

Effects of Drying Method and Seed Priming Duration on Coffee Seed and Seedling Quality

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Abstract : Coffee is an economically important cash crop 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 included two coffee varieties (74110, 75227), two drying conditions (under-shade drying room, open sun), and five durations of seed hydro priming (6, 8, 18, 24 hours, and an untreated control). Factorial combinations of the three factors were laid out in a Completely Randomized Design of three replications. Results indicated that the highest germination percentage (91%), emergence rate (90%), and seedling vigor index-I (2236 cm %) were recorded for seeds dried under-shade drying room. In contrast, the lowest values of germination percentage, emergence rate, and vigor index were observed for seeds dried under open sun. There was a significant difference in seed germination based on hydro priming time, with the highest germination percentage (83%) recorded for seeds soaked for 6 hours, followed by 24 hours (83%). The lowest germination percentage (77%) was recorded for un-soaked seeds. In conclusion, drying seeds under shade is better for coffee seed quality, and hydro priming has improved seedling vigor. However, further investigation into seed priming methods and preservation techniques for primed seeds is necessary to improve coffee seed quality.

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

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