Journal of Applied Biosciences 209: 22110 – 22123
ISSN 1997-5902

Effects of compost enriched with horn, bone and hoof powder on tomato (*Solanum lycopersicon* L.) yield and soil chemical characteristics in organic production in Burkina Faso

***Adama OUATTARA[1], Bazoumana KOULIBALY[1], Clézanga A. TRAORE[1], Céline Porgnogo DAO[2], Abel BEDA[2] et Salia HEBIE[2]**
[1]Institut de l'Environnement et de recherches Agricoles (INERA), 01 BP 910 Bobo-Dioulasso 01, Burkina Faso.
[2]Association pour la Recherche et la Formation en Agro- écologie (ARFA)
*Corresponding author: adamaouatt30@gmail.com

Submitted 17/04/2025, Published online on 30/06/2025 in the https://www.m.elewa.org/Journals/journal-of-applied-biosciences https://doi.org/10.35759/JABs.209.1

ABSTRACT
Objectives: To evaluate composts enriched with horn, bone and hoof powder on tomato yield and soil chemical proprieties in Eastern of Burkina Faso.
Methodology and results: The study was conducted using a simple block design, with each market gardener plot considered as a repetition, and compared four treatments corresponding to three levels of compost enrichment with the mixture of horn, bone and hoof powder (0%, 15% and 30%) and a control with no compost. Observations were made on the agromorphological parameters of the tomato and chemical parameters of the soil. The results showed an improvement in the organic Carbone, nitrogen and phosphorus content of composts enriched with 15% and 30% of horn, bone and hoof powder compared with the control compost. On tomatoes, the applications of enriched composts at 15% and 30% enrichment resulted an improve of neck diameter of 8% and 15%, height plant from 8% and 10%, the number of tomatoes from 67% and 123% and yields from 26% and 108% respectively compared with the control compost. Applications of enriched composts improved soil organic carbon content by 3% to 77%, nitrogen content by 18% to 64% and total phosphorus content by 30% to 117% compared with control compost.
Conclusions and applications of findings: The results obtained revealed value of using slaughterhouse residues in agricultural production systems in order to improve crop yields and soil chemical parameters. The slaughterhouse waste use, in particular horns, bones and hooves, could be an alternative for improving agricultural yields.
Key words: Tomato, horn, bone and hoof powder, slaughterhouse waste, enriched composts, soil fertility.