



## Seed Packets: An Economic Opportunity for Native Wildflower Seed Producers<sup>1</sup>

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Seed production of Florida ecotypes of native wildflowers (see "Native Plants: An Overview" for more information about ecotypes) began in the late 1990s. The industry is comprised mainly of part-time growers on small farms. Growers typically have 0.5 to 10 acres in production. Production has increased over the past several years, but the industry continues to face the major challenge of meeting demand for the large volume of seed for roadside, restoration, and revegetation projects.

Public awareness in Florida about native wildflowers has risen steadily over the past several years. As a result, there is a mounting demand for retail sales of native ecotype wildflower seed in ounce quantities and small packets. Satisfying this demand is critical to maintaining public support for the production and use of Florida wildflower ecotypes.

Information in this publication is designed for those selling or planning to sell native wildflower seed packets.

### Seed

Getting started only requires a small amount of seed—several ounces to one pound. The number of wildflower seeds per pound ranges from about 20,000 to over 2,500,000, with seed packets typically containing less than 1000 seed. Seed can be harvested from the wild or from small production plots. If collecting seed from the wild, be sure to obtain written permission from the landowner. Collecting seed of endangered species requires written permission from the Florida Department of Environmental Protection, even on your own land.

When deciding which species to market, consider species that might be difficult to economically produce on a large scale, unusual species, and those of mainly local interest. Seed packet sales also is a means to increase seed of a species that you want to put into large scale production while simultaneously generating income. The income from sales of that species will help defray the cost of starting large scale production.

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## Seed Conditioning

Lay harvested seed on a hard, clean, dry surface in a shed, barn, or air-conditioned environment. If the surface is not clean, lay the seed on brown packing paper or newsprint. (Visit your local newspaper and ask for the ends of newsprint rolls.) Spread out the seed and allow to dry for a few days before cleaning. For large quantities (several pounds), use a floor fan to facilitate drying. Drying seeds outdoors can be difficult –seed can be blown away in windy weather, and dew and rain will slow the drying process.

Clean seed with sieves, or with screening of various sizes and shapes of openings. It is best to have seed as free from debris as possible, with the goal being  $\geq 99\%$  purity (by weight). This is a daunting task with large quantities of seed, but is easily accomplished with small amounts of seed. Keep in mind that the quality of the product not only reflects upon your integrity, but other Florida seed growers as well.

As seed moisture content increases, shelf life decreases, so seed moisture content should be only 5-10% to maximize longevity. Seed moisture content can be determined by a seed testing lab. Submit samples of pure seed in sealed, moisture proof containers (sealable freezer bag, sealable foil packet, small plastic bottle with tight fitting cap, etc.) to a seed testing lab and request a test for seed moisture content. Determining the conditions and time required for seed to reach 5-10% moisture content will require some experimentation. Typically, 1 to 2 weeks is required for seed moisture content to reach 5-10% if the drying conditions are adequate.

Store dried seed with the desired seed moisture content in a moisture proof container in a cool place.

**CAUTION:** Seed of some species will not tolerate drying and are termed recalcitrant. Intolerance to drying is most likely to occur with seed of wetland species. The wetland status of native Florida species can be checked at the Atlas of Florida Vascular Plants web site (<http://plantatlas.usf.edu>). If you want to sell seed of a native wetland species, determine whether the seed can tolerate drying. Dry seed for at least 2 weeks in an air-conditioned

environment, remove all debris, and then submit a sample to a seed lab for testing. Avoid selling packets of recalcitrant seed.

## Labeling and Packaging

### Florida Seed Laws

Seed producers must comply with State of Florida seed laws (Florida Statutes, Chapter 578 and Administrative Code, Chapter 5E-4; see **Resources**). By definition, seed packets contain 8 ounces of seed in Florida. If packets contain more than 8 ounces of seed, there are additional laws that you must comply with.

### Germination

Seed must meet minimum standards for germination, however, this information does not need to be stated on labels for packets containing 8 ounces of seed, unless the seed germinate at less than the standard established under 5E-4.011 F.A.C.

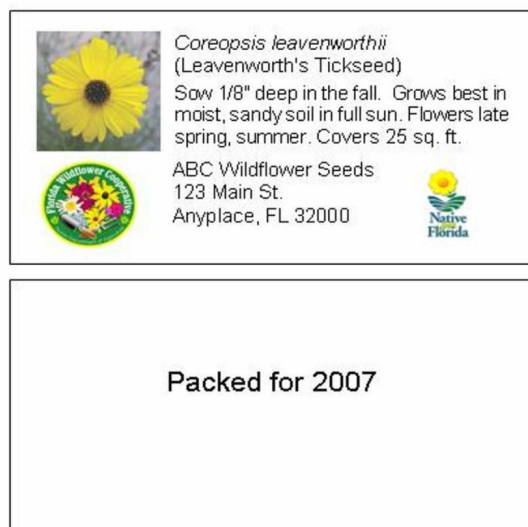
The minimum percent germination equals the actual percent germination reported by the seed lab OR the percent germination plus the percent "hard" or dormant seed. See **Resources** for an internet link to "Chapter 5E-4.011 Flower Seed Germination Standards".

### Seed Label (Figure 1)

Information that must appear on the seed packet label (according to Section 578.09 of Chapter 578 of Florida State Seed Label Requirements):

1. Name of species (scientific name is not specified by law in 578.09, but is recommended).
2. Your name or name of your business, and address.
3. If germination is below state standards – the germination percentage and a statement that the germination rate is "below standard".

4. Month and year of seed test, or the year for which seed was packaged.



**Figure 1.** Example of labeling for front (top) and back (bottom) of a 2 x 4" seed packet that contain seed that meet Florida minimum germination standards.

- If the packet is labeled with the month and year of seed test, the seed may be sold for a period of 7 months, excluding the month in which the test was completed. For example, if the seed was tested in August, it may be sold through March.
- If the seed is labeled with the year for which the seed was packaged (for example, "Packed for 2008") and sold at retail, packets marked "Packed for 2008" may be shipped (at the earliest) to dealers during mid-August of 2007, and placed on sale upon receipt of shipment.

*If packets are shipped prior to January 1, 2008, they must be removed from sale prior to June 30, 2008.*

*If shipped after January 1, 2008, they may be left on display for sale until August 31, 2008.*

For sales via catalogs and the internet, contact the the Florida Department of Agriculture & Consumer Services (FDACS), Bureau of Compliance Monitoring, Seed Section (see **References**).

### License Fees

Only the business that packs the seed for retail sale is responsible for registration and payment of license fees (see **References**). (NOTE: Check with the municipality or county in which you are packaging or selling seed packets about license(s) or registrations that they might require.)

### **Additional Seed Label Information**

The packet label should include a color image of the wildflower, a very brief description of the species (height, flowering season), and planting information (when, where, how, coverage area). A general guideline about coverage is that 500 seed should cover 25 to 50 sq ft. Contact FDACS, Marketing Division (see **References**) about use of their "Native from Florida" logo on the label. Members of the Florida Wildflower Seed Producers Cooperative might also want to include the Co-op logo (contact FDACS, Marketing Div.; see **References**).

### **Seed Certification**

Having seed certified as Source Identified by the Southern Seed Certification Agency (SSCA) is probably not justified. The SSCA currently has no tags designed for seed packets. If they did, the minimum tag charge (\$2.50) would make the seed packet price cost prohibitive to homeowners.

### **Packaging of Seed**

A seed packet should contain between 200 and 1000 seed. The number of seed will depend on seed size and value of the seed. To make the packaging process as efficient as possible, calibrate measuring spoons to simplify the task of dispensing seed. Count the number of seed in a level 1/2 teaspoon samples; repeat 10 times. Add up the 10 numbers and then divide by 10 to obtain the average number of seed in 1/2 teaspoon. If the average is more than 1000, then repeat this process with 1/4 or 1/8 teaspoon.

Place seed in sealed, moisture-proof packets, or in a sealed, moisture-proof envelope inside the outer seed packet. This will ensure that seed moisture content remains between 5% and 10%, and will help

to maintain original seed quality over time. An added benefit is that Florida state seed law extends the germination test expiration date to 18 months for seed stored in a hermetically sealed container. See Section 578.28 of Chapter 578 of Florida Statutes for specifications of a hermetically sealed container (see **References**).

## Costs/Marketing

### Costs

Cost of packaging seed, including the cost of packets, labels, printing, and filling the packets currently is about \$0.25-0.35 per packet, not including the price of seed. These cost estimates are based on purchasing packets and blank labels in large quantities.

If producing more than 10,000 seed packets per species, consider outsourcing the labeling if the cost is equal to or less than your labeling cost.

### Marketing

Always target your sales to groups most likely to purchase seed: people at nature-related festivals or conferences, county fairs, native plant societies, garden clubs, etc.

If you will be selling seed packets via a local garden center or other business:

- Use an attractive package.
- Utilize an eye-catching, user-friendly display rack that is easily maintained by the retailer.
- Keep the display well-stocked, neat, and clean.
- Make sure the display rack is not in the sun – seed quality will decline and seed labels might fade.
- Distributors and retailers should store seed packets in a refrigerator or cooler until ready for sale or distribution.
- If your seed is not packaged in moisture-proof packets, consider them to have a short shelf life. Seed quality could decline after a month or two if seed has been stored or displayed in warm, humid conditions.

### • Pricing

The seed packet's wholesale price should be based on the total costs of producing the packets and the expected return (profit margin). Total production cost includes the value of everything associated with production of the seed packets. Such costs can include, but are not limited to, seed production, labor, shipping, packaging, and other costs associated with the product. Expenses such as package design and packaging equipment should be spread over the entire anticipated volume of seed packets you will produce to get a true calculation of total production cost.

Retail price will include the aforementioned as well as the markup of the distributor and retailer. While percentage can vary, expect about a 50% markup by the distributor, and an additional 75% markup by the retailer. Large volume sales to distributors and/or retailers will reduce your return (profit margin) because a lower price will be negotiated by the purchaser. However, the lower price can be justified in a savings of sales and service time, shipping expenses, and other costs of doing business.

## Resources

### Florida Dept of Agriculture & Consumer Services

*Bureau of Compliance Monitoring, Seed Section*  
<http://www.flaes.org/complimonitoring/seedsection.htm>

*5E-4.011 Flower Seed Germination Standards*  
<http://www.flrules.org/gateway/readFile.asp?sid=0&tid=1010078&type=1&file=5E-4.011.doc>

*Marketing Division*  
<http://www.florida-agriculture.com/>

*Seed Dealer Registration (license fees)*  
[http://www.leg.state.fl.us/Statutes/index.cfm?App\\_mode=Display\\_Statute&Search\\_String=&URL=Ch0578/SEC08.HTM&Title=->2006->Ch0578->Section%2008#0578.08](http://www.leg.state.fl.us/Statutes/index.cfm?App_mode=Display_Statute&Search_String=&URL=Ch0578/SEC08.HTM&Title=->2006->Ch0578->Section%2008#0578.08)

*Seed Section*

<http://doacs.state.fl.us/onestop/aes/seed.html>

Florida Statutes - 2006

*Seed (Chapter 578)*

[http://www.leg.state.fl.us/Statutes/index.cfm?App\\_mode=Display\\_Statute&URL=Ch0578/titl0578.htm](http://www.leg.state.fl.us/Statutes/index.cfm?App_mode=Display_Statute&URL=Ch0578/titl0578.htm).

*Seed Generally (Chapter 5E-4)*

<http://www.flrules.org/gateway/ChapterHome.asp?Chapter=5E-4>