



# The North Dakota Seed Journal

JANUARY 2024

Newsletter of the North Dakota State Seed Department

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## Bulk Retail Manual Now Online

**Steve Sebesta**, Deputy Commissioner

The North Dakota Approved Bulk Retail Manual has been updated and is now available online. The manual contains useful information for bulk retail facilities already approved to handle certified seed, or anyone interested in becoming an approved bulk retailer.

Bulk seed presents different challenges compared to bagged seed and maintaining varietal identity, seed purity and quality are critical. Therefore, bulk retailers that sell certified seed are regulated by the Seed Department to ensure they can meet the minimum standards for handling certified seed.

Many people are unaware that our rules and standards are based on federal law, the Federal Seed Act (FSA), to be exact. There are two sections of the FSA Regulations that specifically regulate seed conditioning and bulk retail facilities. If you find time I suggest reading FSA Regulations §201.73 *Processors and processing of all classes of certified seed* and §201.74 *Labeling of all classes of certified seed*. Those two sections will give you a foundational understanding of why we have the rules we do.

The manual includes just about everything anyone would need to know about handling bulk certified seed. We've included hyperlinks wherever we could to make information like seed laws, labeling requirements and seed certification standards easier to access and to link directly to fillable forms such as Seed Sampler's Reports.


To access the manual, go to the **Field Seed** section of our website and click on **Approved Handling Facilities**. Select **Bulk Retailers**, then click on **Bulk Retailer's Manual** at the bottom of the page to expand the box to show the different sections. Each heading is a link to a pdf file and users can print individual pages or sections of interest. We hope you will find our online version useful and easy to navigate.

## 2024 Approved Facility Inspections

**Ciara Clark**, Field Seed Specialist

Most of our bulk retail and conditioner inspections are complete and location managers should have received a copy of the inspection report along with a new permit for 2024. Make sure to take a close look at the inspection report for any deficiencies that need to be corrected.

This year, the biggest issue we saw was improper labeling of bins containing certified seed. ALL bins containing field-inspected or certified seed **MUST** be labeled. If you have "dirty" field-inspected seed in a bin it must be labeled with the kind, variety, class and lot or field number(s). There is no right or wrong way to label the bin, as long as it is labeled with the proper information.



Year Certified 20	_____
Bin ID	_____
Kind	_____
Variety	_____
Class	_____
Lot No.	_____



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**2024 Approved Facility Inspections**

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# From the Commissioner's Desk

Why is the PVPA important to you?

We do a fair amount of communicating about Plant Variety Protection Act (PVPA) topics. There are a number of good reasons for this, and those reasons affect growers, seed companies and variety owners.

The PVPA enables (among other requirements) the collection of royalties by a variety owner for the invention of a new variety. The PVPA was enacted by Congress in 1970 and amended in 1994 to promote the research and development of new and improved varieties of agricultural seeds, ultimately benefitting producers, the seed industry and all of agriculture. Once PVP is granted, the variety owner has exclusive right to market (and restrict marketing of) their variety for a period of 20 years. PVPA Title V requires the variety to be sold as a class of certified seed (Foundation, Registered or Certified).

PVP protections, including the farmer replant provision allowing for enough legally purchased seed to be used on your own "holdings", apply to some potato varieties as well (but is limited to one year under state seed law). In fact, any certification requirement(s) and other restrictions may be applied by the variety owner in the same manner as field crops like cereals and soybean and other asexually produced crops. Potato is similarly subject to state and federal labeling and variety protection requirements and is (like all seed intended for planting purposes) regulated in North Dakota by the Seed Department.

As a crop producer, your payment of royalties ensures that variety owners have a revenue stream to continue development of improved varieties, which ultimately benefits your operation. Single use agreements, which negate the farmer replant provisions of PVPA, have become more common; again,

Ken Bertsch.....State Seed Commissioner  
Steve Sebesta.....Deputy Seed Commissioner  
Adam Winchester.....Director, Potato Program  
Jason Goltz.....Field Seed Program Manager  
Jeanna Mueller.....Seed Laboratory Manager  
Presley Mosher.....Diagnostic Laboratory Manager  
Starr Thies.....Business Manager  
Dustin Smith.....Regulatory Program Manager  
Robert Sauter...Interim Potato Program Supervisor

PVP allows the variety owner to describe any exclusion for their intellectual property. Nonetheless, these protected/royalty-bearing varieties provide you a consistent supply of new and improved seed and a stable source of revenue to the breeder for continued variety development.

As a variety owner or seed company marketing a PVP variety, collecting a royalty is an obvious financial advantage. The revenue stream from royalties, in addition to the value added profit of seed production, drive investment in variety improvement. Additionally, federal law contains enforcement provisions that protect the intellectual property rights of owners. PVPA provides for the collection of triple-damages for violation of owner's rights. By all logic, this would be considered beneficial to variety owners, seed retailers, seed growers and farmers.

We have a unique situation in North Dakota, especially regarding the choice to use PVPA by variety owners. State seed laws give the responsibility for enforcing PVPA to the state's seed regulatory agency - the State Seed Department. Our code, which was amended by legislative action in 2015, provides a maximum penalty of \$10,000 per violation. We asked for the amendment with the intent to help foster and promote variety development even further by helping variety owners protect their investment in research and development. We view this enforcement provision as an advantage to seed companies and growers. Another win-win.

Is this approach anti-farmer? Absolutely not; it's the right stance for the seed industry and, if one observes state seed laws and PVPA, not a problem for a producer. Is this approach pro-industry? Only to the extent that a variety owner has a partner in legal protection of their product. They have the right under federal law to seek triple-damages; they also have a partner at the state level armed with a \$10,000 "dis-incentive" for infringement of their ownership rights. Seed growers and retailers benefit in the same manner; limiting "brownbagging" of seed promotes a more robust and healthy seed industry in this state. More win-win, especially for commercial farmers and commodity producers.

Best wishes for a safe and profitable 2024.



## The Permit Paradox

**Dustin Smith, Regulatory Program Manager**

What is currently known as the "Seed Sales Permit" has taken various forms and functions over the years. During the 2019 Legislative Session, the Seed Department cleaned up some Century Code language related to seed labeling and sales permits. We made some minor changes to the Seed Labeling Permit section and made it more encompassing to cover all seed sales. We eliminated the Non-Resident Seed Dealer's License requirement, and rolled those permit holders into Seed Sales Permit holders.

The true objective of the permit is to keep track of labelers of seed sold in North Dakota and provide them with annual reporting documents. The permit is free and does not expire, and the only requirement is that the permit holder returns the Annual Report of Seed Sales form and pays the appropriate labeling fees by September 1; easy enough.

There was a time when everyone was encouraged to apply for a permit

**The Permit Paradox**  
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## Potato Winter Test Update

Adam Winchester, Potato Program Director

The 2023 Winter Test on Oahu, Hawaii continues apace. NDSSD personnel will be on site from January 5- 27. Growth looks great with minimal weed pressure. A video of potato personnel planting the test plot on December 5 can be found in the *News* section of our website. A few reminders regarding the winter test are listed below.

### Latent Variety Testing and Other On-Site Hawaii Testing

We will be ELISA-testing the following varieties at University of Hawaii's laboratory in Honolulu:

- Silvertop Russet
- Prospect
- Shepody
- Russet Norkotah (all strains)

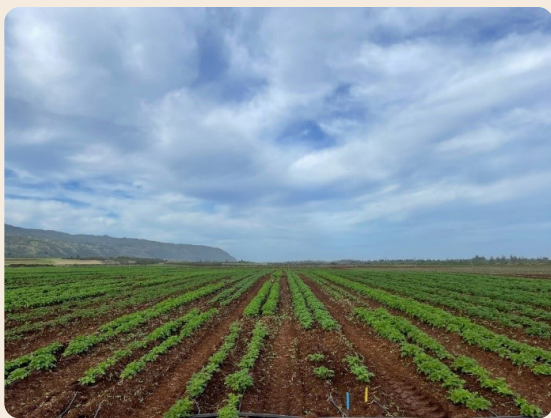
Additional testing may be conducted per request. With the exception of Canada, PLRV tests are not required for export to any state and visual inspections will suffice.

### Sprout Testing

This year, many lots were not sent to the grow-out, but will be sprout-tested instead. We plan on testing all of these lots for PVY, but some lots may require a PLRV test as well. If you plan on keeping the lots in state, only a PVY test is required. Please let us know if you plan on sending any of these lots out of state, since we will also test these lots for PLRV. Feel free to reach out to me or Presley Mosher (pmosher@ndseed.ndsu.edu or 701-231-5430) if you have any questions regarding sprout testing.

### On-Site Updates

I plan to contact each grower once each inspection has been completed. I'll call first, and if I cannot reach you that way, an email will follow giving you an update on what we observed.



## Missing Information Slows Business

Jason Goltz, Certification Manager

The Seed Department performs many different services throughout the year. The type of service is generally driven by a customer's request, specified on the appropriate form, e.g. Application for Field Inspection or Sampler's Report. All too often, important information is not provided on forms submitted by growers or labelers. Remember, the information we request on our forms is necessary to properly process your request and missing information only slows our ability to provide the service you request.

Traceability is an important aspect of certified seed. To demonstrate how this works, I used our database and looked up a lot which I knew to be carry over seed. Figure 1 is a screenshot from a portion of our database from when I entered the current certification number (C33364). This certification was approved December 4, 2023.

Figure 1 shows a previous certification of C78368. When I select the View Prev Cert button, the screen will populate with that previous certification's information.

Figure 1.

Misc

Certification # C33364 Lab Sample # L3302142

Prev Certification # C78368 View Prev Cert View Sample

Figure 2 shows that this lot is a combined seed lot; it had been approved December 9, 2022. I looked up C78140 and it had been approved November 23, 2022.

Figure 2.

Type Certified Retail

C-Combined Lots

Misc

Certification # C78368

Prev Certification #

Cert #	Variety	Kind	Crop	Class	Bushels
C78140	DAPPS	HRSWHT	WHT	F	1724
C78142	DAPPS	HRSWHT	WHT	F	2913

C78142 showed to have been a carryover lot from C75247 as shown in Figure 3; this lot was originally approved on October 20, 2021.

Figure 3.

Misc

Certification # C78142 Lab Sample # L32024

Prev Certification # C75247 View Prev Cert

This time of year, most of our activity is associated with seed testing and final certification. When we receive a carryover sample with the Recertification Request for Carryover Seed form, the previous certification number is often missing on the form. Please include the previous C#. This is a critical piece of information which enables us to trace the seed lot back to its source. If necessary, we could continue this exercise and look up the field inspection numbers to see which seed lot planted the field(s) and even look back through that planted seed lot to determine its origin. Seed certification is often called the Pedigreed Seed System. Now you know why.



## Direct Tuber Testing

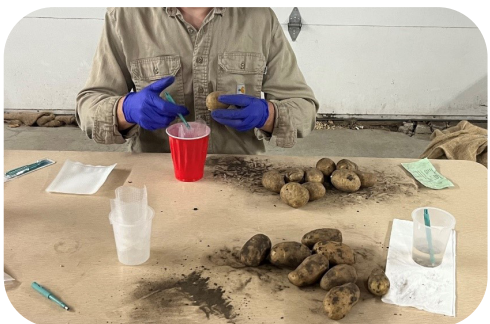
*Presley Mosher, Diagnostic Lab Manager*

Potato Virus Y (PVY) is considered a disease of most importance and is the primary reason for winter grow-out tests. Winter grow-outs are standard protocol for most potato certification programs. In North Dakota, seed lots are sampled at harvest, shipped, and planted in Hawaii. The leaves of the growing plants are then visually observed and/or serologically tested for viruses. This process is undeniably detailed and relies on several cooperators for safe transit and care of the samples.

Last April, certification programs from across the U.S. met in Madison, WI for a weeklong workshop on directly testing potato tuber tissue for viruses. Greater control of the winter testing process, in addition to rising costs of remote grow-out locations are reasons for the groups' interest in this type of testing. In November, I attended the Potato Association of America (PAA) Certification Section meeting in Washington, D.C. Direct tuber testing was one of the main topics of discussion as there has been growing interest in this testing alternative among potato certification programs.

Direct tuber testing involves taking cores from harvested samples and directly testing that tissue for PVY. A molecular method known as polymerase chain reaction, or PCR, is used to detect nucleic acids specific to the virus. It's possible that direct tuber testing could offer more control of the process than a grow-out as it keeps the samples in state and out of the elements of nature.

This fall, the North Dakota State Seed Department initiated dormant tuber testing trials. We plan to continue this research and collect additional data comparing PCR results with field observations in Hawaii over the coming years. We will keep our stakeholders updated as results become available. Please reach out to the Diagnostic Lab with any comments or questions at 701-231-5430 or [pmosher@ndseed.ndsu.edu](mailto:pmosher@ndseed.ndsu.edu).



## The Permit Paradox

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since it was easy to get and seen as better to have it and not need it, than need it and not have it. As a result, we have an extensive list of permit holders that have not reported by the deadline, and we spend an unreasonable amount of time and resources trying to track down missing reports and fees from people and companies that don't have anything to report anyway. As such, I've been on a mission to clean up the permit holder list, and the only way to do it is to deactivate inactive permits.

With only limited exceptions, I will be reviewing the list of permit holders and deactivating accounts that have not submitted annual reports in the previous three years or have reported no sales in the previous five years. You can expect to see a letter in the near future if your permit is slated for deactivation. In the future, we will deactivate any permit that has not reported by November 1. Permits that are deactivated will need to submit a new Seed Sales Permit application to reactivate their permit to legally sell seed.

According to state statute 4.1-53-38: *Before a resident or nonresident person in this state may label or sell [...] seed and before a person may label [...] seed for delivery into this state, the person shall obtain a seed sales permit from the seed commissioner.* We will now be enforcing penalties for seed found available for sale in North Dakota by a labeler who is not an active permit holder. There will be a grace period during the 2024 sales season for current permit holders who are deactivated to get back into active status.

We will be adding an updated PDF of the current permit holders quarterly under the "Seed Sales Permit" section on the website where you can verify that your permit is active. There has been some confusion as to who needs a permit and who needs to report the sales. Basically, any name and address combination that will appear on a label must have a permit, but only the initial labeler needs to include the sale on their annual report. All certified bulk retail locations will now be required to maintain an active permit and current reporting as part of their annual inspection. As always, feel free to call into the office with any questions.

## Jacobson Retires

Ordean Jacobson, a long-time fixture at the Seed Department, has retired after 30 years of service. Ordean began working at the Seed Department in 1994 after retiring from a career with the ASCS. He was initially hired as a field and regulatory inspector and soon began inspecting seed handling facilities. Ordean was the type of person to whom we could give instructions and we'd know the task would be done, and done well. He was very knowledgeable about seed certification, conditioning and retail facilities and seed laws. He was also entrusted with the lead role on a few specialty inspection programs that required extraordinary attention to customer requirements. Over the years, Ordean trained and mentored many of our part-time inspectors and new staff members. Ordean contributed a lot to our department and his loyalty, hard work and dedication to providing excellent customer service will be missed. He plans to spend more time pursuing walleyes. Thanks Jake!



# Dormancy and the Effects on Seed Testing

Jeanna Mueller, Seed Lab Manager

The nature of a seed and how it behaves is a complicated science. The behavior directly effects seed germination. The natural behavior for a seed is to germinate under favorable conditions including light, moisture, and temperature, unless the seed kind exhibits dormancy. "Dormancy is viable seeds, other than hard seeds, that fail to germinate when provided the specific germination conditions for the kind of seed in question." Viability of firm, non-germinated seeds of all species must be determined by any appropriate method or combination of methods (AOSA Rules for Testing Seeds). In seed testing, dormancy is managed differently, depending on what kind of dormancy is present with the seed kind being tested.

## Types of Dormancy

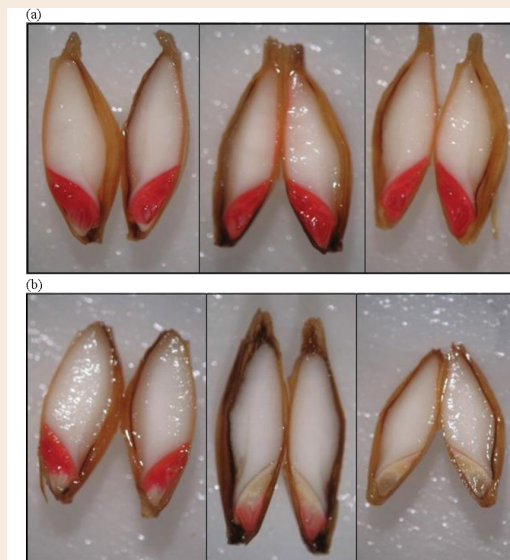
**Innate dormancy** is the case where the seed is incapable of germination when freshly dispersed, even if conditions are suitable for seedling growth are supplied. This type is imposed chemically by the presence of inhibitory compounds either in the seed coat or in the embryo. The seed must first experience some special environmental conditions such as chilling, fluctuating temperature of specific periods, which cause dormancy to break. Innate dormancy is typically our only concern when testing seeds. Many of the species we test require a pre-chill before germination, whether it is small grains, flax or a native grass.

**Induced dormancy** is a kind of secondary dormancy. In many species, newly dispersed seeds have no innate dormancy, but if they fail to meet optimal growing conditions they acquire this type of dormancy.

**Enforced dormancy** occurs when the seed is deprived of optimal conditions. Seed require sufficient moisture, oxygen, light or a suitable temperature to germinate. This dormancy is purely environmental. It may occur when a seed is in dry soil (insufficient moisture), or waterlogged soil (insufficient oxygen). In the lab, we overcome this dormancy by providing optimal germinating conditions for the seed.

In some cases, we can't break dormancy in the lab. When this occurs we use a tetrazolium test at the end of the testing period to check viability of any ungerminated seed that is not obviously dead. These ungerminated seeds are evaluated for viability of their essential structures and examined for evidence of seed deterioration. This test is used mostly on native forbs and grasses but it can be used on any species and/or seed type. The tetrazolium solution stains the embryo red where respiration is occurring. The degree of staining in essential parts (root tip/shoot tip) indicate the viability of the embryo. Figure (a) shows barley embryos that are viable. The embryos in Figure (b) would be considered non-viable.

Dormancy is essential for the survival of some plant species. This information is crucial for the seed grower and the buyer and why it is important to test seed at an official seed lab. We follow the AOSA Rules for Testing Seeds which specify the optimal temperature, light, moisture and type of substrate or planting media to use. If you have any questions, feel free to give us a call.



## 2024 Approved Facility Inspections

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Once final certification is complete or your re-label request has been processed you should receive a blue adhesive label from the State Seed Department that looks like the one shown; if you choose to use your own system to label your bins make sure all of this information is included.

Another issue we saw this year was improper labeling of certified seed samples. Labelers must retain a 2-pound sample of the seed for one year after the final disposition of the seed lot. The sample **MUST** be labeled with the kind, variety, class and lot number.

These two areas are very critical in helping maintain the varietal purity and traceability of a seed lot. The Approved

Seed Conditioner's Manual and the Approved Bulk Retailer's Manual are great resources and training aids for both veterans and new employees. Both manuals can be found on our website in the Field Seed section. Thank you for your cooperation during our inspections and as always, give us a call if you have any questions or concerns.



**North Dakota State Seed Department**

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# NDSSD Calendar

**Feb 19** .....President's Day, office closed

**Feb 21** .....ND Certified Seed Potato Growers annual meeting, Grand Forks

**Feb 21-22** .....International Crop Expo, Grand Forks

**March 6-10** .....North Dakota Winter Show, Valley City

**March 29** .....Good Friday, office closed

**May 1** .....Field inspection applications due for grass