

## North Creek Seed Treatment Techniques<sup>©</sup>

Jill Romero

North Creek Nurseries, 388 North Creek Road, Landenberg, Pennsylvania 19350, USA

Email: [jill@northcreeknurseries.com](mailto:jill@northcreeknurseries.com)

### IT ALL STARTS WITH...

- Own seed collection vs. purchased?
- Seed berm: 16+ plants in order to prevent inbreeding.
- Collection window is highly variable among species, ranging from only a few days to several weeks or longer.

### Seed Collection

- Done by hand (Fig. 1).
- Most grasses can be done by stripping the culms (the flowering shoot) off the stem.
- Seeds that ripen in pods should be collected just as the pods are beginning to open.
- Mature seeds are often dark in color, firm, and dry.
- Store seeds in paper bags to allow air circulation and prevent mold.

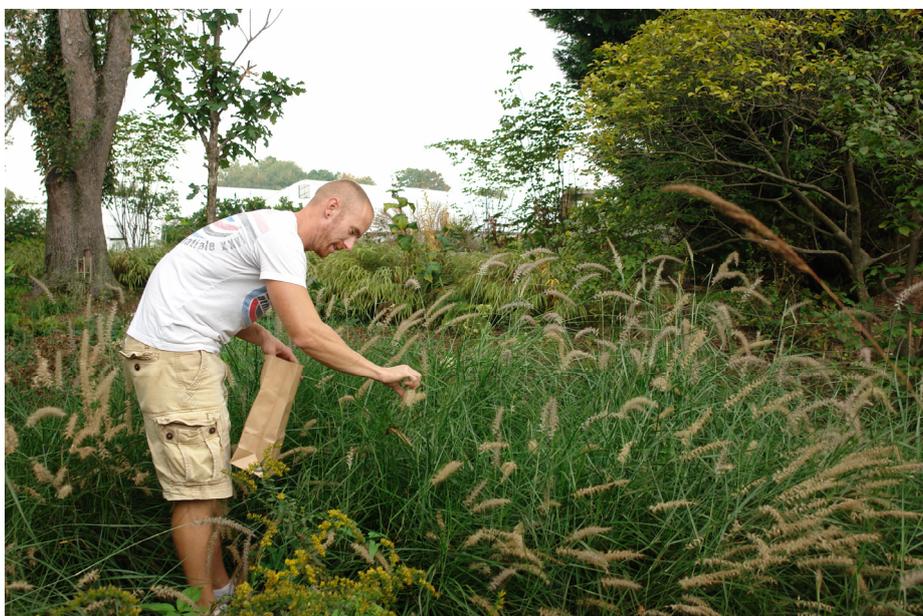


Fig. 1. Harvesting mature seed by hand.

### Seed Cleaning

- Done by hand.
- Separate the seed from the rest of the plant material.
- Some threshing or beating of the inflorescence may be necessary before the seeds can be sorted out.
- Most easily done using screens with various size openings (Fig. 2).



Fig. 2. Seed cleaning equipment.

### Seed Log and Storage

- Logged seed inventory in Excel® spreadsheet (Fig. 3).
- Seed collection form (Fig. 4).
- Refrigeration slows down the natural respiration and deterioration of the seed (Fig. 5).
- In general, the lower the humidity and temperature in storage, the longer the viability of the stored seed.

Box A					
Seed Name	Grams on hand	Date Weighed	Seed Date	Lot#	Supplier
Aconus americanus	293.30	9/26/2012		?	NCN
Agastache 'Golden Jubilee'	3.00	11/2/2012		70277014100g	Jelitto
Agastache rupestris "Apache Sunset"	7.50	9/26/2012		70367014100s	Jelitto
Alchemilla mollis Select	10,000 seeds	11/2/2012	2012	188535	Ivy Garth
Allium cernuum	13.10	10/20/2012	2011		NCN
Allium cernuum	To be cleaned	11/8/2012	2012		NCN
Aruncus dioicus					Ivy Garth
Andropogon glomeratus	1.00	9/26/2012		70002317100s	Jelitto
Andropogon scoparius	71.20	10/20/2012	2012	PM1284H	Prairie Moon
Andropogon scoparius	47.20	10/20/2012	2012	PM138K	Prairie Moon
Anemone canadensis	25.00	11/2/2012	2012	WW535H	Prairie Moon
Anemone canadensis	112.00	11/7/2012	2012	BO1141H	Prairie Moon
Aquilegia canadensis	0.91	9/26/2012		161002	Ivy Garth
Asclepias curassavica	42.00	11/19/2012	2012	LD0808	Everwilde Farms
Asclepias inc. Ice Ballet	6.80	9/26/2012			Ivy Garth
Asclepias incarnata "Swamp Milkweed"	15.50	10/20/2012	2012	BO1142H	Prairie Moon
Asclepias incarnata "Swamp Milkweed"	8.50	9/26/2012		TW1299H	Prairie Moon

Fig. 3. Seed inventory in Excel® spreadsheet.

**SEED COLLECTION FORM**

Species \_\_\_\_\_ ID Code \_\_\_\_\_

Date Collected \_\_\_\_\_

Collectors \_\_\_\_\_

Location Collected (Be specific and include site details if relevant) \_\_\_\_\_

Raw Weight \_\_\_\_\_ Cleaned Weight \_\_\_\_\_

Cleaning Method \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Seed Treatment (Sterilization, CMS, etc.) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Germination Test/ Percent Germ \_\_\_\_\_

Fig. 4. Seed collection form.



Fig. 5. Seed storage in refrigerator

### Seed Label

Includes the following (Fig. 6):

- Cold moist stratification week.
- Sow week.
- Transplant week.
- Finished size ready date.
- Seed source.
- Treatment used.
- Seed lot #.
- Sow rate.
- Weight of seed sown.
- Size/yield.

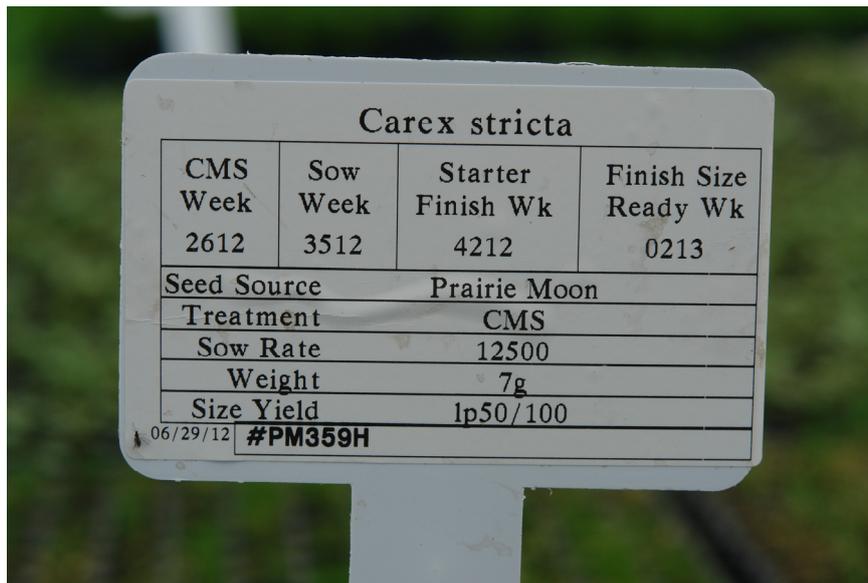


Fig. 6. Seed label up close.

## SEED GERMINATION TREATMENTS

### Stratification

- Cold moist stratification is the most used method.
- Moisten the medium making sure it doesn't get too wet, place the seeds inside and then place the sandwich bag in the fridge, not the freezer (Fig. 7).
- It is important to note that you shouldn't let the medium you use dry out during this process.



Fig. 7. Seed stratification in plastic bag.

### Scarification

- A seed's hard outer coat makes it impervious to gases and moisture that would cause them to germinate.
- Seeds that need to be scarified before sowing are usually large or have thick seed coatings.
- To overcome this, you need to scratch, break or nick the seed coat (Fig. 8).
- Can be accomplished by rubbing the seed on a file or sandpaper.



Fig. 8. Small batch seed scarifying equipment.

### **Soaking**

- Soaking seeds to get them to germinate is the easiest of all the methods.
- 24-h hot water soak.
- Gibberellic acid soak.
- Used for wetland plant species.

### **WHAT WE'RE WORKING ON**

- Getting away from Turface<sup>®</sup>.
- Seed placed in muslin bags.
- Covered in germination mix.
- Seed dried out with talcum powder.
- Run through automated seeder.

### **SEED SOWING**

- Germination mix filled in 288 tray (Fig. 9).
- Cold moist stratification material spread over top of trays.
- Direct sowing into finished size tray.



Fig. 9. Seed sowing tray.