

Study the Growth and Yield Performance of Lentil (*Lens culinaris*) Under the Sri Lankan Conditions

S.N.C. Silva¹, A.D.N.T Kumara²

^{1,2}Department of Biosystems Technology, Faculty of Technology, South Eastern University of Sri Lanka

¹navodichethana1024@gmail.com, ²adntkumara@seu.ac.lk

Abstract

Red lentils (*Lens culinaris*) are the most commonly consumed legume, with a daily per capita consumption of around 770 grams per month. However, overall consumption depends heavily on lentil imports due to challenges in growing the crop in the country. The aim of this study is to identify the barriers to lentil cultivation in Sri Lanka using edible seeds from market stocks. The selected unbroken seeds from the market were tested for their germination percentage under different potting media and their growth performance was examined on the same media. The results showed differences in germination percentage (ranging from 60% to 90%) between different starting materials and survival rate differed between seeds and growth medium. Challenges were observed during growth to flowering due to high susceptibility to fungal diseases and climatic conditions. The number of leaves per plant 9 days after transplantation showed significant differences ($F = 40401$, $p = 0.017$) between the tested media, although no significant differences were observed after 20 days of transplantation ($F = 2.326$, $p = 0.115$). The use of sand media with liquid fertilizer (Albert solution) proved successful and resulted in a significantly higher plant survival rate compared to other media tested. Plant height showed significant differences between the three media tested 9 days after transplantation ($F = 5.970$, $p = 0.005$), while no significant differences were observed 20 days after transplantation ($F = 0.987$, $p = 0.385$). These preliminary studies suggest that germinating tiny seedlings is challenging in local conditions, but subsequent cultivation is not too difficult. However, further studies are needed to provide comprehensive cultivation practices for growing red lentils under local conditions.

Keywords: *Cultivation barriers, Germination, Growing media, Red lentil*