

## Milkweed Germination Process

You have received freshly collected milkweed pods. Below includes step by step process and explanations on how to create milkweed plugs from freshly picked seeds. Each step in the process will include a list of materials needed, step by step methods, and descriptions explaining why the method is needed.

### *Storage and Prepping Seeds*

To ensure no mold or diseases occurs on the collected pods they should be stored in an open dry area with good air circulation. They should be stored like this until you are ready to start processing.

1. Remove the outer shell/pods – should be left with seeds with coma (white fluff)
2. Remove coma: paper bag method, Coins method, Vacuum separator method, By hand
  - a. Paper bag method – Materials: Paper bags, Scissors, Plastic container
    - i. Place the seeds with coma into a paper bag. Shake vigorously, cut small hole in bottom corner of bag, and pour out seeds through hole. Continue shaking until majority of seeds are separated from comas.
  - b. Coins Method – Materials: Plastic container with lid, Coins
    - i. In a plastic container with lid place a few coins, 5-8, in with seeds and coma in the container and close the lid securely. Shake the container back and forth. Open lid and sift off the coma from the top leaving the seeds in bottom to pour out.
  - c. Vacuum Separator Method – See handout on building machine
  - d. **By hand (easiest method)** – Separate the seed from the coma individually by hand, Materials needed are container to keep separated seeds
3. Place cleaned seed in dry containers: paper bag, plastic container, glass jars
4. Label the containers with seed info and date cleaned

After the coma has been removed from the seeds, they should again be stored in dry open area with good air circulation until you are ready for the next step.

### *Scarification*

Scarification is the, scratching, or softening the seed coat so water and air can enter the seed. The easiest and safest way to scarify seed is to fill a paper bag with dry sand, put the milkweed seeds in with the sand, give the bag a few shakes and then remove the seeds from the sand by pouring the contents of the bag into a metal strainer. The sand will fall through the strainer holes but the seeds will not.

### *Vernalization*

Seeds of most temperate plants need to be vernalized, which is a fancy way of saying that they need cold treatment to replicate the seed's life cycle during the winter months. The best way

to give the required vernalization is through stratification, artificially exposing seeds to cold-moist conditions.

Materials: Plastic zip-lock bags, paper towels, Spray bottle filled with water, Permanent marker, Seeds

1. Lay out two layers of paper towels ripped in 2 sheet panels
2. Spray the paper towels until completely moist
3. Spread Milkweed, a single layer of seeds evenly across 1 panel of the paper towel
4. Fold over the other panel so the seeds are sandwiched between the moist paper towels
5. Place the folded moist paper towel with seeds flat into the zip-lock bag, seal bag while removing as much air as possible.
6. Label the zip-lock bag with the date completed
7. Place zip-lock bag flat in refrigerator

You can stack zip-lock bags on top each other, just be sure they are flat so the seeds stay evenly spaced within the moist paper towel.

8. Keep seeds in refrigerator for 5-6 weeks

### ***Planting seeds***

At the end of 5-6 weeks the seeds need to be brought out of dormancy and germinated. For most effective germination, a process of shocking and scarification should be done.

Materials: Buckets, warm water, potting soil, seed trays (50 cell recommended)

Shocking:

1. Fill bucket with warm water, around 70<sup>0</sup>F
2. Remove seeds from zip-lock bag and pour into bucket of warm water
3. Let soak in water for 24 hours

Scarification

4. Remove seeds from bucket and place in plastic container
5. Add coarse sand to the container
6. Shake back and forth seeds with sand for 30 seconds

Germinating:

7. Fill seed trays almost completely full with potting soil
8. Place a single seed into each cell lightly pushing seed just below the soil
9. Fill the rest of the cell with soil to completely cover seed
10. Label the seed tray with seed info and date seeded
11. Water the seeded trays, they should be well water when first seeded
12. Place in warm area with sunlight

Most seeds will germinate in 7-10 days if flats are maintained at 75<sup>0</sup>F

13. Keep watering the plants daily, soil should be moist, not soaked

The plants are ready to be transplanted when they are about 3-6 inches in height.