

## Cone Collection and Handling of Whitebark pine. (after caging)

Don Pigott, September, 2018

Cone collection of Whitebark pines usually starts in Mid-September and continues on until into late October. At the higher elevations, weather is always a concern for access later in the season. Cones should be collected when the seeds are mature, that is usually considered to be when the embryo is at least 90% of the cavity or greater. Cones can be collected when the embryo reaches 80% provided good handling and storage techniques are followed. If you wish to collect scion material from selected parents, you may want to collect as late as possible so that it is as dormant as possible.

- Once cones are harvested, and removed from the cages, they should be stored in porous sacks or bags to allow good air-flow. The mesh size should be large enough for good aeration, but not so large as to lose seed. Burlap cone sacks, or bags made from curtain sheer, or screen door screen are good. The sizes shown below for the sewn bags, (23 x 11" or larger ) is suitable for most collections, but may not be large enough when many cones per tree are harvested. Make larger sacks or use burlap. (Check the website for Burnaby Bag and Burlap). 20" x 40" cone sacks are about \$1.10 each.
- Pillow cases or bags with tightly woven cotton do not allow good circulation, and are not recommended.
- Do **not** use old sacks unless they have been washed with soap and bleach or sanitized.



**Bags for cone collection.**



**Correct way to tie up sacks.**

- Tie the sacks at the top of the bags to allow the cones to be freely turned and exposed for drying. Make sure they sacks or bags are well marked with their unique identifier. A tag inside, and out is recommended.

- Transport the cones as quickly as possible to an interim storage facility, or the location where they will be processed. Ensure that they are well-aerated as the cones will likely still have a high moisture content, and the moisture and heat needs to be dissipated. Avoid piling sacks, and keep well-ventilated during transport especially in hot weather.



**Transportation of cones - Pallet on truck bed, and raised racks.**

- At the storage or processing facility, store the cones on well ventilated racking, either in the bags or sacks, or transfer the cones to a well-ventilated container, particularly if rodent or bird predation could be a concern. These screen bottomed containers (Dollar Store) can be useful for drying the seed after it is processed. Auxiliary fans can be useful.
- If cones are being dried indoors prior to extraction, room temperature is adequate.
- Do not use supplemental heat.
- De-humidifiers are also useful.
- Monitor cones regularly for fungal growth, even non pathogens can be problematic.
- Remove seeds from the cones as soon as they are easily extracted.
- Remove as much debris as possible as it may contain moisture or pathogens.



**Conventional cone storage**



**Dollar Store containers with screen door screen glue-gunned in, and protective cover.**



**Containers are also useful for seed drying.**