

12 HONEY BEE FARMING



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1. INTRODUCTION

Beekeeping, a time-honored tradition in the hills of Uttarakhand, holds significant potential in the region due to its abundant flora and favorable climate. Uttarakhand government has launched the Maun Palan Yojana, aimed at encouraging self-employment among unemployed youth. As part of this initiative, the establishment of honey production units is mandated throughout the state, operating under the State Horticulture Mission of Uttarakhand. Under the Maun Palan Uttarakhand scheme, the state government extends substantial support by offering an 80% subsidy to young individuals engaged in honey production through beekeeping. This governmental backing not only provides a strong foundation for bee farming businesses but also ensures financial prosperity. Prospective promoters in Uttarakhand should seriously consider the potential and support offered by engaging in the bee farming industry in the state.

2. HONEY BEES OF UTTARAKHAND

The diverse flora and climatic conditions of Uttarakhand provide an ideal habitat for honey bee colonies. The first type is medium-sized, non-aggressive domesticated bee, *Apis Indica* which is primarily found in the Kumaon region of Uttarakhand. And another bee known for their low inclination to swarm and a strong pollen-collecting drive is *Mellifera* bee which is well-suited for large-scale honey production.

3. DESIRED QUALIFICATION FOR PROMOTER

To succeed in honey bee farming, a promoter should ideally possess knowledge and skills related to beekeeping. Qualifications may include formal education in agriculture, biology, or a related field. Practical experience in beekeeping, understanding of the local ecosystem, and business management skills are also crucial. Additionally, a willingness to undergo relevant training programs and staying updated on advancements in apiculture is essential.

4. BUSINESS OUTLOOK AND TRENDS

In Uttarakhand, the outlook for beekeeping extends beyond mere economic benefits for farmers; it serves as a catalyst for enhancing agricultural productivity through pollination. Despite the vast potential stemming from abundant flora and favorable climatic conditions, the utilization of traditional practices has led to a suboptimal yield of honey, both in terms of quality and quantity. It has been highlighted that in the hilly terrains of Uttarakhand, where agricultural land is scarce and holdings are small, beekeeping emerges as a significant avenue for economic prosperity. Unlike being a competitor to agriculture, beekeeping is positioned as a complementary and subsidiary venture. Even small farmers and landless individuals can engage in beekeeping, offering them a viable means of livelihood.

5. MARKET POTENTIAL AND MARKETING ISSUES; IF ANY

The market potential for entrepreneurs in Uttarakhand is significant, given that Indian honey market is experiencing rapid expansion, with the country boasting 19.34 lakh bee colonies. According to independent estimates, the honey industry is poised to witness an impressive cumulative annual growth rate of 10 percent from 2022 to 2027. This growth trajectory presents an opportunity for entrepreneurs and beekeepers to tap into a market that is still in its early stages of development. The market for honey and honey-based products in India holds immense promise for growth. For entrepreneurs in Uttarakhand, this presents a wide scope for establishing

beekeeping as a remunerative and sustainable enterprise. The climate of Uttarakhand further amplifies the region's potential as a hub for beekeeping. Entrepreneurs can leverage government initiatives, the growing demand for honey, and the untapped potential of the market to establish successful and profitable ventures in the apiculture sector in Uttarakhand.

6. BUSINESS INPUTS

The raw materials required for a stackable beehive include wooden hive bodies, frames with foundation sheets, inner and outer covers, a bottom board, and optional components like a queen excluder and a metal smoker. Bee feed and harvesting equipment like bee brushes and centrifuges facilitates honey extraction.

7. BEE KEEPING AND HONEY EXTRACTING PROCESS

Beekeeping with vertical wooden stackable frames involves the management of honeybee colonies within a structured hive consisting of vertically stacked boxes.

1. **Hive Configuration:** The hive is structured with multiple wooden boxes, or supers, that can be stacked on top of each other. The vertical design allows for efficient hive management and expansion.
2. **Brood Chambers:** The lower boxes, usually at the bottom of the hive, serve as brood chambers. These are dedicated to the queen for laying eggs and the development of bee brood (eggs, larvae, and pupae).
3. **Honey Supers:** Above the brood chambers, additional boxes, known as honey supers, are added. These provide space for the worker bees to store surplus honey. The vertical configuration allows for easy expansion as the colony grows.
4. **Frames with Foundation:** Each box contains frames with foundation sheets. Bees build comb on these frames, and the foundation provides a guide for uniform and organized comb construction. The frames are removable for inspection and honey extraction.
5. **Queen Excluder:** A queen excluder may be used between the brood chambers and honey supers. This is a barrier that prevents the queen from laying eggs in the honey supers, ensuring that these boxes remain reserved for honey storage.
6. **Regular Hive Inspections:** Beekeepers conduct regular hive inspections to monitor the health of the colony, check for signs of disease, ensure sufficient space, and assess honey production levels.

Honey Extracting Process:

1. **Harvest Timing:** Honey is harvested when the frames in the honey supers are capped, indicating that the bees have completed the honey-making process.
2. **Bee Removal:** Before extraction, bee brush or blower is used to gently remove bees from the frames.
3. **Uncapping:** An uncapping knife or fork is used to remove the wax cappings from the honeycomb. This exposes the honey for extraction.
4. **Honey Extractor:** The uncapped frames are put back in a honey extractor, a device that uses centrifugal force to spin the frames, extracting honey from the cells. The honey collects at the bottom of the extractor.

8. MANPOWER REQUIREMENT

Sr. No	Particulars	No.	No of month in year	Wages/Salaries per month (Rs. In Lakhs)	Annual Expense (Rs. In Lakhs)
1	Self-employed	1	-	-	-
2	Skilled Labour	1	12	0.15	1.8
3	Helper	2	12	0.12	2.88
	Total				4.68

9. IMPLEMENTATION SCHEDULE

Sr. No.	Activity	Time Required (in months)
1	Acquisition of premises	1
2	Construction (if applicable)	1.5
3	Procurement & installation of Plant & Machinery	2.5
4	Arrangement of Finance	1
5	Recruitment of required manpower	1
6	Total time required (some activities shall run concurrently)	3

10. COST OF PROJECT

Sr. No	Particulars	Annual Expenses (Rs. in lakhs)
1	Land	-
2	Building (Rented)	-
3	Plant & Machinery	0.00
4	Equipment and Furniture Exp.	2.85
5	Misc. Fixed Asset	0.02
6	Preoperative & Preliminary Exp.	0.05
7	Working Capital	0.47
	Total Project Cost	3.39

11. MEANS OF FINANCE

Bank-term loans are assumed @ 60%

Sr. No.	Particulars	Annual Expenses (Rs. in lakhs)
1	Promoter's contribution	1.36
2	Bank Finance	2.04
	Total	3.39

12. LIST OF MACHINERY REQUIRED

A. Furniture & Equipment

Sr. No	Particulars	Unit	Price per Unit (Rs. in lakhs)	Total Amount (Rs. in lakhs)
1	Tools & Equipment (honey extractor, bee venom collector, hive tools, knives, pollen trap, extraction kit, beekeeping brushes, iron hive tools, queen excluder, etc.)	-	0.80	0.80
2	Wooden boxes & Frames	50	0.04	1.75
3	Storage space	-	0.30	0.30
	Total Rs.			2.85

The availability of boxes and equipment from local manufacturers is a promising advantage for the entrepreneur. It is essential to carefully choose the right mix of products and suitable machinery and tooling to facilitate modern and flexible processes. Here are some of the suppliers of business equipments an entrepreneur can consider:

1. Arora Honey Bee Farms

Arora Honey Bee Farm,
V. P. O. Jethuwal Batala Road,
Amritsar-143502,
Punjab, India

2. Beeready Harvesters LLP

C/o Virendra Singh Rana,
Balawala, Dehradun-248001,
Uttarakhand, India

3. Tiwana Bee Farm

G. T. Road, Doraha,
Ludhiana-141001,
Punjab, India

13. SALES REALISATION

Sr. No	Product	Raw Honey Sales Realisation in Lakhs
1	Extracted & Raw Honey	16.20

**The Annual Total Honey Collection is 3000kgs of honey i.e. a monthly extraction of 250kgs of pure & raw honey.*

14. PROFITABILITY CALCULATIONS

The basis of profitability calculation:

Sr. No	Particulars	Annual Expenses (Rs. in lakhs)
A.	Sales realisation	16.20
B.	Cost of production	
i)	Raw materials	1.13
ii)	Utilities	0.20
iii)	Manpower Cost (Salaries/wages)	4.68
iv)	Administrative expenses	0.18
v)	Packaging Cost	0.01
vi)	Material Lost Cost	0.01
vii)	Selling & distribution expenses	0.90
viii)	Interest	0.23
	Total (B)	7.34
	Gross profit/loss (A – B)	8.86
	Less: Depreciation	0.43
C.	PBIT	8.44
D.	Income-tax	-
E.	Net profit/loss	8.44
F.	Repayment (Annual)	0.19
G.	Retained surplus (E-F)	8.24

15. BREAKEVEN ANALYSIS

(Rs. in lakhs)

Fixed cost	
Depriciation	0.43
Interest	0.23
Manpower	1.40
Total Fixed cost	2.06
Variable cost	
Raw materials	1.13
Utilities	0.20
ManPower	3.28
Administrative expenses	0.18
Selling & distribution expenses	0.90
Total Variable cost	5.69
Contribution margin	20%
Break-Even Point in Value	10.31

16. STATUTORY/GOVERNMENT APPROVALS

The Food Safety and Standards Authority of India (FSSAI) is the regulatory body responsible for ensuring food safety and standards in India. It is established under the Food Safety and Standards Act, of 2006, and governs all matters related to food, storage, distribution, sales, and import. Any entity operating a food business has to abide by the food safety rules and regulations and fulfill the legal requirements. Non-compliance with FSSAI regulations can lead to penalties, fines, and even closure of the business.

Besides an FBO license, a food processing unit has to secure and register a business under MSME. It also has to secure various types of licenses such as:

1. Trade License: This license is important for any food-related business. The local municipal authority gives it.
2. GST Registration: Registration under the GST is mandatory for any business with a certain turnover and is involved in the sales of goods including food products.
3. Other legal approvals include meeting with labeling compliance, local permits, and state-specific licenses if any.

2. TRAINING CENTERS AND COURSES

There are few specialized Institutes that provide degree certification in Food Technology, The most famous and authenticate Institutions are as follows:

1. FCI Institute of Management

11, Subash Road, Opposite Police HQ,
Dehradun, Uttarakhand, India

2. Food Industry Capacity & Skill Initiative (FICSI)

1, 3rd floor, Shriram Bharatiya Kala Kendra,
Copernicus Marg, Mandi House-110001,
Delhi, India

3. National Institute of Food Technology Entrepreneurship and Management

97, Niftem Rd, HSIIDC, Industrial Estate,
Kundli, Sonapat-131028,
Haryana, India

Swayam portal (link: <https://swayam.gov.in/>) can also be accessed for enhanced learning on business commerce, accounting, production, marketing, and areas of entrepreneurship.

Disclaimer

Only few machine manufacturers are mentioned in the profile, although many machine manufacturers are available in the market. The addresses given for machinery manufacturers have been taken from reliable sources, to the best of knowledge and contacts. However, no responsibility is admitted, in case any inadvertent error or incorrectness is noticed therein. Further the same have been given by way of information only and do not carry any recommendation.