

Effect of Coffee Seeds Pre-germination Practice on Tap Root Development

B. BELLACHEW, M. AMEHA

Jimma Agricultural Research Center, P.O.Box 192, Jimma, Ethiopia

SUMMARY

Pre-germination (germinating seeds before sowing) is a common practice among the extension agents of coffee and Tea Authority (CTA) of Ethiopia. However, the effects of such practice and nursery soil preparation on taproot development were not studied. In this study, bulks of seeds of 15 released selections were pre-germinated between sacks with and without treating with fungicides. Concurrently, part of the untreated bulk were seeded directly on conventional seed-beds. Polythene tubes with course (unsieved) and fine soil were used to grow the pre-germinated seeds.

Highly significantly large percentage of hypocotyls were initiated from seeds sampled from untreated bulk as compared to seeds sampled from the treated bulk seeds, but highly significantly more percentage of rotten seeds were also observed in the bulk seeds untreated with fungicides (3.84%) than in the treated bulk seeds (2.01%). Large percentage of cotyledon and first pair of true leaves were initiated much earlier from direct sowing than from pre-germination practice. Percentage of multiple and crooked tap roots under fine and course soils and seed-bed were significantly higher from the pre-germination than from direct sowing. Relatively large percentage of seedling stand, however, was recorded from the pre-germinated and planted seeds than from directly seeded as expected, because no screening was made for nonviable seeds before direct sowing. From these observations it was concluded that pre-germination was the primary cause of malformed root system and eventual early tree death in the field.