

## Reorientation of Sustainable Livestock Management: A Case Study Applied to Wastes Management in Faculty of Animal Husbandry, Padjadjaran University, Indonesia

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**Abstract :** The agricultural sector covers a wide area, one of them is livestock subsector that supply needs of the food source of animal protein. Animal protein is produced by the main livestock production such as meat, milk, eggs, etc. Besides the main production, livestock would produce metabolic residue, so called livestock wastes. Characteristics of livestock wastes can be either solid (feces), liquid (urine), and gas (methane) which turned out to be useful and has economical value when well-processed and well-controlled. Nowadays, this livestock wastes is considered as a source of pollutants, especially water pollution. If the source of pollutants used in an integrated way, it will have a positive impact on organic farming and a healthy environment. Management of livestock wastes can be integrated with the farming sector to the planting and caring that rely on fertilizers. Most Indonesian farmers still use chemical fertilizers, where the use of it in the long term will disturb the ecological balance of the environment. One of the main efforts is to use organic fertilizers instead of chemical fertilizer that conducted by the Faculty of Animal Husbandry, Padjadjaran University. The method is to use the solid waste of livestock and agricultural wastes into liquid organic fertilizer, feed additive, biogas and vermicompost through decomposition. The decomposition takes as long as 14 days including aeration and extraction process using water as a nutrients solvent media which contained in decomposes and disinfection media to release pathogenic microorganisms in decomposes. Liquid organic fertilizer has highly efficient for the farmers to have a ratio of carbon/nitrogen (C/N) 25/1 to 30/1 and neutral pH (6.5-7.5) which is good for plant growth. Feed additive may be given to improve the digestibility of feed so that substances can be easily absorbed by the body for production. Biogas contains methane (CH<sub>4</sub>), which has a high enough heat to produce electricity. Vermicompost is an overhaul of waste organic material that has excellent structure, porosity, aeration, drainage, and moisture holding capacity. Based on the case study above, an integrated livestock wastes management program strongly supports the Indonesian government in the achievement of sustainable livestock development.

**Keywords :** integrated, livestock wastes, organic fertilizer, sustainable livestock development

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