The Complete Technology Book on Vermiculture and Vermicompost (Earthworm) with Manufacturing Process, Machinery Equipment Details & Plant Layout 3rd Edition

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Advantage of vermicomposting is that it composts the wastes of rural areas. They clean our villages by using unnecessary organic and non-organic materials. Improves the texture of the soil and its ability to store water. Improves root growth and the multiplication of beneficial soil microorganisms by providing optimum aeration to the soil.

Vermicompost (vermi-compost) is a mixture of decomposing vegetable or food waste, bedding materials, and vermicast created by the decomposition process using various species of worms, usually red wigglers, white worms, and other earthworms. This is known as vermicomposting, and the practise of raising worms for this purpose is known as vermiculture. Sewage treatment can also be done with vermicomposting.

The Global Vermicompost Market is reach growing at a CAGR of 16.74%. The Growth of the global vermicompost market is caused by various factors, such as improved soil aeration, improved water holding capacity, better nutrient cycle, and enriched soil with micro-organism, helps in plant root growth and structure, enhanced germination. The vermicomposting method is used in organic farming. Increasing the use of sustainable agricultural practices, such as vermicomposting along with Government support for organic farming is significantly contributing to the global vermicompost market growth. Vermicompost offers plants with necessary nutrients and helps in plant diseases suppression. Worm castings often comprise 7 times more phosphorus, 11 times more potassium, and 5 times more nitrogen than ordinary soil, which are crucial minerals required for plant growth.

Vermiculture and Vermicompost (Earthworm), as well as their manufacturing methods, are all covered in depth in this book. It also offers photos of equipment as well as contact information for industrial providers.

This book is a one-stop shop for everything you need to know about the Vermiculture and Vermicompost (Earthworm) industry, which is ripe for manufacturers, merchants, and entrepreneurs. This is the only book that goes into great detail about Vermiculture and Vermicompost. It's a genuine feast of how-to material, from concept to equipment buying.

1. INTRODUCTION Advantages of Vermicomposting Vermicomposting in Daily Life Vermiculture v/s Vermicomposting Vermitechnology (VT) Progress of Worm Industry Turning Garbage into Money Chemical Composition of the Vermicompost Vermicomposting at Home Vermicomposting on the Farm The Business of Worms Interaction of Vermicompost-Earthworm-Mulch-Plantroot (Vemp) Earthworm Farming is not Hard

2. EARTHWORMS : ECOLOGICAL TYPES Trophic Classification of Earthworms Drilosphere Physical Effects of Earthworms on Soils Chemical Effects of Earthworms on Soils The Effect of absence of Earthworms in Soils

3. PHYLUM ANNELIDA : EARTHWORM Earthworms **Economic Importance** Pheretima Poshuma The Body Wall Locomotion The Coelom The Digestive System Food and Digestion Respiration **Excretory Organs** Physiology of Excretion Chloragogen Cells Vascular System The Nervous System Working of the Nervous System **Receptor Organs Generative Organs** Copulation Fertilization and Coccon Formation Classification 4. EARTHWORMS : LIFE CYCLE Life Cycle Studies Life Cycle Patterns Life cycle—Lampito mauritii Cocoons **Juveniles** Non-Clitellates Clitellates Life Cycle—Perionyx excavatus Cocoons **Juveniles**

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6. WHY VERMICOMPOSTING
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Testing the Impact of Vermicomposting
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Vermicompost - a Quality Manure
Recycling of Wastes through Vermi-Composting
Minimizing Pollution Hazard
Providing Growth Promoters
Vermicomposting : Advantages
Black Gold (Worm Castings) from Worms
Adverse Effects on Crops
Economic Vibility

7. VERMICOMPOST HIGH-GRADE FERTILIZER

Crucial to Organic Agriculture Wide-spread use in the Tropics and Sub-Tropics Flexible Method **Rapid Conversion** What Exactly is Vermicompost? **Characteristics Conversion Processes** Plant Nutritionists - Ncouragement of Soil Fertility Soil Conditioning and Plant Strengthening Effect Minimisation of Solid Waste with Low Toxicity and Containing Heavy Metals Which Species of Earthworms? Eisenia Fetida - Hard Workers Transformation of the Organic Material: Reproduction **Under Perfect Conditions** Further Uses Feed Source Material for the Fodder Nutritional Balance in Feed Feeding Process Various Worm Composting Methods Size of the Worm Compost Heap Climate Construction of a Worm Farm Harvesting the Vermicompost Storage of Vermicompost Spreading the Vermicompost The Liquid Variety: Vermiwash A Method to Prepare Vermiwash Application of Vermiwash Management Great Potential for Large and Small Organic Farms alike

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Other Factor Affecting Earthworm's Growth Eathworm and Insects Tilling and Earthworm Population Earthworm and come Drounding Maintaining the Bin Harvesting the Compost and Worms General Problems in Production of Vermicomposting Remember

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13. EARTHWORMS : END USES AND POTENTIAL

Earthworms in Medicine Earthworms as Feed Economic Potential Legal Constraints Conclusion

14. METHODS OF EARTHWORMS MEASUREMENT Sampling Methods Hand Sorting Principle **Materials** Procedure Washing and Sieving Principle **Materials** Procedure **Use of Chemical Repellants** Principle **Materials** Procedure **Electrical Methods** Principle **Materials** Procedure **Trapping Methods**

Materials Procedure Other Method Flotation Heat Extraction Number of Casts Measurement of Earthworm Biomass Storage and Identification Storage Identification 15. VERMICOMPOSTING: A WORLD SCENARIO Grace McKellar Centre, Geelong, Victoria, Australia Hobart City Council, Tasmania, Australia National Institue of Environmental Health Sciences, Research Triangle Park, North Carolina, United States Newcastle City Council, New South Wales, Australia Oregon Soil Corporation, Beaverton, Oregon, United States Pacific Southwest Farms, Ontairo, California, United States Resource Conversion Corporation/Canyon Recycling, San Diego, California, U.S. Rideau Regional Hospital, Perth, Ontario, Canada San Quentin Prison, California Seattle Kingdome Stadium, Seattle, Washington, United States Sovadec, La Voulte, France Vermiculture Production Center, Pinar del Rio Province, Cuba Vermicycle Organics, Inc., Charlotte, North Carolina, United States India Green Cross Society of Mumbai, India Indian Aluminum Co. Ltd, Belgaum, India M.R. Morarka - GDC Rural Research Foundation, Jaipur **16. ROLE OF EARTHWORMS** In sustainable Agriculture **Organic Farming** Earthworms Activities Soil Fertility and Texture Soil Aeration Water Impercolation **Decomposition and Moisture 17. MONITORING WORM BED ENVIRONMENT** Moisture Control Keeping Beds Warm during Winter Lighting Earthworm Predators or Annoyances • Flies Mites White or Brown Mites Red Mites Hammerhead Worms Centipedes Ants Black Soldier Fly Larvae **Troubleshooting Worm Bed Conditions** bН Bedding Too Dry **Red Mite Infestation**

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Vermi Cast
Soil and Vermi Cast
Earthworm Inoculation in Soil
Decomposition of Bio-Degradeable Wastes and VermiComposting Vermiculture in Pollution
Abatement

- 20. VERMICULTURE
- General and Planning
- Selection of Suitable Species
- Basic Characteristics of Suitable Species
- Description of Suitable Species
- Family : Lumbricidae
- 1.Bimastos parvus (= Allolobophora (Bimastos) parvus Eisen)
- 2. Eisenia foetida (Sav.)
- Family : Eudrilidae
- 1.Eudrilus Eugeniae (Kinb.)
- Family : Megascolecidae
- 1.Lamptio mauritii (Kinb.)
- 2. Metaphire anomala Mich. (= Pheretima Anomala)
- 3. Metaphire Posthuma (= Pheretima posthuma)
- 4. Perionyx Excavatus E. Perr.
- 5. Perionyx sansbaricus Michaelson
- Family: Octochaetidae
- 1. Octochaetus (Octochaetoides) Surnensis Mich.
- 2. Ramiella Bishambari (Steph.)
- Sub-family : Diplocardinae
- 1. Dichogaster Bolaui (Mich.)
- 2. Dichogaster Affinis (Mich.)
- 3. Dichogaster Curgensis (Micha.)
- 4. Dichogaster Saliens (Bedd.)
- 5. Ramiella Bishambari (Steph.)
- 6. Erythodraeodrilus Suctorius (Steph.)
- 7. Ocnerodrilus (Ocnerodrilus) Occidentails (Eisen.)
- Family : Moniligastridae
- 1. Moniligaster Perrieri (Mich.)
- 2. Drawida Willisi (Mich.)
- Maintenance of Base Culture

21. VERMICOMPOSTING

General Advantages of Vermicomposting Vermicomposting Materials Preliminary Treatment of Composting Material Small Scale or Indoor Vermicomposting Large Scale or Outdoor Vermicomposting Other Types of Vemi-Composting Requirement for Vermicomposting Feed for Earthworms Vermicomposting Schemes Maintenance of Vermicomposting Beds Vermicomposting Efficiency Collection of Vermicompost Transportation of Live Worms Marketing Outlets

22. GRANULATION OF VERMICOMPOST

Introduction Functions Methods Process Impact of Using Vermiwash as the Binding Media Vermicompost Fertilizer Granule Machine Feature

Types of Granulator Machines

- Disc Fertilizer Granulator
- Double Roller Extrusion Granulator
- Organic Fertilizer Granulator
- New Type Organic Fertilizer Granulator
- Rotary Drum Granulator
- Cat Litter Disc Fertilizer Granulator

23. BIS SPECIFICATIONS

24.PHOTOGRAPHS OF MACHINERY WITH SUPPLIERS CONTACT DETAILS Vermi Compost Tank Sprayer Pump **Rotary Drum Dryers** Vermi Compost Maker Vermicompost Seiving Machine Leaf Waste Shredder Machine Packing Machine Waste Fully Automatic Compost Machine Rotary Twin Drum Composter Fertilizer Granule Machine Waste Compost Tumbler Waste Compost Machine Fertilizer Drum Granulator Machine Fertilizer Granulator Machine

25. PLANT LAYOUT & PROCESS FLOW CHART

About NIIR

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