

# II INTERNATIONAL SYMPOSIUM ON SCIENCE AND BIOTECHNOLOGY ENTREPRENEURSHIP AND INNOVATION

## APPLIED COMPOSTING TO THE BIOLOGICAL FERMENTATION OF SOLID WASTE FROM PRODUCTION OF PIG, BOVINE CATTLE AND CHICKENS

\*Rogoski, Nédio Ricardo; \*\*Gelinski Junior; Eduardo; \*\*\*Fernandez, Carlos Manuel Reyes

\* Barros, José Eduardo; \*Farinon, Kemylli

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\*Graduate student of the Science and Biotechnology Program - Universidade do Oeste de Santa Catarina, Videira, SC

**Unoesc Videira**

\*\* Professor of the Graduate Program of Science and Biotechnology, Unoesc, Videira, SC

\*\*\* Professor of the Bachelor Administration Course, Unoesc, Videira, SC

### Abstract

The great Catarinense West is economically based in the productive chains of poultry and swine. At the level of the rural producers the activity is intensive, resulting in the high production of waste. This is a weak link in sustainability, given the possibilities of deleterious effects, impacts and externalities on the environment. This study evaluated the technical efficiency of the composting process in the biological stabilization of the solid fraction of swine, poultry and bovine litter. The composting technique - controlled aerobic biological process speeds up the decomposition of organic material. Seven formulations were prepared with the three types of solid material. For each formulation, 6.6m<sup>3</sup> of organic material was used, and the fermentation mass was recorded every three days for gas exchange and temperature control. As a result of formulations prepared and submitted to composting, the internal temperature of the mass increased to 40°C on average after ten days. Except for bovine solid waste alone, all formulations had a mean maximum temperature of 54.6°C between thirty to sixty days of fermentation. The biological stability behavior occurred with sixty-eight days in processing. It

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was concluded that all organic solid waste used for this study can be stabilized by the aerobic fermentation process in solid cultivate.

Keywords - Fermentation. Solid cultivate. Sustainability. Composting. Productive chain.

E-mails - [nediorr@hotmail.com](mailto:nediorr@hotmail.com); [eduardo.gelinski@unoesc.edu.br](mailto:eduardo.gelinski@unoesc.edu.br).

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