



GERMINATION PROTOCOL OF DREAK OR MALABAR NEEM FOR COMMERCIAL MULTIPLICATION

(*Melia dubia* Cav. Syn. *Melia composita* Benth.)

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- *Melia dubia* Cav. (Syn. *M. composita* Benth.) is an economically important multipurpose tree species, which thrives well upto 1800 masl and planted in various afforestation and reforestation programme to support agro/farm forestry systems
- Versatile species provides raw materials chiefly for production of face veneer, quality ply, bright paper, furniture and agricultural implements
- However, eclipsed with poor seed germination to critically retard production at commercial levels
- Pre-treatments conducted earlier have not commensurated with increased seed germination

- Seed collection, handling and germination was considered to be a serious bottleneck in deployment and commercialization of this versatile species
- Germination was varying from 5 to 21 % (Southern India) to 20 to 41 % (Northern India)

Therefore,

- Process for collection and processing of seeds was standardized
- De-pulping process along with duration and technique was fine-tuned
- Seed variability analyzed, and germination was enhanced to about 300% (Northern India), in terms of stones
- Planting stock multiplied in large numbers for commercial cultivation



- Fully matured yellow or brown fruits or drupes are collected in the month of December
- After cleaning, fruits are soaked in tap water for 8 to 10 days so that pulp around stones is fully decomposed
- Pulp is removed from the stones by hand rubbing and crushing in such a manner that no damage is caused to stones. Moreover, thicker hands gloves to be used for smooth removal of pulp
- Every stone is found to bear four to seven locules, and each of the locules contain one single seed. Hence, each stone has a capacity to produce four to seven healthy seedlings when provided with appropriate conditions
- Stones are thereafter sundried for 4 to 5 days or until excess moisture is fully dried-up
- Fruits can even be stored upto 2 years or more in air tight containers and pre-treating with carbendazim (50 % WP) @ 2 gm per kg
- Germination could be carried out in plastic trays (or any surface with hard pan) filled with a mixture of sand, soil and FYM in the ratio of 1:1:1



- After 30 to 40 days of sowing, seedlings start emerging from stones in bunches of two to seven
- Newly emerged seedlings with pair of leaves to be pricked and transplanted either in poly bags or root containers with 500 cc capacity, filled with a mixture of sand, soil and FYM in the ratio of 1:1:1
- Transplanting to be carried out during evenings so that tender seedlings could be avoided with heat shocks
- Before transplanting, polybags / root trainers to be watered properly to enhance survival of transplanted seedlings
- Germination in terms of stones ranges from 223 to 497 per cent, which varies significantly from progeny to progeny as well as source of collection
- Stones sown with pulp either don't germinate or have a very low germination due to pulp as physical barrier and also tend to attract higher fungal attacks
- In this way, planting stock becomes ready for field transplantation in three to four months



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