**Seed Collection of Forest Trees**

 Collection of forest tree seeds **requires** **knowledge** of some basic points that are most important in terms of **development** and **economic,** as knowledge **ways to collect seeds** and their **time** and **choose trees appropriate** in the absence of **orchard seeds** and then **collect** **the** **largest** **amount** **of** **seeds** **at** **low** **cost**, this needs to choose the **right** and **fast** **method** to collection and set the right time.

**Then necessary to knowledge seeds collectors include:**

1. Where are the trees of good qualities and good growth, which carry large amounts of seeds?
2. When the seeds mature and best period for collecting.
3. Choose the appropriate way to collect seeds.

**Selection of groups to collect tree seeds**

To choose a group of tree for collect seeds (trees are called **mother trees**) or tree seeds and must take into account the following:-

**1-** Choose mother trees with excellent genotype.

**2-** The trees must be with good qualities in terms of growth speed and morphology.

**3-** The trees that will not have any defects or undesirable characters and cleanliness of disease and insect injury.

**4-** Choose the best trees in terms of quantity and quality of seeds or fruits.

**5-** Selection of trees to seed collect from the area of ​​environmental conditions correspond roughly with the environmental conditions of the area to be planting them.

**Stages of fruit maturity**

The determining factor for the collection of fruits and seeds is the **fruit** **ripening** and there are **two stages of maturity of the seeds**:
**1 - Physiological maturity**

1- The seed coat and materials within the endosperm **not** **hardens** in these types of seeds.

2- Sow seeds **directly** after collection in several days.

3- These types of seeds **aren’t** for storage.

**2 - Perfect maturity**

1. A phase that comes **after** the stage of physiological maturity.
2. Becomes the food inside the seed to complex materials and **hardens** as well as the seed coat.
3. These types of seeds can be **stored** according to their life period.

**Signs of maturity of the fruits and seeds**

***First: natural signs of maturity***
There are some signs that indicate the maturity of the **fruits** or **cones**, including:

**1-** **Open a fruit or cones and separation from the tree**

 This occurs in many species, as in ***Salix*** and ***Populus*** and fruits of some types of **legume family**, such as some species of ***Acacia***trees

**2-** **The change in color of fruits**

The **color change** in a fruit that can be important factors for determining the **date of maturity**, for example:

**Change the color of the fruit from**:

* Green to **red** such as ***Cercis siliquastrum***
* Green to **black** such as ***Morus nigra***
* Green to **brown** such as ***Quercus aegilops***
* Green to **yellow** such as ***Melia azedarach*** and ***Albizzia lebbek***

**3-The beginning of the fall fruit** is one of maturity signssuch as ***Quercus*** and ***Castanea***

**4- The change in taste**: such as ***Juglans regia***
**5- Change in specific gravity.**
A change in specific gravity in some fruits a natural signs of maturity. Some fruits **light weight** **at maturity**. This may be done by taking the number of cones on the tree and put it in a kind of **oil density 0.88** if **more** **than** **half** **the** **number of cones** **above** interpreted as evidence of the maturity of the fruits.

***Second: Chemical signs of maturity***

So by estimating the **moisture content** of the fruit or the chemical composition of their **protein** and **fat** and as evidence of maturity and this kind of marking is **less** commonly used natural signs of maturity.

**Methods of collecting the fruits of trees**

Collect fruits from the trees in several ways:-
**1-** Collection of fruits on the ground after falling such as **oak** and **chestnut**.
**2-** Collect fruits of trees felled.
**3-** Climbing and collecting fruits by using certain tools.
**4-** Collect some fruits from the **caches of the squirrel**, the species that can be collected by this way such as seeds of **Fagus**, **oak** and **chestnut**.

**Machines and tools for collecting seeds**

**1 -** Bags or containers to put seed in it.
**2 -** Ladders of different lengths and tree network.
**3 -** Belts and claws special for climbing.
**4 -** Hooks, saws and secateurs small and large.
**5 -** Use special cranes to transport workers to the higher required.
**6 -** A piece of cloth or tarpaulin to furnished under the trees when using the method of shaking the trees, whether manually or mechanically.

**Table (1) Collecting date for some tree seeds presented in Iraq.**

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| **Scientifi name** | **Collecting date** |
| 1. *Pinus brutia*
 | March - September |
| 1. *Pinus pinea*
 | February - June |
| 1. *Robinia pseudoacacia*
 | September - October  |
| 1. *Gleditsia triacanthos*
 | September - October |
| 1. *Ailanthus glandulosa*
 | September - October |
| 1. *Melia azedarach*
 | September - October |
| 1. *Platanus orientalis*
 | October - November |
| 1. *Acer* spp.
 | October - November |
| 1. *Thuja orientalis*
 | August - October  |
| 1. *Cupressus sempervirens*
 | End of September - November  |
| 1. *Juniperus oxycedrus*
 | September - November |
| 1. *Eucalyptus* spp.
 | June - February  |
| 1. *Casuarina equisetifolia*
 | June - December |
| 1. *Fraxinus rotundifolia*
 | October - December  |
| 1. *Populus nigra*
 | May - June  |
| 1. *Catalpa bignonoides*
 | October - February |
| 1. *Juglans regia*
 | August - September  |
| 1. *Quercus aegilops*
 | November |