

## Effect of Seed Soaking and Drying Methods on Coffee Seed and Seedling Quality

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**Abstract :** Coffee is economically important in Ethiopia. However, the conditions under which coffee seeds are dried and processed significantly affect the seedling quality and productivity. The objective of this study was to evaluate the effect of pre-sowing treatments and drying methods on the physiological quality of coffee seeds and seedlings. The study was conducted at the Jimma Agricultural Research Center seed laboratory and nursery site. Two coffee varieties, 74110 and 75227, were used. Fully ripe red cherries were harvested, and the seeds were dried under two conditions: a shade drying room and direct open sun. Pre-sowing seed soaking treatments of 6, 8, 18, and 24 hours, including a control, were applied. A factorial design in a Complete Randomized Design was used. The highest germination percentage (91.48%), emergence rate (90.19%), and seedling vigor index (2236.30) were recorded for seeds dried in the shade drying room. In contrast, the lowest values (70.47%, 68.36%, and 1378.22, respectively) were observed for seeds dried in direct sunlight. There was a significant difference in seed germination based on soaking time, with the highest germination percentage (83.25%) recorded for seeds soaked for 6 hours, followed by 24 hours (83.13%), while the lowest (76.88%) was recorded for un-soaked seeds. The results indicated that drying seeds under shade is better for seed quality. Moreover, further investigation into seed treatment methods and preservation techniques is necessary to improve coffee seed quality.

**Keywords :** coffee, seed drying, germination, seed, seed longevity, seed priming

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