



The North Dakota Seed Journal

SEPTEMBER 2017

Newsletter of the North Dakota State Seed Department

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IP Laws Drive Innovation

Steve Sebesta, Deputy Commissioner

Intellectual Property Rights issues are not new and they aren't going away. Ignoring the IP rights of variety owners or state and federal seed laws is illegal. Given the number of tips our Regulatory Program manager received this year, maybe people are starting to wake up to the fact that the vast majority of crop cultivars available to the consumer today are protected by some form of IPR. Maybe seed growers and retailers are tired of trying to compete with those who sell or exchange seed illegally. Whatever the motivation, we appreciate the tips and we acted accordingly. See Jason's Regulatory Update for details.

The most commonly used form of IP protection used by variety owners is **Plant Variety Protection (PVP)**. This federal law was enacted in 1970 as a mechanism to stimulate research in self-pollinated crops like wheat and barley. PVP gave variety owners the exclusive right to determine who had authority to produce and sell seed of their varieties. An exemption gave farmers who *legally acquired seed* the right to save enough seed to plant on their farm and sell what was left over.

In 1994 the Plant Variety Protection Act was amended to extend protection to 20 years and also eliminate the farmer's exemption, thus prohibiting farmer to farmer sales. Farmers could still save seed for replanting on their own farm, they just couldn't sell it.

Variety owners also may select the **Title V** option when they apply for protection under PVP. Title V of the Federal Seed Act prohibits the sale of non-certified seed when the variety owner opts for the certified seed option when submitting a PVP application. Very simply stated, if a variety is protected by PVP Title V, the seed must be certified by an official seed certifying agency in order to be eligible for sale. The Seed Department encourages variety owners to utilize this type of IPR protection because it is the easiest form of protection for us to track and legally enforce.

Initially, some farmers claimed ignorance of the PVP law as a defense in infringement cases, which resulted in the strengthening of owner's responsibilities for education and requirements for proper and uniform notification language on labels. As a result, every bulk certificate or tag issued for seed of PVP protected varieties includes a notification statement to that effect. The Seed Department publishes lists annually of varieties commonly grown for certification in North Dakota, including their protection status, in the Seed Directory and Seed Guide. ***There simply is no excuse any longer for not knowing whether a variety is protected.***

Some variety owners choose **Utility Patents** to protect varieties. Patents are typically used for specific, novel traits, such as a biotech trait, but may also be applied to processes used in the development of a variety. Patents are often combined with PVP. Patent numbers are generally listed on the label provided by the genetic supplier, but this isn't always the case and it is more difficult to track down patents by variety name. Try the US Patent Trademark Office website to search specific crops or varieties.

Contracts and licenses are used by some genetics suppliers to manage IP rights and have more control over their authorized seed producers and users. These legal agreements specify the rights and obligations under which the purchaser may use the variety. Ordinarily, these specify the seed is to be planted for a single use, i.e., to produce a commercial crop, and prohibit the farmer from saving grain for replanting or sale.

Regardless of the method by which crop varieties are protected, they have the same purpose; to protect the Intellectual Property Rights of the variety owner. The

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From the Commissioner's Desk

"To assure the integrity of the seed industry through a commitment to client service and product quality".

A mission statement should go directly to the heart of an organization's objectives; I believe the Seed Department's does. Whether in how we provide services or seek to ensure high quality seed is being produced and marketed, the statement speaks to why we exist as an agency. Good products and good service; we can usually tell if we are on track in these areas.

The moving target is in the first part of the statement: "To assure the integrity of the seed industry...". It's difficult to measure if our presence here contributes to "integrity" of the industry, that's a rather nebulous goal. Webster's definition really doesn't help much: 1) adherence to moral and ethical principles; soundness of moral character; honesty; 2) the state of being whole, entire, or undiminished.

I believe that the inspections and tests we perform are the client service and product quality part of our mission. I also believe that the seed regulatory functions of our agency are about industry integrity, for the most part. After all, regulatory agencies are here to see that the public good is being protected. In the seed industry, the public includes purchasers, producers and owners of seeds. Truth in labeling, accuracy of testing, variety protection...all of these contribute to the integrity of the industry.

We've tried to expand this part of our mission as the seed industry evolves in North Dakota, both in the field and with the public. We discuss state and federal seed laws at every opportunity in person and print, seeking to educate the public on the importance of these issues in production, marketing and ownership terms. Periodically, we seek legislation that improves

those laws to the benefit of farmers, seed growers and seed companies.

As public institutions and private companies devote more funding to variety development, the costs associated with seed piracy become more acute to the variety owner. While a variety owner has the responsibility to protect their intellectual property interest, they also rely on state regulatory agencies to uphold and enforce PVP laws. In North Dakota, we take that responsibility seriously.

We sought and received legislative approval in 2015 to increase maximum penalties (commonly assessed only for violation of PVP) for violations of seed laws. The maximum enforcement penalty increased from \$5,000 per violation to \$10,000 at that time. While the Seed Department has always pursued regulatory enforcement issues (both labeling and

PVP) aggressively, we are determined to pursue brown bagging with purpose. In fact, we hired an experienced investigator this spring to assist in efforts to investigate seed piracy tips. While violators of seed laws may argue otherwise, these examples show a depth of commitment to the entire industry.

My belief, mirrored by the Seed Commission, is that expanding our efforts on seed regulatory issues (especially PVP violations) benefits producers and users of seed products. In effect, educational and enforcement activity assures the integrity of the seed industry and agriculture in this state.

Best wishes for a safe harvest and profitable 2017.



Fall Season Seed Testing

Jeff Prischmann, Diagnostic Lab Manager

Fall is now here and this is a good time to have seed lots tested for variety identification and seed-borne pathogens. Many seed health tests needed for certification require 7 days for completion. Seed producers need to keep in mind that during high volume periods, these times can vary and increase slightly. We recommend conducting some of these required tests as early as possible to avoid potential delays during the busy spring testing season.

Variety identification tests are required for certification of barley, field pea, and spring wheat in North Dakota. These tests are usually completed within 7 days or less. Seed health tests that are requirements for certification include: barley stripe mosaic virus test for Foundation class barley, barley loose smut for barley, bacterial blight (Dome) test for edible bean, anthracnose test for edible bean, and Ascochyta tests for chickpea and lentil. Many of these tests require a minimum of 7 days for completion. The bacterial blight test for edible bean requires a minimum of 10 days for completion. The anthracnose test for edible bean requires up to a minimum of 14 days for completion. Seed growers need to consider these completion times when submitting samples for testing.

An important consideration with seed health testing is that the overall physical appearance and quality of the seed is not always the best indicator of seed health or the presence of seed-borne pathogens. Many seed-borne pathogens do affect the physical appearance of seed. However, there are some cases where seed may have a very good physical appearance, but is infected with a seed-borne pathogen. With this in mind, it is very important for seed producers to have the necessary seed health tests performed on their seed regardless of the overall physical appearance of the seed lot.

Variety identification tests are important for the seed producer to maintain varietal purity. These tests can detect low level mixtures of two or more varieties and can also be used to verify if storage bins are correctly labeled. Variety identification tests provide an additional level of quality assurance in the certification process. Again, we recommend having variety identification tests performed on certification samples early to avoid potential delays during the spring testing season.

Seed producers should also keep in mind that all seed health tests and variety identification tests are only as good as the sample submitted. It is very important for a good, representative sample of the seed lot or field be submitted for testing. This may require the seed producer to take multiple bin probes or subsamples during seed handling and create a composite sample for testing.

For additional information on seed health testing, please contact the North Dakota State Seed Department.

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
Jeff Prischmann..... Diagnostic Laboratory Manager
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Labeling Cover Crop Seed

Jason Goltz, Regulatory Manager

Due to the increased popularity of cover crops I have received more questions on whether cover crop seed needs to be labeled. The answer is yes. **All seed sold for planting purposes must be labeled in accordance with North Dakota State Seed Laws.** It does not matter what the purpose of the crop is.

I recently had a conversation with a gentleman who told me that federal law says the variety does not have to be stated for cover crops and that federal law supersedes state law. Actually, the Federal Seed Act leaves the issue of labeling by variety up to each state. The only instance where a federal law specifically supersedes a state's Variety Not Stated (VNS) law is in the federal Plant Variety Protection Act (PVPA) which requires labeling by variety name.

Virtually all varieties in use today are protected, mostly by PVPA. A state that allows a crop to be labeled VNS must still state the variety name on the label if that variety is protected by PVPA. Seed of varieties protected by PVPA sold as a cover crop or included in cover crop mixtures must include the variety name. And if that variety is protected by Title V it must be certified. Failure to use the variety name is considered false marking, which is prohibited under Section 128(4) of Chapter 11, Infringement of Plant Variety Protection.

Labelers can always include additional information on a label as long as it is truthful. Feel free to call us if you have questions about labeling requirements. And always ask for a label when purchasing seed.

Join us on Social Media

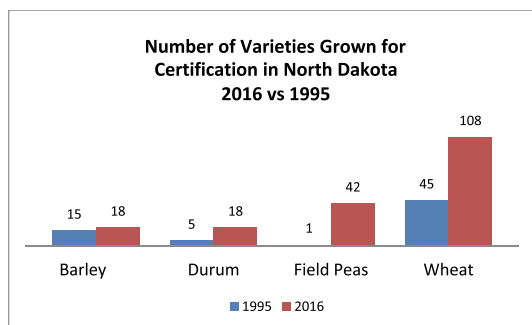
In August, the Seed Department joined the estimated 2 billion other users on social media. We understand that a lot of people, our customers included, utilize social media for news and information. It's quick, it's brief, and it's far-reaching. And while its credibility and authenticity may be questionable at times we won't bombard you with inane messages just to get our brand out in the public realm. We will utilize our accounts to communicate information such as deadlines, observations from the field and labs and other information relevant to the seed industry and agriculture in North Dakota or neighboring states. So, join us on Facebook and Twitter.



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end result is that the variety owners recover some of their costs in the development of a variety, which are substantial, and reinvest revenues into research and development of new varieties for the benefit of the public.

To me, eliminating farmer-to-farmer seed sales has had a significant and positive impact on agriculture in the state. To illustrate that impact, I compared the number of varieties commonly grown for certification in 1994 (when farmer-to-farmer seed sales were still allowed) and 2016. The number of varieties of barley, durum, field peas and wheat has increased 282%; from 66 in 1994 to 186 in 2016. Many people have differing opinions on this topic, but having worked in both private and public sectors, I have seen the benefits of well-funded breeding programs, strong certification programs, and active regulatory programs which enforce the IP rights of genetic suppliers. **Profitability drives innovation – do your part by respecting IP Rights laws.**



NEW! Online Bulk Certificate Printing

Joe Magnusson, Certification Manager

This fall we are rolling out our new online printing of bulk certificates for growers that have the capability of doing so. Paper certificates are still available to growers that do not want to print online. We began beta-testing the online certificate system last spring with a number of growers/dealers and received positive feedback and great suggestions. With their help we believe we have a great system that will help make your task easier.

The new system will record each transaction and deduct the bushels you sell from the total number of bushels in the lot. It will also automatically create the sales log sheet for each lot, thus eliminating the need to complete the log by hand and return with unused bulk certificates at the end of the year.

It will be important after conditioning to accurately report the number of bushels on the Sampler's Report submitted with your sample for final certification. Don't just estimate the quantity in each bin because if you underestimate and you oversell the lot, you will not be able to print any more certificates until you contact our department. Also, to help identify and use the correct seed lot when printing certificates, you should always include your bin number on the Sampler's Report. We recommend incorporating the bin number in your lot numbering system. This will help ensure you sell from the correct bin and you do not oversell the lot.

If you are interested in online printing of bulk certificates, call our department and we will help you get started.

Special thanks to our beta-testers

Agrimax- Fisher MN
Birdsall Grain and Seed
O'Toole Seed
Weinlaeder Seed
NDSU Agronomy Seed Farm
NDSU Carrington REC
NDSU North Central REC

Germination Test vs. TZ

Jeanna Mueller, Seed Lab Manager

By the time this article is published the combines are rolling in full force in soybeans. The early grains have been harvested, later fields are being harvested and most producers are looking to the next crop. There is always the anticipation in the fall to see what the end result will be in the field. For the producer, customer and seed control officials that end result is very important. There seems to be more fall crops going in this year like rye and triticale. Many of these customers are requesting a TZ and a germination test, the reason I am not completely sure. We have received many questions this fall about TZ vs. germination testing.

In the AOSA Rules for Testing Seeds, germination is defined as “the emergence and development from the seed embryo of those essential structures that, for the kind of seed in question are indicative of the ability to a produce a normal plant under

favorable conditions”. A tetrazolium test is “a biochemical seed viability test using the compound triphenyl tetrazolium chloride (TTC). Seeds are prepared and exposed to a solution containing TTC. The TTC is reduced to formazan in the presence of living (actively respiring) tissue. Formazan stains the living tissue red. At the end of the test, seeds are evaluated for the viability of their essential structures and examined for the evidence of seed deterioration.” To answer simply which is better would be a disservice to the nature of seed quality testing. In quality seed testing, many tests work hand in hand to produce an accurate result. When reading a germination test, we quantify normal, and abnormal seedlings, dead and hard seeds. TZ testing quantifies viable seed. So instead of answering the question, we need to find out what is right for the customer and the situation.

Listed below are four reasons for performing a tetrazolium test (taken from

AOSA Rules for Testing Seeds):

- 1) To determine the viability of ungerminated seeds at the end of a standard germination test.
- 2) To determine the percentage of dormant seed when a separate standard germination test is required.
- 3) To estimate viability of a seed lot before completion of a germination test or to estimate viability independently of a germination test.
- 4) The tetrazolium test may also be used as a vigor test.

For native forbs and grass samples we receive in the lab we typically handle TZ tests for the first two reasons. If we plan ahead, the third reason is not an issue. Now is the time to submit samples of native grasses and especially mixes. Our busiest time is January until spring planting.

We are here to serve you, if you have questions give us a call. We hope you have a safe harvest season.

2018 Approved Facility Inspections

Kyle Bednar, Field Seed Inspector II

2017 Approved Conditioner or Bulk Retail Facility permits expire December 31. Permit applications for 2018 were sent to all current facilities August 1, with a due date of September 1. If you have not returned your application, please do so immediately and remember to retain a copy of the agreement for your records. The information you put on the application will be published in the Seed Directory and on our website, so accuracy is important.

Facility inspections will begin in October. Inspectors will review the requirements of the agreement with your staff and answer any questions you may have. Before then take some time to review your 2017 inspection report for any deficiencies identified last year. Some common problems include:

- Seed samples – Proper labeling for each lot; organization; retention for one year from the last date of sale.
- Seed storage and loading areas must be well maintained.
- Approved seed bins must be properly labeled including variety, lot and class.

Before commingling a new lot of the same variety it is best to submit a sample of the original lot for a current germ test.

As always, we appreciate your cooperation with the inspectors. Please call the office or your inspector, if you have any questions.

Potato Program Update

Kent Sather, Potato Program Director

North Dakota certified seed potato acreage entered for 2017 is 13,940, down 1,642 acres from last year. This decrease was the result of losing one grower, and decreased replant of various varieties, especially Russet Burbank, Prospect Russet and Norland strains. Inspections proceeded on schedule this year. No acreage has been rejected, although some lots have been downgraded from Foundation to Certified due to mosaic levels in excess of tolerance. There are three main potato disease-related concerns as the seed potato crop grows this summer: late blight, aphid populations, and *Dickeya dianthicola* potential.

Late blight index levels have indicated weather favorable for late blight infection. Late blight is caused by the pathogen *Phytophthora infestans*. The primary host is potato. Late blight survives season to season in infected seed tubers, cull piles, and volunteer plants. Spores can move from field to field with wind currents. This is a community pathogen that can affect tuber quality. Confirmations of the fungal potato pathogen have been reported in North Dakota, along with recommendations for spraying. Browse the NDSU Potato Extension website maintained by Dr. Andy Robinson for more information.

Aphids are primary vectors for moving PVY, a yield reducing potato virus, from plant to plant. According to Dr. Ian McRae, U of M entomologist, this is “...a very high aphid year. Trap catches continue to be high and the PVY Vector Risk Index continues to rise.” Given recorded mosaic levels in some certified seed lots, assumed mosaic inoculum in commercial acreage, and near record aphid levels, mosaic spread is bound to happen. Growers are strongly encouraged to maintain insecticide use and crop oils. Go to <http://aphidalert.blogspot.com/> for more information.

Dickeya dianthicola continues to be a concern in the US potato industry. Our ND seed lots are being monitored for this bacterial pathogen. All NDSSD tissue culture plantlets used for greenhouse minituber production have been screened and confirmed negative for *Dickeya*. Inspectors are submitting blackleg type symptom samples found during inspections to Dr. Gary Secor at NDSU Plant Pathology for identification. Results have been negative for *Dickeya* in these samples.

Even with the issues mentioned, growers are anticipating good yields. Planting and growing conditions have been very favorable so far. Growers have initiated vine-kill, anticipating harvest to begin the first or second week of September. The cycle of seed potato certification will continue as growers randomly select tubers from seed lots for required post-harvest testing. Results from this stage of testing will determine seed lots eligible for certification for the future 2018 crop.

Regulatory Update

Jason Goltz, Regulatory Manager

The Regulatory Program protects consumers by ensuring that seed lots meet truth in labeling requirements which conform to state and federal laws. This is accomplished through annual inspection of facilities and sampling seed lots. These samples are tested to ensure they are within Federal Seed Act tolerance of their label.

The Regulatory Program also protects intellectual property rights and enforces the federal Plant Variety Protection Act (PVPA). It is important to remember that intellectual property protection drives innovation.

Discovery of a violation of the PVPA happens in a variety of ways. Usually, we find violations during our inspections or through an anonymous tip. Anytime a tip is received or a discrepancy is found, we are obligated to investigate. Not all investigations, however, result in penalties. In some cases, the issue is educational in nature and we work to bring the individual or company into compliance. Occasionally, an investigation may find no illegal activity. The following is a list of regulatory investigations this year:

1. Company not properly labeling seed sold to associates.
 - Main office in ND and Warehouse in MN, delivery directly to growers
 - Coordinated with MN Dept. of Ag.
 - Visited warehouse and office, educated on labeling requirements in ND
2. Nine company facilities which normally sell common soybean and corn began offering for sale Ambush HRSW without approval as bulk retail facilities.
 - Facilities were inspected and became approved bulk retailers
3. A company from Canada attempting to sell RR1 soybean Variety Not Stated (VNS), suspected of moving seed through MN to ND.
 - Cooperating with MN, investigation ongoing
4. Facility inspection, company which sells both feed and seed had a bin of conditioned oats, variety unknown. Employees could not tell inspector if the bin was intended as feed or seed.
 - Investigation inconclusive, educated employees on VNS laws and labeling requirements
5. Company sold ND Gold flax without certification completed, field had been inspected.
 - Paid \$500 in fines; placed on one year probation
 - Investigation re-opened, suspected probation violation
6. Individual suspected of illegally selling SY Soren HRSW and SY Ingmar HRSW.
 - No illegal activity found
7. Individual suspected of illegally selling Faller HRSW.
 - No illegal activity found
8. Individual sold Registered ND Genesis barley to customer before final certification, sample failed lab test for purity, customer planted seed and applied for field inspection but couldn't provide bulk certificate.
 - Paid \$3,260 in fines; one year probation
9. Individual sold Faller HRSW without certification, had been field inspected.
 - Paid \$2,700 in fines; one year probation
10. Individual suspected of illegally selling SY Soren HRSW.
 - Investigation ongoing
11. Individual suspected of selling WB Mayville HRSW from MN to ND.
 - Cooperating with MN, investigation ongoing
12. Individual illegally sold Lacey barley to a neighbor before final certification, field had been inspected.
 - Paid \$750 in fines; one year probation

The Regulatory program is an important part of our industry. Labeling laws benefit consumers who have a right to know what they are purchasing and how that seed is expected to perform. Variety owners have the right to protect their intellectual property so they can continue to develop new and improved varieties, which also benefits consumers. Always ask for a label when buying seed, it is your right. If you suspect seed piracy call ND State Seed Department Regulatory Manager 701.231.5400 or Farmer's Yield Initiative (FYI) anonymous tip line 877.482.5907.

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NDSSD Calendar

- Nov. 11**..... Veterans Day (office closed)
- Nov. 23**..... Thanksgiving (office closed)
- Nov. 28-29**... ND Ag Association Northern Ag Expo, FargoDome
- Nov. 29**..... SW District Crop Improvement Association meeting, Mandan
- Nov. 30**..... NW District Crop Improvement Association meeting, Minot
- Dec. 1** NE District Crop Improvement Association meeting,
Devils Lake
- Dec. 4**..... SE District Crop Improvement Association meeting,
Casselton
- Dec. 25**..... Christmas (office closed)
- Dec. 30** Non-resident seed dealer applications due
- Jan. 1** New Year's Day (office closed)