

HOW PRODUCE MORE AND CONSERVE BETTER

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Introduction

In recent years the importance of the soil conservation and the organic matter in a context of environment conservation has been perceived better. The more and more important phytosanities products use and fertilizing chemistries with its negative consequences (costs elevated, increase of the resistance towards them and soil biology degradation among others) has induced a change of mentality towards a more ecological agriculture and therefore more sustainable, with the organic materials use available locally.

This represents one of the most important methods and satisfactory to increase, or at least to maintain, the level of soil fertility and productivity used for the food production.

The Integrated Watersheds Management Program (PROMIC), with its component of soil management and conservation, has promoted the soil agronomic conservation in which one of the techniques is referred to the soil incorporation of fermented organic manure in conditions of mountain.

Benefits of the fermented organic manures

The benefits of the soil incorporation of fermented organic manures are various:

- * Compost is obtained more quickly disturbed;
- * Constitutes a source of plants nutrient, that are gradually released when mineralizing itself the soil organic manures;
- * Increases the soil organic matter content with the benefits of improvement of the water retention, better soil workly and increase of the erosion resistance;
- * Represents an alternative economic than the chemical manures use.

Obtained results of the fermented organic manures use (Bocashi type) in the potato crop

The fermented organic manure also called Bocashi, consist of a type of compost to which it adds some elements like the lime, the leavening and the molasses that allow to improve the fermentation and by consequence the organic matter decomposition besides to contribute potassium, magnesium and other micro-elements.

Between the organic materials that are used for the elaboration of the fermented organic manures we have:

- * Dungs of animals
- * Straw of the place (*Estipa ichu*)
- * Strubble of wheat
- * Rest of pine

The preparation of the fermented organic manure must be made in protected places of the sun and rain, since these don't allow to a suitable process of decomposition and fermentation. The different materials are placed in layers, having added slowly water in which it has dissolved the leavening and the

molasses. Once concluded the positioning in layers, it mixes all the layers of homogenous way and cover to induce the fermentation.



Photo 1. Preparation of the fermented organic manure type bocashi

It has several experiences of the use of the fermented organic manures of Bocashi type, mainly in the potato crop. We presented in figure 1 the results of yields obtained with the incorporation of 20 tn/ha of different organic manures:

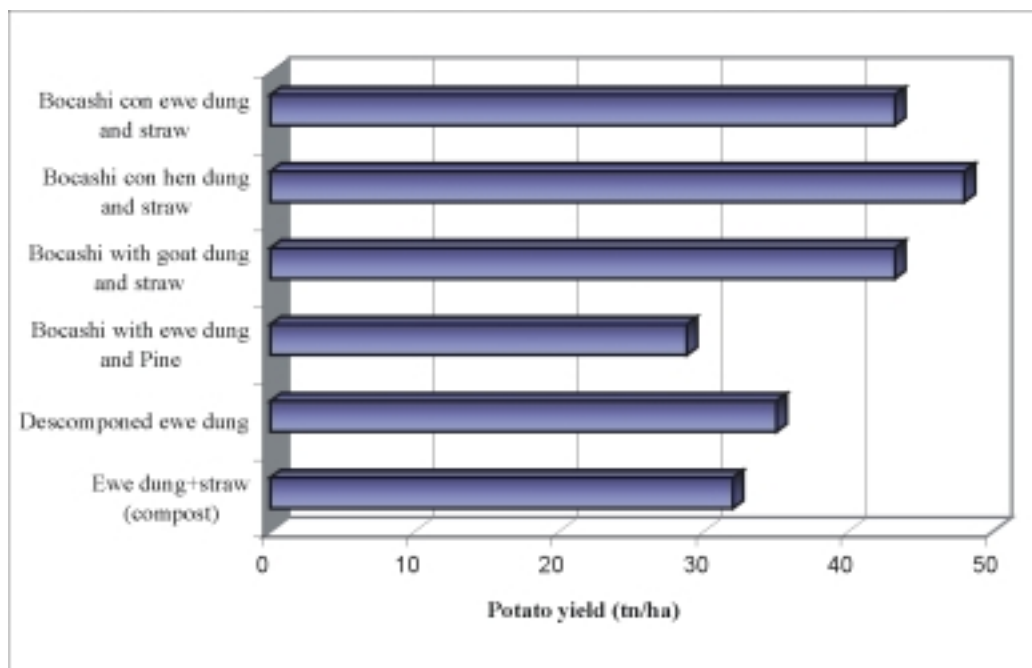


Figure 1. Potato yield (tn/ha) with diferent organics manures used

From the previous results it's difficult to propose “an ideal” prescription for the preparation of fermented organic manure of Bocashi type. Nevertheless, we can give some orientations:

* Like vegetal strubbles, it's preferable use straw that rest of Pine, a certain acidificación of the manure is made with this last one;

* The obtained results are generally better with fermented organic manures Bocashi type that with compost;

* The manure is more effective when it's prepared with a mixture of ingredients (dung, vegetal strubbles, lime, molasses, etc.) that when its preparation is simpler;

* The hen dung seems to contribute to more nutrients than the ewe or goat dung, but it's important to take care of that it isn't too fresh.



Foto 2. Potato production with fermented organic manure incorporated

Conclusions

In many areas, there is a necessity to increase the food, forage and fuel production, to satisfy the populations demands that increase quickly. The soil fertility is diminishing in some of these areas like turn out on the attempts to increase the production without paying attention to the erosion prevention and the maintenance, or improves, of the soil fertility. In general it's accepted that one of the most important factors of the soil fertility is the level of organic matter of the same one. The organic matter improves the soil structure and therefore it allows that the soil resists to erosion, contains more water, remains humid more time and contains greater reserves of nutrients for the plants. Many of their beneficial effects must to the stimulus that gives of the soil microorganisms and small animals.

The organic manures incorporation contributes significantly to the fertility level increase. The obtained results have demonstrated that it's possible to be significantly increased the potato crop yields (up to 50%) incorporating fermented organic manure at the same time that to improve the soil fertility.