

RESEARCH ARTICLE :

Effect of plant density, nitrogen and phosphorus level on growth characters of cowpea (*Vigna unguiculata* (L.) Walp)

■ **MANISHA SHIVADE, M.S. PARIHAR, P. BARDE, A. HALDAR AND R. THAKUR**

ARTICLE CHRONICLE :

Received :

22.07.2017;

Accepted :

11.08.2017

KEY WORDS :

Density, Nitrogen,
Phosphorus

SUMMARY : Cowpea is a popular grain legume which is grown as vegetable and fodder. It can be grown successfully during monsoon and summer. Being rich sources of proteins, vitamins and minerals for the predominantly vegetarian population and are popularly known as “Poor man’s meat” and “rich man’s vegetable” (Singh and Singh, 1992). This experiment was conducted at the Vegetable Research Farm Department of Horticulture, R.A.K. College of Agriculture, Sehore, under Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior (M.P.) during the *Kharif* season of 2011-2012. The experiment was aimed to find out specific plant density, nitrogen and phosphorus level. The experiment consisted of three plant densities viz., D₁ (60 x 10 cm), D₂ (60 x 15 cm) and D₃ (60 x 20 cm), three nitrogen levels viz., N₀ (0 kg/ha), N₁ (20 kg/ha) and N₂ (40 kg/ha) and three phosphorus levels viz., P₀ (0 kg/ha), P₁ (40 kg/ha) and P₂ (80 kg/ha) with three replication and Randomized Block Design (RBD). The significant findings of the investigations are highlighted as under plant density, nitrogen and phosphorus level on growth phase viz., plant height (cm), number of branches per plant, number of leaves per plant, leaf area, days to first flower flush (50%) plant, number of root nodules per plant at 60 DAS and dry weight of stem, root, nodules and leaves.

How to cite this article : Shivade, Manisha, Parihar, M.S., Barde, P., Haldar, A. and Thakur, R. (2017). Effect of plant density, nitrogen and phosphorus level on growth characters of cowpea (*Vigna unguiculata* (L.) Walp). *Agric. Update*, 12 (TECHSEAR-9) : 2616-2621.

Author for correspondence :

MANISHA SHIVADE

R.A.K. College of
Agriculture, Rajmata
Vijayaraje Scindia
Agricultural University,
SEHORE (M.P.) INDIA
Email : [ajayhldr@
gmail.com](mailto:ajayhldr@gmail.com)

See end of the article for
authors' affiliations