HARVESTING AND STORAGE OF ARABIDOPSIS SEEDS

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* Harvest seed from yellow brown pods. For mass harvesting, stop watering plants after the first pods are beginning to turn brown. Allow the plants to dry out. Gently tap the dried plants onto a sheet of paper and collect the seed. Sieve the harvested seeds to remove pods and plant debris.
* Arabidopsis seeds should be viable for two years in seed packets at room temperature.
* High humidity is detrimental for viability (certain mutants may have a shorter shelf life). To increase shelf life, store seed packets over silica gel in a sealed sandwich box.

* For longer term storage, place seeds in Nalgene Cryovials (see method below) or ampoules. Place into a dessicator above self indicating silica gel for 4-7 d under a moderate vacuum. The seeds can now be stored in either of two ways:

1. CRYOVIAL STORAGE (Thanks to A.R. Kranz, AIS)
(i) Fill about the third of the volume of a Nalgene Cryovial with self indicating silica gel. Cover this with a plug of non-absorbant cotton wool and this with a tightly fitting disc of filter paper.
* The self indicating silica gel changes colour from blue to red when moisture is absorbed.

(ii) Add seeds to the vial and dessicate as described above.
(iii) Cap the vial, label, and put in a numbered slot of a Nalgene Cryobox.
(iv) Store at -20oC.
(v) Before removing seeds, allow the vials to warm to r.t. in a dessicator above silica gel.
(vi) After removing some seeds, briefly dessicate the remaining sample and return to storage.

2. VACUUM STORAGE - FOR LONG TERM SEED STORAGE
* Effective with Landsberg erecta. Currently under test with other lines and mutants.

(i) Constrict a 0.5 ml freeze-dry ampoule approximately 1/2 way along its length under a mixed gas and air flame.
(ii) Add the required amount of dessicated seed (as above) and a paper label if required. Plug the ampoule above the constriction with non absorbant cotton wool [to prevent loss of seeds during stage (iii)].
(iii) Place the ampoule on a nozzle of a centrifugal freeze dryer (e.g.,

Edwards Speedivac) and pull a vacuum of 0.5 torr.

(iv) At this point, seal the constricted part of the ampoule using a butane microjet blowtorch, leaving a sealed tube containing the seeds.

(v) Store the ampoule at r.t., 4oC or -20oC.

* We don't know yet which of these temperatures is the best for long term storage. Landsberg erecta shows 100% germination after storage for 3 months at any of these temperatures.

(vi) When the seeds are required from storage, allow the ampoule to warm to r.t. and open with a file.

3. NOTE ADDED

* In our hands the storage of seeds above dessicant is fine, but we are picking up rumours (no hard evidence) that it may be detrimental to certain seed lines to store them over several years in this way.

* An alternative procedure is to dessicate seeds as described and then store them in cryovials without dessicant. At -20oC seeds should be