**Production Scheduling**

**Production schedules – the ultimate aim of nursery research**

Growing a wide range of forest tree species is difficult to manage. Different species fruit in different months and have widely different rates of germination and seedling growth; yet all species must be ready for planting by the optimal planting time. Species production schedules make this daunting managerial task easier.

In seasonally dry tropical climates, the window of opportunity for tree planting is narrow, sometimes just a few weeks, usually at the beginning of the rainy season, whereas in less seasonal climates, there may be more latitude in the timing of tree planting. Either way, species production schedules are an excellent tool to ensure that the required species of trees are ready for planting when required.

**What is a production schedule?**

For each tree species being grown, the production schedule is a concise description of the procedures for producing planting stock of optimum size and quality from seed, wildlings or cutting by the optimum planting out time. It can be represented as an annotated time-line diagram which shows i) when each operation should be performed and ii) which treatments should be applied to manipulate seed germination and seedling/sapling growth.

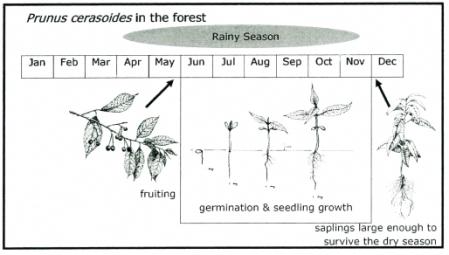
**What information is needed to prepare a production schedule?**

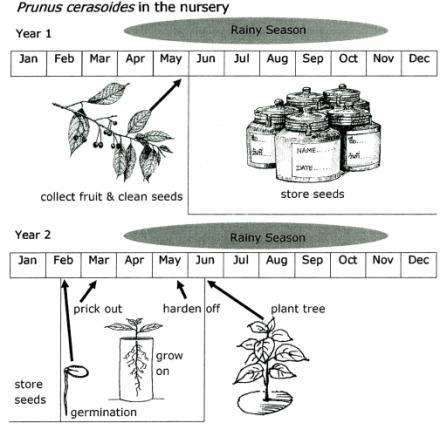
The production schedule combines all available knowledge about the reproductive ecology and cultivation of a species. It is the ultimate interpretation of the results from all the experimental procedures described above, including:

* optimum seed collection date;
* germination time or natural length of seed dormancy;
* how seed dormancy might be manipulated with pre-sowing treatments or seed storage;
* length of time required from seed sowing to pricking out;
* length of standing-down time required to grow saplings to a plantable size and
* how plant growth and standing-down time can be manipulated with fertilizer application and other treatments.

All this information is available from nursery data sheets, if the procedures detailed above are followed. The production schedule is very much a working document. Draft the first version once the first batch of plants has been grown to a plantable size. This enables identification of areas requiring further research and appropriate treatments to test in subsequent experiments. As the results of experiments on each subsequent batch of plants, become available, the production schedule is gradually modified and optimized.

**Example Production Schedule – *Prunus cerasoides*.**

In its **natural habitat**, this fast-growing pioneer tree, fruits in April-May. Its seeds have short dormancy and the seedlings grow rapidly during the rainy season, so that by December their roots have penetrated deep enough into the soil to supply the shoot with moisture during the harsh conditions of the dry season. In the **nursery**, saplings which have reached a plantable size by December would have to be kept for a further 6 months before the next planting season (the following June) and would out-grow their containers.

In the nursery, the production schedule, therefore, involves storing the sun-dried pyrenes at 5 degrees centigrade until January, when they are germinated. Plants grow to the optimum size just in time for hardening off and planting out in June. Development of this production schedule involved research on phenology, seed germination, seedling growth and seed storage.



***Example production schedule for framework tree species suitable for lowland deciduous forest***