Genetic Variability Studies in Garlic (*Allium Sativum* L.)

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Garlic is the second most widely cultivated bulb crop after Onion. It is consumed as either raw vegetable or after processing in the form of garlic oil, extracts powder and has a good export potential. Globally China is leading country in area and production followed by India. In India, area under this crop is 280.95 thousand hectares with annual production of 1617.34 thousand metric tonnes. It is mainly propagated by vegetative means using cloves and bulbils, therefore clonal selection is the best method for the improvement of the crop. Further crop improvement is based on available genetic variability and extent to which the desirable characters are heritable. Thus there is a need for screening germplasm and to identify promising genotypes for yield and yield contributing traits as well as reaction to major diseases. Keeping in view the above facts an experiment was laid at Experimental Farm of Department of Vegetable Science, UHF, Nauni, Solan during Rabi season of 2015-16 involving 25 genotypes at a spacing of 20x10 cm in the plot size of 1x1 m^2 in RCBD. The observations were recorded on various horticultural traits, yield parameters and disease incidence to *Stemphylium* blight. Analysis of Variance revealed highly significant differences among genotypes and Kandaghat Selection, LGC-2, LGC-4, LGC-5 and LGC-13 were found promising in terms of yield and yield contributing characters and also performed better than check variety namely Agrifound Parvati.High heritability in association with high genotypic coefficient of variability and Genetic Gain were recorded for bulb weight, number of bulbs per kg, bulb yield per hectare and *Stemphylium* blight intensity. Path coefficient analysis depicted that Bulb weight had the maximum positive direct effect on Bulb Yield.

Keywords: Garlic, variability, *stemphylium* blight

Yield Gap, Adoption Pattern And Constraintsanalysis In Cultivation Of Soybean Under Rain Fed Areas Of Madhya Pradesh

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The study was conducted by Agro Economic Research Centre in the rain fed area covering 32 districts under Integrated Watershed Management (Watershed Development) Programm (IWMP) of Madhya Pradesh. It was purely based on the primary data, which were collected from 1285 respondents through pre-tested interview schedule through survey method on yield gap, adoption pattern and constraints of soybean production technology in rain fed areas. It is revealed from the study that there is still a remarkable yield gap of 20.70, 33.90 and 47.33 % in cultivation of soybean in rainfed areas of Madhya Pradesh. This yield gap was due to reason that soybean growers were note position to adopted recommended package of practices (RPP) of soybean in their field due of various socio-economic constraints. The majority of farmers not adopted RPP of soybean in their field due to lack of capital, lack of knowledge of RPP of soybean, unavailability of desired and good quality of inputs viz. HYVs, culture, fertilizers, plant protection chemical, implement and machinery etc in local market hence, to increased production of soybean efforts should be made to removed all there constraints from the farmers field.

Keywords: *Adoption pattern, constraints, soybean and yield gap*