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Turning waste into wealth

Success story of a vermicomposting venture

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Jagdeep Singh, a farmer from Bathinda, Punjab, transformed his 2 acre ancestral land into a thriving vermicomposting business. Starting in 2014 with just 4 vermibeds, he expanded to 208 beds by 2023, producing 3,120 quintals of vermicompost annually and earning ₹22.27 lakh per year. With support from Punjab Agricultural University's Krishi Vigyan Kendra, he implemented innovative practices like a self-installed sprinkler system and cucurbit plants for shade. His brand, 'Harpreet Organic Manure,' gained recognition across Punjab and neighbouring states. This venture uplifted his family's standard of living, created rural jobs, and inspired others to adopt sustainable farming practices, showcasing how resilience and innovation can drive community development and environmental sustainability.

Keywords: Krishi Vigyan Kendra, Punjab, Vermicompost

Jagdeep Singh, a 32-year-old farmer from Village Rama Mandi, Block Sangat, District Bathinda, always had a deep connection to the land. In January 2014, alongside his conventional farming on 2 acres of ancestral land, he ventured into vermicomposting. Despite only completing his matriculation, Jagdeep's passion for nature and soil led him to pursue vermicomposting as a profession.

Challenges and early struggles

With limited landholding, Jagdeep's family was cautious about heavy investments, pushing him to start with minimal resources. Initially, despite having adequate technical knowledge, he faced challenges such as identifying the right earthworm species, maintaining moisture levels, and controlling compost pit temperatures. However, his fortunes took a turn for the better when he began visiting the PAU Krishi Vigyan Kendra (KVK), Bathinda, marking a pivotal moment in his journey.

KVK interventions

Jagdeep and his father started visiting the PAU-KVK demonstration farm towards the end of 2013, closely observing the entire vermicomposting process, from bed preparation to obtaining the final compost. For technical guidance, he directly contacted KVK scientists and joined their WhatsApp group to share queries and experiences. Armed with the necessary knowledge, he initiated his venture on a pilot basis in 2014, starting with 4 vermibeds, each measuring 30 ft × 4 ft × 1 ft. Despite facing social and economic constraints initially, he persevered and now manages

PAU-KVK Bathinda team of experts at Jagdeeps' farm

Jagdeep (right) with his father showing products of his farm

Table 1. Economic analysis of Jagdeep's vermicomposting unit

Particular	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
No. of beds (30 × 4 feet)	4	12	20	35	60	90	118	138	164	208
Vermicompost (Quintals/ Year)	32	120	250	437.5	780	1260	1652	2070	2460	3120
Earthworm culture (Quintals/ Year)	0	0	0	0	0.7	1.5	2.2	4.5	8.4	14.7
Annual gross cost (₹ in Lakh)	0.12	0.36	0.7	1.4	2.7	4.5	5.9	6.9	8.2	10.4
Annual gross income (₹ in Lakh)	0.19	0.72	1.75	3.06	6.29	10.2	16.69	21.15	25.44	32.67
Annual net income (₹ in Lakh)	0.072	0.36	1.05	1.66	3.59	5.7	10.79	14.25	17.24	22.27
Benefit: Cost ratio (BCR)	1.60	2.00	2.50	2.19	2.33	2.27	2.83	3.07	3.10	3.14

180 vermibeds, selecting the *Eisenia foetida* species of earthworm.

Expansion and innovation

Enthusiastic about his new enterprise, Jagdeep continuously sought ways to improve his vermicomposting unit. He experimented with various methods to prepare more efficient and economical vermicompost, including mixing neem leaves and seeds. KVK supported him by providing opportunities to showcase his products at various *Kisan Melas*, aiding in proper labeling and packaging to attract customers. Encouraged by KVK experts, Jagdeep expanded his vermicompost unit on 3 acres of land. He also began selling earthworms to various districts of Punjab, expanding his reach and impact.

Innovative solutions

Over time, Jagdeep's vermicompost business grew significantly. He constructed a suitable structure for packing and storing his vermicompost, which now allows him to store over 100 quintals and park his machinery. Despite having a matriculation education only, Jagdeep's creativity shone through in his approach to maintaining moisture content in his vermicompost beds, which are covered with paddy straw. After contacting private companies for sprinkler system installation and finding it too expensive, he resourcefully installed the system himself, saving money in the process. Initially, Jagdeep used shade nets to cover vermicompost beds. However, severe winds and hailstorms caused significant damage to these nets. He then had the bright idea to grow cucurbits to shade the beds. This not only provided effective cover but also allowed him to grow and sell organic vegetables, boosting his revenue.

Jagdeep (right) with his loving mates 'the earthworms'

Outcome

In 2022, Jagdeep produced 2,460 quintals of vermicompost, earning a net income of ₹17.24 lakh annually. By 2023, with 3,120 vermicompost beds, his annual net income increased to ₹22.27 lakh. The production of vermicompost increased from 32 quintals in 2014 to 3,120 quintals in 2023. This substantial increase in production showcases the effectiveness and growth of his venture over the years.

Change in livelihood status

Jagdeep's venture into vermicomposting significantly enhanced his livelihood. He expanded his dwelling from 50 × 70 feet to 110 × 140 feet, increased his landholding from 2 acres to 3.5 acres, and grew his livestock from 2 cows

to include 2 additional buffaloes.

Table 2. Change in livelihood status of Jagdeep after adopting vermicomposting

Particular	Pre-adoption	Post-adoption
Dwelling	50 × 70 feet	110 × 140 feet
Land holding	2 acres	3.5 acres
Cattle	2 cows	2 cows 2 buffaloes
Machinery and Infrastructure		
Sieving machine	1 (40 q / day capacity)	1 (40 q/day capacity) 1 (180 q/day capacity)
Packing machine	1	5
Tractor	1 Eicher	2 (1 Eicher +1 Ford 3600)
Trolley	1 (6.5 × 11 feet)	2 (6.5 × 11 feet)
Packaging and storage shed	Nil	30 × 50 feet
Vehicles	1 Two wheeler 1 Four wheeler (car)	3 Two wheelers 2 Four wheelers (cars) 1 Pickup truck 1 Tata 710 truck
Employment generation	1 persons	11 persons

Marketing and branding

Jagdeep branded his vermicompost as 'Harpreet Organic Manure'. To enhance his customer range, he distributed pamphlets and visiting cards to farmers and plant nurseries. The demand for his product soon exceeded his supply capacity, prompting further expansion plans.

Improved standard of living

Jagdeep's vermicompost business significantly improved his family's standard of living. Previously, he could not even consider sending his daughter to a private school. Now, thanks to his successful venture, he can provide her with a top-notch education. His increased income allowed him to upgrade from one old car in 2014 to two cars this year. His achievements have been recognized by numerous organizations.

His family's living conditions have seen remarkable improvements, moving from a modest dwelling to a larger, more comfortable home. The increased income has enabled better educational opportunities for his children and a substantial improvement in their overall quality of life.

Inspiring others

Jagdeep's success has inspired many others to take up vermicomposting as a commercial venture. He has guided several farmers in setting up their own vermicompost units. One such farmer, Manpreet Singh, inspired by Jagdeep, established his own vermicomposting setup. Jagdeep has also mentored individuals from Gurdaspur and Hoshiarpur, sharing his experiences and delivering lectures at KVK Bathinda to trainees interested in vermicomposting.

Farmers from Punjab, Rajasthan, Jammu & Kashmir, Haryana, and Himachal Pradesh place orders with Jagdeep for vermicompost and earthworms. He has created jobs for more than ten men, helping rural young farmers earn additional income and become self-sufficient.

CONCLUSION

Jagdeep Singh's journey exemplifies the transformative impact of vermicomposting. He has improved his livelihood, enhanced soil health, and preserved important soil microorganisms. His high-quality products are in demand among local district farmers, NGOs, and nurseries. By urging others to produce high-quality vermicompost on their farms, Jagdeep is helping the farming community thrive. His story is a testament to the potential of sustainable agricultural practices to inspire and empower others.

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