

**RESPONSE OF GENOTYPES AND GROWTH REGULATORS ON NUTRIENT UPTAKE, ECONOMICS AND ENERGY OUT-PUT OF PIGEONPEA (*CAJANUS CAJAN* (L.) MILLSP) IN *VERTISOLS* OF CHHATTISGARH PLAINS**

**Tej Lal Kashyap, G.K. Shrivastava, R. Lakpale and N.K. Choubey**

*Department of Agronomy, Indira Gandhi Krishi  
Vishwavidyalaya, Raipur (CG) 492006  
Email : kashyaptl@yahoo.com*

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**Abstract:** In Chhattisgarh, pigeonpea occupies an area of 164.72 m ha with a production of 85.69 m t and productivity of 520 kg ha<sup>-1</sup>. Present study was undertaken to assess the effect of genotypes and growth regulators on nutrient uptake, economics and energy output of pigeonpea in *Vertisols* of Chhattisgarh plains. Field experiment was conducted during *kharr* (rainy) season of 2000-01 at IGKV, Raipur on *Vertisols* having pH 7.19 with available N 218, P 12.15 and K 363 kg ha<sup>-1</sup>. The N and K uptake were found to be higher in cv. Asha, even though their concentration was low; it is due to higher biological yield of cv. Asha. As regards to economics comparison of both cultivars, the gross and net realization estimated to be significantly higher in cv. Asha than cv. C-11. Highest seed protein content was observed in 2,4-D, which corroborates the findings of Borriobera *et al.* (1995). Protein yield was found to be highest in cycocel and 2,4-D for seed and stalk respectively. Economics of pigeonpea production was influenced by growth regulators. Highest gross and net realization were found in cycocel treatment

**Keywords:** Growth regulators, Economics, Nutrient uptake

**REFERENCES**

- Borriobera, C.L., Villaalobas, N. and Guerra, H.** (1995). Change in protein and carbohydrate during the induction of callus from cotyledons of *Cicer arietinum* L., the role of 2,4-D. *Acta Physiologiae Plantarum*.17 (4): 301-308.
- Gupta, B.** (2000). Efficacy of growth regulators on nodulations, flowering, pod setting and productivity of chickpea (*Cicer arietinum* L.) in shrink—swell soils of Chhattisgarh plains. M.Sc. (Ag)(Agronomy).Thesis, IGKV, Raipur.
- Jackson, M.L.** (1967). Soil chemical analysis. Prentic Hall of India Pvt. Ltd., New Delhi.
- Jarillo, R.J., Castillo, G.E., Valles, M. and Hernandez, H.R.** (1998). Grain production and tannin contents in lines of *Cajanus cajan* (pigeonpea) in the humid tropic of Mexico. *Revista -de-la. Facultad- de -Agronomia, universidal -del-zulia*.15(2):134-134.
- Pando, S.B. and Shrivastava, G.C.** (1985). Physiological studies on seed set in sunflower III. Significance of dwarfening the plant size using growth regulator. *Indian Journal of Plant Physiology*. 28 (1):72-80.
- Randhawa, K.S. and Singh, K.** (1970). Effect of maleic hycrazide, nephthalene acetic acid and gibberellic acid applications on vegetative growth and yield of muskmelon. *Indian Journal of Horticulture*. 27:195-199.
- Sachan, J.N.** (1992). New frontiers in pulses research and development : *Proceedings of National Symposium*, 10-12 Nov. 1989, Directorate of Pulses Research, Kanpur, pp 44-57.
- Shende, V.P., Deore, B.P. and Patil, R.C.** (1987). Effect of plant growth substances on nutrient uptake by pea. *Journal of Maharashtra Agricultural University*. 12 (3): 381-382.
- Wang, M.S. and Zapata, F.J.** (1987). Somatic embryogenesis in rice (*Oryza sativa* L.) cultivars *International Rice Research Newsletter*. 12: 23-24.

\*Corresponding Author