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Farmer Saved Peanut Seed: Factors to Consider[1]

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Introduction

Seed is one of the single highest variable costs of producing a peanut crop. Depending on the seed size and the seeding density, planting certified peanut seed can cost from $55.00 to $70.00 per acre or more. To reduce costs, peanut farmers may be tempted to save seed from their own fields for planting the subsequent year, but there are economic, quality and legal considerations associated with planting seed directly from the farm. This publication outlines and discusses the benefits and risks associated with purchasing peanut seed as compared to saving it from the farm.

Executive Summary

Producing high quality peanut seed is much more involved than producing eatable stock and those interested in saving seed should have the equipment, facilities and knowledge to do a good job. Varieties covered by Plant Variety Protection can be saved for planting by a farmer on his/her own farm, but may not be sold to other farmers outside of the seed certification system. Varieties covered by utility patent cannot be saved for seed under any circumstances. One should carefully weigh the legal, economic and production risks and benefits of saving seed.

Legal Considerations

Growers, seed producers, seed processors, seed dealers, and others involved with peanut seed should be aware of the provisions of the Plant Variety Protection Act and utility patents that relate to the production and sale of peanut seed. These provisions are based on federal laws and apply not just to peanuts, but to varieties of any plant that have such protection under either or both set(s) of laws. Most recent peanut varieties have been registered for plant variety protection. Those with the high oleic acid trait are also protected by U.S. utility patents. Plant variety protection and utility patents are two separate forms of legal variety protection, but have similar effects on seed production and sale or use.

One purpose of variety protection is to allow the developer a period of years of exclusive rights to recoup costs of research needed to development new

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varieties. This source of revenue also allows for research and development of new and improved varieties. Without such incentives, there would be only limited plant breeding and variety development. Variety protection is available to public or governmental, as well as private developers of new varieties. Permission to propagate or sell seed of a protected or patented variety is normally conveyed through contracts that include licenses, royalty payments, or other contracts.

Another important purpose of variety protection and patent laws are to maintain genetic purity and help ensure that quality seed are made available to growers. While quality seed are necessary to obtain good stands and produce satisfactory crops, genetic purity of high oleic peanuts is especially important to the manufacturer and consumer and therefore the entire peanut industry. If high oleic peanuts become mixed with normal oil varieties, the possible health benefits of high oleic chemistry to consumers and the shelf life are compromised. It takes only a few rancid kernels to ruin the taste of an entire batch of peanuts.

Plant Variety Protection

The Plant Variety Protection Act was enacted by Congress in 1970 and amended in 1994. Under this law, if a farmer purchases and plants seed of a variety with PVP he/she can save enough seed of that variety to plant on their farm or rented acreage. The 1994 amendment prohibits sale of non-certified seed by farmers under any circumstances, but only on varieties protected after April 4, 1995. To do otherwise would be an infringement of variety protection and the farmer could be subject to civil action.

In addition to the farmer, anyone who cleans, shells, bags, or stores seed of the protected variety in quantities greater than that needed by the farmer to plant his own holdings is infringing on variety protection and subject to civil action. The custom operator who shells, cleans, bags, treats or stores seed may wish to have the grower sign a statement naming the variety, where it was grown, and that the peanuts will not be sold for planting purposes. It may also be useful to save a small sample of the unprocessed seed for testing if a claim of infringement is made.

At present, most commonly grown peanut varieties are covered by plant variety protection (see Table 1). The seed tag on the original bag of seed lists plant variety protection status. More information, including a list of varieties that are currently under variety protection, can be found through the Plant Variety Protection Office website: http://www.ams.usda.gov/AMSv1.0/ams.fetchTemplateData.do?template=TemplateC&navID=PlantVarietyProtectionOffice&rightNav1=PlantVarietyProtectionOffice&topNav=&leftNav=ScienceandLaboratories&page=PlantVarietyProtectionOffice&resultType=.

Utility Patents

Patents are issued to anyone who invents a product or process that is novel, meaning that no other person has made, sold, or published a description of the product or process prior to the application to the United States Patent and Trademark Office. Seed from a variety protected by patent may not be saved for seed. One example of this is genetically modified or transgenic plants. The use of patents for genes that are transferred from one species to another has become common. While there are no transgenic peanut varieties currently available, the high oleic characteristic was discovered and incorporated into peanuts by the University of Florida and others. There are three patents that cover seed, products, and oil from high oleic peanuts. University of Florida Research Foundation is the owner of the patents. The patent numbers are 5,922,390, 6,063,984, and 6,121,472, and the full description of the three patents can be found through the patent office website: http://www.uspto.gov .

As of 2006, several peanut varieties covered under these patents were available for production. Table 1 lists peanut varieties that were grown for certified seed in 2005 and highlights their legal protection status. The varieties that contain the patented high oleic characteristic are also protected, or likely will be protected, under the Plant Variety Protection Act. Any additional varieties of high oleic peanuts, as well as any high oleic peanuts imported into this country, would also be subject to the patents. Permission from the University of Florida Research Foundation, usually through licensing agreements, is

needed to use high oleic peanuts. Information can be obtained from: University of Florida, Office of Technology Licensing, Attn: Bruce Clary, PO Box 115500, Gainesville, FL 32611, or by telephone at 352-392-6393. Procedures are available to determine if peanuts contain the high oleic characteristic.

There are no provisions for farmers to save seed of high oleic peanut varieties, even for their own use. Likewise custom shelling, cleaning, or storage of high oleic peanuts would be an infringement of the patent, even if the custom operator is not aware that the seed being handled are patented. The custom operator should protect his business from being charged with patent infringement by requiring the grower requesting his services to provide identity of the variety and where it was grown, and other documentation and agreements to prevent or reduce the likelihood of civil action. It may be useful in case of any patent infringement claims, if a small sample of unprocessed seed is saved and clearly labeled with pertinent information, including the grower's signature.

Owner Licensing

In addition to PVP and patenting, variety owners may also place restrictions on seed production through licensing agreements. In the placecountry-regionUnited States, most peanut varieties are developed by universities or the USDA and seed production and marketing is licensed to private companies. Sometimes a variety is licensed exclusively to one company and other times varieties are licensed to all interested companies. In the case of exclusive licenses, the original licensee can sub-license the variety to other seed producers. Prior to saving seed of a variety planted from certified seed, it is a good idea to make sure that seed production is not restricted by PVP, patent or licensing.

Economic Benefits and Risks

Note: Figures used in this section are not meant to be used for budgeting purposes, but are for illustrative purposes to show the general difference in costs of saving seed versus purchasing certified seed.

The obvious economic benefit of saving seed is reducing the input cost of the subsequent crop. Assuming a shelling rate of 57% (range of 55% to 60%), a planting rate of 120 pounds per acre, and that the value of the in-shell peanuts is $355 per ton, saving 120 pounds of seed would cost (reduce the value of the crop) about $37.40 per planted acre. This does not include shelling, bagging and seed treatment which costs $0.09-$0.11 per pound. This would bring the cost of seed to about $48-$51 per acre. In recent years, (2005-2006), certified seed cost about $0.55 per pound, so seeding 120 pounds per acre would cost $66 per acre. Given these figures, planting saved seed could reduce the seed costs by $15-$18 per acre compared to purchasing certified seed. This does not include saving enough seed for replanting in case of a stand failure.

Saving seed for replanting also has economic risks. When certified seed is purchased, the seller guarantees that the seed germination meets the minimum state requirements. If the emergence is less than adequate, then the seed seller may replace the seed. There is no such guarantee of germination or the potential to have seed replaced if the seed is from the farm. It is a good practice to have a germination test conducted by a certified seed laboratory, prior to incurring the expense of processing (shelling, bagging and treating) the seed and after the seed is processed (prior to planting).

Seed Production

Producing a high quality peanut seed requires care and attention not necessarily required to produce peanut for the eatable market. When producing peanut seed, there are several very important factors. We will list the factors here but please refer to UF/IFAS EDIS publication SS-AGR-187 - Producing Quality Peanut Seed (http://edis.ifas.ufl.edu/ag190) for more detail. Planters and combines should be thoroughly cleaned to insure genetic purity. Calcium, preferably in the form of gypsum, should be applied to the crop to insure that the seed will germinate to their maximum potential. Digging should be timed so that the majority of the pods are close to maturity. The crop should be combined when the moisture of the seed is 20% to 25%. Seed should be dried slowly with moderate heating (maximum of 95°F). Finally, the

seed should be stored in a cool, dry location prior to and after processing.

Conclusion

Growers should consider the legal, economic and seed quality factors associated with saving seed for planting. Plant Variety Protection and utility patenting are mechanisms to encourage research and development that leads to improved varieties. However, they place restrictions on seed production and violations could result in civil action. Economically, saving seed can reduce production costs, but there are risks and added management that should be considered prior to making the decision to save seed. The additional management factors can be costly and require additional labor and attention not normally required.

Table 1. Peanut varieties grown for certified seed in 2005 and the legal protection status held by their owners.

Variety Type and Name	Owner/Developer	High Oleic	Legal Protection
Runner market type			
Georgia Green	University of Georgia	No	PVP
Flavor Runner 458	Mycogen Company	Yes	Patent & PVP
C-99R	University of Florida	No	PVP
Georgia-02C	University of Georgia	Yes	Patent & PVP
Tamrun OL 02	Texas A&M University	Yes	Patent & PVP
Tamrun OL 01	Texas A&M University	Yes	Patent & PVP
Tamrun 96	Texas A&M University	No	PVP
AP-3	University of Florida	No	PVP
Gerogia-01R	University of Georgia	No	PVP
Carver	University of Florida	No	PVP
GP-1	University of Florida	Yes	Patent & PVP
Virugard	Golden Peanut Company	No	PVP
Andru II	University of Florida	Yes	Patent & PVP
Tifrunner	USDA	No	PVP
Okrun	Oklahoma State University	No	None
SunOleic 97R	University of Florida	Yes	Patent & PVP
ANorden	University of Florida	Yes	Patent & PVP
Virginia market type			
Perry	North Carolina State Univ.	No	PVP
Gregory	North Carolina State Univ.	No	PVP
NC-V 11	North Carolina State Univ.	No	PVP
VA 98R	Virginia Poly. Inst. & State Univ.	No	PVP
Jupiter	Oklahoma State University	No	PVP
Wilson	Virginia Poly. Inst. & State Univ.	Yes	Patent & PVP
NC 7	North Carolina State Univ.	No	PVP
NC 12C	North Carolina State Univ.	No	PVP
AgraTech VC-2	Golden Peanut Company	Yes	Patent & PVP
Spanish market type			
Tamspan 90	Texas A&M University	No	PVP
Spanco	Oklahoma State University	No	PVP
OLin	Texas A&M University	Yes	Patent & PVP
Valencia market type			
New Mexico Valencia A	New Mexico State Univ.	No	None
New Mexico Valencia C	New Mexico State Univ.	No	None
Georgia Valencia	University of Georgia	No	PVP