



Research article

Effect of different methods of depulping on viability, germination, seedling vigour and its economic analysis in neem (*Azadirachta indica* A. Juss.)

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Abstract

The present study was conducted to determine the effect of different methods of de-pulping on viability, germination, seedling vigour and the economics of post-harvest seed management in terms of its quality for seedling production and industrial application. The physiologically matured ripe yellowish green-coloured fruits of neem were harvested manually, and the seeds were extracted by manual and mechanical de-pulping. In each method, skin weight (kg), pulp weight (kg), man-hour requirements, cost of de-pulping (Rs/kg), seed recovery (%) and moisture content (%) were calculated. After de-pulping, seeds were manually washed with water and time taken for washing the de-pulped seeds was also calculated. After that seeds were dried in threshing yard and moisture content of seed was calculated. Dried seeds were processed using cleaner cum grader in mechanical method and sieves in manual method. In both the methods, fruit to seed recovery (%) were calculated. The effect of manual and mechanical seed extraction on viability (%), germination (%) and seedling vigour was analyzed. Results revealed that mechanical method of de-pulping (45.5kg) exhibited an additional wet seed weight of 1.5kg compared to manual method (44kg). The seed recovery from one ton of neem fruits was 170.5 kg in manual de-pulping and 164 kg in mechanical de-pulping. The processing cost of one kg of neem seed was Rs.9.03 for manual de-pulping and Rs.2.49 for mechanical de-pulping. Among the two methods of seed extraction, even though there was not much variation in seed recovery, germination and seedling vigour, mechanical method had the advantage of 160 minutes less time duration for extraction and minimal processing cost per kg of seed extraction with higher seedling vigour index.

Keywords: Depulping, Economic analysis, Germination, Neem seeds, Seedling vigour