

OPTIMIZATION OF PARAMETERS FOR CREATING LIQUID FERTILIZERS USING THE WASTE FROM POULTRY FARM SRL „PILICCIK-GRUP”

Sucman Natalia¹, Gaidarji Feodor², Calinicenco Serghei³

¹*Institute of Chemistry, SUM, Chisinau, Republic of Moldova*

²*SRL „Piliccik Grup”, Comrat, Republic of Moldova*

³*Technical university of Moldova, Chisinau, Republic of Moldova*

E-mail: natalia_sucman@yahoo.com

The study presents research results focused on identifying optimal conditions for producing high-quality liquid fertilizers using resources from the poultry farm. LLC „Pilichchik-Group”. To achieve this, avian manure accumulated at the enterprise and the products obtained from it, namely compost and biohumus, were used as the base material, prepared according to the methods described previously. They were subjected to extraction under varying temperatures and time conditions.

The content of both macro- and microelements was analyzed in all samples. pH was determined according to the SR 7184-13:2001 standard, PO-01. Humus was determined according to SR ISO 10694:1998, PO-0.3. K, Na, Ca, Mg, P, Fe, Zn, Cu, Mo, Mn, B were determined according to SR ISO 14870:2002, SR ISO 11263:1998, PO-04 Ed 2 Rev-0. Cl⁻, SO₄²⁻, N-NH₄⁺, N-NO₂⁻, N-NO₃⁻ were determined by standardized methods corresponding to PO-05, Ed 2, Rev-0. All chemical analyses were conducted in the „HOLLAND FARMING” Laboratory (Romania).

The study reveals that the optimal and efficient approach involves cold extraction of compost and vermicompost with agitation for a duration of 4 hours.

The same parameters were also analyzed regarding the samples of liquid biohumus available in the market: one from Turkey, another from Russia, and three samples of Moldovan origin, in order to assess the position, they can occupy in the landscape of liquid organic fertilizer production at the enterprise level.

After considering the results obtained, it can be concluded that the extract prepared at the enterprise exhibits significantly better parameters. It can be used as a microelement-containing fertilizer after a 1000-fold dilution and shows promise for inclusion in production.

Acknowledgments: The NARD of the Republic of Moldova financially supported the work under projects No. 23.80015.5007.269T and No. 20.80009.5007.11.

Keywords: *biohumus, dropping, humus, organic fertilizer, poultry waste, soil.*