REVIEW ARTICLE

NUTRIENTS REQUIREMENT IN FENUGREEK FOR THEIR GROWTH AND YIELD

Surender Singh*, V.P.S. Panghal[2] and Raman Jangra[3]

[1]*Department of Biology G.S.S.S, Jahajpul, Hisar (Haryana)*
[2]*Department of Vegetable Science, CCS HAU, Hisar, Haryana (India)*
[3] *Raman Jangra, JRF*
Email: singhsuren29@gmail.com

Received-01.01.2020, Revised-28.01.2020

Abstract: Fenugreek (*Trigonella foenum-graecum* L.) belongs to sub family papilionaceae of leguminous family. It is an important multipurpose crop commonly used as spice, condiment, food, fodder, soil renovator and medicine for a wide range of disease. It is a source of raw material for pharmaceutical and perfume industries. Increase in growth and quality throw suitable management of farm practices could contribute to income of farm land industries. Plant growth depends upon metabolic process, which is governed by genetic makeup, climatic and edephic factors. Therefore, appropriate farming practice involving optimum level of nutrients through different sources under different growth condition can help in widespread and economical cultivation of the crop. Studies indicate that the uses of appropriate fertilizers at right time are necessary to maximize overall performance of crop. To achieve the objective of sustainable crop production, the study undertaken by different workers on the effect of organic and inorganic nutrients on growth and yield of fenugreek is needs to be reviewed.

Keywords: Fenugreek, Nitrogen, Phosphorus, Vermicompost, Biofertilizer, Yield

REFERENCES

Acharya, S., Srichamreon, A., Basu, S., Oraikul, B. and Basu, T. (2006). Improvement in nutraceutical properties of fenugreek (*Trigonellafoenum-graecum* L.) .SongklanakarinJSci Tech,28(1):1-9

Ahmed, M.A., Ibrahim, O.M. and Badr, A.E. (2010). Effect of bio and mineral phosphorus fertilizer on growth, productivity and nutritional value of fenugreek (*Trigonellafoenum-graecum* L.) in newly cultivated land. Res J AgriBiolSci,6(3):339-348.

Basu, S.K., Acharya, S.N. and Thomas, J.E. (2008). Application of phosphate fertilizer and harvest management for improving fenugreek(*Trigonellafoenum-graecum* L.) seed and forage yield in a dark brown soil zone of Canada . KMITL Sci Tech J,8(1): 1-7

Bhunia, S.R., Chauhan, R.P.S., Yadav, B.S. and Bhati, A.S. (2006). Effect of phosphorus, irrigation and *Rhizobium* on productivity, water use and nutrient uptake in Fenugreek (*Trigonellafoenum-graecum* L.). Indian JAgron,51 : 239-241.

Chaudhary, B.R., Gupta, A.K., Parihar, C.M., Jat, S.L. and Singh, D.K. (2011). Effect of integrated nutrient management in fenugreek (*Trigonellafoenum-graecum* L.) and its residual effect on fodder pearlmillet (*Pennisetumglaucum*). Indian J of Agron,56(3):189-195.

Chaudhary, G.R. (1999). Response of fenugreek (*Trigonellafoenum-graecum* L.) to seed rate and fertilizer application . Indian JAgron,44(2): 427-429.

Deora, N.S., Singh, J. and Reager, M.L. (2009). Studies on nutrient management and seed rate on growth and herbage yield of fenugreek (*Trigonellafoenum-graecum* L.) cv.Kasuriin Rajasthan . J Spices &Aromatic Crop, 18(1): 19-21.

Dubey, P.K., Pandey, C.S. and Bhardwaj, S.B. (2011). Effect of integrated nutrient management on growth, yield attributes and yield of fenugreek (*Trigonellafoenum-graecum* L.). Int J Agri Stat Sci, 7(1): 327-339.

Eidi, A., Eidi, M. and Sokhtch, M. (2007). Effect of fenugreek (*Trigonellafoenum-graecum* L.) seeds on serum papameters in normal and streptozotocin induced diabetic rats. Nutrition Res,27: 728-733.

Fathi, T., Golchin, A. and Safikhani, F. (2012). Effect of drought stress and vermicompost on clary sage. Annals Biol Res,3(7):3346-3349.

Ghadge, S. and Jadhar, B. (2013). Effect of lantana manures on nutrient content of fenugreek (*Trigonellafoenum-graecum* L.). Bioscience Discovery,4(2): 189-193.

Godara, A., Gupta, U.S., Singh, R. and Mehta, R.S. (2012). Effect of different combinations of organic and inorganic sources on productivity and profitability of fenugreek (*Trigonellafoenum-graecum* L.). Int J Seed Spices,2(2):34-37.

Gour, R., Naruka, I.S., Singh, P.P., Rathore, S.S. and Shaktawat, R.P.S. (2009). Effect of phosphorus and plant growth regulators on growth and yield of fenugreek (*Trigonellafoenum-graecum*L.). J Spices and Aromatic Crops, 18(1): 33-36.

Gowda, M.C., Halesh, D.P. and Farooqi, A.A. (2006). Effect of date of sowing and spacing on growth of fenugreek (*Trigonellafoenum-graecum* L.). Biomedicine,1(2): 141-146.

Jat, B.L. and Shaktawat, M.S. (2001). Effect of phosphorus,sulphurand biofertilizers on yield

*Corresponding Author

attributes and yield of fenugreek and their residual effect on pearl millet. Indian J Agron,46(4):627-634.

Jat, N.L., Jain, N.K. and Choudhary, G.R. (2006). Integrated nutrient management in fenugreek (*Trigonellafoenum-graecum* L.). Indian J Agron, 51:331-333.

Jorgensen, I. (1988). Experiment in alternative crops. Ugeskrift for Jordburg,133:731-773.

Karmegam, N., Alagumalai, K. and Daniel, T. (1999). Effect of vermicompost on the growth and yield of green gram. Tropical Agri, 76(2):143-146.

Khan, M.B., Khan, M.A. and Sheikh, M. (2005). Effect of phosphorus levels on growth and yield of fenugreek(*Trigonellafoenum-graecum*L.) grown under different spatial arrangements. Int J AgricBiol,7(3):504-507.

Khiriya, K.D., Singh, B.P. and Tanja, K.D. (2001). Effect of farmyard manure and phosphorus levels on yield,quality and nutrient uptake by fenugreek. Forage Res,28:105-110.

Kumar, D., Sharma, Y., Kumar, R., Prasad, M. and Saini, D. (2013). Response of fenugreek (*Trigonellafoenum-graecum* L.) to different levels of phosphorus and vermicompost. Annals of Biol, 29(2):164-166.

Kumar, V., Yadav, J.S., Singh, J. and Yadav, B.D. (2000). Irrigation and phosphorus requirement of fenugreek on light soil .Indian J AgricSci, 70:515-517.

Kumawat, S., Sharma, S.R., Yadav, B.L., Prajapat, K., Choudhary, G.L. and Kumawat, S.R. (2013). Effect oforganics and irrigation scheduling on productivity,water use efficiency and quality of fenugreek. Environment and Ecology, 31(2B):957-961.

Mavai, D. (1997). Effect of seed rate and fertilizer application on seed production of fenugreek (*Trigonellafoenum-graecum* L.). In: MSc Thesis submitted to CCSHAU Hisar.

Mavai, D.S., Lal, S., Singh, K.S. and Singh, N. (2000). Respose of fenugreek (*Trigonellafoenum-graecum* L.) to seed rate,nitrogen and phosphorus fertilizer. Haryana J of HorticSci,29(3): 244-246.

Mehrafarin, A., Rezazadeh, S., Noormohammadi, G.Z.E. and Qaderi, A. (2011). A review on biology, cultivation and biotechnology of fenugreek (*Trigonellafoenum-graecum* L.) as a valuable medicinal plant and multipurpose. J Medicinal Plant,10(37): 6-24

Mehta, R.S., Godara, A.S. and Meena, B.S. (2011). Effect of nitrogen, phosphorus and biofertilizer levels on yield attributes,yield and economics of fenugreek (*Trigonellafoenum-graecum*L.). Progressive Hortic,43(2):271-275.

Mehta, R.S., Patel, B.S., Meena, S.S. and Meena, R.S. (2010). Influence of nitrogen,phosphorus and biofertilizer on growth characters and yield of fenugreek (*Trigonellafoenum-graecum*L.). J Spices and Aromatic Crops,29(1&2): 23-28.

Mishra, N., Singh, C.P. and Mishra, U.S. (2011). Effect of biofertilizers on bionutrients,nitrogen,total protein,extractable lipid and mineral contents of fenugreek (*Trigonellafoenum-graecum* L.). J Phytology,3(8):15-17.

Nehra, K.C., Kumawat, P.D. and Singh B.P. (2006). Response of fenugreek (*Trigonellafoenum-graecum* L.) to phosphorus,sulphur and plant growth regulators under semi arid eastern plant zone of Rajasthan. Indian Journal of Agronomy,51(1):73-76.

Panghal, V.P., Duhan, D.S. Yadav, A.C. and Mazoka, M. (2014). Effect of nitrogen, phosphorus and biofertilizers on growth, seed yield and quality of fenugreek. In the abst. of papers: *National seminar on reorientation of agricultural research to ensure national food security*, held at CCS HAU, Hisar on January 6-7, 2014,: 160-A.

Rammurti (1996). Response of fenugreek (*Trigonellafoenum-graecum* L.) to nitrogen, phosphorus and *Rhizobium*inoculation .In: Msc Thesis submitted to CCSHAU Hisar.

Sehatoleslami, M., Mousavi, G., Mahdavi, R. and Zabihi, H. (2013). Response of yield and yield component of fenugreek to irrigation intervals,potassium and zinc. Annual Review& ResBiol,3(4): 466-474.

Tuncturk, R. (2011). The effect of varing row spacing and phosphorus doses on the yield and qualityof fenugreek (*Trigonellafoenum-graecum* L.). Turkish J Field Crops,16(2):142-148.

Tuncturk, R., Celen, A.E. and Tuncturk, M. (2011). The effect of nitrogen and sulphur fertilizers on the yield and quality of fenugreek (*Trigonellafoenum-graecum* L.). Turkish J Field Crops,16(1): 69-75.

Zandi, P., Rad, A.H.S. and Khatibani, L.B. (2011). Agronomic study of fenugreek grown under different row spacing and nitrogen levels in a paddy field of Iran. American-Eurasian J Agri & Envir Sci,10 (4):544-550.