

SOP 02. ANNEX 6. STUDY OF PHYTOPOPULATIONS

A seed collection is representative of a population consisting of 50 healthy and viable phytopopulation individuals of wild origin, undamaged, with each phytopopulation individual possessing a large number of seeds. The collection of seeds from a wild population is conditioned by the following factors:

1. The population is genetically distinct, with a differentiated pedo-climatic and altitudinal structure compared to others and is separated from other populations by physical barriers (hill, valley, ridge, etc.), making genetic mixing almost impossible.
2. No samples have been previously collected from that population, or it is poorly represented in the bank's collection.
3. The population is of wild origin and does not include cultivated species.
4. Samples can be collected randomly and uniformly from at least 50 phytopopulation individuals, and a sample should contain approximately 10,000–20,000 seeds. If possible, it is recommended to collect multiple species from the same site and/or multiple samples for the same species.
5. Seeds are not collected from small populations with fewer than 50 phytopopulation individuals, and no more than 1,000 viable seeds can be collected.
6. When populations are of optimal size, it is recommended to collect multiple species from the same site, but no more than 20% of the seeds available in the population at the time of collection.
7. Approximately 50% of the seeds present at a site during collection should not be harvested to allow for the natural regeneration and revitalization of the respective population.

Depending on the purpose of the collection and the intended use of the genetic material, seed samples can be collected from all individuals, forming a total sample, or seeds can be collected from each individual, with the sample representing a separate collection.

It is often useful to conduct a preliminary visit to the collection site to evaluate the populations, confirm identification, estimate the probable collection date, and assess the productive potential of the population.

Regardless of the method used, collection must always be carried out in a manner that does not damage the existing vegetation (viability, perpetuation, etc.), while at the same time optimizing the capture of the population's genetic diversity.

Formula for evaluating population size:

$$100,000 / (\text{number of seeds per fruit} \times \text{number of fruits per plant}) \\ = \text{minimum number of plants required in the population}$$