The North Dakota
# Seed Journal
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Newsletter of the North Dakota State Seed Department

## Inside



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## Spring Planning

***Jason Goltz**, Field Seed Program Manager*

Just a few reminders as we get through mid-winter and prepare for spring.

### Seed Certification / Recertification

Certification samples have been coming into the lab regularly and compare closely to this time last year. Some seed producers hold off on certifying their field inspected seed because they don't have any sales. The problem with doing that is that when a sale is pending, it can take a week to ten days from the time we receive the sample to complete all the testing.

If the logistics work to clean up the seed lots, then the samples can come in for testing. If there are no pending sales, just write "HOLD" in the remarks section of the sampler's report. All the testing will be done, but you will not be charged the final certification fee. When a sale is pending, just notify the department to remove the certification from HOLD. This request, if it comes in during business hours, can be fulfilled in just a few minutes. Bulk certificates will then be available for printing in the online account. Placing a seed lot on hold can save a little money while waiting for a sale. It also helps have a saleable seed lot available on short notice.

### Field Inspection Application

Each year, we receive applications for field inspection which are missing a bulk certificate. If the applicant grew the seed on their farm, for example, they planted Foundation seed and had the field inspected as Registered class, then they do not need to issue themselves a bulk certificate. If they are planting back that Registered field to produce Certified class, then they only need to put the field application or 'S' number in the box for the lot planted. We will verify the field was inspected and passed at that class.

When purchasing seed for producing a seed crop, ensure you are buying a Foundation or Registered lot. Certified class cannot produce seed unless the variety owner declares an emergency and requests from our department a one-time Certified to Certified production. When buying your Foundation or Registered seed, you must receive a bulk certificate or tag; we cannot process the application without it.

Receiving a bulk certificate at the point of sale will ensure you have purchased the correct class of seed. It will also ensure you can submit your application as soon as the seed is planted rather than waiting until you receive the certificate later or not at all.

## New Certified Seed Growers Manual

We have a new Certified Seed Growers Manual to help our customers navigate the process of certifying seed lots. Experienced seed growers will find reminders and new seed growers will find a start to finish guide to certify their first seed lot from field to bin. The manual will be accessible on our website, with some limited print copies also available.

# From the Commissioner's Desk

It appears that we have kicked the proverbial hornet's nest.

The ND State Seed Department seed regulatory division recently completed an enforcement action wherein a grower in northeast ND was assessed and paid a fine of $60,000 for the unauthorized propagation of protected wheat varieties. The fine amounts to the maximum $10,000 per occurrence on 6 separate fields totaling 451 acres planted in the 2025 season.

As you might imagine, the public chatter surrounding this issue is extensive…and loud. Social media, enough said. While I would much prefer to let this situation blow over, some clarity has become a necessity. Here are some facts surrounding the case;

We received multiple complaints regarding this individual, on virtually every crop type planted on his farm, over a two-year period. Those complaints came to our agency, and to national seed intellectual property entities associated with the American Seed Trade Association. Our investigation focused only on potato and wheat, and our audit of records reflected this.

Our audit did not uncover violations of state seed laws associated with potato plantings, but did regarding the unauthorized planting of protected wheat varieties. The grower misled Department personnel by falsely identifying wheat varieties planted on 12 of 19 fields planted in spring of 2025. The grower failed to provide proof of legal acquisition of the varieties, or couldn't provide those records. This fact led to the unauthorized propagation/infringement complaint and, ultimately, the enforcement action.

The Department is not speculating on or making up the infringement allegation; tissue samples of plants growing on the legal location(s) provided by the grower were tested using DNA fingerprint technology by the ISO 17025 accredited National Agricultural Genotyping Center (NAGC). This testing procedure determines a unique genetic fingerprint using DNA markers comparing the unknown sample to a pre-determined breeder profile contained in the database. NAGC is a high-throughput not-for-profit facility that performs all of our variety ID testing on certified HRSW totaling hundreds of seed lots, dozens of varieties, and millions of bushels of certified wheat seed each season. The plant tissue was acquired by trained inspectors/auditors, and chain of custody from field to laboratory was followed.

The Department levied the maximum penalty for the unauthorized propagation; which is in line with the precedent for use of the penalty provisions in state seed law. The $10,000 maximum per occurrence has only been utilized or levied in cases of violation of PVP provisions. In this case, the grower did not "brownbag" seed to another farmer, he received a protected variety by some means and planted that protected variety on his farm, thus violating the infringement provisions of the PVPA.

Further, the Department did not release the name of the individual involved, only that an enforcement action had occurred. The name was released only after a formal request for information by media.

The grower, by virtue of signing a consent agreement and waiver of hearing and paying the assessed penalties, legally admitted to the wrongdoing. He had every opportunity to retain an attorney and/or request an administrative hearing before an administrative law judge. In essence, to appeal the action.

An additional piece of this case that has remained in the background is the admittance of violation of a single-use technology agreement on a different protected variety. Genetic testing revealed the use of a Certified Seed Only (CSO) variety, which had been acquired legally in 2024. The enforcement of single-use agreements does not fall within the purview of the Department's regulatory authority and is therefore unenforceable by our agency. However, the Department can and will inform a variety owner of limited-use license agreements if found in the course of an audit or enforcement action. For the Department, this brings some clarity to the extent of our authority in regulating PVP. Enforcement surrounding unauthorized propagation of varieties (infringement of PVP) is considered a primary violation, while breach of a single use agreement between buyer and seller is considered secondary and not enforceable.

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Ken Bertsch.....State Seed Commissioner
Adam Winchester.....Director, Potato Program
Jason Goltz.....Field Seed Program Manager
Phillip Aipperspach....Regulatory Program Manager
Jeanna Mueller.....Seed Laboratory Manager
Presley Mosher...Diagnostic Laboratory Mgr, Editor
Starr Thies .....Business Manager
Robert Sauter.....Potato Program Supervisor
Ciara Clark.....Field Seed Specialist, Asst Editor
Sera Axtman ..... Design and Layout

## Administrative Corner

***Starr Thies,*** *Business Manager*

When you send in seed samples for testing you may receive multiple emails with results as each individual test is completed. The easiest way to see how much you owe in total for a sample would be to wait until the end of the month and look up each sample compared to the customer statement we send out. These statements are sent at the end of each month with a listing of all invoices on your account.

If you are not currently receiving your statements by mail and feel that you should be, please contact the department to update your customer information. We would also love to have your email address so that your lab results can be sent to you as soon as they are completed.

Thank you and have a happy new year!

## Know What You Sow

***Phillip Aipperspach**, Regulatory Program Manager*

"Know what you sow" is a simple statement that relates to agriculture in an equally simple way. However, despite its simplicity, modern trends in agriculture have made it more difficult to fully understand everything that comes with sowing crops each season.

Since the beginning of ancient agriculture, the standard practice has been to plant good seed, harvest the crop, sell the product, and save a portion of the seed for planting the following year. While this is still a viable practice to some extent, producers who wish to take advantage of modern agricultural advances may need to adapt.

Specifically, I am referring to changes in how new seed varieties reach the market and the varietal protection policies that accompany them. The most relevant seed law affecting our industry is the Plant Variety Protection Act (PVPA). Originally enacted in the United States in 1970 and significantly amended in 1994, the PVPA provides companies with tools to protect new genetic varieties they develop. If a company opts for PVPA protection, the variety is protected by law for 20 years.

This is where things can become complicated. Within the PVPA, there is a provision known as Title V, which allows the variety owner to restrict the sale of that variety to certified seed only. If this option is chosen, the seed may only be legally purchased if it has passed certification and been approved for sale. Under PVPA protection, there is also a farmer's saved seed exemption. This exemption allows a farmer who has legally purchased a PVP variety to save seed for replanting on their own farm. However, it does not allow the farmer to sell, barter, or exchange that seed for any reproductive purpose.

PVP protections have been in place for some time and are widely understood and followed. However, a relatively new practice in the cereal grain industry is the implementation of "single-use agreements." A single-use agreement is a contractual requirement that seed be planted for commercial production purposes only. These agreements do not allow any seed to be saved for replanting. This practice is becoming increasingly common throughout the cereal grain industry, with WestBred wheat being one of the most notable examples. It is likely that more new varieties will continue to be released under single-use agreements.

Both PVP protections and single-use agreements are here to stay in the cereal grain market, so what can producers do to ensure compliance? First, the most important step is to review and read the product label. Every seed purchase comes with a label that clearly states what is being purchased and outlines any restrictions. These labels contain critical information to help producers make compliant decisions. Second, producers can consult the USDA database for PVP-registered varieties. All varieties appear in this database after application, even before official approval. Lastly, the North Dakota State Seed Department (NDSSD) offers resources such as the seed directory and staff assistance to help answer questions regarding PVP and single-use agreements.

In conclusion, it is in every producer's best interest to stay informed about these laws and how they affect their operation. By purchasing protected seed, producers agree to follow the legal requirements attached to the varieties they purchase. Being informed and knowledgeable about what is being planted is the best defense against noncompliance and potential regulatory action.

## In the Seed Lab

***Jeanna Mueller**, Seed Lab Manager*

Our 2025/2026 season is starting to pick up with samples coming in more consistently. From July 1st to January 2nd, we have received 2,456 samples compared to last year's approximately 3,045 samples.

**Seed Quality:**

Seed quality has been good to average for germination scores, with no major quality or disease issues. This year's harvest was dry for some fragile crops and I am expecting to see some mechanical damage, but have not seen any yet.

**Seed Testing Reminders:**

- **Length of Germination Test:**
  - Please take in to consideration the length of time it takes to carry out a complete germination test. The closer we get to planting season the busier we get in the Seed Lab, which means a possible delay in planting. Below is the guideline for germination testing length:
    - Small grains and most field crops, 7-10 days
    - Wheatgrass/native grasses, 30 days
- **Length of Purity Test:**
  - Our end goal for timing purity tests to be completed is the same day as the germination comes out. That being said, if our sample load on the purity side of the lab is light they will be done much sooner than that.
  - If any of our customers are worried about the timing a rush can be added to the test (germ. or purity) and that sample will be pushed to the front of the line.
- **Sample sizes:**
  - Quite often we have samples coming in that do not have enough seed for the tests requested. It delays testing if we have to request more seed. Below are the amounts required for germination and purity testing.
  - Germination tests have minimum sample size of at least 800 seeds.
  - Purity test minimum sample sizes vary according to species.
    - Small-seeded grasses, white or alsike clover or seeds of similar size, 4 oz.
    - Sweet clover, red clover, alfalfa, grasses, millet, rape, flax or seeds of similar size, 1/2 lb.
    - Cereals, soybeans, or seeds of similar size, 2 lbs. Grass mixes, 2 lbs.

For Diagnostic Lab testing samples sizes please see our website. Please give us a call with any testing questions we can help you with!

# Where we are and where are we going? Direct Tuber Testing: A Perspective

***Adam Winchester**, Director of Potato Programs*

Direct tuber testing (DTT) is the process whereby seed potatoes are directly tested for viruses, potato virus y (PVY) and potato leaf roll virus (PLRV) in particular. This method is being explored as a possible alternative to a grow-out, which requires seed lots to be planted, and then grown to full maturity for visual inspection. The North Dakota State Seed Department (NDSSD) has come a long way in expanding its DTT program from testing only a few lots in 2023 to nearly 70 in 2025. We anticipate testing even more lots in 2026 and beyond. The NDSSD is keeping pace with (and in some cases far ahead of) other programs with its DTT program. The purpose of this journal article is to update the ND seed potato industry on the state of DTT across the U.S. and Canada with a focus on developments within individual programs as presented at the recent Seed Certification Section meeting of the Potato Association of America (PAA) held in Washington D.C. in early December, 2025.

As of early January, the 2025 potato seed crop winter grow out is taking place on Oahu's north shore. NDSSD Potato Program personnel planted the plot in late November and are back evaluating the emerged plants at time of writing.

The two polymerase chain reaction (PCR) methods currently being used by certification programs for DTT are immunocapture PCR (IC-PCR) and real-time PCR (RT-PCR). IC-PCR shares similarities to ELISA (enzyme-linked immunosorbent assay) testing and was the first method to be adopted for DTT. It is also the most common PCR test being used in certification. Many states are now adopting RT-PCR because it allows for multiplexing of viruses. Regardless, all states were in agreement that both methods are acceptable for DTT. The NDSSD utilizes IC-PCR, but may explore the use of RT-PCR in the future.

The Section made a breakthrough regarding standardizing composite sizes and number of cores to be taken from individual tubers. The number of tubers per test well is known as the composite size. A large composite size (25 or even 50) would be more cost effective and allow the tests to be conducted more quickly, but accuracy would be sacrificed. A small composite size (5 or even 1) gives you a more accurate test, but is more expensive. The Section decided that no more than 10 tubers per well is acceptable, though less than 10 tubers is acceptable.

Another point of discussion was the ideal number of cores that should be taken from each tuber. In the Netherlands, a single large core is taken from the stem end, whereas in the U.S. and Canada the standard practice has been to take three or four smaller cores. In the U.S., one core is taken from the stem end and two or three additional cores are taken at random from eyes on the tuber. Taking only a single core is risky considering that PVY and PLRV are randomly distributed inside the tuber

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# Combining R# Seed Lots

***Ciara Clark**, Field Seed Specialist*

When purchasing additional seed of the same variety as seed already in your bin, you may combine the seed into a new seed lot. This can help free up bin space and eliminate the need to produce Bulk Certificates from multiple seed lots for a customer. There are two different ways to accomplish this: purchasing seed from the same parent lot or combining two seed lots and creating a new lot number.

Seed from the same parent lot means that the newly purchased seed has the same C# of the previously purchased seed. In these instances, when filling out the Resale Request for Certified Seed form you should make a note in the comments box "Same parent lot, add bushels to Rxxxxx" (this is the certification number of your existing lot). You still need to attach the Bulk Certificate you received with the newly purchased seed as proof of purchase.

Purchasing additional seed of the same variety and class of seed you already have in the bin and adding to that seed requires you to provide a new lot number. When filling out the Resale Request for Certified Seed form you should provide the new lot number as well as noting in the comments box, "Combine with x number of bushels from Rxxxxx". The number of bushels for remaining seed must be provided as well as the number of bushels purchased of the new seed to make up the total number of bushels for the new lot. This also requires you to attach the Bulk Certificate for the newly purchased seed.

These options are in addition to the ability to combine multiple seed lots together when filling your bins. There is no maximum number of seed lots that may be combined, as long as the bushels do not exceed bin size. As with the above options, any time you combine multiple seed lots together you must provide the Bulk Certificate for each lot as proof of purchase and designate a new lot number.

If you have any questions on this process or any certified seed questions in general don't hesitate to ask. You can email me at cclark@ndseed.ndsu.edu or call me at 701-797-7201.

## From the Commissioner's Desk

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These are all facts of the case. Arguments surrounding whether a farmer should be able to replant seeds on his farm are irrelevant in this particular case; federal and state laws protecting variety owner's rights are clear, and have been in place for decades.

As the administrator of the agency responsible for many different functions and outcomes for the seed industry in North Dakota, a few final points are in order:

1) Seed quality is the foremost goal of Department inspection and regulatory efforts. We pursue that goal for growers, retailers and consumers of seed products. Inspection, in both certification (quality assurance) and seed regulatory programs, focuses on providing the highest quality product for the ag industry in this state and region.

2) Improved seed varieties are critical to the advancement and profitability of farms in North Dakota. Variety development and improvement processes happen only when adequate revenue flows back to crop breeders. Seed intellectual property laws like the Plant Variety Protection Act are intended to help variety developers, both public and private, recover costs of plant breeding and reinvest in those efforts.

The Department's regulatory efforts primarily focus on consumer education and protection issues. Sampling and spot checking labeling, educating groups and the general public on seed labeling and variety protection (including PVP and single-use licensing) chews up most of our regulatory inspector's time in the field or in public meetings. I estimate that 5-10% of our seed regulatory time is spent following up complaints related to seed law violations.

Most importantly, the illegal exchange or use of seed, or the ignoring of limited use licenses, negatively affects everyone involved in this effort. Plant breeders lose royalty revenues each time a seed is wrongly obtained or misused on a farm. The seed grower loses out on the potential to profit from growing certified seed, and the seed retailer markets less product. Every participant in the seed production process, and ultimately the entire ag industry, loses.

Best wishes for a safe and profitable 2026,

## Blackleg Testing

***Presley Mosher**, Diagnostic Lab Manager*

Blackleg is a serious seed transmitted disease of canola caused by the fungal pathogen, *Leptosphaeria maculans*. Another closely related species, *L. biglobosa*, is considered weakly virulent and is usually not of concern in North Dakota. Both species are found in North Dakota and many parts of Canada. *L. maculans* is economically important as it may cause premature seedling death in the field or result in plants more prone to lodging. Yield losses of up to 50% are possible under conditions that foster disease.

Symptoms appear as tan or brown colored leaf spots on leaf surfaces. Stem lesions can also form after the pathogen works its way up the developing plant (Fig. 1). In extreme cases, lodging can occur when lesions weaken the stem. Pods and seed may also become infected. Infected seed may appear gray and have a shriveled appearance. Infected pods have a tendency to split open, resulting in seed loss.

Figure 1. Cracked and drying canola stem infected by the blackleg pathogen. The black spots are structures of the fungus itself, called pycnidia. (Photo credit: NDSU Plant Pathology)

Effective control measures for blackleg include proper management practices, using certified seed that is free of disease, chemical measures such as seed treatments and fungicide applications, and planting resistant hybrids. Resistance is specific to the race of blackleg present and should be carefully utilized to avoid an increase in prevalence of a race that the hybrid is not resistant to. It's recommended to utilize a three-year rotation with other crops and to avoid using the same canola hybrid two seasons consecutively.

The North Dakota State Seed Department offers testing for *L. maculans*. An agar test on petri plates is performed using 1,000 seeds. This test is typically completed in seven days and results are reported as a percentage of infected seed.

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itself and some stems may emerge without the virus. The Section decided that taking four cores (as opposed to one or three) should be standard practice across all states.

Acceptance of DTT as an official winter test is growing across the United States. In Nebraska, it is now accepted as the official winter testing method for FY3 lots or older that are staying within the state. A similar practice is being considered in Wisconsin and Michigan. In Montana, DTT is not considered the official test, but is being conducted in tandem with the grow-out. New Brunswick is actively using DTT as an official test, though its use is limited. In North Dakota, the grow-out and sprout testing are still considered the only two official winter test methods, though this may be subject to change in the coming years depending on circumstances of individual lots. Lastly, it should be noted that a grow-out is still required in cases where DTT is required by industry partners. As of 2025, a direct tuber test cannot replace a grow-out or sprout test in the state of North Dakota.

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# NDSSD Calendar

**Jan 28-30** .....KMOT Ag Expo, Minot

**Feb 16** .....President's Day, office closed

**Feb 18** .....ND Certified Seed Potato Growers Annual Meeting, Grand Forks

**Feb 18-19** .....International Crop Expo, Grand Forks

**April 3** .....Good Friday, office closed