

CONSIDERATIONS OF COVER CROP SEED PRODUCTION

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ASSOCIATION

PROHARVEST SEEDS

- Who is ProHarvest?





MWS Seeds Facility

Soybeans, Wheat, Oats,
other small grains

Seed, Certified Organic,
Food Grade Soybeans for
Export

Clean and package over
600,000 bushels of seed
annually

DISCLAIMER

- You need to do your homework on your own situation
- What I am sharing is my personal understanding of seed laws as I am aware
- The goal is to share with you areas to research and review for own situation

CONSIDERATIONS OF SELF- PRODUCED SEED

Quality

- Weed free
- Germination
- Economics

Intellectual Property Protection

- Patent
- PVP
- Certified
- Research and Development

SEED QUALITY



Seed Oats Versus Feed Oats

It has come to our attention that "feed oats", or oats from the grain channel, are being used as seed. Weed seed potential in feed oats is high and the germination expectation in feed oats is low. A small batch of feed oats was screened and a 50 gram sample of the cleanout was analyzed. The sample analyzed by the Illinois Crop Improvement Association required over 3 hours of work by its analysts and Registered Seed Technologists (RST). The following results represent the potential weed seed in approximately 5 bushels of feed oats.

WEEDS SEEDS FOUND IN CANADIAN FEED OATS

1 OF 2

- **Other Crop Seeds and Number Found**

Alfalfa — 1
Kentucky Bluegrass — 1
Timothy — 2
Black Medic — 1
Sweet Clover — 1
Red Fescue — 1
Lettuce — 2
Slender Wheatgrass — 1
Italian Millet — 1

- **Common Weed Seeds and Number Found**

Night-Flower Catchfly — 16
Witchgrass — 91
Green Foxtail — 4,106
Yellow Foxtail — 957
Lambs quarter — 91
Prostrate Knotweed — 1
Lady's Thumb — 2
Foxtail Barley — 4
Marsh-elder — 54
American Slough grass — 14
Strong Scented Stink grass — 27
American Dragonhead — 1
Pennsylvania Smartweed — 2

CONTINUED

2 OF 2

- **Noxious Weed Seeds and Number Found (IL Noxious and All State Noxious)**

Rape — 28 IL Restricted and All State

Russian Thistle — 118 All State

Quack grass — 4 IL Restricted and All State

Kochia — 523 All State

Canada Thistle — 2 IL Prohibited and All State

Wild Sunflower — 2 All State

Curly Dock — 1 All State

Barnyard grass — 451 All State

Wild Buckwheat — 16 All State

Large Crabgrass — 1 All State

Pennycress — 2 All State

Amaranthus spp. — 42 All State (palmer
amaranth molecular tests in progress)

Cover Crops And Weed Seeds – A Study Of Lab Results Over Three Years

DATE: DECEMBER 17, 2018 - INCLUDED IN ISSUE: [2018.29](#)

BY: [DON ROBISON](#)

Cover crops have increased in interest and acres planted substantially in the past decade. Indiana has now had three consecutive years of over one million acres of cover crops planted. While cover crops are beneficial, there is an underlying issue among some of the species being utilized by Indiana farmers. Weed seeds in the cover crop seed! The Indiana State Seed Lab, which is housed in the Office of Indiana State Chemist, conducts hundreds of seed tests on cover crop seed each year. These tests include investigations for the presence of noxious weed seed, seed purity, germination, seed count and other quality measures. The vast majority of cover crop seed sources are passing these tests at a high rate. There is one glaring exception – cereal rye. Starting with 2016 and continuing through '17 and '18 our lab has had higher failure rates on both regulatory and service samples of rye. These results are from over 400 samples tested. Much of the failure comes from locally grown cereal rye seed. One particular sample of organic rye in 2016 had 23 species of weed seeds and had been “cleaned” prior to the tests. While that is not the norm, it isn’t an outlier. In 2018, several samples were found with more than 10 species of weed seeds. Noxious weed seeds, along with amaranth (many different species including pigweed and waterhemp) and poison hemlock show up in these tests as well (see table below).

GERMINATION RESULTS

ILLINOIS GROWN

Lab Number	Variety Name	Lot/Name	Status	GERMINATION Test Date	GERMINATION	DEAD SEED	ABNORMAL
909039	VNS		Completed	09/23/2019	72%	11%	17%
909038	VNS		Completed	09/17/2019	78%	17%	5%
906413	VNS		Completed	08/27/2019	62%	32%	6%
906412	VNS RYE		Completed	08/27/2019	80%	14%	6%
906411	VNS		Completed	08/27/2019	95%	3%	2%

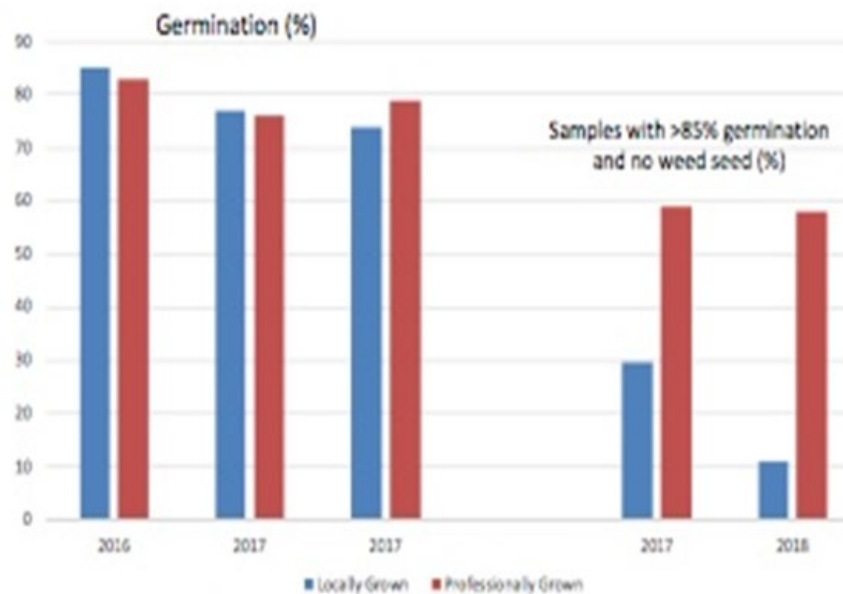
Average

77%

GERMINATION RESULTS

INDIANA GROWN

Cereal Rye Seed Quality



EXAMPLES

- This was from Twitter last fall; the Indiana State Chemist is the regulating body for IN agriculture.

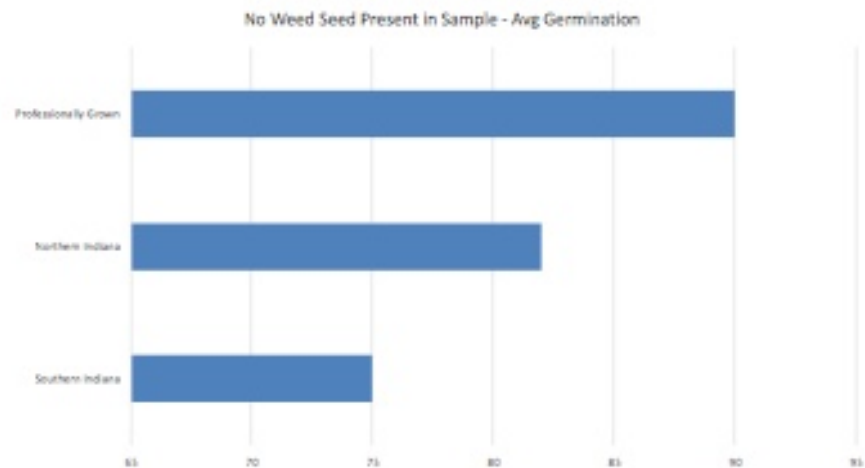


- This is a wagon being dumped of farmer kept seed that he was going to bin run and sell to a few neighbors. A lot of chaff and straw, very difficult to clean well.



INDIANA STATE CHEMIST TEST RESULTS

Average Germination % in Cereal Rye Samples with No Weed Seed



In 2018 the average germination rate on cereal rye was just 74.28%, down from 85.04 percent in 2016 (figure 1). The average number of weed species found this year is just over three weed species per sample. When applying a 2 stage filter of seed samples that had germination rates of over 85% and contained no weed seeds, locally grown samples hit that high quality mark in just 11% of the samples, compared to nearly 60% of the professionally grown seed samples. A 2017 study of 112 samples shows that where the rye is grown influences the quality indicators measured in our lab. Southern Indiana rye had a 75% germination rate, Northern Indiana rye averaged 82% and rye from traditional growing regions such as North Dakota or Canada averaged 90% germination. There are some very good locally grown samples. But over 23% of all locally grown rye samples had a germination rate below 50%.

INDIANA STATE CHEMIST TEST RESULTS

In addition to the quality issues that can be found in feed oats planting a protected variety under the US Plant Variety Protection (PVP) Act, or similar patent protection, is against the law. PVP enforcement on wheat varieties sold as cover crop raised the awareness level of [elevators in Oklahoma](#) and surrounding states in the early to mid-2000s. Farmers illegally selling protected varieties have been sued by variety owners for damage. The most recent case of note resulted in a [\\$2,975,000](#) judgement against James Fevold, an Iowa farmer, in favor of the South Dakota Board of Regents. When looking for any cover crop seed always consider the ultimate cost of weed-seed, germination and legal issues. To avoid such issues the Illinois Crop Improvement Association recommends purchasing seed of any kind from a reputable seed company with seed production and seed cleaning facilities.

PVP PROTECTION

PATENT/PVP/INTELLECTUAL PROPERTY PROTECTION

- Oats
 - PVP, Certified Class Only, etc.
 - Practical Farmers website blog link
- Cereal Rye
 - Hybrid Rye is coming to market and is protected
- Universities need a source of funding and revenue

SEED COMPANY INNOVATION

- Soybeans and Bin Run Seed
- Pioneer Hard White Wheat
 - Pioneer exited the market
- Cover Crop Specific Varieties
 - Drive to keep costs low stifles interest in research
- Investment and Incentive for Innovation and Improvements
- Industry estimate of \$5-\$7,000,000 to get a corn hybrid to market
- \$1,000,000 estimated to get a soybean variety to market

What Does a Seed Company Do?

QUALITY AND EXPERTISE

We recognize that as we are now experiencing a tighter ag economy, there will be pressure from some to use “bin-run” seed or seed from other less expensive sources. Some of the benefits of choosing ProHarvest as your cover crop seed provider rather than “the bin” include:

Field inspected seed production

Appropriate seed permits and insurance requirements per law

Germination and purity tests conducted at accredited laboratories

Professionally cleaned seed, with intense focus on purity and weed seed

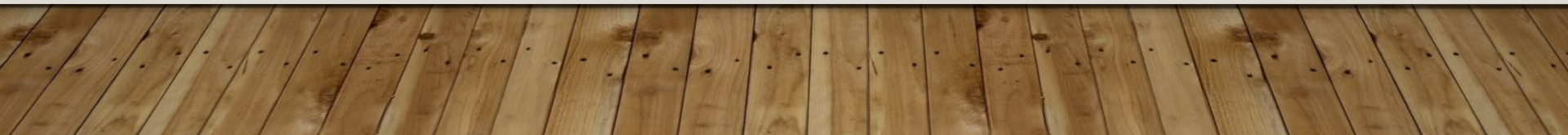
Our knowledge of how to use and manage these products

We source our seed from those who have a history of quality products and a fair price, not necessarily the cheapest. We would rather apologize for price than quality.



IF YOU DO GROW YOUR OWN SEED, SOME CONSIDERATIONS

- Take care of it like a cash crop
 - Fertilize, weed control, harvest, etc.
- Run numbers on the return to your farm
 - Does it make sense to raise 35-40 bpa Rye if you can grow 200 bpa corn?
- Store it properly, aeration fans, check regularly, etc.
- Think through a back-up market in the event of poor germination
 - What if?



IF YOU DO SELL YOUR OWN SEED, SOME CONSIDERATIONS

- Make sure it is not a protected variety
- Check with **YOUR** State Seed Laws for permits, reports, labeling, etc.
- Get a germination and purity test from an Accredited Seed Lab

IL State Seed Law

230.70 will allow a farmer exemption to sell their own produced seed to neighbors without a permit but they must have it labeled properly and be tested by an accredited lab or Illinois Seed lab. They must also deliver the seed only from their farm premise.

Section 230. EXHIBIT A Example of Label or Tag for Container of Agricultural, Vegetable or Other Seeds

Kind of Seed _____	Variety _____ Lot No. _____
Origin _____	Germination _____ %
Pure Seed _____ %	Hard Seed _____ %
Other Crop Seed _____ %	Total Germination And
Insert Matter _____ %	Hard Seed _____ %
Weed Seed _____ %	Date of Test _____
Noxious Weed Seed (rate of occurrence) _____	
Net Weight* _____	
Name _____	
Address _____	

IF YOU WANT TO SELL TO A SEED COMPANY, SOME CONSIDERATIONS

- Contact the company sooner, rather than later
- Be prepared to submit samples, etc.
- Quite likely they will not want to work with smaller quantities

ILLINOIS CROP IMPROVEMENT ASSOCIATION

- Who is Illinois Crop?



To provide professional, unbiased information and valuable services that facilitate the production and maintenance of quality seeds & grains.



WHERE WE HAVE BEEN AND WHERE WE ARE GOING?

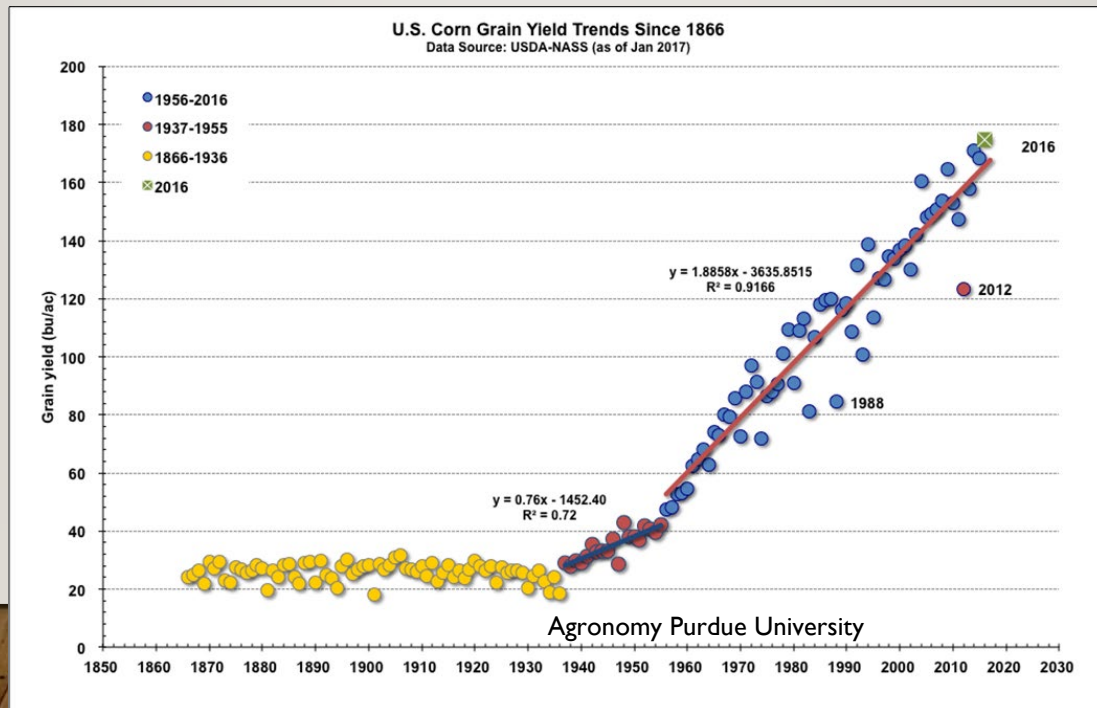


Spring Planting Time—Computers, Horses, and Optimism

<https://www.cast-science.org/spring-planting-time-robots-horses-and/>

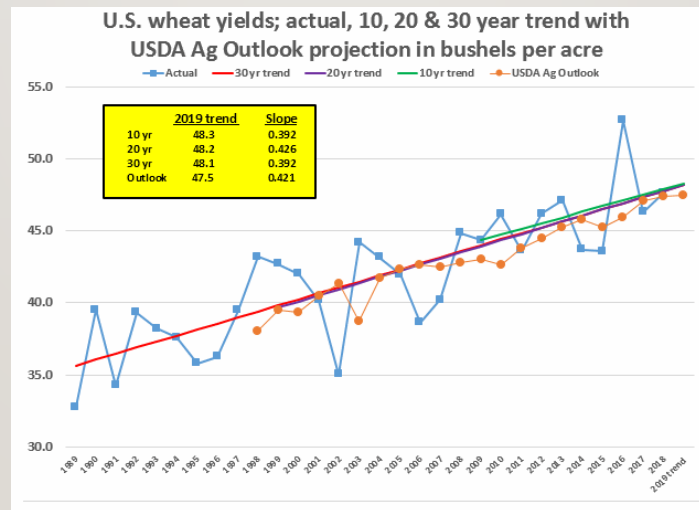
THE MODERN SEED INDUSTRY

- The U.S. Seed Industry reinvests approximately 10% of the estimated total annual seed value, between \$16 and \$17 billion, into research and development.* (SIPA)



MODERN PLANT BREEDING

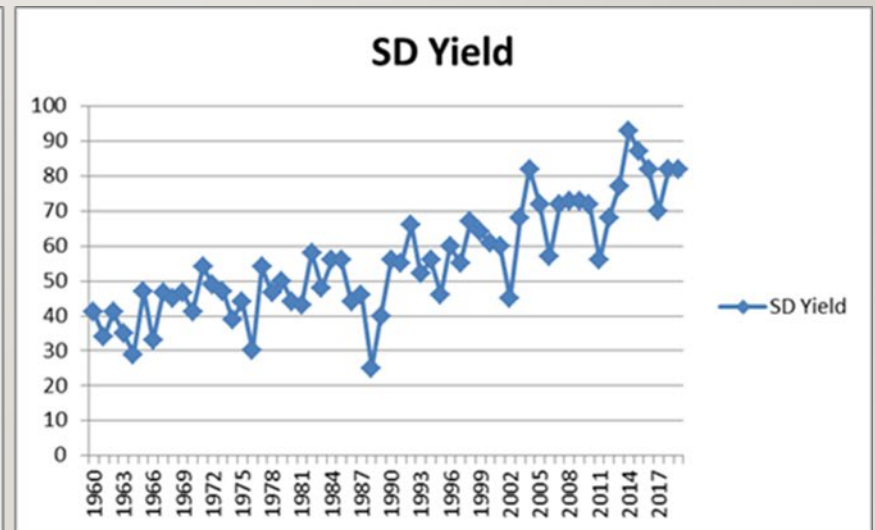
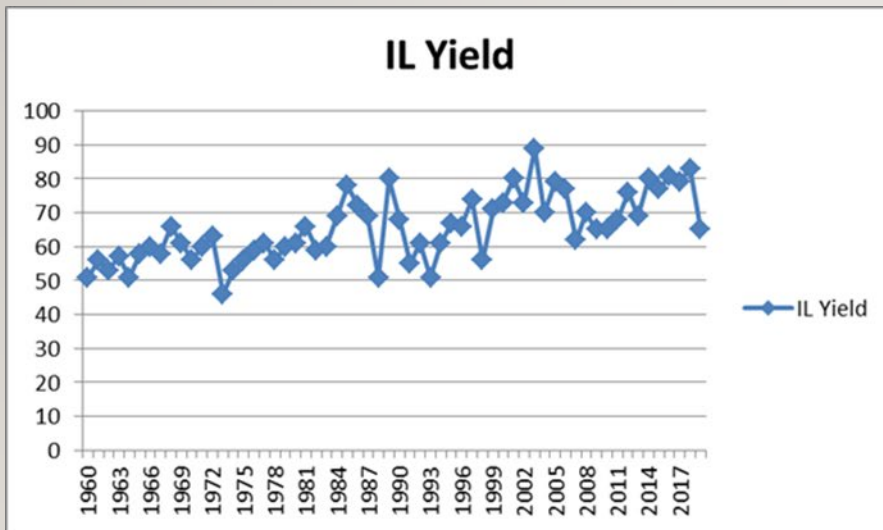
- Corn 1.9 bpa since 1955
- Soybean 0.44 bpa since 1960
- Wheat 0.392 bpa, 0.426 bpa, 0.417 bpa



DTN Progressive Farmer

THE MODERN OAT VARIETY

- No private commercial oat breeding programs exist in the U.S. Oat research is conducted only by state land-grant universities and the USDA's Agricultural Research Service.



NASS Downloads DM

CERTIFIED SEED AND PVP

- Varietal Purity and Identity Certified – Member of AOSCA
- Unauthorized propagation prohibited. U.S. protected variety.
- Unauthorized propagation prohibited. U.S. protected variety.
Seed of this variety is to be sold by variety name only as a class of certified seed.
- Unauthorized propagation prohibited. U.S. variety protection applied for.

-Grower's Directory ilcrop.com

INTELLECTUAL PROPERTY INFORMATION

- Talk to your seed dealer
- Check the bag and tag labeling
- Refer to your limited use/technology use agreement
- Consult seed company website
- Contact the seed company

-Seed Innovation Protection Alliance (SIPA)

MODERN SEED INDUSTRY

- From gifts, to public varieties to privately developed hybrids and genetics
- From ambiguity to an ever shrinking level of uncertainty
- From no process, to a process supported by cutting edge technology and testing

“Don’t judge each day by the harvest you reap but by the seeds you plant.” - Robert Louis Stevenson



QUESTIONS?

Thank you!