EFFECTS OF CHEMICAL SEED TREATMENTS ON COMMON BEAN (*Phaseolus vulgaris*) AND COWPEA (*Vigna unguiculata*) SEED GERMINATION AND SEEDLING VIGOUR

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Common Bean (Phaseolus vulgaris) and Cowpea (Vigna unguiculata) are widely grown two major pulse crops in Sri Lanka. Farmers get low yield from those two crops due to poor plant stand and growth caused by seed borne pathogens and insects where chemical seed treatments could be used to control. Experiments were carried out in the open field and in controlled environmental condition (poly tunnel) using sand as a germination medium in a Randomized Complete Block Design (RCBD) with three replications. Two seed treatment chemicals [Thiram and Cruiser (Thiamethoxam)] at the rate of 2 g/kg seeds were tested on two varieties of common bean (Top Crop and Wade) and cowpea (Sena and Bush Polon) in the study. Seed germination, plant heights, root lengths, fresh weights and dry weights were measured 5, 9, 14 and 21 days after sowing in the open field and 5, 9, 14 days after sowing in the sand medium and analyzed using Statistical Analysis System (SAS). Seedling Vigour Index was calculated. There were positive effects by Thiram and negative effects caused by Cruiser on germination whereas no effect was observed in sand medium. Effect of both chemicals on plant height, root length, fresh weight and dry weight of the seedlings in both experiments were not significant. But, Thiram caused positive effect while Cruiser caused negative effect on Seedling Vigour Index under open field conditions. Therefore, Thiram is a good seed treatment chemical to obtain better seed germination and seedling vigour of common bean and cowpea especially under open field conditions.

Key words: Seed treatment, Germination, Seedling vigour index