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Influence of planting geometry and number seeds per hill on performance of pole bean grown under different protected growing conditions

Mallikarjun Biradar, Mantur S M and **Mannikeri I M**
University of Agricultural Sciences, India

Growth and development of any plant is a result of genetic constituent and the growing environment. Under protected conditions yield and quality can be increased by manipulating plant density and number of seeds per hill. Pole bean-a climbing variety of French bean tried under different protected growing conditions (Poly house, shadehouse-I with 35% shade and shadehouse-II with 50% shade) with three planting geometry (45x30, 45x45 and 45x60 cm) and three levels of seeds per hill (2, 3 and 4 seeds) during 2014 at Hi-Tech Horticulture Unit, University of Agricultural Sciences, Dharwad, India. Crop was raised on soil media with drip-irrigation. Among the protected structures, shadehouse-I had optimum temperature, relative humidity and light intensity (32.50°C, 60% and 36835 lux resp.)which recorded better plant growth, higher yield and greater quality produce than those in shadehouse-II (lower LI28335 lux).The crop under poly house had more of lanky vegetative growth due to higher temperature (37.00°C), relative humidity (75%) with light intensity (38,500 lux) and produced lesser yield. Shade house-I recoded significantly maximum pod diameter (1.25cm), pod weight (14.5g), yield per plant (1835 g) and yield per square meter (5.50 kg). Among the planting geometry 45x45cm recorded significantly maximum pod diameter, pod weight and yield per plant (1.12 cm, 14.55 g & 1218 g respectively). However, yield per unit area was significantly maximum (3.34 kg/m^2) under closer spacing of 45x30 cm with maximum pod length (19.45 cm). As regards the number of seeds per hill, 2 seeds recorded significantly maximum pod length (22.55 cm), pod weight (13.85 g), yield per plant (1511 g) and yield per square meter (4.30 kg). It can be concluded from the study that favourable environment under shade house condition-I with closer spacing of 45x30 cm having 2 seeds per hill is optimum for protected cultivation pole beans for higher productivity of super quality produce.

Biography

Mallikarjun Biradar is currently working at University of Agricultural Sciences, India.

msbiru@rediffmail.com

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