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

Inside

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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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Field Inspection Application Reminders

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

The following are some reminders ahead of applying for field inspections this season.

Grasses

- Application deadline for grasses is **May 1st**. Most grasses are perennial and there should be no reason for a late application.

Cereal Grains

- Application deadline for most crops is **June 15th**. Mail in applications should be post marked by the 15th and online applications should be submitted by close of business that day.

Applicant vs Contract Grower

- The applicant is the person or company which is intending to label the crop.
- The contract grower may be the same as the applicant, but if different, we need their information to coordinate the inspection before harvest.
- In some cases, the applicant will have the contract grower fill out and submit the application. This can lead to problems:
    - The contract grower may put themselves as the applicant. This can lead to the future seed lot being labeled in the wrong name.
    - The contract grower may submit the application late or not at all.
- The applicant should be involved with this process to avoid these problems.

Proof

- Each application will need a tag or bulk certificate for each lot planted. The class planted will need to be either Foundation or Registered.
- If you did not receive a tag or bulk certificate contact Phillip, our Regulatory Manager.

Maps

- FSA maps are required because it is an aerial view with the legal description on it.
- The inspector will use the map to verify location and plan their route through the field. Hand drawn maps or spray maps without topographic detail do not help the inspector.

Signature

- Each application requires a signature.
- Application without a signature will be returned.

Payment

- Payment must be included with the application.

If the approver finds a deficiency with the application, the applicant will receive a call and the application is held until the problem is resolved. Please call us ahead of time with questions. Applications which are on time, complete and accurate are processed quickly which helps all parties involved.

From the Commissioner's Desk

We're in the odd transitional time of the year between wrapping up meeting season, going full-bore with seed quality and health testing, and launching into the next seed production cycle.

By the time Seed Journal arrives to readers we'll have nearly completed lab testing of last year's crop, and be well into prepping for the upcoming inspection season. Shipping point inspection for potato will be winding down and field crop seed will be mostly placed at retail locations or farms and/or in the ground. Our regulatory inspectors should be completing their site visits to warehouses and facilities, and have mostly completed spot-checking labels and sampling of seed lots. Completion of these activities really means the culmination of a full year's cycle of seed quality work Department and industry-wide.

In the meantime, application deadlines are approaching, inspector training is in planning phases, and we're gearing up for the upcoming kickoff of this year's field-season inspection cycle.

As an agency that has responsibilities in both field and lab, and to consumers of seed products, our program of work is fairly broad-and our staff stays busy most of the year. We run a fairly "slim" operation in our field seed program, with a half-dozen or so full-time people involved with inspecting approximately 250,000 acres of seed. Our part-time and seasonal field crop staff, along with full-time employees that perform laboratory or regulatory inspections are critical to completing the work applied-for by our seed growers and industry. In our Potato program, our full time staff inspectors are responsible for all of the field work (3 inspections on 13-14,000 acres), along with the shipping point inspections and GAP audit services. There are a lot of other moving parts in both Potato and Field Seed programs, but you get the idea.

Those core duties haven't changed substantially over time. What has changed is the number of different varieties inspected, the technology used to determine seed quality/varietal identity, challenges associated with seed health, and the sheer size of most of the seed operations we work with in both programs. Like everything else in agriculture; the yield and value of those products has also increased. In the past fifteen or so years, acres inspected have decreased by 50,000 in field crops and 5,000 in potato; but final certified bushels and hundredweight of seed potatoes inspected remain fairly stable. Varietal improvement accounts for a share of that circumstance; improved production practices are much more significant a factor in those statistics.

Ultimately, everything about our agency and its programs is driven by two things; 1) serving our growers and industry with reliable, unbiased inspection service, and 2) making sure that seed (whether inspected/tested by our agency or not) is of the purity and quality stated on the label. The expectations of both industry and consumer intersect at that point, and we take our part in that bargain very seriously.

The Department's mission statement says it all *"To assure integrity of the seed industry through a commitment to client service and product quality"*. Mission statements are often a bit lofty; "assuring integrity" of an industry is beyond anyone's reach. "Commitment to client service and product quality" is not; we remain focused on those objectives every day and in all of the various functions of our seed quality programs.

Best wishes for a safe and profitable year,

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*

As a state agency, we are unable to carry credit balances on customer accounts into the new fiscal year (June 30th). Each month when you receive your statement you may see a credit balance for items such as overpayments, duplicate payments, or canceled fields. You are invited to request a refund check at any time. However, in late May and early June if you have not used up your credit balance we will send a refund check with the amount owed to you.

It is also very important to note as field inspection season nears to please check our website for fees on any of our services. We mail out statements at the end of each month to the address we have on file, so it's easiest to wait until the end of the month to pay your bill, based on the total amount due.

If you have any questions about your account balance, credit or otherwise, please feel free to contact me.

Limited Use License Agreements in Cereal Grain Seed Production

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

The seed production market is an ever-changing landscape; an example being Limited Use License Agreements (LULAs) becoming more common in cereal grains. Both Certified Seed Only (CSO) and single use agreements are also used to describe this model, but all these terms are fundamentally the same. These LULAs are not new to the seed industry as soybeans have followed a similar model for decades. Let's go over a few aspects of single use cereal grains so you as the producer can know what to expect.

These agreements function similarly to technology agreements for soybean seed. However, a key difference is that technology agreements generally protect the seed trait, whereas a LULA for cereal grains protects the variety in its entirety. When buying a variety protected by a LULA you agree to a contract that includes a provision that states you will only use this seed to produce one generation of seed. You agree that you will not plant the seed you produce the following season. If you want to plant that variety again you will have to repurchase for the upcoming planting season.

You may also wonder why the industry is shifting to this model of production after years of producers being able to save their seed for replanting. The answer is many varietal producers in the industry see these agreements as a way of keeping their genetics under tight quality control. This method produces as uniform a product as possible year by year as the company can be very specific on how their seed stock is produced. A notable aspect is that many of the LULA protected cereal varieties are part of the NDSSD certification program. This ensures that the seed you purchase is held to the same quality standards as any other certified seed you may purchase.

There are numerous upsides for growers that use single use seed versus using your own saved seed. The main benefit being assurance that you are getting high quality seed upon delivery every season. With single use seed you won't have to clean, test, and store the seed you need for next season cutting down on your inputs and storage requirements each year.

LULAs may not be the guaranteed solution for every producer; there are many aspects to consider. Does saving your own seed save time and money in the long run? Are cereals an important enough crop in my rotation that they warrant being treated in the same way as soybeans? Is the yield and quality advantage of this variety worth it economically? These are all valid questions that all producers should be asking themselves as they prepare to potentially purchase new varieties of single use protected cereals.

Another note in closing, a single use agreement is considered a contract law; once you purchase a variety of seed that is protected in this manner you agree to all terms in the associated contract. This contract supersedes the Plant Variety Protection Act farmer saved seed exemption. Please take time to read all information on the label provided to you upon purchase of any seed. Everything you need to know will be on that label.

Thank you for all your effort out in the field and have a safe and successful planting season.

Online Field Inspection Application

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

Field inspection applications can now be completed and submitted through your online account. Instructions for completing the applications is in our new Certified Seed Grower's Manual on the State Seed Department website under Field Seed, Seed Certification, Certified Seed Grower's Manual. The step-by-step instructions are listed under the Online Account section.

A couple of reminders

- If your variety does not come up, stop entering it and contact the department so we can add the variety; do not just pick a different variety.
- To pay your field inspection fees either contact the office or wait for the invoice to arrive. Invoices are printed and mailed once the application is approved on our end.

Please reach out to me with any questions regarding the online field inspection application, cclark@ndseed.ndsu.edu or 701-797-7201.

Spring comes early at the NDSSD Potato Seedstocks greenhouse! The crop of russet cultivars gets planted in early March and is harvested in June.

Regrowth After Vine-Killing: An Overlooked Risk for Late-Season PVY Spread in Seed Potato Production

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

Vine-killing is one of the most reliable tools seed growers use to limit Potato Virus Y (PVY) spread late in the season. By removing foliage, growers effectively close the window during which aphids can transmit the virus to susceptible plants. But in recent years, some certification agencies have begun to worry about a problem that can quietly undermine this strategy: **post-kill regrowth.**

The image on the right shows a typical example of vigorous regrowth emerging from a plant that had already been chemically or mechanically killed. While these shoots may look harmless, they represent a physiologically young, fully susceptible target for PVY-carrying aphids at exactly the time growers assume the transmission period has ended.

Although no published studies have directly tested regrowth as a discrete risk factor, multiple lines of evidence from recent PVY research lead to the same practical conclusion: **if green tissue reappears after vine-kill, the opportunity for late-season PVY infection reopens along with it.**

Photo credit: Dr. ir. Laura van Bezouwen and Jan Eggo Hommes, NAK (Netherlands)

Why Regrowth is a Concern

Fresh foliage is highly susceptible

PVY is transmitted in a non persistent manner by many aphid species. Transmission can occur in seconds during brief probing, making young tissue especially vulnerable. Research on in-season spread shows that even when seed is free of detectable PVY, plants can still acquire infection from field sources throughout the summer, with spread continuing all the way to top kill. In a two-year analysis across 19 New Brunswick fields, virus spread ranged from 0 to 76.2%, and even fields planted with clean seed accumulated infections up to 8.7% by harvest (Mackenzie et al., 2014).

When regrowth occurs after top-kill, that tender foliage behaves like a new emerging plant—highly susceptible and unprotected.

Late-season aphid flights continue after vine-kill

Aphid activity commonly persists past the point when growers terminate vines. Because PVY transmission is so rapid, insecticides cannot prevent the initial virus probes. Even if vector numbers are low, a single viruliferous aphid landing on regrowth is sufficient to start a new infection focus.

Studies of seed-borne PVY confirm the broader principle: once a field contains an infection source, spread continues predictably through the remainder of the season (Rosenman et al., 2019). Regrowth simply reintroduces the one element needed for this process—susceptible leaf tissue.

Regrowth undermines the purpose of vine-killing

The goal of vine-killing is to “freeze” the field’s PVY status by removing all above-ground tissue. Regrowth reverses this freeze. What appears as a few scattered green shoots is, epidemiologically, a reopening of the field to late-season transmission at a time when symptoms are milder, scouting is more difficult, and virus spread is harder to detect until postharvest testing.

Experience from the Netherlands

Dutch seed certification authorities have already acknowledged this issue. In the Netherlands, where maintaining extremely low PVY levels is a national priority, **growers actively monitor and suppress regrowth after vine-kill** to avoid late-season infection. The practice is considered an important part of producing high-grade seed under the NAK system.

The image used here—courtesy of Dr. ir. Laura van Bezouwen and Jan Eggo Hommes of the NAK—illustrates exactly the type of regrowth Dutch inspectors watch for during late-season field checks.
Their experience reinforces a simple message: preventing regrowth is not merely cosmetic; it is a disease-management necessity.

Practical Implications for North Dakota Seed Growers

North Dakota’s seed industry already invests heavily in minimizing PVY, from variety selection to roguing, oil sprays, and timing of vine-kill. Recognizing regrowth as a potential late season risk fits naturally within these existing practices.

Key considerations include:

- **Conducting a follow up field check 7–14 days after vine-killing** to identify pockets of regrowth.

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Francis Longtine Retirement

Francis Longtine, potato inspector in Walhalla, ND, retired from service with the Seed Department on February 27th, 2026.

Francis began his career with the Department on January 1, 1980. His 46 years of service marks the longest tenure of a Department employee on record. Francis spent the entirety of his career in our Potato Program with duties focused on potato field inspection and shipping point inspection in the Walhalla seed production area. In addition, he performed regulatory inspections in the northeast district as time allowed in spring prior to shipping point season.

Congratulations to Francis on a long and successful inspection career, your experience and expertise will be missed!

Importance of a Purity Test

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

Every producer, farmer and seed company thinks of germination as the first step to ensure they have a quality product; but really we should be thinking of purity tests as equally valuable information. A purity test is an excellent way to discover the makeup of a seed lot. Below is a breakdown of a purity test.

Parts of Purity test

- **Pure Seed Portion** – All inert matter, broken seed and weeds removed (this portion is used for the seed count).
- **Inert Matter** – Removed from the pure seed portion of the test includes: broken seeds, chaff, stones, ergot, etc. Lower moisture at harvest causes more inert matter in a seed lot. Mechanical breakage of seeds may occur during harvesting, threshing, loading/unloading, hauling and cleaning operations. Large-seeded legumes such as field and garden beans, lima beans, soybeans and peas are especially susceptible to mechanical damage.
- **Other Crop** – Seed considered other crop in the kind being tested by the AOSA Rules for Testing Seeds. We find the biggest issue in particular with spring wheat in durum or durum in spring wheat; it can be hard to pick out the characteristics between the two with an untrained eye. This year's seed lots that failed mostly included too many other crop; the biggest problem being previous crop. An unusual problem seen this year is canola found in flax.
- **Seed Count** – number of seeds per pound; The normal range for a spring wheat sample is 11,000 to 13,000 seeds per pound.
- **Weeds** – Both common and noxious weeds are removed. Depending on where the seed lot is being sold determines the type of weed examination to be conducted.
- **USA noxious** – The sample is checked for any USA noxious weeds. The noxious weed list is published by the USDA, compiled from each state's noxious weed list. The purpose for this test is when growers or retailers sell seed across state lines.
- **Canadian noxious** – The sample is checked for Canadian noxious weeds, also the seed sample size is set by Canadian (CFIA) standards. The purpose of this test is when seed is being sold into Canada.

Seed quality testing is cheap insurance to a quality product. We are here to help; give us a call with any questions or concerns.

Regrowth After Vine-Killing: An Overlooked Risk for Late-Season PVY Spread in Seed Potato Production

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- **Applying secondary control measures** (mechanical removal or additional desiccant) when regrowth is present.
- **Monitoring later-planted neighboring fields** whose aphid activity may overlap with the regrowth window.
- **Prioritizing fields with a history of PVY pressure**, which are more likely to serve as inoculum sources.

In high-value seed lots, eliminating regrowth can function as a "last safeguard" before final tuber sizing and harvest.

A Closing Thought

PVY management is a game of margins. The research we have points toward a consistent pattern: any moment when susceptible tissue is exposed to aphids is a moment in which PVY can move. Regrowth after vine kill may seem minor, but in practice it reopens a door that growers believed was already closed. Understanding and addressing that window strengthens the entire process of producing clean, reliable seed.

One interesting direction this topic raises is how different cultivars respond to late season infection pressure—especially as newer varieties with diverse resistance mechanisms, like those described in recent resistance screening work (Funke, Tran and Karasev, 2024) begin to enter seed programs.

Citations

Funke, Cassandra N., Lisa T. Tran, and Alexander V. Karasev. "Screening Three Potato Cultivars for Resistance to Potato Virus Y Strains: Broad and Strain Specific Sources of Resistance." American Journal of Potato Research, accepted 28 Feb. 2024, published online 8 Mar. 2024

MacKenzie, Tyler D. B., et al. "Effects of Crop Management Practices on Current-Season Spread of Potato virus Y." Plant Disease, published online 8 Jan. 2014.

Rosenman, Jeremy, et al. "Planting a Problem: Examining the Spread of Seed-Borne Potato Virus Y." Plant Disease, published online 19 July 2019.

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NDSSD Calendar

May 1.....Applications due for grass inspection

May 25.....Memorial Day, office closed

June 1 .....Applications due for hemp

June 15 .....Applications due for all crops including potato (except buckwheat, millet, & soybeans requiring a single inspection)

July 4 .....Independence Day, office closed

July 15 .....Applications due for buckwheat and millet

Aug 1.....Applications due for soybeans requiring one inspection

Sept 1.....Reports due: Annual Report of Agricultural & Vegetable Seed Sold (labeling fees), Research Fees; Carryover Seed; Applications for Approved Conditioner & Bulk Retail Facilities

Sept 7.....Labor Day, office closed