

RESEARCH ARTICLE

Study on economics of biochar application in cotton – maize – cowpea cropping sequence under integrated nutrient management

■ R. Elangovan, S.R. Shri Rangasami, R. Murugaragavan and N. Chandra Sekaran

SUMMARY

The highest net return was found in continuous application (two times) especially in the treatment biochar @ 10 t + 100 % NPK + FYM with Rs.67,928 ha⁻¹ followed by biochar @ 10 t + 75 % NPK + FYM treatment with Rs.67,172 ha⁻¹. The next higher net return was registered in biochar @ 10 t + 75 % NPK + FYM treatment under one time application with Rs. 62,970/-. Comparing the studies, the two times application (biochar @ 10 t ha⁻¹ time⁻¹) recorded an addition of Rs. 5,565/- only over one time application. Therefore one time application (biochar @ 10 t ha⁻¹) considered to be an economically viable management technology than two times application in the cotton – maize – cowpea cropping sequence. One time conjoint application of biochar @ 10 t ha⁻¹ along with 75 % recommended dose of NPK fertilizers and 12.5 t ha⁻¹ of FYM i.e., (biochar @ 10 t + 75 % NPK + FYM) to cotton and following the general recommended practices for maize and cowpea to be the best combination suited for enhancing higher benefit cost ratio of 1.45 under cotton – maize – cowpea cropping system in Inceptisol (Vertic Ustropept) of Periyanaickenpalayam series of Coimbatore District.

Key Words : Benefit cost ratio, Cotton, Maize, Cowpea, Biochar

How to cite this article : Elangovan, R., Shri Rangasami, S.R., Murugaragavan, R. and Chandra Sekaran, N. (2022). Study on economics of biochar application in cotton – maize – cowpea cropping sequence under integrated nutrient management. *Internat. J. Plant Sci.*, 17 (OCAEBGD): 1-11, DOI: 10.15740/HAS/IJPS/17-OCAEBGD/1-11, Copyright@ 2022:Hind Agricultural Society.

MEMBERS OF THE RESEARCH FORUM

Author to be contacted :

R. Elangovan, Department of Soil Science and Agricultural Chemistry, College of Agricultural Technology, Tamil Nadu Agricultural University, **Theni (T.N.) India**
Email : esoilscience2005@gmail.com

Address of the Co-authors:

S.R. Shri Rangasami, Rice Research Station, Tamil Nadu Agricultural University, **Ambasamudram (T.N.) India**

R. Murugaragavan, Department of Soils and Environment, Agricultural College and Research Institute, Tamil Nadu Agricultural University, **Madurai (T.N.) India**

N.Chandra Sekaran, Department of Soils Science and Agricultural Chemistry, Agricultural College and Research Institute, Tamil Nadu Agricultural University, **Coimbatore (T.N.) India**

Article chronicle : Received : 11.11.2022; **Accepted :** 15.11.2022