



# The North Dakota Seed Journal

JUNE 2008

Newsletter of the North Dakota State Seed Department

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## 2007 Seed Crop, Chemical Damage

*Mark Hafdahl, Seed Lab Manager*

The past seed testing season went very smoothly. Sample volume was down about 10 percent compared to last year, but on the positive side, we were able to get samples tested in a timely manner. The quality of the seed this year was very good with the exception of field peas. A large percentage of field pea samples showed mechanical damage, probably caused by harvesting at very low moisture levels. This situation may not be avoidable, but I think it is worthwhile to note.

Another situation we observed was chemical injury. This shows up in the germination test. The seedlings are stunted and deformed or are dead. We observed too many seed lots, especially of wheat, exhibiting these symptoms. What appeared to be nice looking new-crop seed ended up with a germination of 70-80 percent. I suspect the chemical damage was due to a pre-harvest chemical application. Pre-harvest chemical applications should be done only if the chemical is labeled specifically for seed production.

As usual, the Seed Lab is here to serve you. If you have any questions, give us a call and we will do what we can to answer them.

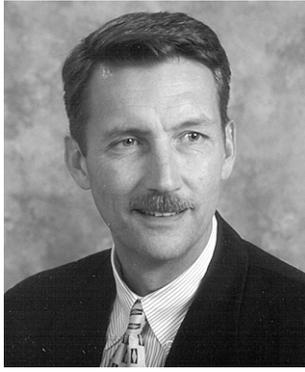


*Abnormal seedlings (L) and normal (R)*

North Dakota State  
**NDSSD**  
Seed Department

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## From the Commissioner's Desk

I generally review many of the articles I previously wrote for the Seed Journal prior to sitting down to the task of constructing something new, interesting and insightful for our readers. I don't do this because I love to read my own ramblings; I do this for the purpose of protecting our readers from rehash.

Working for an agency like ours that is tuned to the same schedule as our growers, it's easy to hit the same seasonal topics when writing for a quarterly newsletter. The high impact topics seem to be consistent from year-to-year. Rather than bend to the pressure of repeating the normal topical routine (think, SPRING; when a young man's fancy turns to regulatory issues), I'll toss out some random observations and thoughts.

It appears that many of our worst fears, regarding seed shortages, are unrealized. Beginning at harvest time last fall, we started talking about the potential for shortages in some types and varieties of seed. Haven't heard a single word this spring. I'm not sure if this means the seed industry did a great job in

holding and placing inventories, or that producers recognized the situation as extreme and did a nice job of planning. For whatever reason, we are thankful that this seems to be a fairly low-stress spring in terms of seed availability. Or... (must...resist...urge...to...talk...about... regulatory...stuff...) ...is part of the supply coming from illegal sources? There, I said it. My biggest fear leading into this season was the "desperate times demand desperate measures" theory of Brownbag Justification Syndrome.

For those that don't know, "BJS" is not a made-up rationale to eat a cheap lunch, it's an illogical and imprudent mindset that allows the individual to tell him/herself that it's ok to ignore variety protection if seed is in short supply or too expensive. Or, "I can't find what I really want and Joe Buddy has a bin full". BJS has been known to make otherwise solid individuals buckle to the creeping pressure of "everyone else is doing it, I might as well".

The parallel disease is known as "Brownbag Ignorance Syndrome", or "BIS". Symptoms of BIS include constant references like, "I didn't know that variety was protected", or "Joe Buddy said this variety was ok to plant", or "What? I can't get seed from my neighbor anymore?", or the ever-popular, "What's a PVP?"

I'll stick with the "well-prepared" viewpoint until proven otherwise. We know there is brownbagging, some of it organized and systematic. You know we know. We know you know we know.

Unfortunately, for the seed industry and variety developers, we (in partnership with industry) can't find it all. What we can find, we investigate. And, we continue to seek help from producers,

seed growers and seed companies throughout the state. It's the right thing to do for this industry. It helps ensure variety development will continue, to everyone's benefit. Whether you agree with variety protection or not, violating someone's PVP protection is just plain wrong. It's the law.

Lastly, at the end of a strange and historic crop year... a truly interesting spectacle: potatoes and sugar at the low end of projected farm net income estimates. As you know we are intimately involved with and interested in the potato industry (as the certification agent for potato seed in North Dakota), and this segment of our business is facing some real challenges. I've learned much in the past eight years at the Seed Department, but in no area so much as in potato. I've learned that it takes a cast-iron stomach, a penchant for trust in working relationships and a sharp pencil to be a seed potato grower. I've learned that \$1,000-\$1,500 per acre costs of production are the norm, and that those costs are rising at the same 30-50 percent rate as everyone else in the ag industry. They are NOT being followed by the same 100-200 percent increase in sales or contract prices as most other commodities. This is not a business for the faint of heart. Good luck folks.

Now ends the momentary wandering of the mind. Here's hoping for adequate rain on the heels of an abnormally dry start, plenty of sunshine on your season's toil, and continued strong prices for results of your effort.

Best wishes for a safe and profitable 2008.

- Ken Bertsch..... State Seed Commissioner
- Steve Sebesta..... Deputy Seed Commissioner
- Willem Schrage..... Director, Potato Program
- Joe Magnusson..... Seed Regulatory Manager
- Galen Briese..... Seed Certification Manager
- Mark Hafdahl..... Seed Laboratory Manager
- Jeff Prischmann..... Diagnostic Laboratory Manager
- Kris Nicklay..... Administrative Officer
- Mike Oosterwijk..... Potato Program Supervisor

## Variety Identification Testing

*Jeff Prischmann, Diagnostic Lab Manager*

Variety identification testing is an important testing service provided by the Seed Department. The Diagnostic Lab has performed varietal identification testing in cereal crops since 1994. Many of our customers know this test as an 'electrophoresis' test. This test is capable of detecting whether two or more different varieties are mixed together.

Customers may request this test to verify which bin a particular lot of seed was stored in or to determine whether a mixture has occurred. With most new varieties protected by plant variety protection laws, this type of test becomes a valuable tool for PVP enforcement. The department uses this test during the regulatory inspection process to verify that a variety stated on a seed label matches what is in the bag. Every year, a number of samples are found to be mislabeled. Usually, these samples are unintentional switches. Occasionally, sample mixtures are identified and are a more serious problem.

Wheat and oat variety identification tests are conducted using a seed protein test. Seed protein is extracted from the seed and then the process of electrophoresis is performed on the sample to determine the identity of the unknown seed sample. This process separates the proteins in the sample and yields a profile or fingerprint. Known control samples are tested with unknowns for positive identification. Sample mixtures or other varieties can be identified from the sample fingerprint. All gels the lab runs are visually scored and electronically photographed.

In some crops that have strict industry requirements for specific quality parameters the germplasm base is very narrow. Examples are durum wheat and malting barley. This inherent genetic similarity makes it difficult to distinguish varieties, so alternative testing methods must be used. Genetically similar barley varieties are not easily differentiated using a seed protein test. Barley variety identification tests are conducted using seed DNA. Seed DNA from an unknown barley sample is subjected to PCR using specific barley markers for the variety of interest. Multiple markers are required to identify a barley variety. PCR products are then visualized using electrophoresis. As with a seed protein variety identification test, known control samples are tested with unknowns. Sample mixtures and other varieties can be determined from this test.

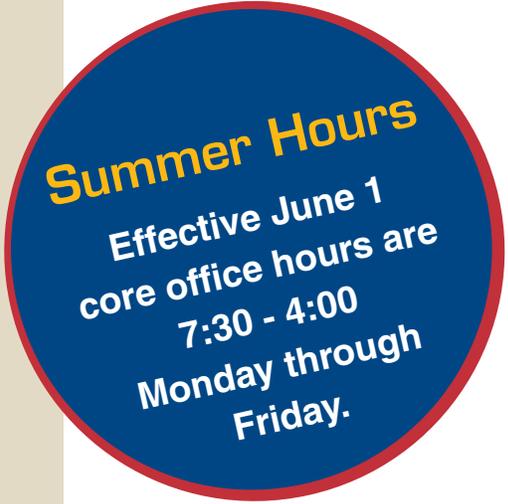
For all variety identification tests, sample information is important. Any information the customer can provide the lab regarding the sample is important. This information helps narrow the possible varieties for the unknown sample and gives the lab some starting point as to what varieties to test against the unknown. In the case of a barley sample, information such as whether the sample is a two or six-rowed variety, rachilla hair type, etc. is also useful information. Prior to testing barley samples, a rachilla hair check is often performed to aid in identification. Both the seed protein and seed DNA tests use bulked seed analysis and do not determine exact percentages of mixed variety samples or seed lots. In order to determine exact percentages of varietal mixtures, single seed testing is required. In most cases, sample mixtures can be detected with as little as a 5% mixture. Please contact the department for more information on single seed analysis.

## Field Isolations

Field isolations must be installed before field inspection of your seed fields can be completed. Isolations are required between inseparable crops such as barley, wheat, oats, also field beans seeded adjacent to soybeans. Different varieties of the same crop must be isolated also. This certification rule helps prevent contaminations due to other crops, and or varieties that may occur due to lodging, or mechanical mixing at harvest.

Isolation strips may be left at planting, mowed or sprayed out. Other acceptable isolations include fence-lines, grass strips, ditches, roads and tree rows.

The proper segregation of crops will help ensure the producer high quality, clean seed for certification.



**Summer Hours**  
Effective June 1  
core office hours are  
7:30 - 4:00  
Monday through  
Friday.



North Dakota State  
***NDSSD***  
Seed Department

## Seed Department Deadlines

- June 15 ...** Field inspection applications due for all crops except conventional soybeans, buckwheat and millet.  
Potato field inspection applications due.
- June 30 ...** License applications due for wholesale potato dealers
- July 1 .....** Bulk certificates due
- July 15 ....** Field inspection applications due for conventional soybeans, buckwheat and millet
- July 31 ....** Labeling fee reports due
- Sept. 15...** Research fees due
- Oct. 1 .....** Unconditioned carry-over seed report due
- Oct. 1 .....** License applications due for Approved Conditioners
- Oct. 1 .....** License applications due for Bulk Retail Facilities
- Dec. 31 ....** License applications due for non-resident seed dealers

## Plant North Dakota Certified Seed



Phone: (701) 231-5400

Fax: (701) 231-5401

E-mail: [ndseed@ndseed.ndsu.edu](mailto:ndseed@ndseed.ndsu.edu)

## Pea Producers: Care Required at Harvest

As noted in the Seed Lab report, there was significant quality loss to the 2007 pea crop due to harvest damage. This usually results from harvesting at low seed moisture content or rough handling. Field peas, field beans and soybeans are considered fragile crops and extra care should be exercised at harvest to minimize damage.

Monitoring seed moisture content prior to harvest is critical. According to NDSU Extension specialists, field peas should be combined at 14-20 percent seed moisture to minimize damaging seed. Dry seed is more susceptible to damage. If possible, harvest during higher humidity conditions to minimize shattering.

Weather conditions can change rapidly before and during harvest so check seed moisture often.

Proper handling is also critical. Producers should take time to set combines correctly before harvest. Reel speed and cylinder speed should be slow to avoid shattering and splitting seed. NDSU Extension recommends concave settings of 0.6 inch at the front and 0.2 inch clearance at the back. Further adjustments may be required as crop and weather conditions change. Run augers slow and full to reduce damage. Belt conveyors would be a good investment.

Finally, if you suspect your pea seed has been damaged a soak test can be used to quantify the damage. Refer to the June 2006 issue of the Seed Journal for materials and methods. It is on the website, or you may call for a copy.

There isn't much one can do to remedy the problem after seed has been damaged, so producers need to take all possible precautions to prevent damage from occurring in the first place.

## NDSU Field Days Scheduled

We encourage everyone interested in agriculture to attend one (or all) of the NDSU Field Days. Field days are an excellent way to keep in touch with important issues in production agriculture. They provide participants the opportunity to look at, and learn about the attributes of different varieties of crops and learn what NDSU researchers are doing to improve agriculture. The research stations also play a critical role in the seed industry because most of the Foundation seed for NDSU varieties is produced at the research/extension centers. Take advantage of these opportunities to see what your land-grant college is doing for you.

**June 26 ....Central Grasslands REC, Streeter**

**July 8 .....Hettinger REC**

**July 9 .....Dickinson REC**

**July 10 .....Williston REC**

**July 14 .....Agronomy Seed Farm, Casselton**

**July 15 .....Carrington REC**

**July 16 .....North Central REC, Minot**

**July 17 .....Langdon REC**

## Who Is Required To Have A Seed Permit?

Any person or company labeling and selling agricultural, vegetable, flower, or tree and shrub seed in North Dakota needs to obtain a permit. Also, a Non-Resident Seed Dealers license is required if sales are made directly to the consumer by direct sales, internet sales, or through the use of an authorized agent. If sales are only made through wholesale or retail businesses in North Dakota, only the seed labeling permit is required. There is no cost for the permit and it remains active until you no longer sell seed in this state.

## Bednar Joins Seed Department



Kyle Bednar joined the Seed Department in May as a Field Inspector I. In this role, he will be involved in field inspection, conditioning

plant and retail facility inspections and regulatory audits and sampling. Kyle has worked for the department on a part-time basis since 2005. He has operated an approved mobile seed cleaner and has experience as an elevator manager. Kyle's experience and knowledge of seed cleaning and seed handling facilities will help the Seed Department provide greater service to facilities that condition and sell North Dakota Certified seed.

## Seed Producers...

be certain your seed fields have been inspected by ND State Seed Department inspectors before you begin harvesting. Fields harvested before the inspection is completed will not be eligible for certification and you will forfeit the inspection fees.

If you are ready to harvest and you are not certain your seed fields have been inspected, call your inspector or the State Seed Department at (701) 231-5400.

## Summer Potato Virus Test Reminder

*Jeff Prischmann, Diagnostic Lab Manager*

In July, the Diagnostic Lab will conduct the annual summer potato virus test. This testing service is provided to growers on a voluntary basis for anyone interested in submitting leaflet samples for PVX and PVY testing. Growers need to be aware that there is currently one testing requirement for certification. **PVY tests are required on all latent virus carrier varieties including Russet Norkotah, Shepody, and Silverton.**

All tests are conducted using an ELISA test and 400 leaflet samples. Growers should submit at least 440 leaflets for these tests in order to ensure the proper sample size is tested. Bt-Cry3a tests will also be available at the same time for any grower interested in obtaining a GMO test. This test also requires a minimum of 400 leaflets. PVX, PVY, and the GMO test can be performed on the same leaflet sample.

In July, each grower will receive an information packet containing instructions on collecting and submitting samples for testing, sample tags, and a test request form. Use the test request form to indicate whether you will be submitting samples for testing and when you would like to test. To ensure proper sample identification, the sample tags must be returned with the samples. Please contact the Diagnostic Lab if you have any questions on sampling and testing.



## Approved Conditioners and Bulk Retailers...

Agreements to operate as an approved conditioner or bulk retailer will be mailed to all current facilities in August. Facility managers are requested to complete the form and return it to the office with the \$40 payment by October 1. Facility inspections will begin in October.



## Clean Seed Handling Equipment Before Harvest

Once your seed fields have passed field inspection you're ready to hop into the combine and harvest right? Not entirely. Harvest is a busy time and can be stressful under the best circumstances. Planning ahead can help eliminate some potential problems and help maintain the quality of your seed.

Make sure the following are CLEAN before harvest

Combine	Augers
Grain carts	Bins
Trucks	

Make sure you label bins with variety and class. Every year we receive calls from customers requesting variety ID tests because they are not sure what seed is in which bin. Our regulatory program also finds seed labeled incorrectly because of mistaken identity due to inaccurate bin labeling.



## Several Reports Due This Summer

Each year we receive inquiries about the reports we require and why seed quantities must be reported in different units, e.g., bushels or pounds, manner of disposition, conditioned or not. Several reports are due during the next few months that perhaps could use some additional clarification.

### Annual Report of Seed Sold due July 31

This report is due thirty-one days after the reporting period ends, which is June 30. All North Dakota permit holders will receive a report form in late June. According to Chapter 4-09 of North Dakota Century Code, a Seed Labeling Fee Permit is required by anyone (individual or company) who labels seed in North Dakota. This includes not only agricultural seed, but flower, vegetable, tree and shrub seed as well. Labelers must report the quantity of ALL seed sold during the reporting period (July 1- June 30) and remit the appropriate fee to the Seed Department. One common reporting error is that only certified seed is reported. **This report includes ALL seed, including certified seed.** The report must be returned even if there were no sales in the reporting period. If you no longer sell seed, please check the appropriate box on the form to cancel your permit.

### Research Fee Report due September 15

Research fees are assessed by the variety owners to generate funding for breeding programs. The ND State Seed Department is responsible for collecting research fees for NDSU, our neighbor states and Busch Agricultural Resources for seed sold in North Dakota. Research Fee Reports for seed produced in 2007 will be mailed to all who completed certification and labeled seed during the last year and sold before June 30, 2008. **Labelers** are required to report the quantity of seed **SOLD AS SEED** and remit payment to the Seed Department. The Plant

Variety Protection Act gives variety owners the legal right to determine who is authorized to produce and sell their varieties. In the past, some variety owners have withheld certification privileges, which has included final certification of last year's crop and field inspection of this year's crop. Don't get caught in that predicament. The Seed Department will not be able to accept your field(s) for field inspection in 2008 if mandated by the variety owner. **Please make sure you return the report and payment to the Seed Department on time.** DO NOT remit payment to your county extension agent or local/state crop improvement association. All reports must be returned to the Seed Department in order for your account to be reconciled.

### Unconditioned Carryover Seed Report due October 1

Report forms are mailed to seed producers in late July and are due October 1. Key information includes variety, class, field application number and the number of bushels of unconditioned seed remaining. **Unconditioned Carryover Seed Reports must be submitted in order for that seed to be eligible for final certification in 2008-09.** Failure to report carryover seed will disqualify that seed for final certification. To assist you in marketing that product, unconditioned carryover seed is listed in the Seed Directory if reported on time. Carryover certified seed does not need to be reported, however, a new sample must be submitted to the department for a new germination test to ensure it meets labeling requirements.

If you need any assistance with these, please call.

## North Dakota State Seed Department

State University Station  
P.O. Box 5257  
Fargo, ND 58105-5257

Non-Profit Organization  
U.S. Postage

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Fargo, ND  
Permit No. 229

# NDSSD Calendar

- June 15 ....** Field inspection applications due for all crops except conventional soybeans, buckwheat and millet
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