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RESPONSE OF BLACKGRAM (*VIGNA MUNGO. L*) TO SEED BIO-FORTIFICATION AND FOLIAR NUTRITION INTERVENTION IN RELATION TO SEED QUALITY AND YIELD POTENTIAL

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ABSTRACT

Cowpea and horse gram, the underutilized legumes of the tropics with high nutritional quality and low cost were used for preparing the pulse sprout extract at Agricultural Research Station, Vaigai Dam, Theni during 2011-13. The biochemical properties of the pulse sprout extract was analyzed. Seed fortification was effected through soaking of blackgram in both horsegram and cowpea sprout 1, 2, 3 & 4 % extract @ 1:0.3 w/v (seed to pulse sprout extract) along with $ZnSO_4$ (100 ppm) and water for three hours followed by dehydration in a drying chamber at 30° C for three days to reach original moisture content (10 ± 0.25% on wet weight basis). The seed quality analysis revealed that blackgram seeds fortified with cowpea 2% extract enhanced the germination percentage over $ZnSO_4$ hardening and control. The best performed cowpea 2% and horsegram 3% fortification were forwarded to field trial and foliar spray with cowpea 1% and horse gram 2 % sprout extracts were imposed along with water and DAP 2% at two growth stages i.e., 35 and 50 days after sowing. The combined application of seed fortification with cowpea 2% + foliar spray with cowpea 1% increased the physiological parameters of plant dryweight, leaf area index, crop growth rate, relative growth rate and net assimilation rate. The same treatment was also reflected the similar trend of result for yield parameters *viz.*, days to 50 % flowering, number of pods per plant, seed yield and 100 seed weight over control. The experiment has proved that the seed fortification with cowpea 2% + foliar spray with cowpea 1% at 35 and 50 days after sowing increased the seed quality, physiological and yield parameters in blackgram.

KEYWORDS: Seed Fortification, Pulses Sprout Extract, Foliar Nutrition, Plant Growth, Yield , Seed quality