



The North Dakota Seed Journal

JANUARY 2019

Newsletter of the North Dakota State Seed Department

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New Year - New Seed

Steve Sebesta, Deputy Commissioner

Another new year has begun and many farmers are busy making plans for the upcoming spring planting season. North Dakota farmers are fortunate to be able to grow so many different crops. They are also fortunate to be able to easily access high quality certified seed to meet their seed needs, thanks to certified seed growers, conditioners and retailers.

From large seeded row crops like field peas and soybeans to small grains like wheat, durum and barley, to the really small-seeded crops like flax, North Dakota's certified seed producers meet the needs of most farmers across the state. In 2018, the Seed Department inspected approximately 300,000 acres of 422 different varieties of 43 different crop kinds.

Most of you should recognize the photo to the right. We produced this poster a number of years ago with our neighbor states to highlight reasons certified seed is a value and a solid return on a farmer's investment. It was distributed to certified seed retailers with hopes that it would be prominently displayed at points of purchase. We believe it successfully captures the main selling points promoting the use of quality seed.

If one thinks about these points, one would agree they just make sense, and one could probably come up with some anecdotal evidence that support these claims. However, there's a lot of research to support the use of certified seed over bin run seed. We don't just preach these points, we believe them and here's some real evidence you can use with your customers to sell your certified seed.

Certified seed is field inspected and lab tested to ensure each seed lot meets specific industry-accepted standards. These inspections and tests are performed to ensure, within tolerances, that each class of certified seed meets customer expectations for quality.

The charts that follow are from samples submitted to our Seed Lab last year and for this year's crop, to date - more than 3,500 samples in all. The Certified Seed samples are those that were field-inspected seed, submitted for certification. The VNS samples were service samples, non-certified seed, or bin-run, farmer-saved seed.

Certified Seed Doesn't Cost... It Pays!

▲ PROVEN QUALITY

- High germination
- Fewer weed seeds
- Less inert matter
- Less seed-borne disease
- Known varieties

▲ SUPERIOR PERFORMANCE

- Better plantability
- Rapid stand establishment
- More uniform maturity
- Easier harvest
- Less dockage

▲ GREATER PROFITABILITY

- Newest genetics
- Less weed control costs
- Less disease control costs
- Greater yield per acre
- More return on your investment



Members of Association of Official Seed Certifying Agencies



mcia.org
800.510.6242

ag.montana.edu/mcga
406.994.3516

ndseed.com
701.231.5400

ndcia.com
605.688.4006



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ND State Seed Department

p 701.231.5400 f 701.231.5401

ndseed@ndseed.ndsu.edu



New Year - New Seed continued on page 3

From the Commissioner's Desk

By the time this edition of Seed Journal is published, North Dakota will have declared Palmer amaranth a prohibited noxious weed. As in many states, North Dakota has a "weed list" and a "seed list"; the former administered by the Agriculture Commissioner and the latter by the Seed Commissioner. In simple terms, the Agriculture Commissioner is responsible for those issues in the field, and the Seed Commissioner maintains authority for seed-related regulatory and quality issues associated with prohibited weeds.

The presence of restricted and/or prohibited weed seeds impacts both quality of certified seed products and labeling/marketing of all seeds to the general public, therefore, it's necessary to compartmentalize or split actions that are either regulatory or certification in nature.

Sometimes, what we do in seed certification involves limiting the spread of a pest by implementing rules prohibiting that pest in field inspected or laboratory tested products. Seed lots can fail certification in either way, thus limiting the spread of pests including noxious weeds.

Similarly, regulatory examinations can limit the potential for spread of noxious weeds through a stop-sale process. Regarding Palmer amaranth, the Seed Department will follow a slightly different and stricter process to protect the agriculture industry from the introduction and spread of this devastating weed species.

If any amaranth species is identified in a regulatory inspection, an automatic stop-sale will be issued on the seed lot, the amaranth seeds tested, and the stop sale either enforced or lifted.

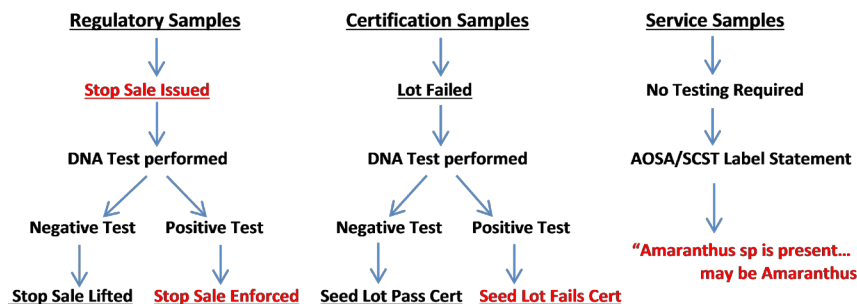
If any amaranth species is identified in a certified seed sample, the seed lot will automatically fail final certification and the grower will be informed of the failure. The seed lot may be reconditioned and/or DNA-tested and resubmitted for further evaluation. Upon further review, the lot may then

Ken Bertsch.....State Seed Commissioner
Steve Sebesta.....Deputy Seed Commissioner
Kent Sather.....Director, Potato Program
Jason Goltz.....Field Seed Program Manager
Joe Magnusson.....Field Seed Program Manager
Jeanna Mueller.....Seed Laboratory Manager
Starr Thies.....Business Manager
Mike Oosterwijk.....Potato Program Supervisor

be eligible for final certification.

If any amaranth species is identified in laboratory examination of service samples, the owner will be notified and the lab report will contain the statement advised by AOSA/SCST which reads "*Amaranthus sp* has been found in this sample and the species cannot be determined and may be *Amaranthus palmerii*." It will then be the responsibility of the owner of the seed lot to dispose of, re-condition or notify purchasers of the presence of amaranth.

Amaranth Species Identified During Laboratory Analysis



This plan isn't knee-jerk by nature. The issue has been discussed for years at the Seed Commission level, and the Department implemented an action plan a full two years ago; one that contained everything but the testing elements.

I've maintained publicly for some time that the lowest risk for field contamination by Palmer amaranth will be certified or regulated seed sources. The physical transfer of Palmer seed, either by machinery or wildlife, is much more likely...which has proven true with the initial discoveries in North Dakota. Unregulated seed sales (i.e., internet and other sales) are another high risk area. As a regulatory agency, we cannot sample those seed lots that are not placed for sale here, especially those marketed online for the purpose of producing wildlife plots and/or pollinator habitat.

This isn't the first time, nor will it be the last, that invasive species or disease will threaten the ag industry. Certification and regulatory agencies at the state and federal levels take these threats seriously and address the risks in the most reasonable manner possible.

Best wishes for a warm and profitable winter season,

Ken Bertsch

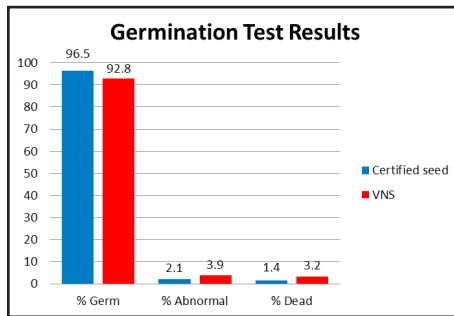
WANTED

Seasonal Field Inspectors

The Seed Department is seeking seasonal field inspectors in or near the counties of Cavalier, Dickey and Hettinger. Field inspectors do not need an agricultural background; we provide training and mentorship. Inspectors must be over 18, have a valid driver's license, be able to walk long distances and possess an independent work ethic. Field inspectors will be provided a state fleet vehicle and operate from their home. The inspector in the Hettinger county area will work primarily in July-August for a minimum six weeks. Inspectors in the Cavalier and Dickey county areas will do the same, but also have the opportunity to return in September for soybean inspections. Contact the Seed Department for more information. 701.231.5400 ndseed@ndseed.ndsu.edu

New Year - New Seed

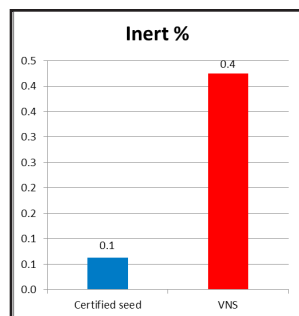
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Germination test results are broken down into four components; total germ; abnormal; dead; and hard. For the samples studied, % hard seed was the same (0%) so it is omitted from the graph. One can easily see that

certified seed is a higher quality product than bin-run, farmer saved seed. Total germination is almost 4 points higher. And the percent abnormal and dead seed are about half of the VNS samples.

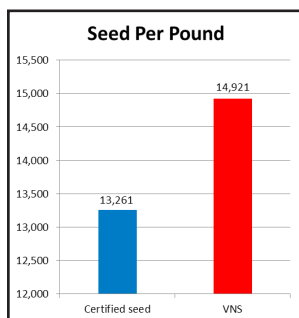
The next chart shows the comparison of the percent inert matter found in the samples. Certified samples had one fourth the amount found in the VNS samples. Another clear advantage for certified seed, which demonstrates the advantage of professional seed conditioning by approved and regulated certified seed conditioners.



According to ND certification regulations, approved conditioners of small grains are required to have (1) either a disk separator or indent cylinder for length grading to remove long or short fractions and (2) either an air screen separator or precision grader with aspiration in line. The purpose for these is to remove other crop seed and inert matter such as plant parts or

foreign matter to improve the quality of the seed lot.

There is a lot of research demonstrating the advantages larger seed has over small seed. In our subset of samples certified wheat seed was significantly larger, as shown in the next chart.



Research has shown that larger, heavier seed will outperform smaller, lighter seed. Utilizing a gravity table to remove the lightest seed is invaluable for finishing a seed lot. Larger, heavier seed contain more energy reserves for germinating seed. This translates into quicker emergence and more uniform stand establishment. This can be especially important when

planting at greater depths to hit moist soil or when planting early into colder soils.

Today, there is more emphasis on seeding to a specific population, rather than simply planting a certain quantity of seed based on weight. The importance of understanding seed count per pound is even more critical. Planting 90 lbs. per acre of seed lots with the seed counts shown above will result in a 13% difference in the number of plants per acre. Missing the optimum seeding rate for a variety can have a significant impact on the performance of some varieties, measured directly by yield, or indirectly in agronomic performance like lodging. In my opinion, we are just beginning to understand optimum seeding rate x variety interactions in wheat. This is

partly due to a lack of investment in wheat research compared to other crops such as corn and soybeans. Improvements in seeding equipment and the ability to collect and manage field data make high quality, certified seed even more valuable.

Producers are strongly encouraged to use available resources to select the best varieties for their farm and production practices and then purchase North Dakota certified seed to plant. With all the management decisions that are made throughout the production season, why would anyone not start the season with the best seed possible? New year – New seed.

Regulatory Inspections: What to Expect

Jason Goltz, Regulatory Program Manager

Each year, between February and May, Seed Department regulatory inspectors visit seed retail establishments to determine whether seed being offered for sale complies with state and federal seed laws. These inspections provide retailers and consumers assurance of properly labeled, quality products.

Inspectors ensure:

- possession of a seed labeling permit, if an initial labeler
- information about the business is updated
- an inspection report is completed
- record retention is verified to be in compliance with NDSSD requirements
- random samples from different lots may be collected

To help the inspection go smoothly, retail facilities should prepare ahead of time. Ensure all bins are properly marked, and any carry over seed lots have been re-labeled (forms are available on the NDSSD website). Verify your records and seed samples are in order. Records must be retained for one year and samples retained for three years after the final disposition of the seed lot.

Facilities that print bulk certificates online will not have the same record retention requirements as facilities that use bulk sales certificates printed at the department. The inspector may need to view the online records. Although not required, the log sheet can be printed and placed in a file once the lot is sold.

Regulatory inspectors will also verify that germination test dates are current. Excluding the month of the test, germination tests expire after:

- Cereal grains, soybeans and edible beans **9 months**
- Vegetable, flower, grass and forb seed **12 months**
- Cool season lawn and turf grasses **15 months**
- Interstate seed transactions **5 months**

Samples we collect will be checked for contamination from other crop seed, excessive inert matter and weed seed, then tested for germination. Results are compared to the label claims. The labeler and retailer will be notified if the sample is not within Federal Seed Act tolerances. After all testing is completed a file sample is retained by NDSSD for two years.

Understanding what the inspectors are looking for and preparing for an inspection will help ensure compliance. An inspection is all about truth-in-labeling.

2019 Approved Facility Inspections

Kyle Bednar, Field Seed Inspector II

The annual facility inspection process started in early October and was completed in late December. By now, managers should have received the current Approved Facility Permit in the mail along with a copy of this year's inspection report. Please display the permit, retain your copy and review the 2019 facility inspection report with the appropriate employees for any nonconformity found during the inspection.

In order to continue to have another successful upcoming seed season, here are a few things to keep in mind:

- Re-label any carry over seed.
- Be sure that all seed bins and equipment is clean before certified seed is handled.
- Label all final certified seed bins with lot, class and variety. Blue certified seed adhesive labels are provided with each lot.
- Keep an up-to-date bin chart and ensure all approved seed bins are identified.
- Retain a two-pound sample of each seed lot for one year, labeled with lot, class and variety.
- Issue buyers a bulk certificate for each sale at the time of sale, and retain your portion.
- Return all unused bulk certificates and log sheets to the State Seed Department after final disposition of the lot, or by September 1.
- Monitor your seed bins for any signs of heating or insect damage that may occur during the winter months.

The Seed Department launched a new online bulk certificate printing program for growers/dealers that have online capability. If you are interested, call the office and we will get you set up. Paper bulk certificates are still available for those that don't want to print online.

We look forward to visiting with you during the upcoming trade shows. We'll be at the ND Grain Dealers Convention – January 20 - 22, and the KMOT Ag Show – January 30 - February 1. The State Seed wall calendar, Seed Directory & the Seed Guide will be available at our booth.

I would like to take this opportunity to thank my fellow inspectors for another successful year. We also sincerely appreciate the support shown by the facility managers and staff while we were on site conducting inspections.

Print Your Own Bulk Certificates

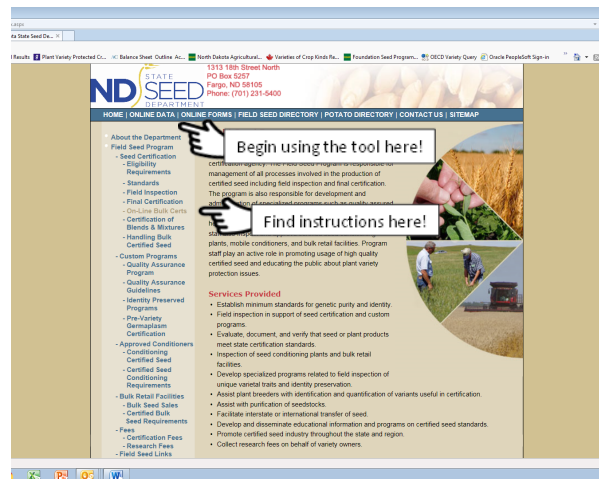
Steve Sebesta, Deputy Commissioner

Over a year ago we rolled out our online bulk certificate printing tool enabling labelers to generate their own bulk certificates on demand. The number of labelers that are using the online service has grown steadily and we anticipate more will do so this spring. Here are a few good reasons labelers should consider using the online tool.

It's fast – labelers can print bulk certificates as soon as a seed lot passes final certification. No waiting for the paper forms to arrive by mail. Labelers no longer need to call our office to request additional bulk certificates. Bulk certificates may be printed as long as there is seed remaining in the lot.

It's convenient – print certificates whenever you want and from wherever you are. As long as you have connection to the internet, you may generate bulk certificates from your computer, tablet or even your cell phone. Bulk certificates may be printed on-site or they can be emailed to your customer as a pdf document. That's especially helpful if you are away from your office.

It's functional – lot management is simplified. All of your certified seed lots are accessible when you log in. You may filter your options by crop/variety/lot if you wish. When a sales transaction is completed, the records are automatically



updated. The quantity of seed sold is automatically deducted from the beginning inventory each time a sale is made. Year-end sales reports are generated automatically which simplifies royalty and seed tax reporting.

To make it simple, we've posted instructions for getting started on our webpage, ndseed.com in the Field Seed Program section. All you need to use this handy tool is your customer ID and password. Call the Seed Department and we'll be happy to help you get started.

2018 Winter Grow Out

Kent Sather, Director, Potato Programs

North Dakota certified seed potato growers planted 14,008 acres of seed potatoes for the 2018 crop year. This acreage was made up of 496 individual seed lots. Each lot is characterized by unique information including grower name, acreage, seed source, number of field generations previously grown, and disease readings from previous inspections. All of this data is documented by the Seed Department and determines eligibility for certification.

During the 2018 growing season, NDSSD staff visually inspected all seed lots three times, and serologically tested plants from many of those acres. These inspections and tests determine if seed lots meet disease tolerance standards for certified seed stated in North Dakota rules and regulations. Tolerances for various potato pathogens and other issues are established by research and practical analysis.

The process of certification continues after harvest with the Winter Grow Out (WGO) plots. During harvest, growers collect tuber samples from each seed lot that passed summer inspections. These WGO samples are planted in the fall near Homestead, FL. Every plant of each lot is inspected for virus and other issues. Inspection results estimate virus-spread that may have occurred after summer inspections were completed, but before vine killing occurred. The results are used to determine seed sales eligibility of lots already in storage, and recertification eligibility for the following growing season.

The 2018 WGO plot was planted November 12 – 20. The plot represents just over 8,000 acres that passed summer inspections. NDSSD staff planted 378 samples, most containing 600 tubers. Nearly 180,000 total tubers were planted over 12 acres. Inspections will occur January 2 – 16, 2019. Every emerging plant will be examined at least twice by two inspectors. Plants with virus symptoms will be scored and recorded as a percentage within its representative sample. Leaves from 140 lots will be sent to the NDSSD diagnostic lab to serologically test for Potato Virus Y (PVY), the primary virus that causes rejection in certified seed. Lots with high levels of virus will be rejected for re-certification. Lots with no or very low virus levels will be eligible to be certified in the 2019 crop.

Results from the WGO estimate virus levels that likely will be expressed in the future crop. Growers will use this information for management of their seed lots. The NDSSD will record and file the results, confirming eligible seed lots for re-certification during application time for the 2019 crop.



2018 WGO near Homestead, FL

Submitting Seed Samples

Sera Axtman

When submitting a sample, it is extremely important to provide all required information. Incomplete or inaccurate information will result in delays.

Always include the following for each sample:

- Kind, variety
- Lot
- Field application number(s) if applicable
- Test(s) requested

Envelopes and bags for submitting samples are available from the Seed Department. Please contact us to have some mailed to you. Manila envelopes are used to submit common seed, pre-germs and carryover seed. Plastic sample bags are used for final certification only.

For a purity, germ and seed count on cereals, we need approximately 4 cups of seed. For soybeans, we need 5 cups.

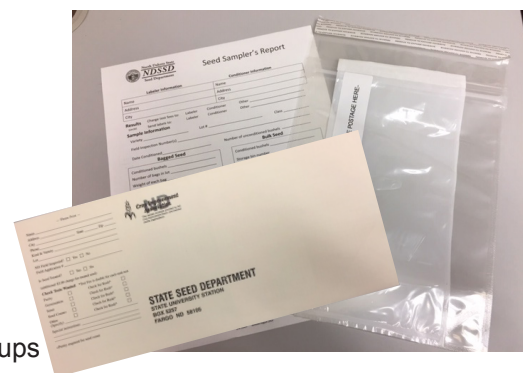
Carryover Seed: To update your germination, 2 cups of seed is needed. Complete the “Relabeling Request” form, making sure to include carryover bushels and the number of bulk certificates or tags you need.

Pre-germ: Two cups of seed is needed. Include your field numbers if you plan on using the results for final certification. Pre-germs are not allowed on field peas, soybeans, beans and other fragile crops.

Final Certification: A full plastic bag of seed is needed. Complete the “Seed Sampler’s Report” form, making sure field numbers are included and accurate. If using your pre-germ results, please include the lab sample number (e.g. L1800265) so we don’t duplicate the test.

You can find our forms under “Online Forms” on our website at www.ndseed.com.

If you have not yet provided your email address and would like to get your lab results via email, please call the office.



North Dakota State Seed Department

PO Box 5257

Fargo, ND 58105-5257

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NDSSD Calendar

Jan 20-22ND Grain Dealers annual meeting, Fargo

Jan 28-29Northern Pulse Growers annual meeting, Minot

Jan 29-Feb 1KMOT Ag Expo, Minot

Feb 7ND Crop Improvement annual meeting, Bismarck

Feb 7MonDak Pulse Day, Williston

Feb 20ND Certified Seed Potato Growers annual meeting, Grand Forks

Feb 20-21International Crop Expo, Grand Forks

Mar 5-10North Dakota Winter Show, Valley City

Mar 12-13National Hard Spring Wheat Show, Williston