

## **SOP 02. ANNEX 5: TECHNIQUES AND METHODS FOR SEED COLLECTION**

### **Seed collection from wild plant species**

The collection of seeds from wild plant species requires attention, creativity, and determination. The collector must spend sufficient time in the collection area to gather a small number of high-quality seeds rather than rushing to collect a large quantity of seeds with no economic or scientific value. For the purpose of ex situ conservation, seed samples are collected uniformly from each individual in the population, rather than only from those with a higher number of seeds.

During seed collection, excess plant material should be removed from the sample to improve the drying process and reduce the likelihood of contamination by molds, pathogens, or insects.

### **Collection techniques**

The techniques used for seed collection vary depending on the species but can generally be grouped into five categories:

#### **1. Complete removal of fruits**

This is the basic and most flexible technique, suitable for collecting small seeds when the fruits are fleshy and/or indehiscent. Advantages of this technique include:

- Fruits can be easily selected through visual analysis (colour, shape, texture etc.).
- Non-target species, damaged, or immature fruits can be avoided.
- The collection process is faster.

#### **2. Rolling off the entire inflorescence containing fruits/seeds**

This technique is used for collecting seeds from herbaceous plants, particularly when there is a high density of individuals. It involves grasping the inflorescence with one hand and pulling from the bottom to the top with the other hand, detaching all the seeds present.

(Figure 1.)

However, limitations include, the collector cannot select the best panicle for harvesting and a significant amount of immature seeds may be included in the sample.



**Figure 1. Rolling fingers on the inflorescence**

#### **3. Cutting the entire inflorescence containing fruits/seeds**

Inflorescences are cut using garden shears and placed into paper bags. (Figure 2.)



**Figure 2. Cutting the inflorescence with scissors**

#### **4. Shaking or rubbing the inflorescence inside the collection container**

For herbaceous plants with dehiscent fruits (pods, capsules, siliques) or those with irritating hairs or spines (e.g., *Rosaceae*), the inflorescence is shaken above a container or placed in a paper bag and gently agitated so that the seeds fall into the container or bag. (Figure 3.)

Advantages of this technique is poorly developed or heavily damaged seeds are less likely to detach from the mother plant, reducing the risk of collecting diseased or underdeveloped seeds.



**Figure 3. Shaking the inflorescence inside a container**



**Figure 4. Inflorescence covering in plants with fruits that open suddenly and explosively**

#### **5. Covering the inflorescence with a paper bag or cloth sack**

This method is used when frequent access to the collection area is possible, particularly for species whose fruits release seeds suddenly and explosively. The population is covered with waxed paper bags or perforated plastic bags, allowing seeds to be captured directly in the bags as they mature. (Figure 4.)