



The North Dakota Seed Journal

SEPTEMBER 2006

Newsletter of the North Dakota State Seed Department

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North Dakota State

NDSSD

Seed Department

The North Dakota Seed Journal is published and edited by the Seed Department, State of North Dakota, under the provisions of Chap. 258, S.L. 1931, as administrative and instrumental matter required for effective transaction of the Department's business and for properly fostering the general welfare of the seed industry in the state.

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Early Season Ascochyta Testing

Jeff Prischmann, Diagnostic Lab Manager

Chickpea, Field Pea, and Lentil producers needing Ascochyta testing during the upcoming season should submit samples as early as possible to ensure timely testing. The Diagnostic Lab has experienced a significant increase in the number of tests the past two years so growers are advised to submit samples as soon as they are available this fall. Early season testing will allow us to more efficiently process your sample and in turn, provide you better testing service.

The Ascochyta test is required for labeling of chickpea and lentil seed, and test results must be on the label.

Another point to keep in mind is that the Ascochyta test result is only as good as the sample submitted for testing. Sampling is an extremely important part of seed testing that can often be overlooked. The most important factor in sampling is obtaining a sample that is representative of the field or seed lot. This can be achieved by probing several bags, bins, or during seed conditioning and then compositing into a single sample. A portion of this sample can then be submitted for testing. Growers should also keep a reference sample as a backup sample to go back to if needed. These sampling tips will help growers achieve a more accurate Ascochyta test result.

The department currently charges \$75 for Ascochyta tests on field pea, lentil, and chickpea using a sample or test size of 500 seed.



Lentils infected with Ascochyta

Chickpea may be tested for Ascochyta using a 1,000 seed test. The current charge for this test is \$100. Please contact the department for more information. Thanks for your past testing business.



From the Commissioner's Desk

For most residents of North Dakota, this year has been quite a change of pace (weather-wise) from the past decade. Low precipitation and high temperatures make the 2006 crop year a real departure from what we experienced over the past decade unless you are from the southwestern part of the state. Those folks are saying, "So, what's new?"

Ironically, after years of wet weather and scab pressure, billions of dollars in quality and yield losses, millions of dollars and countless hours spent on research and breeding efforts, a drought arrives on the heels of *Fusarium* tolerant variety releases.

Even more ironically, I had to chuckle this summer while attending the NDSU Agronomy Seed Farm crop tour, upon hearing the question facing breeders now is; "When are you guys going to release a drought tolerant variety?" While the question is reasonable, I know the expectations can become impossible. History tells us (and sociologists understand) that the need for immediate gratification in agriculture is as profound as it is in the rest of our society. Looking back to about 1994-95, I vividly recall the outcry over the lack of progress on breeding for scab resistance after only

a two to three year period of battling the problem in the field.

As for the issue of *Fusarium* tolerant varieties now on the market, this year will (at least) test their overall strength in performing under multiple environments. This is an important point, since most breeding programs focus on creating varieties with multiple strengths. Obviously, preferred traits (in scab tolerant varieties like Alsen, Freyr and Glenn) are the main reason for choice, but producers and breeders both seek varieties that can achieve results under multiple environments and conditions. Now extend the issue to the full range of crops grown in North Dakota, and one can see the problems breeders face in creating solutions for all potential problems and challenges faced by producers. This has nothing to do with irony, and everything to do with hitting a moving target.

Lastly, if we experience another dry season next year, patience may be in order. Drought tolerance (as the leading trait in a variety) won't come about immediately, but it's in the pipeline. Finding the one or two varieties that perform on your farm under several types of conditions will also take patience. Both are achievable, it just takes time.

Best wishes for a safe and profitable harvest season.

- Ken Bertsch State Seed Commissioner
- Steve Sebesta Deputy Seed Commissioner
- Steve Marquardt 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

Diagnostic Lab Conducts Potato Summer Virus Testing Program

Jeff Prischmann, Diagnostic Lab Manager

The annual Potato Summer Virus Testing Program was held during July 17 through August 4. This testing program allows certified potato growers an opportunity to have their seed fields tested for several viruses including PVX, PVY, and PVYn. GMO tests were also offered. This testing is optional to all growers with the following exceptions: (1) PVY tests are **required** for all Silverton, Russet Norkotah, and Shepody varieties, regardless of generation. These varieties are considered to be latent virus carriers and do not always express symptoms in the field, (2) PVYn tests are required for **all G-1** generation seed lots.

The lab performed over 400 individual virus and GMO tests on more than 200 potato leaflet samples. The amount of virus found overall was low. No PVX, PVYn, or GMO positives were detected in any sample. PVY was detected in a small number of samples but was lower than seen in previous years.

Growers who have questions about their test results or how a test is performed, are encouraged to contact the lab. All the samples submitted this year for testing were of excellent quality. Thanks to all the growers who submitted samples for testing. The care in packaging and prompt delivery to the lab was appreciated.

New Rules Effective July 2006

Steve Sebesta, Deputy Commissioner

On July 12 the Interim Legislative Rules Committee gave final approval on rule changes proposed by the Seed Department. Though the proposal was broad-reaching, most of the changes simply cleaned up language or clarified existing rules.

There are several new rules of significance that producers, conditioners and retailers should note. I communicated these proposals at the district and annual meetings of the ND Crop Improvement and Seed Association last fall and winter.

Land requirements for Durum Wheat –
Foundation or Registered class fields of durum will not be eligible for certification if planted on land on which spring wheat was planted either of the two previous years.

Every year inspectors fail durum fields because of the presence of spring wheat and the Seed Lab manager estimates that ten percent of the durum samples fail to meet seed standards for the same reason. Additionally, research has shown that volunteer wheat can remain viable for more than one year and continue to contaminate subsequent crops. Due to the extreme difficulty in effectively rouging wheat from durum, stricter field requirements were necessary to improve the quality of foundation and registered classes of seed.

Seed standards for White Wheat –
White wheat must be tested for red wheat contaminants.

Bulk storage – All hopper bins must be equipped with bottom access ports, inside ladders or some other means approved by the seed department to facilitate access for cleaning. Seed Lab and Regulatory sample evidence has shown that contamination problems due to dirty bins, is the leading contributor to stop sale orders. Improving accessibility to the inside of the bins should help to eliminate this problem. It is also a safety consideration. Bulk retailers and approved conditioners were advised

of this requirement last year during facility inspections.

Bulk handling – All augers used to convey seed must be reversible. There is no other way to clean an auger effectively than to reverse the direction of the flow.

Sample Retention – It is the seller's responsibility to maintain possession of a two-pound sample identified by variety, kind and lot number of each lot of certified seed sold, whether bagged or in bulk, for a period of two years after the final disposition of the seed lot. Just remember two pounds for two years.

Implementation

Inspectors have been communicating the new rules about bins and augers to approved conditioners and retailers over the last year while conducting annual inspections. Since the rules have now passed, inspectors will be documenting on their reports, which bins and augers are not in compliance. We recognize that some of the bins may have seed in them already and that would prevent installations. If that is the case, we will grant a one-year grace period. The other option is to remove those bins from their approved bin list.

The rule changes may be found on the department website www.ndseed.com. Click on "Proposed Rules" to see the changes.



New Rules
Effective
July 2006

Regulatory Update

Joe Magnusson, Seed Regulatory Manager

The Regulatory inspection team drew approximately 1,700 samples for truth in labeling testing this past year. “Stop Sale” orders were issued on 67 seed lots that were improperly labeled or found to be out of tolerance with label claims. The germination and inert matter violations were mostly from soybeans and field peas that were handled improperly. Most of the other crop and weed seed violations were due to bins that were not adequately cleaned before they were filled with certified seed. The following is a breakdown of the “Stop Sale” orders issued in 2006.

- Out of date labels 28
- Low germination 12
- Excess inert matter 9
- Excess other crop 8
- Excess weed seed 6
- No labels 4

Prepare for the new crop

Now is an excellent time to get bins ready for the upcoming seed season to avoid contaminating certified seed lots. After you have thoroughly blown or swept down the bins, make sure the slide and bottom of the unloading auger have been cleaned. Also, check above doors and access ports as seed can hang up in these areas. Reverse and clean any loading augers you plan to use for seed.

Improper handling contributes to “Stop Sale” orders

Another problem we encountered this past season is fragile crops such as soybeans, field peas and edible beans that have low germination and excess split seeds (inert matter). Samples for purity and germination testing are generally collected during conditioning, before the seed is augered or belted into a bin and dropped 20 to 40 feet to the bin floor. Dropping fragile crops that far without the use of bean ladders and belt conveyors, may result in a ten percent to 30 percent drop in germination and add one percent to three percent inert matter to the product. Even though seed may look sound, the embryo can be damaged each time you handle the seed. If at all possible, condition these crops directly from the field or during mild weather.

After filling the bins, it is a good idea to check the first few bushels on the bottom, as this is where the contamination or poor quality seed will most likely be. Monitor bins closely for any signs of heating or insect damage that

may occur. When the temperatures fluctuate during the winter months, monitor the bins so air can be added as needed. The NDSU Ag and Biosystems Engineering Department can provide information on proper storage conditions of all seed crops.

If you use a pre-germ on your seed lot, and the seed was tested before spring, it would be wise to probe the top and bottom of the bin and send a sample to the seed lab for a new germination test to ensure the seed lot has not gone out of condition and is properly labeled. These procedures should avoid an unnecessary “Stop Sale”, and allow you to sell a quality product to your customer.

When our regulatory inspector arrives at your location to obtain samples for truth in labeling testing, we recommend you accompany them to the bins so you will be satisfied with the sample they draw. This is especially true for samples taken from the bottom of the bins, where the seed is subject to the most damage and contamination.

Enforcement of Plant Variety Protection

Another concern we have dealt with in the past is the illegal sale (brown bagging) of varieties protected under the Plant Variety Protection Act (PVPA) Title V of the Federal Seed Act. This act prohibits the sale of non-certified seed or grain of varieties protected with the Title V (certification) option for propagation purposes. Most of the small grain, soybean and pulse crop varieties produced in North Dakota cannot be sold to your neighbors, or anyone else, as common seed. These varieties must be field-inspected and final certification must be approved before the seed can be sold to others. The State Seed Department has regulatory authority to ensure compliance with the Federal Seed Act in North Dakota and has taken the position that all alleged violators of the PVPA, whether Approved Seed Conditioners, Bulk Retailers, grain elevators, seedsmen or farmers will be audited. If justified by the audit, fines will be assessed, and their records will be turned over to the USDA, AMS Federal Seed Branch for further prosecution.

We are currently investigating two alleged violations of the Plant Variety Protection Act, one in northeast North Dakota and the other in the south-central part of the state.

If you have any questions about PVP, selling or labeling seed, give me a call.

Seed Laboratory Report

Mark Hafdahl, Seed Lab Manager

During the last fiscal year, which ended June 30, the Seed Lab received 15,521 samples for testing, and conducted 23,574 tests on those samples. Roughly a third of the tests were on samples for the certification program. The quality of the 2005 crop was good in spite of the presence of scab in small grains. Soybeans and edible beans were of good quality but field peas were generally of lower quality due to low germination, apparently caused by mechanical damage.

Looking ahead

Because of the drought conditions in most of the state this year, I expect to see smaller seed size, but high quality seed that is free from scab. This should be the first year since 1992 that scab is not a problem. The conditions at harvest will have a lot to do with the quality of fragile crops such as soybeans, edible beans and field peas. If conditions remain dry, I expect to see lower germinations due to mechanical damage. Beans at 14% moisture can take more abuse without reductions in germination than beans at 8% moisture.

Every year a small percentage of seed lots fail to meet certification standards. In small grains, the main reason for failing is the presence of other crop seed. In most cases this can be prevented by cleaning trucks, combines, bins, conveyors and seed cleaning equipment. In large seeded crops, the main reason for failing certification is low germination due to mechanical damage. Harvesting early in the day, before the seeds dry out, is one possible remedy.

We in the Seed Lab look forward to meeting your future testing needs. Submit samples early to avoid the rush we experience from February until planting time.

Harvesting, Conditioning and Handling

Galen Briese, Certification Manager

This year has been considerably dry throughout the state and with these conditions come additional concerns about seed quality. Some producers have expressed concern about light seed in small grains. Others are concerned about seed damage due to low moisture content at harvest.

Test weight is not a primary factor in the certification eligibility of seed lots. But, it may be a factor in germination, vigor and viability. Seed with low test weight may germinate just as well as seed with a high test weight. However, differences may exist in the vigor of smaller seed that may be expressed as weak emergence, especially under poor conditions. Smaller seed may be less likely to emerge if planted too deeply or if the soil becomes compacted due to hard rain following planting. In these conditions, the smaller seed can exhaust their food reserves before emerging, resulting in a stand that is less than desired.

In addition to lighter seed, some seed this year may have been harvested at a very low moisture level, making it prone to damage at harvest or from handling. Seed damage is not always a visible factor. Internal seed damage, especially on fragile crops such as field peas, soybeans, and other specialty crops, is not always apparent. All these crops are prone to damage when handled. Hot weather, low seed moisture and harvesting, handling and conditioning equipment all contribute to seed damage. Cold weather conditions during seed conditioning, shipping or movement also affect seed quality. The point is, taking a few extra precautions now can prevent costly mistakes later.

Germination testing is recommended before conditioning, after conditioning and also after over wintering, to determine the viability of the seed. Economically, storing poor quality seed for spring sales is not cost effective. Lost market sales, storage costs, and lost seed sales are items to be considered in these next months.

Research Fees Due September 15

In July, labelers were mailed Research Fee Reports for all royalty-bearing varieties of certified seed labeled in their name. The deadline for payment of those fees is September 15. Do not pay the Crop Improvement Association or county agent. The Seed Department is contractually obligated to turn all delinquent accounts over to the variety owner for further collection efforts beyond that date. If you have not paid your Research Fees for 2005 sales, please do so soon.

Carry-over Seed Report Due October 1

Unconditioned carry-over seed produced in 2005 and eligible for final certification must be reported by October 1 to be listed in the 2007 Seed Directory. Call the office if you did not receive a report form.

Completing Final Certification

Steve Sebesta, Deputy Commissioner

There was a significant increase in the number of seed growers in 2006. Our records show we had 931 applicants for field inspection of 4,271 fields, which represents an 18% increase in growers over last year and a 16% increase over the five-year average. The ND Crop Improvement and Seed Association's campaign promoting the certification of the new NDSU wheat variety, Glenn, was likely one major driving force in this increase.

Certainly, there may be a fair number of new growers in that group that may not fully understand the next steps in completing certification of their field-inspected seed. Passing the field inspection alone does not mean the end of the certification process. Field inspection is just the first step in producing a quality certified seed product. In order to be labeled as certified seed, all field-inspected seed must be cleaned to remove impurities and then tested at the department's Seed Lab to determine whether the seed meets the minimum seed standards for the crop and class.

Testing prior to conditioning

In order to determine whether the additional investment in conditioning is justified, growers should submit a sample of their field-inspected seed for germination and disease testing. Samples should be cleaned with a hand sieve or mini mill to approximate the quality after conditioning. The results of the pre-germ and disease tests may be used for final certification or another sample may be submitted following conditioning. Pre-germ tests cannot be used for final certification on fragile crops such as soybeans, edible beans, and field peas due to their susceptibility to damage from handling. Germination tests on these crops must be done following conditioning.

Conditioning, testing and labeling

Growers have a number of conditioning and marketing options available to them, depending on their marketing skills and the level of management and handling they desire. Keep in mind that certified seed is a value-added product and each level of management adds value, and those that perform those tasks will extract some of that value for the services they perform.

- (1) The grower may condition their own field-inspected seed on their premises with their own equipment. The grower must then complete a Sampler's Report and submit a representative sample of cleaned seed to the Seed Lab for testing. If the seed meets the

minimum requirements for the crop and class, it may then be labeled as certified seed.

- (2) A grower that does not want to clean, label the seed in their own name and market that seed, may sell their field-inspected seed "in the dirt" to an approved conditioner or approved bulk retailer. They will assume the responsibility for conditioning the seed, completing final certification and marketing. An approved conditioner is one that has been inspected by the State Seed Department, possesses the proper equipment and has demonstrated the ability to clean and handle certified seed properly. Approved conditioners must have a current permit issued by the department. Only facilities approved to condition and handle certified seed may condition field-inspected seed. There are 111 fixed plants and 63 mobile conditioners across North Dakota or in neighboring states currently approved by the department. Likewise, an approved bulk retailer is set up to handle and retail seed at their facility.

If ownership of the seed is transferred to an approved conditioner or bulk retailer, the grower must complete a Grower's Declaration when the seed is delivered for conditioning. Transfer of unconditioned seed to other growers is not permitted.

Approved conditioners and retailers are listed on our website (www.ndseed.com) and in the North Dakota Seed Directory.

- (3) A grower may utilize an approved conditioner to clean their field-inspected seed and then label that seed in their own name. The grower then markets that seed and assumes all the risks and rewards. The conditioner will submit a representative sample along with the Sampler's Report to the Seed Lab for analysis. The conditioner will indicate on the Sampler's Report that the seed is to be labeled in the grower's name. Providing the sample meets the minimum requirements for the crop and class, bulk certificates will be issued in the grower's name, and the grower may then sell that seed legally.

Complete procedures and requirements governing the production, conditioning, and labeling of certified seed are published in Bulletin 51, North Dakota Field Seed Certification Standards. If you need a copy, please call the department. They are also available on our website under the Field Seed Program. Whether a new grower or experienced, please call the department if you have questions about completing final certification.

Bin Labeling Requirements Can Prevent Problems Later

*Galen Briese,
Certification Manager*

Every year we receive calls from customers wondering if we can determine what variety they have in their bins. Properly labeling storage bins will help eliminate that problem. Even if you have a well-organized bin setup, mistakes can occur. In some cases the person that put seed into the bin is not the same person who takes it out for conditioning or for shipment. Additional steps should be taken to identify the **contents** of each bin, not just the bin number. A suggestion for bin labeling would be a labeled tag or even a piece of duct tape inside each bin door clearly identifying the contents.

Certified seed requirements state that field-inspected seed must be identified at all times. Identification must be traceable to field inspection numbers from the crop year in which the seed was produced. Conditioned seed in storage must be identified by kind, variety, and lot number displayed on the bin or storage container.

Testing Fees Increase October 1

Following a review of the current testing fee schedule, the Seed Commission gave final approval in July for fee increases for several tests. Only 16 of the 61 tests offered by the department were affected. Adjustments were necessary because the previous charges were significantly below cost for the services performed. The new fee schedule is available online at www.ndseed.com.

Clearfield® Wheat Testing Training Workshop

Jeff Prischmann, Diagnostic Lab manager

The department is hosting a Clearfield® Wheat Testing Training Workshop August 29 and 30 in conjunction with BASF, for lab technicians from various private and public seed testing labs currently conducting this test. This will be the second time NDSSD has hosted a training workshop dealing entirely with Clearfield Wheat Testing. Participants at the workshop will receive hands-on training in the process of conducting a Clearfield Wheat Bioassay Tolerance Test. Clearfield Wheat, developed by BASF, is tolerant to Imazamox herbicide. This tolerance was developed through non-genetically enhanced techniques. Clearfield Wheat is available in the US and Canada in several different varieties including both spring and winter wheat. Other Clearfield crops commercially available include corn, rice, sunflower, and canola. NDSSD is certified and approved by BASF to conduct Clearfield Confirm™ tolerance tests for canola, sunflower and wheat.

Tolerance testing for Clearfield Wheat is a quality control test to ensure seed meets a minimum tolerance level. BASF requires that all Clearfield Wheat seed produced to be tested. Contact the department for further information.



Soybean Growers...

Final soybean inspections will be underway soon. Make certain your fields are ready before the inspector arrives. Isolation strips must be in place for certified seed fields. For fields enrolled in the QA program, consult the company for whom you are producing seed to determine whether you need isolation. Nightshade must be rogued from all fields before the inspection.

Fields that have been combined before the final inspection will be rejected.

If you are ready to harvest and you have not received verification that the final inspection has been completed, call the Seed Department. We'll try to get an inspector to you as soon as possible. Plan ahead to avoid harvest delays.

North Dakota State Seed Department

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NDSSD Calendar

September 12-14 ... Big Iron, Red River Valley Fairgrounds

September 15 Research Fees Due

October 1 Unconditioned Carry-over Seed Report Due

November 28-29 NDAA Northern Ag Expo, Fargodome

N.D. Crop Improvement & Seed Association District Meetings

December 6..... Southwest District — Mandan

December 7..... Northwest District — Minot

December 8..... Northeast District — Lakota

December 11 Southeast District — Casselton