

Effect of ems on field pea

[Environment](#), [Plants](#)



INTRODUCTION

Field pea is one of the most important cool season crop among the pulses grown in India. But lack of well adapted high yielding varieties resistance to various stresses is a major constraint in increasing the area and productivity of Field pea in India. Induced mutagenesis can play an important role in improvement of Field pea. It requires handling of large populations to increase the chances of induction and detection of a mutation in a particular gene of interest. The various effects of mutagen in M1 often used as an indicator of the effective mutagenesis.

It also helps to setup the L. D. 50 value of the mutagen for the varieties and plant species under study. The M1 parameters (plant injury, sterility, etc.) may guide breeders to identify effective treated populations in M1 generation to reduce unnecessary load of ineffective populations and provide better scope of selection in subsequent generation (Singh and Mohapatra, 2004). Keeping this in view the present experiment was conducted to induce and study various characters in M1 generation indicating biological effect of EMS on three varieties of Field pea.

MATERIALS AND METHODS

In present investigation three field pea varieties i. e., HFP-554, Prakash and Rachna were used as experimental materials. Pure well dried, fully matured, disease and insect free seeds with uniform shape, size and colour, as far as practicable, were chosen from the seed lot of each varieties for EMS treatment. The seeds of each varieties were divided into 4 seed lots and

allowed to presoak in distilled water for 6 hours. 1 seed lot from each variety was kept as control rest of three lots were treated with 0. 05%, 0. 10% and 0. 15% EMS for another 6 hours.

The treated seeds were kept under running tap water for 2 hours to wash the residual of the EMS from the seeds. A sample of seeds from each of the treated seed lot including control were placed in petridishes in three replications inside laboratory for taking observations on germination percentage and length of seedling shoot and root. Rest of the treated materials of different varieties including controls were immediately sown in a factorial randomized block design (FRBD) with three replications at PBG experimental field of College of Agriculture (CAU), Imphal. The sowing was done on December 21st, 2012.