

VERMICOMPOSTING - A PROFESSION OF YOUTH

: A SUCCESS STORY

Krishi Vigyan Kendra
ICAR- Indian Veterinary Research Institute
Izatnagar- 243 122

Prateek Bajaj, a young boy of 21 years old with the urban background, who has just completed Bachelor of Degree in Commerce, is one of the known face among the youth and farmers in agriculture based entrepreneurship development in Bareilly District of Uttar Pradesh. His love for nature and soil has tickled his mind towards the idea of vermicomposting as a profession of his life. He dreamt to be a well known entrepreneur in agriculture. He first came to know about vermicomposting while attending a training in dairying at Krishi Vigyan Kendra, IVRI Izatnagar in 2015. He was very much surprised to see the utilization of dung and waste of dairy in different form at Krishi Vigyan Kendra. This training had aroused an interest in him to take up the venture for utilizing the dung and waste of his elder brother's dairy farm, who he was giving the dung free of cost, earlier, to others.



Mr Prateek Bajaj- a young entrepreneur

His Beginning

Although, Mr. Prateek thought to start the dairy as a profession, but at such a tender age investing a lot was considered risky by his family, so he finally decided to start his work on the project of vermicomposting which involved minimum investment. Mr. Prateek after completing the training on dairying at KVK-IVRI, he had started his regular informal visit to learn about the vermicomposting unit at KVK. He used to come at 10:00 AM in KVK and whole day he used to observe the process of vermicomposting and had interaction with the subject matter specialist of KVK. Collecting the relevant information from the KVK, he has built the confidence in himself and started to work in his own project on converting the dung and waste materials of dairy into useful manure. Initially, it took him 3.5 months in preparation of vermicompost.



Interaction with KVK's team

IVRI-another home

He first started visiting KVK demonstration farm and keenly watched the whole procedure from the beginning of bed formation to timely watering and finally obtaining the vermicompost. For any doubt he directly contacted the SMS of KVK. He has also joined the WhatsApp group of KVK and kept on post his queries and experiences about the vermicomposting.

The experimentation

After acquiring all relevant information and gaining the knowledge he had started this venture on pilot basis to judge its feasibility and net return. He started his vermicompost unit in June 2015. He built vermicompost bed of 10x3 feet width with 1 feet height using moisture

absorbing bricks in a shedded area which is open from all sides. He filled it with 10 quintals of manure waste and added 8 kg of *Eisenia foetida* species of earthworm, which he bought @ Rs. 200/kg from KVK-IVRI, Izatnagar. About one kg of earthworms were applied for the size of one square meter of vermicompost bed. The beds were maintained at about 40-50% moisture content and a temperature of 20–30⁰ C by sprinkling the water over the beds. He kept a thermometer in the bed to measure the temperature of vermicompost for regulating the temperature. He sprinkled water in 8 to 10 days for maintaining the moisture. He got his first vermicompost in 100 days.

Innovations

Mr. Prateek is very enthusiastic about his new enterprise, he is continuously searching the new ways for improving his vermicomposting unit. He learnt various methods to prepare the vermicompost in more efficient and economical way like shifting to rhino vermin bed and use of press mud with the dung. He is also mixing the leaves and seeds of neem and used flowers as a waste material in vermicompost.

Methods of Vermicomposting

He is practicing the following methods of vermicomposting

1. Rhino Vermi Bed Method

Rhino vermicompost beds are made up of Polyethylene Net Window with One Netted Outlet at the bottom of the bed. After using rhino beds for vermicomposting he found this method better in comparison to the vermicompost bed made with bricks. Since, this method retains the moisture for longer time which saves the time and manpower for sprinkling the water. Further by this method the vermicompost is obtained of very fine quality and all the dung get converted into composted and rhino bed method is very easy to install and easy to carry/shift from one place to another.



Rhino Vermi Bed Method of Vermicomposting

2. Use of mud press, neem and waste flowers

He is applying the mud press, neem and used flowers of a temple in vermicomposting. Mud press is a solid residue, obtained from sugarcane processing mills before crystallization of sugar. Generally press mud is used as manure in India which is soft, spongy, lightweight, amorphous, dark brown to black coloured material. Vermicomposting of press mud is an efficient method of waste disposal, enabling recycling of organic matter. The organic substrates in solid waste can be biodegraded and stabilized by composting and the final compost products could be applied to land as the fertilizer; the chemical composition depends on cane variety, soil condition, nutrients applied in the field, process of clarification adopted and other environmental factors. According to his experiences, mixing the mud press along with dung, improved the quality of vermicompost.

3. Matka method

According to him, making the vermicompost in *Matka* (an earthen pot), provides perfect darkness and fine quality of vermicompost. This method maintains the moisture needed by the earthworms, for longer duration. In this experiment, he filled up one *matka* with 10 kg of mud press and added 300-400 g of earthworms. After 45-60 days he got very fine vermicompost which even not needed filtration, he is very happy with this result and is planning to follow this

method on large scale. Likewise he tried to prepare vermicompost from neem leaves and the used flowers of temple, these wastes are easily available and can be better used as vermicompost.



Vermicomposting by Matka Method

Vermiwash

Vermiwash is a liquid that is collected after the passage of water through a column of worm action and is very useful as a foliar spray. It is a collection of excretory products and mucus secretion of earthworms along with micronutrients from the soil organic molecules. Mr Prateek is also trying to harness this technology, he drill a hole at the base of the container to fix a tab to it. The sprinkled water percolates through the tunnels made by the earthworms in the beds and the water is collected at the end. He has also experimented vermiwash preparation by bucket method, separately. In a year, he has collected 50 litres of vermiwash which he has sold @Rs. 250/ litre to the farmers



Vermiwash

Expenditure and Return from the Vermicompost Enterprise

Initially he had started vermicomposting with the three bed by following flooring method. He made three beds each of 30x2 feet size, in which 10 quintals of dung with 10 kg of earthworm were used in each bed. Further, an expenditure of Rs. 700/- was incurred on miscellaneous item. In return, he got 6.5 quintal of vermin-compost, 17 kg of earthworm in a period of 2.5 months from one bed. Thus, from all the three beds he got 26 quintals of vermin-compost and 68 kg of earthworm which he had sold @ Rs. 5/kg and Rs. 200/kg respectively. He earned Rs. 41,600.00 from his enterprise which he had started after his first trial. All the work in his unit was done by himself to learn more and more in vermin-compost unit, hence no labour was hired by him.

Table: Expenditure and Return in Vermicomposting Enterprise

SI No.	Items	Quantity and price	Expenditure incurred (in Rs.) in a season (2.5 months)	Total return from one season (2.5 month)
Flooring Method				
1	Dung	10 quintal @Rs. 1/kg in size of 30x2 feet bed. He made 3 bed each of 30x2 feet size.	3000.00	Vermi-compost: 6.5 quintals. Sold @ Rs. 5/kg = Rs. 3250.00

2	Earth worm	10 kg in each bed @ Rs. 200/kg.	2000.00	Earth worm: 17 kg Sold @ Rs. 200/kg =Rs. 3400.00
3	Miscellaneous	Rs.700.00	700.00	Vermiwash: 15 litres Sold@ Rs.250/litre= Rs.3750.00
Rhino method: 10x4 feet size				
	Dung	10 quintal	1000.00	Vermicompost =6.5 quintals. Sold @ Rs. 5/kg = Rs. 3250.00
	Earth worm	7 kg	1400.00	Earthworm=12 kg Sold @ Rs. 200/kg = Rs. 2400.00
Total expenditure and return in a season (2.5 months)			Rs. 8100.00	Rs. 16050.00
Total expenditure and return in a year			Rs. 32400.00	Rs.64200.00

Marketing of Vermicompost, Vermiculutre and Vermiwash

“YE-LO KHAAD”

Prateek started selling vermicompost under his tradename “YE-LO KHAAD”. He printed his pamphlets and visiting card and distributed among farmers, plant nurseries etc. He is receiving more number of orders than the amount he can supply and in view of perspective of this enterprise he has the plan to expand the vermicompost unit at larger scale.



Marketing of Vermicompost

His Vision:

On the basis of the demand of vermi based compost, earthworm and vermiwash in the area and the perspective of vermicompost, he has bought 7 bighas of agricultural land for expending his vermin-compost enterprise in Pardholi village, close to a national highway, in Bareilly district. He has constructed 20 vermicompost bed of 30x4 feet size. He will further expend the *Matka* method of vermin-composting. Adding all the expected expenditure, he will have the turnover of Rs. 5 lakhs from his vermicompost enterprise in a year. His vision is to form the group of unemployed rural youth and give them a platform to adopt the vermicompost enterprise.



Expansion of Vermicompost Unit by Mr. Prateek Bajaj

Inspiring others

Mr. Prateek is not only confined to his own vermicompost based enterprise but he is also inspiring others to take up vermicompost as a commercial venture. Mrs. Pramila from Khargaina, inspired by him, has started vermicomposting, she contacted him and learnt the process, now she has her own set up of vermicompost. He has also guided a Noida based fellow who has started his vermicomposting. Having the professional experiences in vermicompost, he often shares his experiences and delivered the lectures to the trainees at Krishi Vigyan Kendra-IVRI Izatnagar.



Exhibition stall of vermicompost product putting up by Mr Prateek Bajaj during different occasions

Mr. Prateek Bajaj has all qualities of an entrepreneur and at such a young age and in very less time he has achieved a marvelous success in vermicomposting.. Because of the growing demand and acceptance of vermicompost in farming community, vermicomposting has become a quite popular as a profitable enterprise.

The major problems experienced by him, in the beginning, were increased temperature of compost pit that caused heavy mortality in the earthworm which was happened because of lack of experiences in vermicomposting. He further stated that many times the foreign ingredients in dung hamper the proper conversion process of dung into compost. Gaining experiencing on the basis of learning by doing and on the advisories of KVK's SMS, he keeps improving his vermicompost unit. Now he is producing the fine quality of vermicompost which has high demands among the farmers specifically among the vegetable farmers and in plant nurseries in Bareilly district. He is receiving supply order not only from the district of Uttar Pradesh but also from Uttrakhand.