Assisted forest plantation scenario:semi-intensive, intermediate post-planting care

The assisted forest plantation scenario involves a sufficient planting density to compensate for the loss of some of the seedlings which temporarily serve to protect and train the best-formed plants, but not too many, as interventions are frequent enough to eliminate defects and favour the greatest number of well-formed stems. This density is on average around 400 to 600 seedlings per hectare. In the long term, taking into account the cost of all works, this is often the most expensive solution as high planting and protection costs are combined with considerable post-planting costs.

The active forest manager

*« **Portrait** »: active forest managers combine the qualities of the previous two; sometimes an « traditionnal forest owner » seeking to reduce the number of interventions (large area, unstable plant health) and a forester, intervening at frequent intervals. An active forest manager can also be someone with significant funds who makes them available to ensure and obtain the best possible results.*

Why?

- A compromise is sought between security in terms of the choice of the future stems, moderate establishment costs and sufficiently quick establishment of a stand.

- Time and means are available for frequent interventions for at least 12 to 15 years.

How?

- The planting density is between 300 and 900 seedlings/ha. Rectangular spacings are preferable to reduce distances moved in the course of post-planting care.

-A single main species or several in a mix* can be established (recommended for the service tree, wild service tree, wild cherry, pear and apple).

- Seedlings should be stocky, sturdy and well balanced and the seed origins must comply with regulations (all labels possible for the main species). For a limited amount of seedlings of subsequently favoured precious tree species, selected material can be chosen (wild cherry cultivars, seed nurseries for hybrid walnut, wild cherry, rowan , etc.)

- If necessary, the most sensitive main species can be individually protected against animal damage. If this is insufficient, the plot should be fenced off.

-Maintenance, trimming and pruning are performed every year for 3-5 years, then in 3-5 interventions at 2-3 year intervals, possibly coupled with cleaning, concluding the pruning of designated stems.

Type of production?

- The density to some extent facilitates pruning up to 3 m to obtain quality logs around 5-6 m long if the stand is not opened up too quickly.

- These densities, often linked to dynamic forestry practices, produce timber with considerable growth increments that can be maintained through regular, fairly drastic thinning (once the logs are formed).

- For precious hardwood trees under regular treatment, the final harvest comprises 40 to 60 trees aged 50-60 years (with diameter varying between species).

Possible variants?

- For the lower overall density range (3-400/ha) on ground suitable for poplar cultivation, a mixture of precious hardwood trees (especially walnut and ash) can be considered along with poplar to improve the financial return on the first thinning.*

- For the higher overall density range (6-800/ha), the mixture of primarily precious main species can be combined with one or more accompanying species (e.g. walnut, ash or wild cherry with alder, willow or locust tree...), or even to add poplar on suitable ground.*

- Establishing an accompanying tree species can be justified if it is kept long enough to reduce the work involved in high pruning; if not, it should be avoided.

- Take care not to trim and prune too many trees! Less than 120 stems/ha will be harvested for timber. Above all, do not try to recover trees with major defects.

** see sheet «Composition of the plantation»*

Assisted forest plantation or low density plantation scenario

Types of intervention

In the plantation, overall post-planting care is initially carried out. Then in the course of 4 to 5 interventions at 2 to 3 year intervals, a number of pre-designated stems (see the diagram) are formed and pruned, including the intended final crop trees**.

During the first 3 to 5 years (up to a height of 2 - 3 m), the following is carried out at least once a year:

- maintenance to give seedlings a good start by eliminating or reducing competition from herbaceous (mainly grass) or potential semi woody (bramble, broom, etc.) species. Climbing plants should be eliminated (clematis, honeysuckle, etc.).
- checking animal damage protection that may have been put in place when planting.

During this intervention, ensure that at least 300 sturdy stems/ha*** have no major defects in form. If such plants are insufficient, other plants must formed by pruning to obtain the required number.

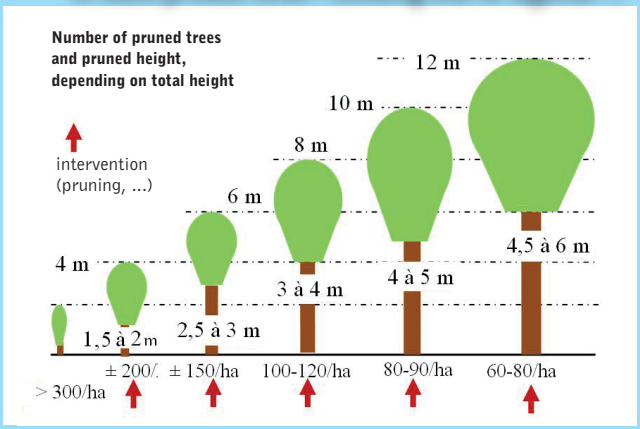
When the most sturdy trees*** reach 4 m in height, 200 well-formed stems among them are selected, trimmed if necessary and pruned up to a height of 1.5 to 2 m.

At 6 m, this operation is performed on approximately 150 stems per hectare, which are pruned up to a height of 2.5 - 3 m.

At 8 m, this operation is performed on approximately 110 stems per hectare, which are pruned up to a height of 3 - 4 m.

At about 10 m, 80-90 stems per hectare are pruned up to a height of 4-5 m and at 12 m, pruning concludes at ± 6 m on 60-80 stems per hectare. The pruned height can be less than 6 m on some sturdy trees with strong branches.

16 years old Wild cherry stand. 3,5m x 7m.
To much pruned stems : thinning will be difficult ...



If the number of well-formed stems allows (sufficient density), it is possible to intervene only 4 times at tree heights of 4, 6, 9 and 12 m. Then ± 100 stems/ha are selected and pruned up to a height of ± 4.5 m for the 9 m intervention.

Post-planting interventions (maintenance, trimming and pruning) are initially concentrated in the first ± 4 years, then over 4 or 5 interventions until a 6 m pruned log is obtained.

This scenario can withstand very brief interruptions or minor management delays and may be suitable for growers who can intervene periodically and do not take account of their own time.

*** et ****: see definitions in the Forest plantation scenario sheet.*