

EFFECTS OF SEED WEIGHT, SEED DRYING AND SEED SOAKING ON GERMINATION AND SEEDLING VIGOUR OF BELL PEPPER (*Capsicum annum* (L))

P.O. ADETILOYE

Department of Plant Physiology and Crop Production, University of Agriculture, Abeokuta, Ogun State, Nigeria

ABSTRACT

Four experiments were conducted to evaluate the effects of seed weight, seed drying and seed soaking on the germination and seedling vigour of *Capsicum* (L) at the University of Agriculture, Abeokuta. Fresh seeds were extracted from mature ripe fruits. The seeds were subjected to 0,3,6 and 9 days of sun drying. The first experiment was planted in a Randomized Complete Block Design, RCBD, with four replications. A second experiment was planted to determine the effect of light versus heavy seed lots and the effect of 0,3,6, and 9 days of sun drying. The effects of seed weight and the length of soaking of the dried seed lots (for 0,6,12 and 18 hours) in water, were investigated in experiments three and four. Experiments two, three and four were each planted in a 2 x 4 factorial arrangement in Randomized Complete Block Design with four replications. Experiments one, two and three were carried out in polythene bags in the screen house while Experiment four was carried out on nursery bed in the field. Seed emergence and seedling vigour were evaluated in the four experiments. In experiments one and two, emergence, leaf number and dry matter yield of seeds sown fresh were significantly higher than those of sun dried seed lots. In Experiment two, heavy seeds gave 84% average emergency and floated or light seeds gave 28% emergence. The low emergence percentage in Experiment one was due to poor emergence of poorly filled seeds that were not separated from the seed lots. In experiments three and four, seed soaking in water significantly increased emergence percentage and rate of emergence over the dry seed lot, particularly for heavy seeds. Soaking heavy seeds for 12-18 hours prior to planting substantially improved emergence rate and seedling vigour. Seed germination correlated highly and positively with seedling dry matter yield. This study highlights that low seed germination in bell pepper was affected mainly by seed filling and to some extent by the hardness of the seed coat, particularly for poorly filled seeds following sun drying.

Keywords: *Capsicum annum*, emergence, seedling vigour, seed weight, seed drying, seed soaking.