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Effect of chlorella culture solution using animal liquid manure on improving seed germination in perennial ryegrass

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Abstract

This experiments were conducted to evaluate the influence of Chlorella culture solution on seed germination of perennial ryegrass seeds. Chlorella are known to contain different bioactive compounds. In present research work, Chlorella culture solution using liquid manure as medium have been used to study their effects on germination and root length. The study conducted a germination experiment in petri-dishes. Four treatments were compared: non-treated control treated with distilled water, Chlorella culture solution and Chlorella culture filtrate, and liquid manure. The germination percentage of perennial ryegrass seeds was highest in the Chlorella culture solution treatment. Days required for 50, 70% seed germination was the fast in Chlorella culture solution and the Chlorella culture filtrate treatment. Root length of perennial ryegrass seeds was long by 1~2cm in the Chlorella culture solution compared with no treated control. The germination index of perennial ryegrass seeds was high by 180~202% in the Chlorella culture solution treatment compared to no treatment. Chlorella culture solution and the Chlorella culture filtrate have shown stimulatory effects in germination and development of root. Use of Chlorella culture solution and the Chlorella culture filtrate can be recommended to farmers as a ecofriendly practice for better germination and growth. Present research work reveals that Chlorella contain certain growth promoting substances which enhances seed germination.

Keywords : Chlorella culture solution, perennial ryegrass seeds. germination, root length

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