

Technical information sheet_3

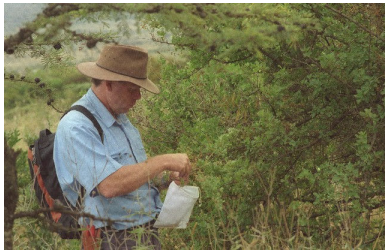
This information sheet outlines the manual techniques most commonly used to make seed collections of adequate quality and quantity for long term conservation.

Refer to [Assessing a potential seed collection](#) (no 2 in this series) before making seed collections. This will help to ensure that the seed collection is adequate for project needs, and does not harm the wild population.

Seed collection from wild plants requires care, resourcefulness and determination. There are many different collecting techniques. The most appropriate technique will depend on the species, particularly the type of dispersal unit (fleshy fruit, dry fruit, individual seeds etc).

Hand picking of whole fruits

The most basic and flexible of techniques; hand picking has many benefits. Consider though, if there are more efficient techniques.



Plucking is particularly suitable when:

- Target fruits can easily be selected by eye (e.g. due to colour or texture change of fruit coat, or swelling of fruit).
- Non-target (e.g. immature or damaged) fruit cannot be excluded from the collection by more efficient techniques.
- Fruits are easily accessible and collectors can tie buckets or similar containers around the

waist, releasing both hands for collecting.

- Collecting many-seeded fleshy or dry indehiscent fruits
- Making small seed collections.

Pruning clusters of fruit

This technique is typically used to collect tree seeds. Cut groups or clusters of fruits using secateurs or tree pruners. Assess for ripeness and damage before adding seeds to the collection.



This is a very effective technique when:

- Seed is clustered at the distal (terminal) part of branches
- The species is abundant and a small associated loss of branch and foliage can be tolerated
- Seed is beyond reach of the collectors and has to be obtained using tree-pruners.

Bagging seed-heads

If there is frequent access to the collecting site, and if seeds would otherwise be lost, fix a well-tied mesh bag **loosely** over pre-dispersal seed heads. Seeds are captured as soon as they are shed, and can be periodically removed. This has

been successfully used on a small scale e.g. for collecting *Fouquieria*.

Shaking branches

Careful shaking of branches will sometimes dislodge the best available seed, which can be collected in buckets or on a tarpaulin held or laid beneath the plant. Start with gentle taps, and carefully check each sample of seed dislodged. Light shaking should dislodge fully ripe fruits and seeds. In some cases, immature, poorly developed and damaged seeds are retained on the mother plant after light shaking.



Heavy beating of branches may cause damage to the tree, and may also dislodge other plant material and associated insects, necessitating additional cleaning of the collection. Light, plumed seed from *Bombacaceae* and *Asclepiadaceae* will often be carried away by air currents if this technique is used in even gentle wind.

Shaking branches may be useful when collecting:

- Dehiscent fruits with medium-large seeds.
- Seeds with irritant plumes (e.g. *Cercocarpus: Rosaceae*)
- Spiny trees such as *Prosopis (Fabaceae)*.
- In level, open terrain suitable for tarpaulin use.

Stripping entire seed-heads

This is a popular technique for collecting seed from grasses and

may be suitable for other species with erect infructescences (seed-heads). Grasp the seed-heads at the base with a gloved hand and slide the hand upwards, dislodging many or all of the seeds. This technique may introduce a proportion of immature seeds into the collection. Such seeds might need further post-harvest ripening which can be time consuming and is best avoided.

The stripping technique is most suitable for:

- Dense, mono-specific stands of target species with no weed or other species present.
- Infructescences which are completely and consistently at the natural dispersal stage.

Collecting fleshy fruits

Collect fleshy fruits directly into strong plastic bags or tubs with as much air as possible. Pack the bags in some kind of rigid plastic container to ensure that the fruits are not squashed and help prevent them getting too hot and fermenting during their journey. You may need to remove the seeds from fleshy fruits either during or immediately after the field trip.

Collecting from the ground

You will frequently find seeds on the ground below trees or shrubs, but they will often be damaged by pests or pathogens. The seeds may have been on the ground for several months, and could even date from the previous year. Such seed will have aged and life-span in storage will be reduced. Inspect the seed carefully, noting any variation in the fruit, seed coat and seed internal tissues. In general, only collect from the ground when:

- The mother tree(s) can be determined without doubt.
- You are certain that you are collecting recently dispersed seeds.
- Seeds have not suffered significant damage from pests or pathogens.
- Other techniques or collecting options are unsuitable.

Containers

Collect into buckets, cloth or paper bags, and check each person's sample carefully before combining into a single population collection. Using buckets has the advantage of allowing you to monitor the quality of the collection whilst associated insects disperse freely.



Secure collections of dry, ripe seed into cloth or paper bags for transit. Store any awned seed or hooked fruit that would damage or get stuck in cotton bags in cardboard boxes or strong paper bags. Never collect or store seeds in plastic bags.

Label all seed containers inside and out with a unique collection number, and seal them securely. It is best to prepare sufficient labels before filling the containers.

Data

Without good field data, the utility of seed collections is limited.

- Maintain a record of the number of individual plants sampled, and the approximate size of the population. This data can be valuable for land managers and users of the seed.
- Refer to other sheets in this series for further advice on data collection and handling.



Further reading

Assessing a potential seed collection - technical information sheet_2 in this series

Forestry tree seed collection frequently requires additional use of rope and climbing techniques. Refer to publications such as

Schmidt, L (2000). Seed Collection. In: *Guide to handling of tropical and subtropical forest seed*. Danida Forest Seed Center.

<http://www.dfsc.dk/pdf/Handbook/chapter4.pdf>