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An Overview of Vermicompost Production in India

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Abstract:

Vermiculture is a growing industry not only for managing waste and land very economically but also for promoting 'sustainable agriculture' by enhancing crop productivity both in quantity & quality at significantly low economic cost than the costly agrochemicals. Earthworms not only converts 'waste' into 'wealth' it itself becomes a valuable asset as worm biomass. Large-scale production of nutrient rich 'vermicompost' (especially from the municipal solid wastes) with potential to replace chemical fertilizers and protein rich 'earthworms' can be a good business opportunity today with awareness growing about use of these products in agriculture and other allied industries. Municipal solid wastes (MSW) is growing in huge quantities in every country with growing population and there will be no dearth of raw materials for production of vermicompost. Vermiculture have also enhanced the lives of poor in India and have generated self-employment opportunities for the unemployed. It has become good source of livelihood for many. Vermicompost among the various organic manures, the compost produced by using earthworms is the significant one from the point of total nutrition it provides to the plant. Vermicompost not only helps to improve and protect fertility of top soil, but also helps to boost productivity by 40 percent at 20 – 60 percent lower nutrient inputs. It also enhances the quality of end products and keeping quality on storage. Thus with various benefits of vermicompost and its wide use as an organic input, it becomes essential to study the production of vermicompost across the country. Hence, against this background, the current study is made to highlight the production of vermicompost in India.

Keywords: Vermicompost, production and availability

1. Introduction

The green revolution increased significantly the productivity in developing countries, but it had also several negative ecological consequences such as depletion of lands, decline in soil fertility, soil salinisation, soil erosion, deterioration of environment, health hazards, and poor sustainability of agricultural lands and degradation of bio diversity. Today agricultural research seeks new management strategies and technologies to reorient the current and future needs and constraints. Much dependence on chemical fertilizers without adequate use of organic recycling has not only aggravated multi-nutrient deficiencies in soil plant system but also deteriorated soil health and is cause of main environmental pollution. Moreover, chemical fertilizers are becoming costlier in agriculture because of increasing oil prices.

Vermiculture is a growing industry not only for managing waste and land very economically but also for promoting 'sustainable agriculture' by enhancing crop productivity both in quantity & quality at significantly low economic cost than the costly agrochemicals. Earthworms not only converts 'waste' into 'wealth' it itself becomes a valuable asset as worm biomass. Large-scale production of nutrient rich 'vermicompost' (especially from the municipal solid wastes) with potential to replace chemical fertilizers and protein rich 'earthworms' can be a good business opportunity today with awareness growing about use of these products in agriculture and other allied industries. Municipal solid wastes (MSW) is growing in huge quantities in every country with growing population and there will be no dearth of raw materials for production of vermicompost. Vermiculture have also enhanced the lives of poor in India and have generated self-employment opportunities for the unemployed. It has become good source of livelihood for many. In several Indian villages NGO's are freely distributing cement tanks and 1000 worms and encouraging men & women to collect waste from villages & farmers, vermicompost them and sell both worms and vermicompost to the farmers. People are earning from Rupees 5 to 6 lakhs (Approx. AU \$ 15-20 thousands) every year from sale of both worms and their vermicompost to the farmers. Mostly they use farm waste and also municipal solid wastes (MSW) collected from streets & waste dumpsites. Hence, against this background, the current study is made to highlight the production of vermicompost in India.

2. Review of Literature

The following are the various studies previously made on the aspect of vermicompost.

Pravara Kumar Tamminana et al (2014) stated that the scope for production and use of vermicompost appears to be promising in the country with the government laying much emphasis on the promotion of organic farming. In addition several non-governmental organizations have also been playing a vital role in spreading the message of organic farming. Many enterprises by farmers and private agencies have shown keen interest in undertaking of vermicompost production. He also concluded in his study that the majority of the entrepreneurs had good attitude towards vermicompost technology which helps in building up their business activity successful and earn more profits and were in opinion of vermicompost technology as eco- friendly, a means to promote and propagate sustainable agriculture sustainable agriculture and helps in improving soil fertility and also as a small scale/ micro- enterprise, has been used as an effective tool for organic waste management in many geographies who are largely agro- based.

Latika Vyas et al (2012) in her study stated that Vermiculture technology has been considered as a sound and viable option to regenerate the soil health through recycling the agricultural waste. Vermiculture is potential enterprise which supports unemployed youth, agricultural labours, small and marginal farmers etc.

R.K.Sharma et al (2012) in his study asserted that Vermitechnology is a simple methodology with low investment and does not need sophisticated infrastructure. Innovative, interested and talented rural people can be successful entrepreneurs in vermicompost production and accruing profits will enhance their life style and income. Awareness about vermiculture and vermicomposting will motivate the rural people to start vermicomposting units, which can fetch regular income.

Shivakumar et al (2009) in his study stated that Vermicompost could contribute enormously to farm production and economic conditions of rural people, besides being an eco- friendly activity. In recent years, concerted efforts have been initiated by the state as well as by private sector including many Non Governmental Organisations (NGOs) to create awareness among farming community about the need for application of suitable amendments mainly in the form of organic matter for sustainable agricultural production.

3. Objectives of the Study

The present study has the following objectives

- To present the quantities of vermicompost produced in India
- To analyse the trend in the production of vermicompost.
- To suggest policies for the further increase in the production of vermicompost.

4. Methodology

This study is based on secondary data. The details regarding the quantities of vermicompost produced, were obtained from the Statistics of National Centre of Organic Farming, Department of Agriculture and Cooperation. The data analysed in the present study belongs to the period of 2007- 2010. Trend analysis has been employed to present the trend percentages of the data.

5. Significance Of The Study

Vermicompost among the various organic manures, the compost produced by using earthworms is the significant one from the point of total nutrition it provides to the plant. Vermicompost not only helps to improve and protect fertility of top soil, but also helps to boost productivity by 40 percent at 20 – 60 percent lower nutrient inputs. It also enhances the quality of end products and keeping quality on storage. These effects have a significant impact on market price as it increases the storage time between harvesting and marketing. Continuous use of Vermicompost over the years has also resulted in reduction of pests and disease problems, besides building resistance in plants to pests and diseases (R.Varalakshmi et al 2012). Thus with various benefits of vermicompost and its wide use as an organic input, it becomes essential to study the production of vermicompost across the country.

6. Vermicompost Production in India

Recycling organic wastes through vermiculture biotechnology is being considered as an economically viable solution. This innovative discipline of vermiculture biotechnology, the breeding and propagation of earthworms and the use of its castings has become an important tool of waste recycling the world over. Vermicomposting facilities have already entered domestic and industrial marketing in countries like Canada, USA, Italy and Japan. However, most of the work on vermicompost in India is under un- organized sector. Therefore, it is now time for our country to think about vermiculture technology in organized sector commercially. The table below shows the production of vermicompost in various states of India.

Sl. No	Name of the states	Production and availability		
		2007-2008	2008-2009	2009-2010
1.	Andhra Pradesh	1,00,000	1,10,000	1,00,000
2.	Arunachal Pradesh	1,000	1,200	1,400
3.	Assam	25,000	nil	45,000
4.	Bihar	14,000	nil	2,00,000
5.	Chattisgarh	66,600	3,00,000	78,200
6.	Goa	1,000	12,000	9,48
7.	Gujarat	50,000	80,000	80,000
8.	Haryana	73,000	nil	nil
9.	Himachal Pradesh	65,000	4,31,000	5,50,000
10.	Jammu and Kashmir	25,000	3,000	2140
11.	Jharkhand	41,000	nil	nil
12.	Karnataka	13,56,000	4,21,000	4,42,000
13.	Kerala	4,16,000	40,00,000	55,00,000
14.	Madhya Pradesh	nil	nil	nil
15.	Maharashtra	1,07,000	17,000	17,000
16.	Manipur	nil	nil	nil
17.	Mizoram	300	300	1000
18.	Nagaland	nil	nil	nil
19.	Orissa	13,900	30,000	45,000
20.	Punjab	15,000	17,000	56,000
21.	Rajasthan	2,48,000	nil	nil
22.	Sikkim	50,000	nil	nil
23.	Tamil Nadu	40,000	35,000	50,000
24.	Tripura	nil	nil	nil
25.	Uttarpradesh	83,000	1,08,000	1,30,600
26.	Uttarkhand	1,50,000	14,300	16,500
27.	West Bengal	1,55,000	nil	56,000
	Total	30,95,800	55,79,800	73,72,000

Table 1: Production and Availability of Vermicompost During the Year 2007-2010

Source: Ncof.Dacnet.Nic.In

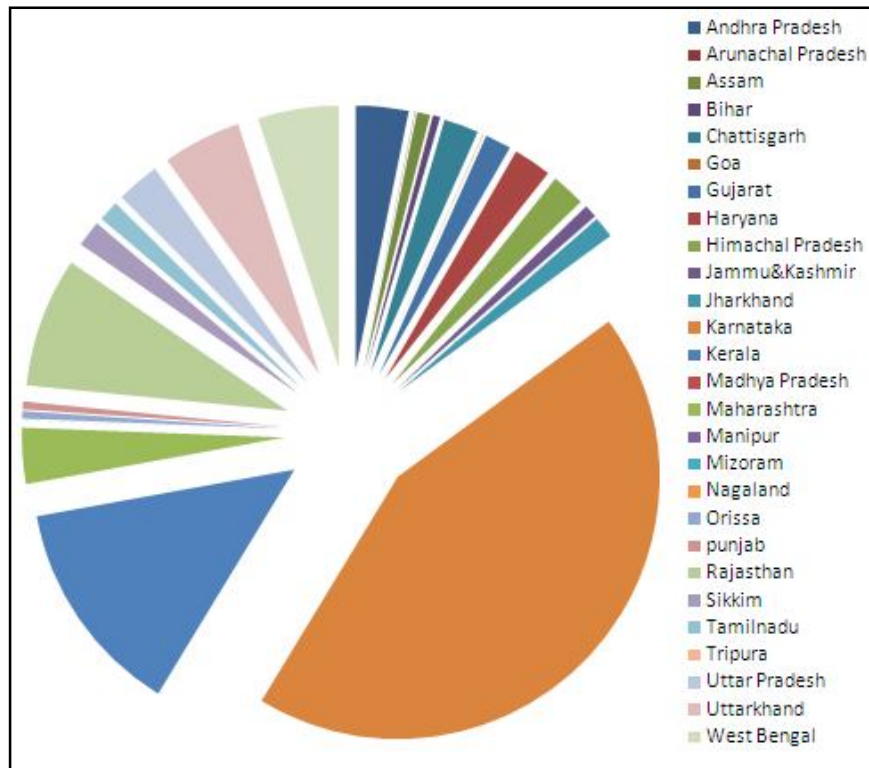


Chart 1: Production of Vermicompost during 2007-2008

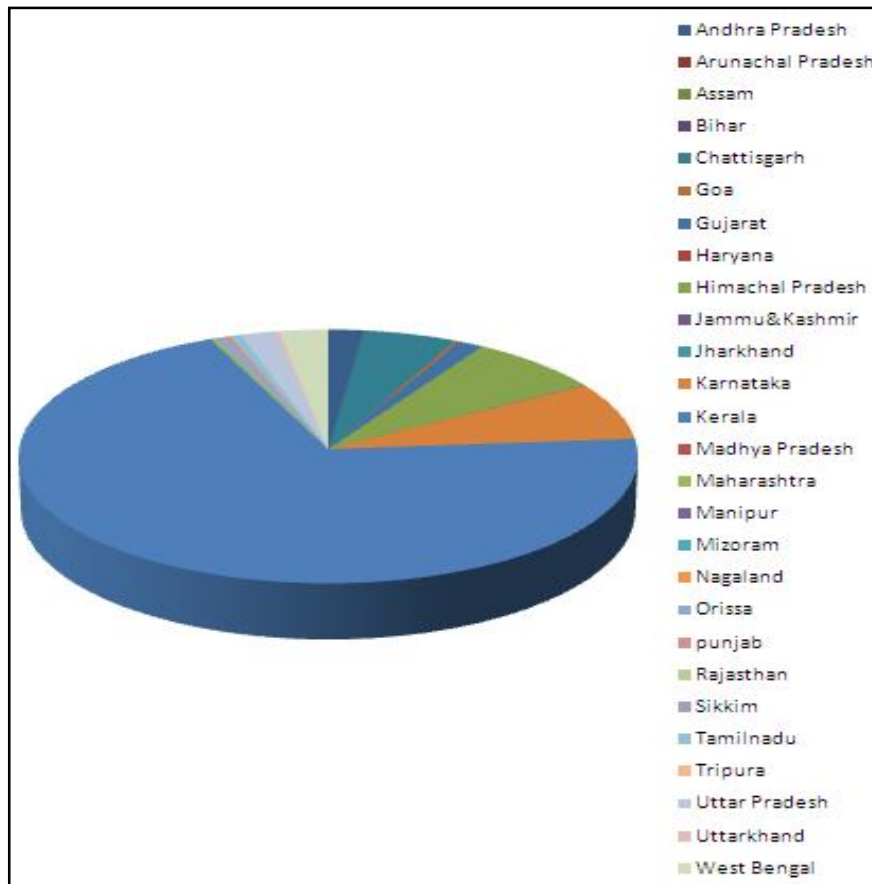


Chart 2: Production of Vermicompost during 2008-2009

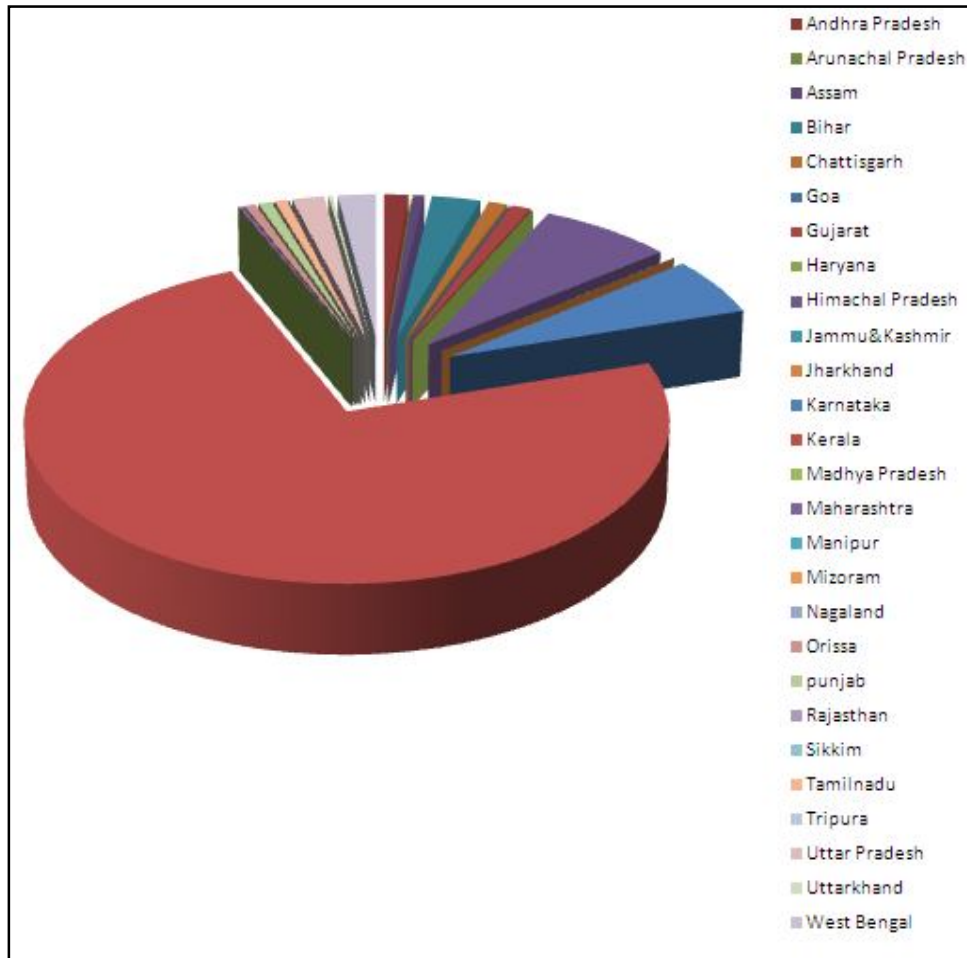


Chart 3: Production of Vermicompost during 2009-2010

S.No	Name of the states	Production and availability					
		2007-2008	Trend Percentage	2008-2009	Trend Percentage	2009-2010	Trend Percentage
1.	Andhra Pradesh	1,00,000	100	1,10,000	110	1,00,000	100
		1,000	100	1,200	120	1,400	140
2.	Arunachal Pradesh	66,600	100	3,00,000	450	78,200	117
3.	Chattisgarh	1,000	100	12,000	1200	9,48	94.8
4.	Goa	50,000	100	80,000	160	80,000	160
5.	Gujarat	65,000	100	4,31,000	663	5,50,000	846
6.	Himachal Pradesh	25,000	100	3,000	12	2140	8.56
7.	Jammu and Kashmir	13,56,000	100	4,21,000	31	4,42,000	32.5
8.	Karnataka	4,16,000	100	40,00,000	961	55,00,000	1322
9.	Kerala						

10.	Maharashtra	1,07,000	100	17,000	15.8	17,000	15.8
11.	Mizoram	300	100	300	100	1000	33.3
12.	Orissa	13,900	100	30,000	215	45,000	324
13.	Punjab	15,000	100	17,000	113.3	56,000	373.3
14.	Tamil Nadu	40,000	100	35,000	87.5	50,000	125
15.	Uttarpradesh	83,000	100	1,08,000	130	1,30,600	157.3
16.	Uttarkhand	1,50,000	100	14,300	9.53	16,500	11

Table 2: Trend Percentage of Vermicompost Produced

Here, for the application of Trend analysis, the first year, 2007-2008 has been taken as the base year. With the use of Trend Percentage it is quite clear that the production of vermicompost in various states has been increasing during the selected period. However, the decreasing trend has also been spotted in certain states. The states for which the data is not available has not been mentioned in the above table. Kerala has been on an increasing trend with the production of Vermicompost, registering a production of 40,00,000 tonnes and 55,00,000 tonnes in during the year 2008-2009 and 2009-2010, compared to 4,16,000 tonnes during the year 2007-2008. Himachal Pradesh, Orissa, Punjab and Uttar Pradesh have also been on an increasing trend registering an impressive growth. The overall production quantities also increased in the years following the base year.

7. Suggestions to Improve the Productivity of Vermicompost

There is still a need to create an awareness among the Producers with regard to the techniques adopted in the production of vermicompost. The consumers too, must be trained to use the vermicompost, as their proper application ensures the right use of the product.

The producers of vermicompost must be guided regarding the various subsidies offered by the Government and other financial institutions for promoting the vermiculture.

In order to increase the export potential of the product, the Government should take up initiatives to promote the export activities of vermicompost produced.

There is also a dearth of proper regulated marketing channels for the produce, hence the marketing channel must be regulated to ensure hassle free marketing of vermicompost.

The significance of vermicompost and its effect on the yield of plots must be made known to all the farmers and agriculturists at large, so as to ensure their regular use of the product.

8. Conclusion

Thus, the above facts presents an overview of the vermicompost produced in the various states. Vermicompost, the miracle manure has enough potential to lead the way in organic farming. With the organic food, gaining momentum across the globe, vermicompost as an organic input has much greater role to play in the production of organic food. By taking adequate measures to improve the productivity of vermicompost, India can compete in the global arena, where there is a great demand for vermicompost. To conclude, with timely measures and subsidies from the Government the producers can tap the untapped markets of vermicompost.

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