



P. T. PINDO DELI PULP & PAPER MILLS

Use Paper Sludge as Compost or Mushroom Fertilizer

SUMMARY OF THE OPTION

PT. Pindo Deli Pulp & Paper produces photocopy paper, specialty paper and tissue paper with a production capacity of 1,465,000 tons per year. The GERIAP project focused on paper machine number 8 (PM# 8) that produces mainly the photocopy paper with a production capacity of 240,000 tons per year.

At Pindo Deli's Waste Water Plant, 1000 to 1500 tons of paper sludge is collected at the Belt Press. In the period 1997 - 2003, 40% (~300 – 400 tons per month) of the sludge produced on site was given away, at no cost, to the local mushroom and cassava growers for use as compost.

The major material content in sludge is pulp and CaCO_3 . Pulp is a cellulose fiber produced from delignification of certain plants. The cellulose fiber is an organic material, which have effects on:

- Physical characteristics of soil
 - Increases its capability to retain water
 - Changes the soil colour to brown-black, which can increase soil temperature
 - Stimulates aggregate granulation
- Chemical characteristics of soil
 - Increases absorption and cat-ion exchange capability
 - Increases the amount of cat-ion that is exchangeable
 - Bonds to N, P, S materials and prevents them from washing (detaching).
- Biological characteristics of soil
 - Increases the amount and the activity of soil organism metabolism.
 - Increases the micro-organism (mo) activity in organic decomposition.

CaCO_3 is a material that can be included in the cellulose fiber granule. In farming perspective calcium can increase pH of soil and cat-ion exchange capability.

Based on the above information, PT. Pindo Deli came to a conclusion that components of bio-sludge can support farming. Ever since Pindo Deli have conducted activities to see the positive and negative impact of paper sludge as fertilizer. The first experiment, combustion of paper sludge to utilize the sludge as compost was done in September 1997. This activity has been continuing since then and extended by more than twenty activities related to this program.

In order to broaden the use of sludge as fertilizer, Pindo Deli sent the sludge to the Rice Research Centre, Sukamandi, Subang on April 16, 1998 for analysis. The results indicated that the composition of the sludge is suitable as compost or mushroom media grower.

Many activities were planned in this project, but since 2003, the permission to use sludge as compost and media grower has been stopped by the Ministry of Environment (MoE) due to the high heavy metal content in sludge, even though the amount is under the permissible value.

Pindo Deli is still trying to find a solution to continue this project. The Ministry of Environment has recommended treating the sludge by disposing it to the landfill area, where there is concentration of contaminants in the waste.

KEYWORDS

Indonesia, Pulp & Paper, Paper Sludge, Compost



FOR MORE INFORMATION

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