

Buzzing beyond honey

How diversification and processing are transforming beekeeping

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Beekeeping has evolved from a traditional honey-centric practice into a multifaceted enterprise, thanks to innovative approaches in product diversification and value addition. This case study chronicles the journey of Jagtar Singh, a progressive beekeeper from Punjab, who transformed his subsidiary beekeeping occupation from a modest honey and wax production unit into a thriving enterprise producing diversified products such as pollen, pollen-based beverages, and beeswax-based creams and soaps. Guided by technical support from Punjab Agricultural University, Ludhiana and Krishi Vigyan Kendra, Bathinda, Jagtar acquired advanced training, adopted processing techniques, and sustainable practices to innovate and expand his operations. His emphasis on branding, retailing, and quality enhancement has enabled him to improve profitability and resilience in the face of challenges like fluctuating hive numbers and market dynamics. By moving beyond honey, this inspiring story highlights the immense potential of value addition and product innovation in beekeeping to foster rural prosperity and entrepreneurship.

Keywords: Agricultural Entrepreneurship, Beekeeping, Bee Pollen, Rural Livelihoods, Value Addition.

SUBSIDIARY occupations like beekeeping play a vital role in enhancing farm income and providing sustainable livelihood options for rural families. Mr. Jagtar Singh, a 43-year-old progressive farmer from the village Mandi Khurd in Bathinda district of Punjab, exemplifies this with his remarkable journey in beekeeping. Educated up to the 12th class and owning 3

acres of land, he started with just 10 bee hives in 2002 and has grown his enterprise to an impressive 350 hives. His journey in agricultural entrepreneurship exemplifies how dedication and expert guidance can transform a small venture into a thriving, innovative business model.

Early challenges, motivation, and role of extension institutes

Initially, Mr. Singh focused solely on honey and wax production, producing around 300 kg honey annually, which earned him a modest income. By 2015, although maintaining 300 hives, his earnings remained limited as he sold honey primarily in wholesale markets. His turning point came under the guidance of Punjab Agricultural University (PAU), Ludhiana, and Krishi Vigyan Kendra (KVK), Bathinda. Their mentoring inspired him to diversify his product range and add value to his produce.

Determined to expand his knowledge base, Mr. Singh took a



Jagtar Singh, with his loving mates, 'the bees'

series of training courses—starting with basic beekeeping at PAU in 2007 and advancing through specialized training at the Central Bee Research and Training Institute, Pune, Maharashtra in 2014. These training sessions, coupled with encouragement from PAMETI, Ludhiana, equipped him with the technical know-how to diversify his enterprise. Their technical support, motivational programs, and



Sh. Jagtar Singh

guidance in value addition, brand-building, and market strategies were instrumental in helping Mr. Singh's transition from conventional beekeeping to a diversified and successful business model.

Moving beyond honey and wax

With PAU scientists' encouragement, Mr. Singh shifted focus from solely honey and wax production to diversified products. By processing bee pollen, he significantly enhanced his income. Selling raw bee pollen at ₹450/kg initially, he began processing it into packaged forms fetching ₹1250/kg. He also introduced bee pollen powder priced at ₹2000/kg, greatly boosting his profitability.

In 2018, he innovated further by introducing a bee pollen, honey, and fruit pulp drink priced at ₹30 for a 200 ml bottle. Initially, shelf-life limitations posed challenges, as he avoided using chemical preservatives. However, adopting the pasteurization method—suggested by food technology experts at PAU—extended the drink's shelf life to six months. This innovation brought new demand from health-conscious consumers seeking natural, preservative-free options.

Impact and Growth

The economics of Mr. Singh's enterprise, over nine years (2016–2024), reflected a remarkable transformation. Starting with an expansion of bee colonies, he overcame significant challenges,

including natural adversities and disruptions caused by the COVID-19 pandemic. By 2018, his colonies had peaked up to 416, demonstrating his commitment to efficient management and adaptation to evolving practices. Although the pandemic led to a temporary decline, reducing colonies to 333 by 2021, his resilience and improved management strategies enabled him to restore numbers to a stable 387 by 2024. This steady recovery underscored his ability to navigate uncertainties and maintain operational stability. Similarly, honey production mirrored colony trends, peaking at 15,808 kilograms in 2018, before experiencing a COVID-19-induced decline to 11,025 kg in 2021.

Despite these setbacks, his strategic focus on retail sales enabled him to sustain income, with retail honey consistently contributing 40–43% of total production annually. Moreover, his decision to diversify the enterprise introduced new income streams through pollen-based products, reflecting his visionary approach to business expansion. Bee pollen production surged from an initial 8 kg in 2016 to over 200 kg in recent years, driven by his foresight in tapping into a growing market for natural health products. The introduction of the innovative bee pollen drink further exemplified his entrepreneurial mindset, as demand for this product rose dramatically from just 20 liters in 2019 to a projected 643 liters in

2024. Financially, his enterprise exhibited robust growth, with gross income increasing steadily from ₹30.87 lakh in 2016 to ₹30.93 lakh in 2024. Throughout this period, his enterprise maintained a consistently high benefit-to-cost ratio (hovering around 2.0), indicating not only profitability but also a clear understanding of resource optimization and market dynamics. This combination of product innovation, financial acumen, and resilience in overcoming challenges highlights the transformative journey of Mr. Jagtar Singh's beekeeping enterprise, setting a precedent for rural entrepreneurship and agricultural sustainability.

Achievements and recognition

Mr. Singh's hard work and innovative mindset have earned him multiple accolades. His dedication was recognized with the *Pravasi Bharti Award* in 2019 by PAU, Ludhiana. As the General Secretary of the Punjab Beekeepers Association, Mr. Singh regularly inspires fellow farmers by sharing his knowledge



Jagtar Singh receiving 'Pravasi Bharti Award-2019'



a. Honey



b. Creamy mustard honey



c. Bee pollen



d. B- Treat drink



e. Bee wax creams

Bee products marketed by Jagtar Singh under brand name 'B-Treat'

Table 1. Key economics of Jagtar's apiary

Particulars	2016	2017	2018	2019	2020	2021	2022	2023	2024
Colonies (no.)	396	400	416	407	359	315	355	321	387
Total honey production (Kg)	14256	14400	15808	14652	12565	11025	11715	10593	11223
Honey sold in wholesale (kg)	8553.6	8640	9484.8	8791.2	7539	6615	7029	6355.8	6733.8
Honey sold in retail (kg)	5702.4	5760	6323.2	5860.8	5026	4410	4686	4237.2	4489.2
Wax (kg)	74	70	85	69	60	73	70	75	80
Pollen (kg)	8	23	48	67	160	225	200	180	150
Pollen and honey drink (L)	0	0	0	20	55	150	340	500	643
Total cost (₹)	1568160	1728000	1817920	1684980	1444975	1267875	1347225	1218195	1515105
Gross income (₹)	3087540	3341000	3523010	3016454	2611935	2468950	2691365	2589210	3093650
Net income (₹)	1519380	1613000	1705090	1331474	1166960	1201075	1344140	1371015	1578545
B:C	1.97	1.93	1.94	1.79	1.81	1.95	2.00	2.13	2.04

at PAU Kisan Melas. Additionally, he leads entrepreneurial events like *Mela Jagde Jugnuan Da* to foster rural innovation and networking.

Further enhancing his impact, he founded "B Treat Natural Products Pvt. Ltd." in 2019, leveraging the PAU brand name to launch diverse value-added products under the label *B Treat*. His journey reflects a blend of entrepreneurial skill and social commitment, as he also serves as a resource person at KVK, Bathinda, training aspiring entrepreneurs.

A model of agricultural entrepreneurship

Mr. Jagtar Singh's journey from 10 hives to 350 hives, offering diversified products like honey, beeswax, pollen, and pollen beverages, exemplifies how agricultural entrepreneurship transforms lives. By combining technical guidance, innovation, and determination, he has become a beacon of success, motivating other farmers in Punjab to explore beekeeping as a sustainable livelihood. His success underscores the potential of subsidiary occupations like beekeeping to boost

rural incomes, drive innovation, and promote sustainable practices.

Today, Jagtar Singh is not just a farmer but a visionary entrepreneur, showing how diversification and value addition can achieve remarkable success in agriculture. His efforts resonate with health-conscious consumers and eco-friendly entrepreneurs alike, symbolizing a bright future for the beekeeping industry in India.

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Textbook of *Field Crops Production* – Foodgrain Crops

(Volume I)

Textbook of
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TECHNICAL SPECIFICATIONS

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