



Research Paper

Article history :

Received : 19.11.2012

Revised : 23.03.2013

Accepted : 05.04.2013

Performance of cowpea [*Vigna unguiculata* (L.) Walp.] cultivars as influenced by organic manures in rainfed plateaus of Jharkhand

■ A.C. MISHRA¹ AND V.K. PANDEY

Members of the Research Forum

Associated Authors:

¹Krishi Vigyan Kendra (B.A.U.),
GARHWA (JHARKHAND) INDIA

ABSTRACT : A field trial was conducted during *Kharif*, 2007 and 2008 in the farm of Birsa Agricultural University Krishi Vigyan Kendra, Garhwa, and farmers' field of the rainfed plateaus of Jharkhand. Three cultivars of cowpea *viz.*, Swarna Sweti, Arka Garima and Swarna Harita were sown by application of four organic manures *viz.*, Farm yard manure (FYM), karanj cake, vermicompost and poultry manure with view to supplement recommended dose of nitrogen *i.e.* 30.0 kg/ha. The experiment was laid out in Factorial Randomized Block Design. Results showed that a good deal of genetic variation existed among three cultivars of cowpea *viz.*, Swarna Sweti, Arka Garima and Swarna Harita. Arka Garima and Swarna Harita were found to be at par promising cultivars for pod yield and least percentage of plants affected by aphids whereas Swarna Harita was most superior cultivar for pod length and days to flowering and days to first harvest *i.e.* earliness in pod yield. Above mentioned two varieties also exhibited significantly higher and at par responsiveness to application of poultry manure and FYM in relation to pod yield in plateaus of Jharkhand. Therefore, production of cowpea cultivars Arka Garima and Swarna Harita by application of poultry manure or FYM is recommended in this region.

KEY WORDS : Cowpea, *Vigna unguiculata* (L.) Walp., Organic manure, Poultry manure, Organic farming

Author for correspondence :

V.K. PANDEY

Krishi Vigyan Kendra, CHATRA

(JHARKHAND) INDIA

Email : vinod.bau@rediffmail.com

HOW TO CITE THIS ARTICLE : Mishra, A.C. and Pandey, V.K. (2013). Performance of cowpea [*Vigna unguiculata* (L.) Walp.] cultivars as Influenced by organic manures in rainfed plateaus of Jharkhand, *Asian J. Hort.*, 8(1) : 143-145.

Cowpea [*Vigna unguiculata* (L.) Walp.] is an important dicotyledous crop belonging to the order Fabales, family Fabaceae, subfamily Faboideae, tribe Phasiroleae, subtribe Phasiolenae and genus *Vigna* (Singh, 1993; Paudulosi and Ng, 1997). It is the most diverse of the cultivated subspecies and has the widest distribution (N'tare and Williams, 1992). Cowpea is extensively grown crop for edible pods during summer and rainy seasons in Jharkhand. In India, this crop is well-known table pulse as well as table vegetable because of high nutritional, particularly protein value of pods and seeds.

Favourable environmental requirements *viz.*, high solar radiation, optimum temperature and rainfall, low pest infestation and good soil characteristics are readily available in Jharkhand leading to spread of this crop throughout state. Cowpea thrives well on a wide variety of soils and soil conditions but performs

best on a well-drained sandy loam with pH range of 5.5-6.5 (N'tare and Williams, 1992). Cowpea is known to fix atmospheric nitrogen in the soil. It can fix sufficient atmospheric nitrogen to meet most of its requirements (Christo *et al.*, 2008). Its growth and yield is affected by the quantity and quality of nutrients available in soil. Low organic matter content in soil and inorganic fertilizer coupled with low pH value, drought stress and high temperature frequently result to very low yield (Bationo and Mokwunye, 1991). Organic manures have excellent ability to improve and sustain the yield and also lead to steady build up of soil fertility if applied at higher rates (Lombin and Abdulahi, 1997). Organic manures can also sustain crop yield of most of annuals under continuous cultivation in most of soils unlike equivalent amounts of NPK through inorganic fertilizers (Maynard, 1991). These have been found to ensure early maturity, uniform ripening of fruits, increased