"STUDY OF VERMICASTS FROM EARTHWORMS"

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ABSTRACT: *This paper is for set up the a commercial earthworm business enterprise. Information about vermiculture – raising earthworms in a net and give a food. The detail Information about using these worms, usually Eisenia fetida, it is a process of including waste into vermicompost. Vermicompost is used a such place where earthworm grows, industry as an ingredient in soil mixes and performs pest and disease control functions as a soil alteration. Production and marketing problems are covered up for both types of earthworm businesses. Whether you are raising worms for bait or using them to produce vermicompost, first you will need to study how to raise earthworms. For your worm-based business, you will have to separate section for earthworms to their required environment for growing and sell your product—either the worms or the vermicompost.*

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Keywords: vermiculture, vermicompost, soil amendment, Eisenia fetida.

1. INTRODUCTION

Over the past several years, many people have to start raising earthworms as a business source of income. Some are spent to the business by spending the money and claims of great possible markets for earthworms in large waste disposal systems and agriculture and as obtain a food for animals. Despite these claims, the current major commercial use of earthworms is as bait for freshwater sport fishing.

Although several other shops for sales of worms exist, there is large amount of competition for markets. analysis and development on worms uses under the way of all over the world, but new markets for worms and production will be slow and somewhat uncertain. Those interested in getting into the earthworm business should be learn local markets carefully, particularly it is full time job.

Earthworm growers to build a money by selling earthworms and vermicompost.(charging to have organic materials normally disposed in a land "tipped" by a loaded truck onto the worm producer's site, and provide a food for the earthworms). Vermicomposting is the process of converting organic waste into worm castings (manure). In this process, we can create an ideal conditions for developing a earthworms. Earthworm size and their reproductive quantity are frequently less than the same species level in vermiculture systems.

Vermiculture is the raising of earthworms for resale, so the focus is on ideal conditions for worm growth, reproduction, and health. Worm farmers usually purchase and pull of feedstock or pay for feedstock to be bring them to others and may get the material for free but remunerate for it to be pre-composted and pull to their site.

LITERATURE REVIEW

For vermiculture in agriculture, overlapping interest occurs at either end of the waste management stream. At one end, is the need to deal with specific agricultural by-products, or wastes, and Vermicomposting is identified as one sustainable method of utilising these wastes and turning them into a resource. This has been engaged on a large commercial scale mainly using windrows for the treatment of pig solids (Edwards et al, 1985; Chan and Griffiths, 1988; Wong and Griffiths, 1991) and cattle solids (Hand et al, 1988; Edwards, 1998b). At the other end is the use of the resultant vermicompost products, such as: the application of vermicompost as soil amendments in agro ecosystems; the use of Vermicasts in potting mix blends for plant propagation; and, vermicompost, or Vermicasts, as a plant

Production of earthworms or uses of earthworms for waste processing?

The two main reasons that people grow worms are to sell them as bait or to provide a food or to use earthworms for processing a waste materials

Vermicompost, a valuable soil amendment. Although the needs of the worms must be met in either type of system, the objectives are different. Raising worms for bait requires closer management than raising them to process agricultural or food wastes. When you choose to sell worms for bait or as feed for if she or poultry, you will sell off the livestock from the system periodically. Bait worms must require a certain size and standard to maintain and it will be required to separated from smaller worms and eggs. You should be consistent in your feed and bedding. You will also be require to most effective Eisenia fetida, a high quality composting worm of many names. ATTRA Worms for Bait or Waste Processing (Vermicomposting) temperature, aeration, pH and moisture conditions to promote worm reproduction and growth. All of this necessary to consistent management and attention to detail. For a waste processing system, the aim is low-cost production. The materials that you process might not be ideal for feed or bedding, but if the source is consistent, you can design a workable system. With skilful marketing, it's possible to be paid some fees for waste removal and be paid again by the end user for the if nil products. Tipping fees are charged to those who create garbage for the service of hauling it away. Do some market research and consider what type of worm farming system if it's your situation before you commit resources to setting up your operation. Producing worms will necessary observation, especially at the starting period. If you have never managed a household worm composting system, begin with a small-scale trial basis and learn the basic things.

2. PRODUCTION SYSTEMS

Worm production takes place at scales that range from a bin in the kitchen for processing household piece or raising fishing worms to large automatic systems able to accommodate tons of organic material on a continuous basis. This paper is particularly look at on commercial-scale operations. In general, these production methods can be grouped into four types: Batch reactors (containers on legs or on the ground) are filed, allowed to work and then emptied. This type of processing is being tested at different scales throughout the United States. These systems can be used to raise worms or for waste processing.

–containers are a type of batch reactor and require notably handling and lifting. It is difficult to monitor bed conditions and to add feedstuff s. Systems using stacks of large, shallow drawers reduce some of the drawbacks. Considerable labour is involved. Windrow systems on concrete or on the ground require the smallest capital investment, but they are slow and labour-intensive, even with machinery. Although windrows have been used for worm production, they are most suitable for waste processing. Continuous flow reactors are the most expensive of these systems. Labour costs may be less, however. Equipment, skilled management and excellent marketing are necessary to ensure a profitable enterprise. Continuous processing has emerged as the preferred method for commercial production of vermicompost. The worms never leave the bed, so tedious harvesting procedures are avoided entirely. Feeding, misting and collecting the finished product can be automated, and it is much easier to produce hitch shows that the compressed air engine is cheap when compared to the conventional SI engine.

3.1 REDUCTION IN SOIL C: N RATIO

Vermicomposting change a household waste into compost within 30 days, reduces the C: N ratio and retains more N than the exiting methods to developing a composts (Gandhi et al. 1997). The C: N ratio of the unprocessed olive cake, vermicompost olive cake and manure were 42, 29 and 11, respectively. Both the unprocessed olive cake and vermicompost olive cake inactive soil N throughout the study duration of 91 days. Cattle manure mineralized an appreciable amount of N during the study. The prolonged inactive soil N by the vermicompost olive cake was attributed to the C: N ratio of 29 and to the discipline of nature in its C and N composition. The results suggest that for use of vermicompost dry olive cake as an organic soil alteration, the management of Vermicomposting process should be so adjusted as to ensure more favourable N mineralization immobilization (Thompson and Nogales 1999).

3.2 ROLE IN NITROGEN CYCLE

Earthworms play an important role in the recycling of N in different agro ecosystems, especially under hum (shifting cultivation) where the use of agrochemicals is minimal. Bhadauria and Ramakrishnan (1996) reported that during the fallow period intervening between two crops at the same site in 5- to 15-year *hum* system, earthworms participated in N cycle through castejectionn, mucus production and dead tissue decomposition. Soil N losses were more pronounced over a period of 15-year hum system.

Growing concerns relating to land degradation, threat to eco-systems from over and inappropriate use of inorganic fertilizers, atmospheric pollution, soil health, soil biodiversity and sanitation have rekindled the global interest in organic recycling practices like composting. The potential of composting to turn on-farm waste materials into a farm resource makes it an attractive proposition. Composting offers several benefits such as enhanced soil fertility and soil health – thereby increased agricultural productivity, improved soil biodiversity, reduced ecological risks and a better environment.

Even though the practice is well known, farmers in many parts of the world especially in developing countries find themselves at a disadvantage by not making the best use of organic recycling opportunities available to them, due to various constraints which among others include absence of efficient expeditious technology, long time span, intense labour, land and investment requirements, and economic aspects.

3. WHY WORM COMPOST?

Worm compost can be used several ways in rural or urban commercial agriculture.

- An on-farm produced growing medium component (usually at 5 to 20% by volume) for
- container grown transplants or plants.
- An on-farm produced source of balanced available nutrients/minerals which can be applied as
- A dry surface application or extracted with water and applied as a fustigation (nutrients water).
- An alternative to fish based fertilizers which are commonly used in organic farming.
- A source of microorganisms and micronutrients that can contribute to plant and soil health.
- A "crop protestant" that may help mitigate insect infestations and disease infections.

4. LIFE CYCLE

- Reported time for cocoon to go from formation to hatching in favorable conditions: 4 to 6 weeks
- Reported time that cocoon can protect young worms in unfavourable conditions: months to years
- Reported time for worm to develop from emergence to maturity (producing young): 6 to 8 weeks

Reported time a red worm will live, feed and reproduce in a favorable environment: 3-4 year.

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