A NEW SANATIVE METHOD FOR DECOMPOSITION OF BIOMASS FROM STUD BY CONTROL QUICK AND ECOLOGICAL COMPOSTING PROCEDURE, STIMULATED BY THE PREPARATION AMALGEROL PREMIUM

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Key words: probiotic – composting – stud biomass – microbiotechnological stimulation - Amalgerol Premium – ecological criteria – big farms.

Introduction

Effective biodegradation of residual organic biomass from stables depends on controlled modification of this material to high-quality biomass usable to provide adequate levels of plant nutrients.

Qualitative requirements assume in addition to nutrient limits and adequate ratio of humus base, low microbial counts such as a part of epidemiological-epizootological safe of the final product ensued from biodegradation process.

Currently, it is possible to control the quality of biodegradation of residual organic biomass and population of included bacteria through the native probiotic conditioner Amalgerol®-Premium.

Many research institutes and reputable authors were engaged in methods and application forms in the processes of controlled biodegradable waste utilisation so composting.

Lately, in the Czech republic is discussed the question about minimization environmental risks resulting from unprompted biodegradation, especially with Váňa (14, 15, 16, 17, 18), Jelínek et al. (2, 3, 4, 5, 6, 7, 8,) and Plíva et al. (12).

The application of specific probiotics and improvers of composting processes was evaluated by Jelínek et al. (2, 3) and Plíva et al. (12). Cacíková (1), Margesin and Schimmer (10) and Schimmer (13) published their results with using the Amalgerol Premium.

Other authors - Juris, Rataj, Ondrasovic Sokol and Novák (9) were engaged in hygienic and ecological demands of recycling process of organic waste in agriculture.

Material and methods

Austrian enzymatic agent Amalgerol Premium is intended for positive influence on biological and mainly microbiological processes in soil and microbiotechnological controlled biodegradation of biodegradable waste products of various origins. Its action effect in organic material consists in biochemical maintenance of ubiquitar decomposers, stimulation their vital and reproduction processes. In this way is stimulated favourable degradation with using the principles of interference competition in microorganism community. The recommended method of application enables effective and relatively no-loss decomposition with conversion the structural components of plant residue to elementary form of nutrient substrate. Amalgerol Premium also increases the temperature of soil because of supporting beneficial microorganism and their vital functions in pedosphere. It is an important factor for starting the vegetative processes in spring. Spontaneous propagation co-operative microorganism enables to supplant many undesirable and mainly noxious strain of edaphon, which share in, for example putrescible processes, in soil or exercise some undesirable phytopathogens. After this manner occurrence of pathogenic moulds and other pathogenic microorganism is lowered. Amalgerol Premium is combinable with necessary agricultural chemicals and so it is possible to lower concentration of chemical spraying and restrict environmental burden. Amalgerol Premium is made from natural components, mainly from alga's extracts and vegetable oil including herb essence and so there are no danger residues.

Results and discussion

In co-operation with competent organisation it was formulated and many times verified the methodology based on usage the Amalgerol Premium as composting stimulator. It was accomplished very quick compost maturation if all technological rules and requirements needed for optimal development of microbiotechnological processes were performed. The National Institute of Public Health in Prague reviewed favourably the hygienic security of this way treated compost.

Application methodology of Amalgerol Premium was elaborate by investigators from Research Institute of Agricultural Engineering in Prague conducted with the support of Grant No. QF 3148, named „Conversion of residual biomass from agriculture to environment friendly products in compliance with legislation of the Czech republic and EU". It was evolved an approach to produce so-called farm compost that was equipped with health-hygienic attestation.

Amalgerol Premium was used to stimulation the composting process especially for improvement and acceleration decomposition processes. There was used spraying method or watering method in recommended doses, applied regularly in process of layering compost-

available organic materials. The basic dosing for this indication is 2% solution (i.e. 200 ml of Amalgerol Premium into 10 l of water). This universal disposition is possible to modify according to used "pack" material, its real degradability and level of smelling the materials in process of their degradation. In practise, it is available application range from 0,5% in case of easy-degradable materials with tame production of smelling components to 3% concentration in case of hard-degradable materials with strong production of stink.

In minor farms is recommended to stir the Amalgerol Premium in dual-phase process. First the concentrate disperses in a small water quantity (200-500 ml) and in the second step this emulsion fills up after thorough homogenisation with water to final volume and concentration.

In farms processing large-amount of organic materials is recommended at least dual-phase or three-phase stirring with fitting the concentration in working container when the final phase occur.

Working solution of the Amalgerol Premium is applied with spraying or watering methods in process of layering composted materials. It is recommended to apply the solution at every 20 cm height of pack substrate in formatized accumulation. Identical effect is reached with using compressive grouting into final configured accumulation of composted material.

Conclusion

Costs associated with usage of the Amalgerol Premium and related technological operations are effectively compensated for high quality and minimum microbiological risk of produced substrate. This composted material is available for all sphere of agriculture, but also, for example in floriculture.

Acknowledgements

This study was conducted with the support of Grant No. QF 3148 awarded by the NAZV Ministry of Agriculture of the Czech Republic.

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