

Environmental Effect on Yield and Quality of French Bean Genotypes Grown in Poly-Net House of India

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Abstract : French bean (*Phaseolous vulgaris* L.) is an economically potential legume vegetable grown at high altitude (>1000 ft.). More recently, its cultivation in Northern Indian plains is gaining popularity but there is severe reduction in its yield and quality due to low temperature during extreme winter conditions of December-January in open field conditions. Therefore, present study was undertaken to evaluate 29 indeterminate French bean genotypes for various yield and quality traits in poly-net house with the objective to identify best performing genotypes during winter conditions. The significant variation was observed among all the genotypes for all the studied traits. The green pod yield was significantly higher in genotype Lakshmi (992.33 g/plant) followed by Star-I (955.50 g/plant) and FBK-4 (911.17 g/plant). However, the genotypes FBK-10 (105.50 days) and Lakshmi (106.83 days) took least number of days to first harvest and were significantly better than all other genotypes (109.00-136.83 days). The maximum numbers of 10 pickings were recorded in genotype Lakshmi whereas maximum harvesting span as also observed in Lakshmi (60.50 days) which was significantly higher than all other genotypes (31.17-56.50 days). Regarding quality traits, maximum dry matter was observed in FBK-13 (13.87%), protein content in FBK-1 (9.67%), sugar content in FBK-5 (9.60%) and minimum fiber content in FBK-12 (0.69%). It is hereby concluded that high productivity and better quality of French bean (genotypes: Lakshmi, Star-I, FBK-4) was produced in poly-net house conditions of Punjab, India and these pods fetches premium price in the market as there is no availability of green pods at that time in high altitudes. Hence, there is a great scope of cultivation of indeterminate French bean under poly-net house conditions in Punjab.

Keywords : earliness, pod, protected environment, quality, yield

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