

EFFECT OF DIFFERENT FERTILITY LEVELS AND ROW SPACING ON GROWTH CHARACTERS OF KALMEGH

Pradeep Kumar¹, Balwant Singh¹, Kaushal Kumar¹, Sauhard Dubey^{2*} and Prashant Kumar³

¹Dept. of Soil & Water conservation, C.S.Azad University of Ag. & Tech, Kanpur

²Dept. of Agronomy, C.S. Azad University of Ag. & Tech, Kanpur

³Dept. of Ag. Economics, NarendraDev University of Ag. & Tech., Kumarganj, Ayodhya

Email: sauhardsd29@gmail.com

Received-03.04.2021, Revised-15.04.2021, Accepted-26.04.2021

Abstract: A field experiment was conducted during *kharif* season 2018-19 at Soil Conservation and Water Management farm of C. S. Azad University of Agriculture and Technology, Kanpur. The experiment was laid out in factorial randomized block design with 3 replications. Different fertilizer doses were given according to treatment i.e. F₁ (30:15), F₂ (60:30), F₃ (90:45), crop was transplanted by hand in the field according to the treatment. Plant to plant spacing was maintained as 20 cm, and row to row spacing was set as 30, 40 and 50 cm accordingly. Among the following treatment with fertilizer dose given as 90 kg N + 45kg P₂O₅ ha⁻¹ (F₃) in combination with 40 cm row spacing (S₂) recorded highest growth and was significantly superior over all other treatments.

Keywords: Ayurvedic, Growth, Kalmegh, Medicinal crop

REFERENCES

- Aladakatti, Y.R., Palled, Y.B., Chetti, M.B., Halikatti, S.I., Alagundagi, S.C., Patil, P.L., Patil, V.C. and Janawade A. D. (2012). Effect of nitrogen, phosphorus and potassium levels on growth and yield of stevia (*Stevia rebaudiana* Bertoni.) *Karnataka J. Agri. Sci.* **25**(1): 25-29.
- Anonymous (1992). Second supplement to glossary of Indian Medicinal Plants with active principles (Pt-I) (A-K). *National Institute of Science Communication*, New Delhi pp.39.
- Bolta Ram, M., Dharmendra, M., Kapoor, A. and Kumar, A. (2017). Dynamics of growth parameter and yield of kalmegh; *International journal of chemical studies* **5**(6):773-776.
- Choudhay, R. and Choudhary, R. (2013). Growth and yield of *Artemisia Annu*a as affected by different plant geometry. *Advance Research Journal of Crop Improvement*, **4**, (1):31-33.
- Jana, B.K. and Vaeghese, B. (1996). Effect of mineral nutrition on growth and alkaloid content of vinca. *Indian.Agri.*, **40**(2):93-99.
- Kanjilal, P. B., Bordoloi, S., Kalita, R., Burman, P. and Singh, R.S. (2002). Cultivation practices of kalmegh (*Andrographis paniculata*) and spiderling (*Boerhaavia diffusa*) in Assam, India. *Recent progress in medicinal plants.* **5**: 175-180.
- Kubsad, V.S., Palled, Y.B., Mansur, C.P. and Alangudagi, S. C. (2008). Influence of spacing and fertilizer levels on growth and dry matter production in *Aswagandha*. *Madras Agric. J.*, **97** (9): 212-215.
- Kumar, K., Chaudhari, H. P., Awasthi, U. D. and Sharma, D. C. (2010). Impact of plant density and sowing time on the growth, yield and andrographolide content of kalmegh (*Andrographis paniculata* Nees). *Prog. Agric.* **10**(1): 56-59.
- Mastiholi, A.B. (2009). Effect of NPK levels on growth attributes of kalmegh under irrigated condition. *35*(1): 50-54.
- Meena, S.S., Mehta, R.S., Lal, G., Sharma, Y.K., Meena, R.D. and Kant, K. (2015). Effect of sowing dates and crop geometry on growth and seed yield of dill (*Anethum sowa*). *International J. Seed Spices*, **5**(I), Jan 2015: 79-82.
- Patel, D.H., Hirapara, B.V., Patel, S.A., Panchal, B.D. and Makwana, P. (2012). Response of different organic manures and spacing on growth, yield, quality and economics of Kalmegh panchang under loamy sand of inceptisol of Anand. *An Asian Journal of Soil Science*, **7** I (2): 312-314.
- Patidar, S., Gontia, A.S. Upadhyay, A. and Nayak, P.S. (2011). Biochemical constituents in Kalmegh (*Andrographis paniculata* Nees.) under various row spacing and nitrogen levels. *World Applied Sciences Journal*, **15**(8):1095-1099.
- Ram, D., Chandra, R. and Kumar, B. (2008). Effect of spacing and organics on growth and herbage yield of kalmegh (*Andrographis paniculata* Wall. Ex. Nees). *Prog. Hort*, **40**(1): 69-73.
- Shahjahan, M., Solaiman, A.H.M., Sultana, N. and Kabir, K. (2013). Effect of Organic Fertilizers and Spacing on Growth and Yield of Kalmegh (*Andrographis paniculata*). *International Journal of Agriculture and Crop Sciences.* ISSN 2227-670X.
- Singh, M.A., Singh, R.K., Verma, M.M., Gupta, H.O., Mishra, H.P., Singh and Singh, A.K. (2011). Growth behavior, biomass and diterpenoid lactones production in Kalmegh (*Andrographis paniculata* Nees.) strains at different population densities. *Agri. J.*, **6**(3):124-140.
- Tiwari, V., Shrivastav, A., Namdeo, N. M. and Kumar, M. (2012). Effect of sources and levels of Nitrogen on growth, yield and quality of kalmegh. *Ann. Pl. Soil Res.*, **14**(1):14-17.

*Corresponding Author

Utgikar, Swarupa, Sadawarte, K.T. and Wankhade, S.G. (2003). Growth and yield of isabgol (*Plantago ovata* Forsk.) as influenced by nitrogen and phosphorus levels. *Agric. Sci. Diges.* 23(1):77-78.

Vijaya, D., Padmadevi, S.N., Vasandha, S., Meerabhai, R.S. and Challpandi, P. (2008). Effect of vermicomposted coirpith on the growth of *Andropogon paniculata*. *Journal of Organic Systems*, 3 (2).