

Vermiculture

Mini-livestock in Rosario Argentina for organic waste processing

Rosario City in the province of Santa Fe, Argentina is an urban centre of more than 1,200,000 inhabitants. Over 20% of the population live in conditions of extreme poverty. Unemployment and marginality leads them to live in the marginal areas, without adequate sanitary services and under limited social and economic conditions. There are many examples of social welfare interventions which can help to alleviate these conditions of dire poverty.

A project was started in 1991 in the neighbourhood of Empalme Graneros, in Rosario City. It is an area where some 1,300 poor families have built their houses, of different materials, on the banks of the Ludueña stream, which for years has been subject to flooding. The project focused on organic waste recycling for red-earthworm production (*Eisenia foetida*) and vermicompost used as a fertiliser on family and community farms. Vermiculture has a high potential for organic waste degradation, while at the same time providing by-products for immediate and commercial use.

The project was designed as an experiment to set up vermicultural production at the family and community level in urban areas. The aim was to commercialise the production of earthworms, enabling the humus (vermicompost, VC) produced by them to be used as a fertiliser on organic vegetable farms. (Biasatti et al, 1999).

VERMICULTURE

Vermiculture uses the “red Californian” (*Eisenia foetida*) earthworm species as a “biological machine” to metabolise complex compounds and transform them into simpler chemicals and much more stable forms. Two main products can be obtained: earthworm meat and earthworm humus or vermicompost (Schuldt, 1994; Rivero Hernández, 1993). Earthworm meat production offers some commercial opportu-

nities to this social sector where income levels are generally extremely low. Its commercial value is derived from its suitability as fishing bait, and its high protein content makes earthworm meat an excellent supplementary feed source, which can be integrated into farm animal diets, e.g. in poultry feed.

Vermicompost has also become an interesting prospect during the course of the project as it is a high-quality fertiliser, which is stable and has excellent physical-chemical organic fertiliser properties. Its potential has still to be realised in its application to local crops. The conditions for vermicompost production are relatively simple: inputs are low cost, and maintenance requirements are also low.

DEVELOPMENT

The work that has been carried out is part of a urban agriculture community development programme, aimed at providing social training and organization to promote and spread productive activities and self-manageable resources.

Vermiculture training was given to a group involving 50 families. After completion of the training the participants were provided with genetic material, consisting of modules of about 5,000 earthworms together with substrate. Further field training was then given to individuals, family or community groups, and after this

the “pioneer” producers then became the “multiplying agents” of the project.

RESULTS

The project succeeded in obtaining a high degree of training in vermiculture techniques, which enabled family and community earthworm breeding to become well established. Producers were able to earn income from the vermiculture products: fish bait and earthworms for animal feed. The humus produced was used to improve soil conditions where vegetables are grown, both for domestic consumption and for selling. After 18 months, 26 people had been trained, and 15 production modules had been established. There is also continued interest of newcomers to the neighbourhood, who wish to join the enterprise.

Vermiculture has shown to be a practice that is quickly adopted. After adequate training, a first harvest of products was obtained within three months. The work not only provides an opportunity to learn management techniques for a specific animal species but also introduces a practice of integrated resource management. In other city sectors it has been widely adopted on balconies and terraces. In the future this process may contribute to a decrease in the amounts of domestic organic waste for disposal as families process their own waste.

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