

Technical sheet: development of young plants

Direct sowing (on site)



Benefits

- Easy to achieve
- Quick to achieve
- Possible over large areas

Disadvantages

- Only possible with certain species
- Requires relining
- Slow initial plant growth

Beforehand: breakthrough and filling

- - Choose a planting density adapted to the reforestation context: for 1300 plants/ha (spacing: 2.5 m by 3 m) to 1800 plants/ha (spacing: 2.25 m by 2.5 m).
- - Weed around the hole in a circle 60 cm in diameter.
- - Fill half the holes with dry grass and then fill them with soil.

Step 1: pre-germination (sprouting)

- Soak the seeds of *Acacia mangium*, *Albizia lebbek* or Mandrorofo (*Hymenaea verrucosa*) for 24 hours in a container of boiled water.
- Other species (such as the *Hintsy Intsia bijuga*) require soaking in cold water for 24 hours.
- Some species, such as korymbia (*Corymbia gummifera*) do not require pre-germination treatment: go directly to the sowing stage.



Step 2: sowing

- Conditions for success: sowing depth adapted to the size of the seed, sowing after rain.
- Place a maximum of 2 to 4 seeds in each hole.
- To maintain good moisture conditions, make the mulch by adding dry grass to the hole.
- Planting in a shady area is optional and depends on soil and climate conditions.



Success rate after replanting: 8 living plants out of 10 planted

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Dip treatment



Benefits

- Good survival rate
- Protected, strong plants
- Time window longer than direct sowing

Disadvantages

- More complex and more time-consuming than direct sowing
- Work organisation needed (nursery)
- Requires rapid transplantation

→ Plants to be used for replanting after direct sowing

Step 1 : germination

- In a dedicated space (shaded, protected from wind and rain), place a 10 cm thick substrate and composed of the following materials in equal proportions: top soil, compost, sand and clay soil). Water the germination area.
- Sow the seeds in the substrate, in rows and separated by species.
- Cover with plants until germination.
- Water daily.



Step 2 : dip treatment

- The length of time required for growth before transplantation varies from one species to another. In the case of korymbia (*Corymbia gummifera*), the dip treatment is done on plants of 1 to 1.5 months. Water the plants before digging them up.
- Make the fertiliser solution by mixing manure and water.
- Soak the roots of the plants in the solution.
- The plants to be dip treated are transported in the liquid fertiliser container.



Step 3 : planting

- Condition for success: during light rain or after heavy rainfall.
- Carefully plant one seedling per hole (loose soil), roots down, and water it.
- The use of a shade cloth (made of dry grass) protects the young plants from too much sunshine. If rainfall is insufficient or irregular, mulching is necessary.



Success rate: 9 living plants out of 10 planted.

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Nursery pellets



Benefits

- Very good survival rate
- Protected plants, very robust
- Time window longer than the praline

Disadvantages

- More complex and time-consuming technique than dip treatment
- Work organisation necessary (nursery)
- Shorter nursery life than in bags

→ Plants to be used for replanting after direct sowing

Step 1 : germination

- In a dedicated space (shaded, protected from wind and rain), place a 10 cm thick substrate consisting of the following materials in equal proportions: top soil, compost, sand and clay soil. Water the germination area.
- Sow the seeds in the substrate, in a row, separating the species.
- Cover with plants until germination.
- Water daily.



Step 2 : making the pellets(dumplings)

- The length of growth required before transplantation varies from one species to another. In the case of korymbia (*Corymbia gummifera*), the plants are transplanted from 1 to 1.5 months old. Water before digging.
- The substrate to be used for the making of pellets consists of 50% compost, 35% clay soil and 15% topsoil.
- Prune the plants before transplanting: soak the roots in a solution of manure and water.
- Form a 'cake' of substrate in one hand.
- Place the roots of the plant in the 'cake' and form a ball around it, pack it tightly flattening the top of the ball slightly.
- Condition for success: a consistent and fertile substrate, careful maintenance (daily watering) during the life of the pellet (3 weeks to 1.5 months).



Step 3 : plantations

- Plant one sapling per hole (soft ground).
- Covering the young plants with dry grass protects the young plants from excessive sunlight. If rainfall is insufficient or irregular, mulching is necessary.



Success rate: 9 living plants out of 10 planted

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Spontaneous seedlings



Benefits	Disadvantages
<ul style="list-style-type: none">• Quick to make• Quite easy to make• If plants available: free of charge for the process• Plants under field conditions	<ul style="list-style-type: none">• Transport complicated if remote location• Desired species not necessarily available or in limited quantities• Not permitted in protected areas

Step 1: removal of spontaneous seedlings

- Spontaneous seedlings are tree seedlings or saplings formed by spreading the seeds of fertile plants.
- Here are some species that lend themselves well to the collection of wildlings: Acacia, jackfruit (*Artocarpus heterophyllus*), pine (*Pinus*), Eucalyptus. This technique is likely to work with a wide range of species.
- Preferably choose young seedlings: they are easier to dig up and more resilient when transplanted.
- Dig up the plant by removing the soil around the roots to avoid damaging them.
- It is possible to transport the spontaneous seedlings directly with their clods.
- You can also make a dip treatment of the plants: clean the roots gently and immerse them in a solution of manure and water. The fertiliser container is used to transport the plants



Step 2: planting

- Condition for success: do the transplant during light rain or after heavy rainfall.
- Carefully plant one young tree per hole, roots down (loose soil).
- In the case of spontaneous seedlings, it is recommended to mulch the hole and to make shade with dry grass to protect the plant from drought and sunlight.



Success rate: 7 living plants out of 10 planted