

Effect on Germination of Mung Beans (*Vigna radiata* W.) Using Different Methods of Seed Priming

Anita Bhandari, Tirth Narayan Yadav, Ajita Pokhrel, Abhisek Shrestha

College of Natural Resource Management, Bardibas

Corresponding author: aneetaxettri02@gmail.com

Abstract

The productivity of mung beans (*Vigna radiata* W.) is harshly affected by patchy plant stand due to uneven seed germination. Seed priming can improve crop emergence and establishment, which are thought to be the primary causes of crop success. Thus, the study was to investigate the effect of priming agents on mung beans. The experiment was conducted under laboratory conditions at College of Natural Resource Management, Bardibas, Mahottari, Nepal. This research consisted of 6 treatments (T1; control, T2; 5% cow urine solution, T3; tap water, T4; 5% Moringa leaf extract solution, T5; 5% Neem leaf extract solution, and T6; 5% Aloe Vera sap solution) with 3 replication and laid out in complete randomized design (CRD). The seeds were soaked for 24 hours in priming solution and dried for 2 hours at room temperature before sowing. The germination diversity parameters (i.e. speed of germination, germination %, root length, shoot length, dry weight, seed vigour index 1, seed vigour index 2) were recorded and analyzed using Gen-Stat Ver.2015. The data revealed that all germination parameters of mung beans were highly affected by seed priming. The highest germination % (85.55%), dry weight (0.2180 gm), seed vigor index 1 (1942 cm) and seed vigor index 2 (1.865 gm) were observed in 5% Aloe Vera sap solution. Highest speed of germination (22.75 seeds/day) was observed in 5% cow urine solution followed by 5% Aloe Vera sap solution i.e. (22.43 seeds/day). The highest root length (5.04 cm) was recorded in 5% Neem leaf extract solution and shoot length (19 cm) in 5% Moringa leaf extract solution. Seed priming using aloe vera sap solution was found effective in mung beans to increase germination, crop establishment, seed and seedling vigor. In conclusion, this priming should be conducted in farmer's field condition for validation of the results.

Keywords: *Aloe vera, extracts, germination, leaf, neem, moringa, mung beans, seed priming, solution.*

