



30. Nursery Technology for *Betula utilis* (Birch)

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Name of Inventor

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Description of Technology

Dominating over an extensive area at subalpine altitudes *Betula utilis* is the only broadleaved angiosperm tree species in the Himalayas. *Betula utilis* inhabits, generally, open exposed tracts that remain under snow for 5-6 months during winter. It is also the only birch species which occurs in North-West Himalaya and has been declared as critically endangered in Kashmir.

The regeneration of *Betula utilis* forests is very poor which ranges between 3.38 to 11.53 % in Kashmir Himalayas due to the high anthropogenic pressure, intensive grazing and lopping, which reduce the seed production that ultimately changes the species composition and even the *serial stage* of forests in the subalpine zones.

The seeds of *Betula utilis* are orthodox in nature and exhibit physiological dormancy. Therefore, before sowing, the seeds were subjected to imbibition followed by different stratification treatments ranging from 0 to 90 days to overcome the dormancy.

The seeds stratified for 75 days at $4^{\circ}\text{C} \pm 1^{\circ}\text{C}$ with potting media of soil: sand: FYM in the ratio of 2:1:1 resulted in the better germination (83.25%) and seedling growth (43.08 cm) of *Betula utilis* under nursery conditions.



Betula utilis seeds



Betula utilis seedlings

Impact

Faculty of Forestry has propagated more than 10,000 quality plants of Birch and distributed among relevant stakeholders including J&K Forest Department for restoration of degraded birch forests. A new birch block has also been established at Faculty of Forestry, Benhama Campus. The developed technique will be helpful in mass multiplication of this difficult-to-root tree species and restoration of birch forests across North-Western Himalaya.

Commercial applicability

Betula utilis, an endangered tree species. Therefore, there is an urgent need of some conservation protocols for restoration and rehabilitation of this species. Keeping in view the above facts, faculty of forestry successfully developed a production technology for the mass multiplication of this species. Production of quality plant material through this low cost technology can fetch good source of income to the farmers and nursery growers and thus can help in restoration and restocking of vulnerable birch forests through in-situ and ex-situ management.