

4.5.3 Case Study no. 3. Waste Management in Poultry Farms, Izvoare, Neamt County

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Slide 1: The presentation is about a composting plant that is currently under construction in a chicken farm in Izvoare, Neamt county, Romania.

Slide 2:

The main objective is to valorize poultry manure that is produced at a rate of 10,000 kg per day by composting. This is performed under a project named “Integrated Solutions for the poultry manure management from a chicken farm- Chicken Waste” in which TUIasi acts as a partner.

The sequence of activities for which TUIasi is responsible includes documentation on composting technology, experimental design and set-up, lab scale experiments, selection of the best composting method based on optimization criteria, and pilot scale composting facility design and fertilizer production

Slide 3:

The poultry manure needs to be mixed with other materials to reach the recommended composting parameters. The composting process requires specific parameters such as a C:N element ratio of 25:1, initial humidity of 55%, pH, temperature, particle size, and aeration. The tested mixtures are chicken manure plus sawdust, wheat straw, charcoal, and lignite to achieve the desired parameters.

Slide 4: As part of experimental set-up three types of composting vessels with different sizes were tested and operational parameters were monitored.

Slide 5: The main concept of the waste valorization problem consists in mixing poultry manure with suitable amendments to ensure the suitable properties for an efficient composting process. Either in an in vessel composting system or in a forced air aeration one, parameters such as temperature, humidity, pH, aeration rate and time are to be monitored so as to obtain a stable and mature compost commercially available. Temperatures as high as 70 degrees Celsius maintained for the specific period of time ensure a good composting process.

Slide 6: The Romanian Law 181/2020 classifies the resulted compost into three categories of use: Category A for very high-quality compost that can be used in agriculture and horticulture (the criteria to be met are included in the 2 tables below), Category B for good quality compost that can be used in green areas landscaping, and Category C for lower quality compost that can be used as established by the National Technical Norms.

Thank you for your attention!