

Protection

Wheat

SAVING SEED

by **Daryl Strouts**, president, **Kansas Wheat Alliance**
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throughout the ages, farmers have planted seed saved from their previous crop. They selected the best quality seed of the highest yielding varieties. It was just common sense.

With the advent of hybrid crops like corn, farmers discovered that they did not get the advantage of hybrid vigor when they saved their seed and the ensuing crop was not uniform. They quickly learned they

needed to buy new seed each year of these hybrid crops. This annual purchase of hybrid seed commercialized the corn seed business and resulted in enormous investment into research and development of improved corn hybrids. Consequently, technology in corn has benefitted farmers. It just didn't make sense to save your corn seed any more.

fyi

{ For your information }

Farmers Yield Initiative is a coalition of public and private partners with the common goal of protecting the public and the grain industry by supporting plant variety improvement through research, education, certification, and PVP enforcement for your benefit.

story continued from cover

With the passing of the US Plant Variety Protection Act in 1970, congress encouraged the private investment into development of new plant varieties. An important component of this act was the farmer's right to save seed. Section 113 of the act states,

...it shall not infringe any right hereunder for a person to save seed produced by the person from seed obtained, or descended from seed obtained, by authority of the owner of the variety for seeding purposes and use such saved seed in the production of a crop for use on the farm of the person...

Simply stated, if a farmer purchases Certified seed he may keep seed grown from that seed for planting on his farm. However, if a farmer buys non-certified seed of a PVPA protected variety from someone else, it is likely that not only is the purchase of that seed in violation of the Act, but saving seed of subsequent production is also a violation.

The most recent restrictions to saving seed are those imposed by patented traits and sales contracts. In most cases, farmers are prohibited by patent laws from saving seed of varieties

with patented traits like Roundup® resistance in soybeans and Clearfield® in wheat. This is usually reinforced through a contract that is signed at the point of purchase. Even if traits are not patented, saving seed may be prohibited as part of the sales contract.

The consequences of planting illegal seed can be substantial. The owner of the variety could go as far as filing a lawsuit asking for the destruction of the crop. There could also be monetary awards and attorney fees. If state or federal officials get involved, fines could range from \$50-\$500 per occurrence.

Ignorance of the law is no excuse. As a best management practice, farmers should know what variety they are planting. If they can't show that they purchased Certified seed, they will need to investigate further before they save any production for planting. If they did purchase Certified seed, they should read the label and sales contracts to see if there are any restrictions on saving seed.

With the recent private investment and inclusion of proprietary genetic traits into wheat variety development, it is going to be less likely a farmer will be able to save and replant his own seed in the future. On the bright side, the value that seed Certification brings to seed wheat performance and convenience along with the improvements in yield and quality offered by new varieties will make saving your own seed an economically unattractive choice. **fyi**



A greater return

The benefits of planting Certified Seed

Every good crop begins with good seed. One of the best ways to ensure that the harvest reaped is of good quality is to invest in certified seed. While the initial investment in certified seed may cost slightly more than bin-run seed, the long-term benefits of planting certified seed pays more by producing a higher yield, a higher quality, and a more disease-resistance crop.

According to research by the U.S. Department of Agriculture, certified seed typically out-yields bin-run varieties by 1.2 to 2.5 bushels per acre. "Growers need to take into account the cost of bin-run seed," says Darrell Hanavan, executive director of the Colorado Wheat Research Foundation. "First, if they weren't saving that seed, they'd be able to sell it for well over \$5 per bushel. Then there are the costs of cleaning, cleanout, labor, storage and interest, which add over a dollar. When you think about \$8 to \$9 per bushel for bin-run seed, then consider the lower germination rate and the yield difference, certified seed simply makes greater economic sense."

By planting certified seed, one can be certain that the seed is pure and that it has been tested for noxious weeds, varietal uniformity and germination. Seed companies guarantee their products, and the seed has been segregated and isolated so that you can be confident in planting and marketing your crop when it is harvested. When you purchase certified seed, you get what you pay for—clean, pure and guaranteed seed. Once that seed is planted and harvested, the end product is safer and healthier for the end-user and consumer.

Also, when planting certified seed, you are making an important investment in the research and development of newer and better varieties of seed. Universities and other seed engineers are constantly investing in and developing newer varieties of seed that continue to increase yields and resist disease, thereby improving the overall benefits associated with certified seed. **fyi**



quality

CONTROL

Research and development by breeders have resulted in improved varieties, which include traits that are appealing. Some of these traits include disease resistance, higher yield, and better baking qualities.

Certified seed serves as the basis of identity, value and certainty among farmers and end-users. When certified seed is planted, there is no question as to what variety of product will be produced. The value of certified seed is greater to you, as a farmer, and to those who ultimately consume the product.

Certain purchasers are in the market for specific varieties, and when you can demonstrate that you have used certified seed, you can glean premiums from those buyers. End-users need to be confident that they are getting what they pay for, and certified seed use assures that they get the class of crop they expect. Certified seed use can increase your marketing power when you can produce what buyers want and require.

Research and development by breeders have resulted in improved varieties, which include traits that are appealing. Some of these traits include disease resistance, higher yield, and probably most importantly, better baking qualities. Seed developers focus with the end user in mind so that when the product is finally consumed, it will contain higher proteins, will be healthier for the consumer, and will provide more consistency in the baking process.

When newer varieties of certified seed are developed and marketed, you not only get the newest variety, but you get the best of that variety when you purchase certified seed. The only way to reliably access the traits that you need and require is to utilize certified seed. **fyi**

Protected varieties lexicon

A helpful listing of federally protected seed and provider information. Please use this resource to protect yourself and the grain industry as a whole.

AGSECO varieties:
 Armour
 Hitch
 Keota
 Protection
 Shocker
 Spartan
 TAM 110
 Winterhawk

Colo State varieties:
 Akron
 Jules
 Prowers
 Yuma

CWRF varieties:
 Above
 Ankor
 Avalanche
 Bill Brown
 Bond CL
 Halt
 Hatcher
 Prairie Red
 Prowers
 Prowers 99
 Ripper
 Snowmass
 Thunder CL
 Yumar

CWRF/Agvantage IP varieties:
 Above
 Bond CL
 Bill Brown
 Hatcher

CWRF/NuPride
 Above
 Bond CL
 Bill Brown
 Hatcher
 Ripper

K-State varieties:
 2137
 2145
 2174
 Betty
 Heyne
 Ike
 Karl 92
 Lakin
 Stanton
Application pending:
 Tiger
 Trego

KSURF varieties:
 Danby
 Everest
 Fuller
 Jagger
 Overlay
 RonL

Limagrain varieties:
 Albany
 Banton
 Hat Trick

Nebraska varieties:
 Alliance
 Arapahoe
 Goodstreak
 Husker Genetics Brand McGill (NE01481)
 Husker Genetics Brand Overland (NE01643)
 Husker Genetics Brand Ribodoux (NI04421)
 Husker Genetics Brand Settler CL
 Mace
 Millennium
 NE422T (triticale)
 Wahoo

Michigan Crop Improvement PVP varieties:
 Soft white winter wheat:
 Crystal

MSU D6234
 MSU D8006

Soft red winter wheat:
 Hopewell
 Red Ruby
 Sunburst

Montana State Univ., PVPA title V varieties:
 Choteau
 Decade
 Genou
 Hockett
 Vida
 Yellowstone

NDSU/RF varieties:
 Hard red spring wheat:
 Steele ND
 Glenn
 Howard
 Faller
 Barlow
 Mott
 ND901CL Plus

Durum Wheat:
 Alkabo
 Divide
 Grenora
 Tioga

Barley:
 Stellar ND
 Pinnacle
 Rawson

Flax:
 Carter

Oats:
 Hi-Fi
 Souris
 Rockford

Soybeans:
 Sheyenne
 Cavalier
 Ashtabula
 Traill
 Jim
 Prosoy
 ND1005T

Edible Beans:
 Eclipse
 Stampede
 Lariat
 ND 307
 Avalanche

OK Genetics varieties:
 Centerfield
 Duster
 Guymon
 OK Bullet
 Okfield
Application pending:
 Billings
 Pete

OSU varieties:
 Deliver
 Endurance
 ORCF 101
 ORCF 102
 ORCF 103
 Norwest 553

SDSU varieties:
 Alice
 Brick
 Briggs
 Colt
 Darrell
 Expedition
 Forge
 Granger
 Ingot
 Lyman
 Oxen
 Russ
 Select
 Tandem
 Traverse
 Walworth
 Wendy

Oats:
 Shelby 427
 Streaker
 Stallion

Syngenta varieties:
 AP604 CL
 AP401 CL
 AP503 CL2
 AP603 CL
 Art
 Aspen
 Benton
 Beretta
 Branson
 CJ
 COKER 9152
 COKER 9184
 COKER 9295
 COKER 9312
 COKER 9375
 COKER 9436
 COKER 9474
 COKER 9511

COKER 9553
 COKER 9663
 COKER 9803
 Cooper

Coronado
 Crawford
 Cutter
 Doans
 Dumas
 Fannin
 Freyr
 Hawken
 Jackpot
 Jagalene
 Knudson
 Longhorn
 Mason
 Natchez
 Neosho
 Norpro
 NuDakota
 NuFrontier
 NuGrain
 NuHills
 Ogallala
 Panola
 Platte
 Postrock
 Santa Fe
 Smoky Hill
 TAM 111
 TAM 203
 TAM 401
 Thunderbolt
 Triticale

Texas A&M varieties:
 Dallas (oats)
 Lockett
 Sturdy 2K
 Tambar 501 (barley)
 TAM 113
 TAM 202
 TAM 203
 TAM 302
 TAM 304
 TAMO 397
 TAMO 405
 TAMO 406
 TAMO 606

Univ. of Minnesota varieties:
 Cromwell
 RB07
 Ada
 Ulen
 Oklee
 HJ98
 Tom
 Sabin

Spring barley:
 Lacey
Application pending:
 Rasmusson

UNL varieties:
 Alliance
 Arapahoe
 Husker Genetics Brand McGill (NE01481)
 Husker Genetics Brand Overland (NE01643)
 Husker Genetics Brand Ribodoux (NI04421)
 Husker Genetics Brand Settler CL
 Mace

Watley Seed varieties:
 TAM 112

WestBred varieties:
 Alzada
 Armour
 Breaker
 Bynum
 CDC Falcon
 Cortez (durum)
 Conan
 Corbin
 Express
 Granite
 Hitch
 Jedd
 Keota
 Kofa (durum)
 Ledger
 Norris
 O'Neal
 Pristine
 Pryor
 Roughrider
 Samson
 Shocker
 Smoky Hill
 Snow Crest
 Trooper
 Volt
 WestBred 470
 WestBred 936



develop

UNIVERSITIES FUNDING

{More Towards Seed Breeding}

farmers have always tried to find ways to make their seed produce more at harvest and to produce the highest quality of product possible. As technological advances and genetic engineering have grown in recent years, so has the cost of utilizing such technologies to produce new varieties of seeds. That is why many universities are providing significant funding for the ongoing development of genetically engineered seeds, with the intent of increasing yield, quality and disease resistance. In order to achieve such advances in crop production, much funding will be required.

The United States Department of Agriculture, universities, private institutions, corporate and individual breeders, and farmers alike have all realized the need for funding of research and development. An example of a collaborative effort between farmers and developers in Colorado demonstrates the realization that much funding is needed. The Colorado Wheat Administrative Committee has increased the research investment at Colorado State University by nearly 500%, and Colorado wheat farmers funded CSU with \$387,000, which does not include a grant of \$41,170 from industry partners.

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Furthermore, royalties from the sale of Colorado Wheat Research Foundation varieties were reinvested to contribute an additional \$266,000. The wheat breeding programs at CSU focus on drought and high temperature tolerance traits in wheat, selection of genetic markers, disease resistance, and wheat quality improvement.

Another exciting project that will require much funding is the development of perennial grain crops. Currently, there is less than \$1.5 million which directly supports the development of the perennial grain project world wide, and the USDA has set aside less than \$300,000 annually for competitive grant awards to study the development of perennial wheat and wheatgrass. A successful perennial grain breeding program would significantly enhance the ways in which food is produced, and the investments in such research and development will be well worth the efforts.

Universities are the place where much of the research and development takes place, and agronomists at these institutions know that such a grand investment pays off in the long run as the end product produced greatly enhances yield, disease resistance, and quality. Private companies like Syngenta Seeds sometimes license university varieties, so when you buy private company branded seed, your royalty dollars can help future research with public institutions. **fyi**

Tip Line Enforcement Tool

The purpose of the Farmers' Yield Initiative is to educate the public and producers about the need for more scientific research during a time of federal and state funding cuts. Congress designed the PVP and other federal laws to encourage both public institutions and private companies to invest in research and recoup that investment through royalties.

States have state seed certification processes to ensure only the highest quality seed is distributed to producers. Certified seed is a strong and reliable indicator of high quality.

The overwhelming majority of all new seed varieties are federally protected and can only be sold as a class of certified seed.

While many producers respect the laws, there are some who seek to gain an unfair advantage over other producers by working outside of the legal system. One way to level the playing field is to anonymously report those who seek to benefit from new varieties without contributing to the substantial research investments that make them possible.

Please consider submitting a strictly confidential tip to help put a stop to illegal seed trade. You need not identify yourself during the phone call. The caller can remain anonymous, and it is toll-free:

1-877-482-5907.



Over the years, productivity of the major agricultural crops has increased by about fifty percent, and this has not happened accidentally. Plant breeders and agronomists around the world have worked very hard to make great advances to improve the crops you grow.

One of the advances made is to produce disease-resistant plants. For example, wheat has been bred with genetic resistance to most fungal diseases, such as rusts, powdery mildew, septoria leaf blotch, and in some areas, viruses. While fungicides are available to protect against leaf rust and stem rust, breeding more disease-resistant plants is an important way to control diseases.

Researchers at Penn State University, Ohio State University, Kansas State University, Purdue University, North Dakota State University, and South Dakota State University are combining efforts to develop models that

predict the risk of a major epidemic of wheat fusarium head blight or head scab. The goal of this predictive system is to help growers assess the risk of fusarium in their region. Outbreaks are associated with specific weather patterns prior to the flowering of the wheat crop, and the disease causes great losses by reducing grain yield and quality. The ability to predict when and where an outbreak may occur, and the ability to work toward breeding fusarium-resistant wheat could mean that the disease could soon be a non-issue for wheat growers. **fyi**

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