of 5 tons per acre (approximately) in the greenhouse. Soil samples were collected 0, 1, 2, 4 and 6 weeks after treatment and at wheat harvest (flag-leaf stage, 7 weeks after planting). The soil samples were analyzed for soil microbial biomass and bacterial diversity.

The unfertilized and fertilized controls, in which crop residues were not incorporated, had lower soil microbial biomass than treatments that received crop residues. Peas and clover residues resulted in higher microbial biomass than wheat, barley and canola residues. The effects of crop residues on soil microbial diversity were similar to the effects on microbial biomass described above.

These results show that fertilizer alone (without a carbon source) does not stimulate microbial growth. However, it has an indirect effect of increasing crop growth, resulting in high yields of grain and straw, which, when incorporated into the soil, will stimulate microbial growth. The high N content of legume residues is probably more favorable for microbial growth than the low N content in cereal or canola residues. Soil microorganisms perform many agriculturally important functions. These functions include decomposition and recycling of nutrients from dead organic material, nitrogen fixation, maintenance of soil structure and detoxification of agrochemicals. Therefore, crop rotations that include legume crops will improve the biological quality of the soil more than cereal-only rotations or cereal-canola rotations.

Microbial biomass was reported as a percentage of the highest producing treatment, which was clover residue. The following set of data demonstrates that the microbial biomass produced in the control treatment (no fertilizer additions) and the fertilized treatment was only 50-55% of the biomass produced in the clover treatment. The cereal crop residues resulted in intermediate amounts of microbial biomass.

Microbial Biomass
(% of clover treatment)

Control	275d	55%
Fertilizer	250d	50%
Wheat residue	380c	76%
Barley residue	350c	70%
Canola residue	375c	75%
Pea residue	435b	87%
Clover residue	500a	100%

The bottom line on this study was:

- Microbial biomass produced in the control or fertilized soil was only 50-55% of that produced in soil treated with clover residue.
- Clover and pea residue produced the greatest microbial diversity.
- Crops like wheat, barley, and canola produced lesser amounts of microbial diversity and microbial biomass than did the legume residues.

Pitfalls for Pea Growers

Excerpted from the September/October 1999 Issue of the Canola Guide

In order to continue farming, pea producers must do everything possible to minimize yield losses and to maximize net returns in their pea crop. Al Slinkard, a pulse crop specialist formerly with the Crop Development Center in Saskatoon outlines what he considers to be the top five mistakes that pea growers make:

1. **Inadequate broadleaf and grassy weed control -** Pea plants are very poor weed competitors. If they expect to get top yields, pea producers must mount an intensive weed control program that controls perennial weeds, broadleaf weeds and grassy weeds. Using a herbicide with extended control offers the added advantage of controlling weeds that tend to grow in multiple flushes.

2. **Spraying late -** Delaying weed control until 2 weeks after the pea plants emerge can result in serious yield loss. Delaying weed control until 3 weeks after the pea plants emerge is even worse. Spraying early means spraying early in the life cycle of the pea plant. Weeds start competing with the crop soon after the pea plants emerge. It's important that the pea crop be allowed to form a competitive ground cover or canopy, which requires about five weeks. If that doesn't happen or if weeds go uncontrolled during this five-week period, pea yields can be reduced by 50% or more.

3. **Failing to control perennial weeds -** Weeds such as quack grass and Canada thistle grow vigorously in peas, and dense weed stands can significantly reduce yield. Producers who have quack grass and Canada thistle should use a pre-harvest application of Roundup in the crop preceding peas. This will kill most of the quack grass and severely depress the Canada thistle for at least one year.

4. **Seeding late -** Many pea producers do not fully realize the importance of early seeding. Early spring seeding means seeding as soon as the soil temperature at seeding depth (about 2") reaches 5º C at 8:00 a.m. In some years and in some areas, that means seeding as early as April. But don't push things if the soil is still muddy. Compacted muddy soil can't supply the high oxygen requirement pea plants need during the first 24 hours of water uptake. Pea seedlings can tolerate frost of -4ºC, but an extended frost of -6º can kill the tops of the pea plant. A light frost will delay maturity a few days and reduce yield, but the damaged plants will still be higher yielding than those seeded after the frost. That's because the pea plant has vestigial nodes at or slightly below the soil surface. These nodes contain buds that are stimulated to grow once the terminal shoot has been damaged. High temperatures during flowering (above 28ºC) will cause the flowers to abort. Early seeding will result in good yields in most years since the hottest time of the year is usually around July 15. By that time, early seeded pea plants will be well podded.

5. **Failing to make the grade** - A premium is paid for food grade peas over feed peas. With yellow peas it is important to have a fully mature large seed that is not bleached, and has been stored at16%. Care should be taken to minimize splitting. Green peas are especially susceptible to bleaching in the last two weeks of ripening when frequent rains are followed by hot sunny days. This can be avoided by swathing or using a desiccant when the seed moisture concentration is about 30%, thresh at 18% to 20% and aerate the seed down to 16% or less.

Steer clear of these common pitfalls, suggests Slinkard, and you'll improve the chance of getting higher yields and growing a food grade product for a higher price.▪

No-Till Seminar

Lakeview Colony (School Building), Lake Andes, South Dakota

December 10, 1999. 9 AM – 7 PM (Registration begins at 8:30 AM)

Here's an example of the wide range of topics we'll be covering that are critical for successful no-tilling in our regions…

No-Till Systems
No-Till Rotations and Intensity - Diversity Planning
Soil Health
Soil - Carbon Management
Nutrient Management
Practical No-Till Experiences with Producer Panel and Speakers

List of speakers include:

Dr. Dwayne Beck, Dakota Lakes Research Farm, Pierre SD
Mr. Jim Kinsella, Ag Tec Center. In Cooperation with DuPont. Lexington, IL
Dr. John Bradley, Monsanto No-Till Specialist
Doug Luebke, SD No-Till Association
Ron Christensen, Monsanto Agronomic Sales Manager
Todd Landsman, Monsanto Agronomic Sales Manager
Mark Valencsin, Monsanto Retail Sales Manager
Dr. Joe Waters, Agronomist/Soil Scientist, Oakhurst, CA

Due to very limited seating, registration is $50 to cover breaks, meals, and speaker expenses.

Registration is due by December 3, 1999, to the SD No-Till Association, PO Box 2, Pierre, SD 57501.

Seminar Registration

Limited Seating!! Send to or for more information contact: South Dakota No-Till Association
PO Box 2
Pierre SD 57501
(605) 224-6357 or 6114 **Limited Seating!!**

Name(s): _____

Address: _____

City: _____State: _____

Zip: _____ Phone: _____

Seminar Dues: _____ @ $50/person $ _____

Total: $ _____

Please make checks payable to the South Dakota No-Till Association.

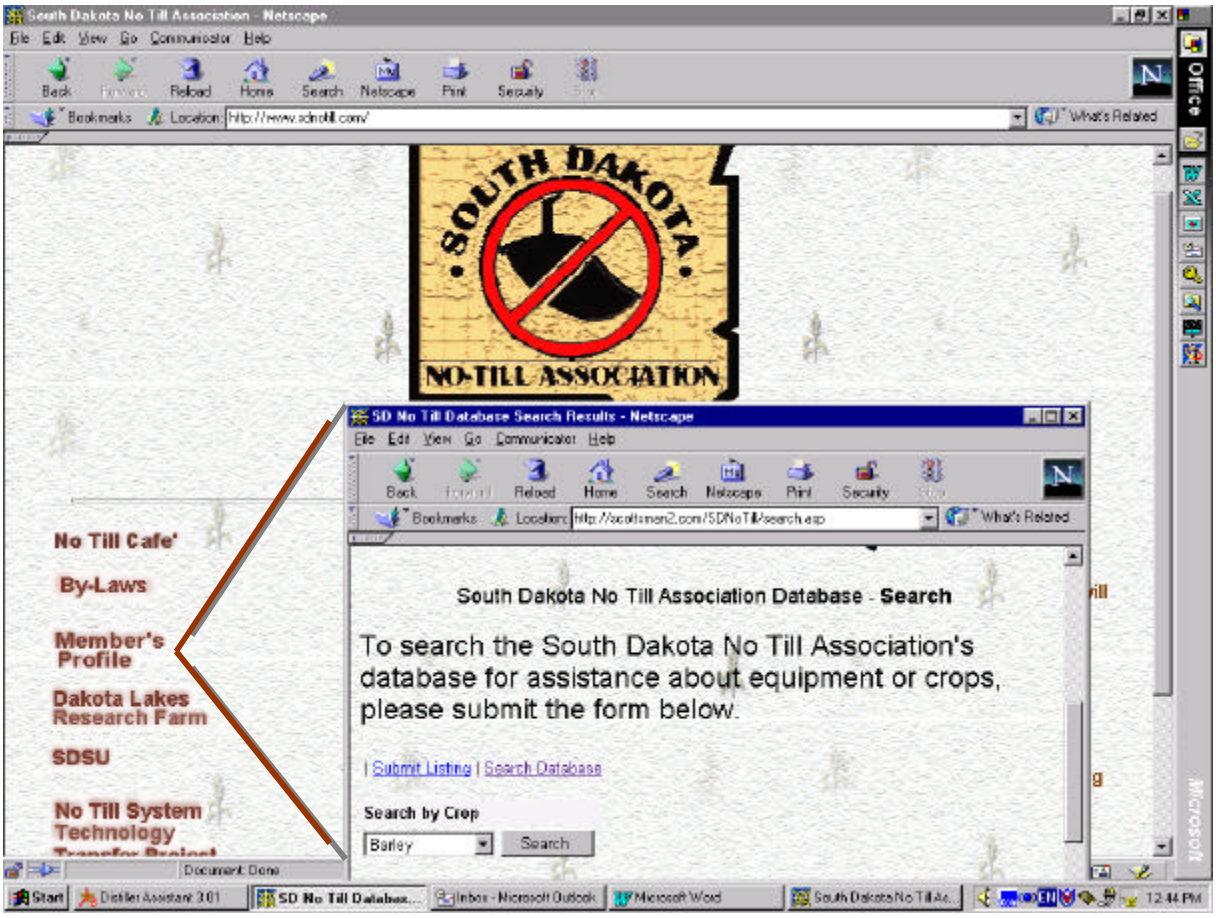
New “Online” South Dakota No-Till Association Farmer Database

The South Dakota No-Till Association www.sdnotill.com has been updated to include an option titled “Member’s Profile”. This new option is a database of the no-till association member’s no-till farm operation. Items in the database include: crops and crop rotation, drill type, planter type (including equipment modifications/accessories), fertilizer placement, and contact information such as phone number and/or e-mail address.

The database was developed to enhance a farmer-to-farmer network among no-till producers. The database can be searched for either a crop type or equipment and will produce a listing of those producers that grow that crop or have that particular piece of equipment. The idea would then be to contact that producer for more information.

The database is also designed to allow a person to edit/add his or her farm information online.

If you would like to add your farm to the database or update what is in the database please visit www.sdnotill.com and go to “Member’s Profile” on the main menu (see the illustration below). If you have questions or comments about the database please contact Jason Miller, Dakota Lakes Research Farm at (605) 224-6357 or voice mail at 1-800-872-7502 mail box 7110 or e-mail at jmiller.daklakes@abs.sdstate.edu .



No Tilling In The 21st Century

Davison County 4-H Fairgrounds, Mitchell, South Dakota

December 16, 1999. 9 AM – 4 PM (Registration begins at 8 AM)

Sponsored by: SD No-Till Association, Cooperative Extension Service, SD No-Till Systems Technology Transfer Project, Natural Resources Conservation Service, Monsanto, Davison County Soil Conservation District, and Lower James RC & D.

Topics and Presenters will be:

1. Advanced No-Till Techniques for the Tall Grass Prairie Region
   Dwayne Beck, Dakota Lakes Research Farm

2. Intensive Wheat Management Strategies
   Philip Needham, Opti-Crop Division Manager, Owensboro, Kentucky

3. The Terminator Gene and GMO's
   Harry Collins, Delta & Pine Land Co.

4. The Role of No-Till in Increasing Water and Nitrogen Use Efficiency - **Jerry Hatfield,** National Soil Tilth Lab Director, Ames, Iowa

5. Grain Market Outlook
   Alan May, SDSU Grain Marketing Specialist

6. Managing Disease Risk in a No-Till System
   Marty Draper, SDSU Extension Plant Pathologist

7. Getting the Most From Your N & P Dollars
   Jim Gerwing, SDSU Extension Soils Specialist

All topics will be presented twice throughout the day.

4:00 PM SD No-Till Association Annual Meeting

Conference Registration

Limited Seating!! Send to or for more information contact: Davison County Cooperative Extension Service
3200 W Havens St
Mitchell SD 57301-9003
(605) 995-8620 **Limited Seating!!**

Name: _____

Address: _____

City: _____ State: _____

Zip: _____ Phone: _____

Conference Dues: _____ @ $25 **(if Received By December 9, 1999)** $_____

Conference Dues: _____ @ $45 **(if Received After December 9, 1999)** $_____

SD No-Till Association Dues: _____ @ $20 $_____

Total: $ _____

Make checks payable to the Davison County Crop Improvement Association.

South Dakota No-Till Association Annual Meeting

DATE: December 16,1999
TIME: 4:00 PM CST
PLACE: Davison County 4-H Fairgrounds
Mitchell, SD

Agenda items will include bylaw changes:

- Change consecutive terms of board members to two years.
- Have the executive committee appoint the nominating committee

Board of Directors and Term Length

One Year	Two Years
	Marcia Burrows
Glen Blumhardt	Doug Luebke
Craig Stahly	Rick Bieber
Dave Nelson	Danny Wipf
Wilbert Blumhardt	Kent Kinkler
Alan Biegler	Bryan Jorgensen

SD Pulse Growers, Inc. Annual Meeting

DATE: Feb. 8, 2000
TIME: To follow the Annual Pulse School

Board of Directors

Mark Steigelmeier-President
Terry Ness
Kent Kinkler
Steve Prasek
Rick Weber

Watch your mail for more information!!