

INFORMATION BOOKLET FOR BEGINNERS OF BEEKEEPING



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An Organisation of Ministry of MSME, Govt. of India and ISO 9001-2015 Certified
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Beekeeping for Beginners

Here we will get important pieces of information about Commercial Beekeeping in India which will surely help a beginner to start his apiary.

A beekeeper should start his venture early in the season, which means he should begin Honey Bee Farming at the correct time when honey bees will get full nectar from the flowers. If you began it too early where the bees do not get flowers, you will get no honey. So, the beginning of beekeeping early in the season is the right thing. Apiculture can be started in any season but generally, honey bees are fond of warm weather and that's why spring season is considered to be the right season to begin Apiculture as the flowering of plants also starts in his period.

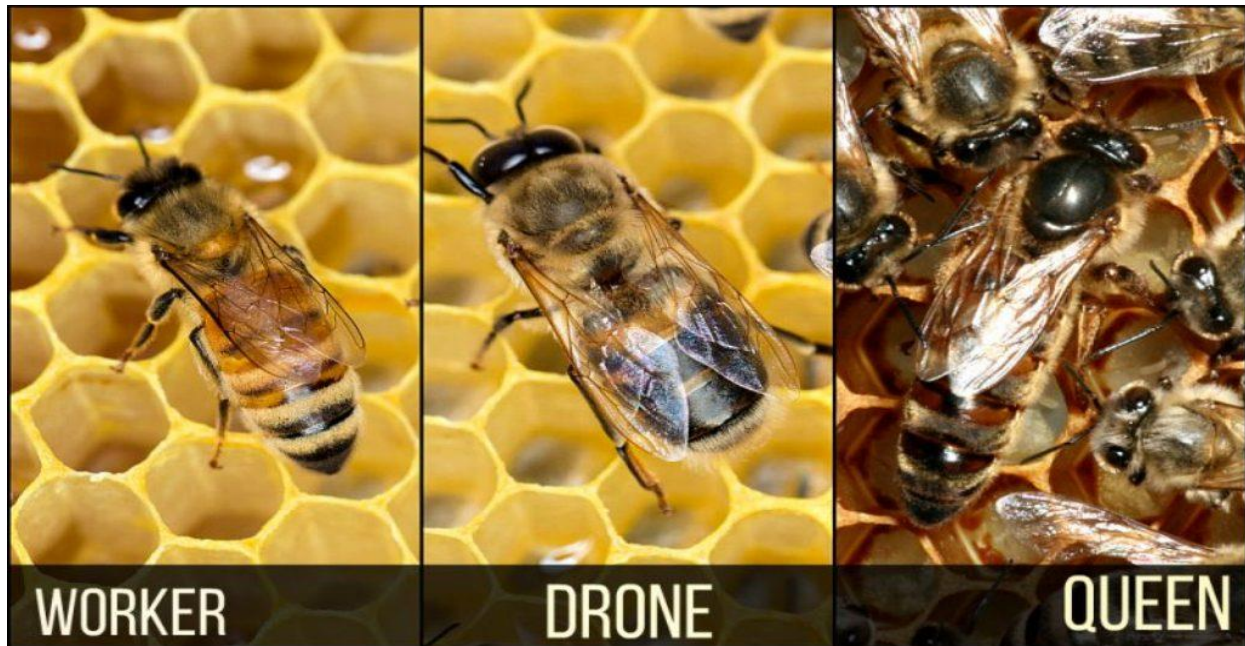


A beekeeper will require Beekeeping Equipment and honey bees for starting his Apiary. Buy good honey bees and start with a Nucleus colony. In the beginning, you should start with the least colonies, two honey bee colonies will be sufficient. After gaining experience, you can go for commercial beekeeping.

The beekeeper should inspect the Beehives once every 7-10 days. Do not make things complex in the beginning, keep it as simple as you can. In the end, watch the result and don't expect a high yield of honey in the first year. Continue practicing because till now

you had acquired valuable pieces of information from your first attempt and apply them on the second one. Don't worry you will surely get a better result next time.

Now, below you will get all the information about beekeeping in a detailed way. So, here is a complete guide of Beekeeping in India.



Bee Family

Bee Family

Honeybees are social bees and lives in hives or colonies which consists of three types of adult bees. One colony normally includes thousands of worker bees, a single queen, and hundreds of drones.

- The worker bees are female, but they do not breed. They are responsible for all other activities, such as taking care of the queen and her eggs, collecting nectar, building comb, guarding the hive and honey, keeping the hive clean, and producing honey.
- The queen bee is the only sexually developed female and her primary function is to lay drones (unfertilized eggs) and workers (fertilized eggs) for the colony.
- The drones are the male bees in the colony. Their main function is to fertilize the virgin queen by mating and die soon after successful mating.

For the survival of a colony, all three types of bees are extremely needed.

Where to get honey bees for beekeeping

No one can be a beekeeper without bees! So, here a question arises, where to get these bees to establish a colony for commercial beekeeping.

For a new or beginner beekeeper, purchasing bees is the simplest and most secure approach to begin an apiary. Here are some basic ways to get honey bees;

Buying Package Bees

To arrange a package of honey bees, one has to contact a local beekeeper or nearby beekeeping associations. The package will contain a queen, several worker bees, and a feeder loaded up with sugar syrup. The honey bee provider ought to give you information on installing the package honey bees into their new home and introducing the queen bee with the workers.

Buying Nucleus Hive

You can also go for a nucleus hive. Nucleus colonies or Nuc are small-sized colonies obtained from larger honeybee colonies. It is almost half-size of the larger colony and its normal size is a 5 frame nuc. The best alternative for the beginner is to search a local beekeeper who can sell his nucleus (nuc) colony of bees. Mostly a nuc contains four to five frames of combs with brood(baby bees) and bees and an actively laying queen. You have to only transfer the frames and bees from the nuc box into your own hive.

Catching Wild Bees from the Tree branches

Wild Bees can also be collected from those beehives which are on the tree branches by cutting the branch and gently shaking it inside a container. But it is very risky for beginners, it can only be performed under expert guidelines or by the expert himself. But free, not good every time, wild bees may have been infected with some diseases and can carry some genetic disorder with them, and it would be difficult to identify the queen bee among the crowd So, it is better to buy healthy and disease-free honey bees for better result.



Species of Honey bees in India

There are around 20,000 different species of bees in the world but only 7 of them are honeybees. And only five of them have commercial importance in India, they are as follows;

The rock bee (*Apis dorsata*)

These giant bees are larger Himalayan subspecies found all over India in sub-mountainous regions. Rock bees are brutal and hard to raise. They make a single comb (cells constructed from beeswax by bees) in an open area which is about 6 feet long and 3 feet deep. They produce about 36 Kg of honey per comb every year.

The Indian hive bee (*Apis cerana indica*)

They are the tamed species and do not build single comb, instead, they build different parallel combs with an average honey yield of 6-8 kg each colony per year. These honey bees are bigger than *Apis florea* (little bee) however littler than *Apis mellifera* (European or Italian bee). They are local in India and Asia.

The little bee (*Apis florea*)

These bees construct single vertical combs. They additionally build combs in open of the size of palm in branches of shrubberies, supports, structures, caverns, void cases, and so on. They produce about half a kg of honey each year per hive.

The European or Italian bee (*Apis mellifera*)

Same to Indian bees, European or Italian bees also construct parallel combs and are bigger than all other honeybees except the rock bees. The normal production of honey per colony is 25-40 kg every year. They have been imported from European nations (Italy).

Dammer bee or stingless bee (*Tetragonula iridipennis*)

The stingless bees are a lot littler than the real honey bees and have significance in the pollination of different food crops. They can be tamed but the honey yield per hive every year is just 100 gms.

Beekeepers can domesticate any of these species in their artificial hives but in India most commonly used species for commercial purposes are Indian Bee and Italian bee. Indian bee farmers tamed these for getting the high yield of Honey Production as well as other cherished products such as royal jelly, beeswax, propolis or bee glue, bee venom, bee pollen, etc.



Beekeeping Equipment

Equipment Needed for Beekeeping

Hives

The hive is the man-made structure used by beekeepers for keeping honey bees. It is usually made of wood, however, it can also be made of plastic, polystyrene, or any other material. The normal and regular size for a deep hive body is 19 7/8" long, 16 1/4" wide and 9 5/8" in height. A deep hive body turns heavy when loaded with bees, honey, and pollen. So most of the beekeepers use the medium size super for hive bodies.

Frames

Frames are of rectangles shapes that hang within a hive-like a filing system. The honey bees will construct their comb within these frames. This is the place they will make honey, lay brood, and live their lives continually planning for winter.

Protective clothing:

Bee veil

Bee veil is the most important equipment for beekeepers, He wears it over the head to protect his face and neck from the stings of bees while taking honey or inspecting the hive. A beekeeper should wear a bee veil consistently to shield his face and neck from stings. Three basic types of veils are available in the market. First are those that are open at the top to fit over a hat, second is totally hatless veils and third veils that form part of a honey bee suit.

Bee Suit

A wide variety of bee suits are available in the market for the beekeepers in a wide price range. White or tan clothing is most suitable when dealing with honey bees. Different colors are also worthy, but honey bees respond adversely to the dark hues, fluffy materials, and garments made from animal fiber.

Gloves

Gloves are another essential and inexpensive tool for beekeeping. It protects your hands from bee stings. Without wearing gloves one can't even imagine touching the hive. So while purchasing gloves make sure that the gloves should be made of sturdy material.

Shoes

Shoes are also an important part of beekeeping. It is necessary to cover yourself properly from top to bottom before digging the hive. So the beekeeper needs to wear boots which should belong in the leg, easy to tuck in the bee suit, made of hard material with strong soles too.

Smoker

The bee smoker is an essential piece of a beekeeper's toolbox. Without the smoker, beekeepers would endure a lot more stings during a hive investigation. These simply designed smokers are used to calm bees when the beekeeper has to work in the hive. The smoke produced by the smoker persuades honey bees that their hive is on fire. The honey bee's normal reaction is to get ready for a possible migration. They start consuming honey so they will have food stores if their break venture is long. The high consumption of honey leaves the honey bees in fairly a food extreme lethargies which leaves them torpid.

Hive tool

A hive tool is also an essential, low priced, and multipurpose tool that is used in maintaining and investigating apiaries. It is available in different variations and styles. It is considered as the third most necessary tool for the beekeeper after the beekeeping veil and bee smoker.

Queen Catcher

A queen catcher is a handy and convenient tool used to separate the queen for a while from the bee crowd.

Feeders

A feeder is a vessel or apparatus used by beekeepers to feed pollen, honey, or substitutes like a mixture of sugar and water to the honey bees of a colony. In some of the seasons when things either have stopped sprouting or are standing by to blossom. At this time your honey bees will require you to assist them with enhancing their food supply.

Bee Brush

Bee brushes are used to separate the bees from the honey frames. After evacuating the frame, shake it to unstick the majority of the bees and afterward use the bee brush delicately, and brush over the rest of the honey bees from the frame.



Honey Bee Products with their Average Market Price

However, most of us may even not know that honey is not the only thing that honey bees produce. Besides honey bee, farmers get various other products by honey bees such as Bee Wax, Royal Jelly, Propolis or bee glue, Bee Pollen and Bee venom. All these products are very beneficial for humans and highly-priced in the market. Let's take a short view on these products and their market value;

Honey

India's most trusted brand Dabur sells honey at the price of Rs 395 per Kg, Baba Ramdev's Patanjali honey costs Rs 275 per kg, Apis Himalaya honey sells 2 kgs honey at just Rs 366 and so on. Only some organic honey costs high but mostly available under 1000 Rs in market or e-commerce sites.

Bee Venom

Being a natural product with a high medicinal value Bee venom's costs from Rs 10,000 to Rs 12,000 a gm in Indian markets. However, if the bee venom is of very high quality, its

price can vary, depending upon the cost of production, packaging, manufacturers' expenses, analysis price, dealer's commission, etc.

Bee Wax

Beeswax is a real organic wax created by honey bees. Its average price in the market is Rs 300 to 350 per kg. It is eatable too. It is used as a lubricant and waterproofing agent, for making candles, shoe polish, cosmetics, crayons, metal casting, vehicle, and floor polish, varnish, gum, carbon paper, electrical appliances, fabric industry, and food processing and packaging.

Royal Jelly

Royal jelly is used in medication, beauty care products, and as a dietary enhancement. Its cost varies nation to nation from Rs 4,000 to 5,000 a kg, and Rs 1.5 lakh to 1.8 lakh if processed or frozen. Indiamart sells processed Royal jelly at Fresh Royal Jelly at Rs 1.5 Lakh per kg. Around half a kg royal jelly can be extracted from a box per year.

Propolis

Propolis is another significant honeybee product. Propolis is utilized in human and veterinary medications and its cost differs from Rs 500 to Rs 2,000 for each kg.

Pollen

Bee pollen average price in the Indian market is about Rs 1250 per kg which can vary upon its quality. A beekeeper can collect around 25 gm pollen every day from one colony.

Undoubtedly, Honey is a primary product of Honey bee but all these produces also come to the beekeeper along with honey and increases their income.

National Bee Board (NBB)

The ministry of agriculture, now renamed as Ministry of Agriculture & Farmers Welfare, Government of India formed the National Bee Board in the year 2000 on July 19. The main aim of NBB is the complete development of Beekeeping by promoting Scientific Beekeeping in India to increase the productivity of crops through pollination and increase the honey production to increase the income of Beekeepers or honey farmers. The board also promotes beekeeping, honey, and other bee products industry in the country and regulate domestic and export market of honey and other allied products. The Board is

authorized to establish or promote State Bee Boards in all major beekeeping States to coordinate the activities of the Board in respective States.

Meanwhile, the government of India has approved a new central sector program over the years 2018-19 and 2019-20 entitled "National Beekeeping & Honey Mission (NBHM)" for 2 years for the overall promotion and development of scientific beekeeping as a mission to achieve the goal of "Sweet Revolution" in the nation by giving a boost to the capacity building and training, special focus on women, input support for the promotion and production, setting Integrated Beekeeping development Centers (IBDCs) other infrastructure, Digitization or online registration, processing of honey, value addition, market support, etc.

Five Freedoms of Honey Bees

To be a successful beekeeper one should follow some strict guidelines, and he must be considered to ensure that while giving attention to one part of beekeeping another part shouldn't be neglected. According to National Bee Board India, every beekeeper should take care of five freedom of Honey bees;

- Freedom from Hunger and Thirst (Proper food and water arrangements for the bees)
- Freedom for discomfort (Shelter for bees)
- Freedom from pain, injury, and disease (bees should be given proper medical care)
- Freedom to express normal behavior (bees should free for their usual behavior or exercises)
- Freedom from fear and distress (bees should get love and understanding by the beekeepers)

Loans and Subsidy for the beekeepers in India

- If anyone desires to begin beekeeping in India, govt. is ready to assist. The government has formed several boards for providing help and guidance to the Bee farmers but among all of the National Bee Board(NBB) is the prominent one. Many of the beekeepers have been benefited by the schemes and loans of NBB. National Bee Board also provides training to people who have an interest in Beekeeping Business.

- The Government is also providing 35% Subsidy to the Apiculture Business in India. The reserved category candidates will have to invest 5% from their own pockets. The government may offer Rs 10 lakh under the Prime Minister Employment Scheme, to start beekeeping as a full-time business for those individuals who don't fulfill the educational qualification.
- Among various banks, IDBI Bank is giving loan for Commercial Beekeeping in India. They named it as 'Bee Keeping Madhu Makshika' This Bank offers loans to farmers and non-farmers for too. Beekeeper has to utilize this loan amount just for setting up the units for honey production. Bee farmer can get the subsidy for this loan from the government bodies like DRDA, KVIC, and KVIB. The farmer needs to repay this loan within 5 to 7 years in quarterly or half-yearly installment according to his convenience. SHGs and NGOs can also apply for this loan. IDBI Bank is offering 11 months gestation period for this loan.
- Canara Bank is also offering loans for Beekeeping (Apiculture) according to the guidelines of the bank. You can approach the bank directly for the loan details.
- Punjab National Bank (PNB) also offers a loan for Beekeeping for trained Small and marginal farmers and agricultural laborers. Repayment of the loan is a maximum of 5 years including the gestation period.
- Punjab state co-operative agricultural developing bank also offers loans for beekeeping or apiculture. A person with beekeeping experience can get a loan. If required Punjab agricultural university will provide the training. Insurance is compulsory. The loan should be repaid within 5 years. The individual can begin with at least 10 boxes. Loans are provided as per the guidelines set by the bank.

Insurance Policy for Beekeepers by NBB

In order to provide social security to beekeepers, the General Committee of the National Bee Board also provides the group insurance policy for all beekeepers registered with NBB. NBB had arranged IFFCO-TOKIO General Insurance Co. Ltd. for providing Janata Personal Accident Policy to the Beekeepers affiliated with NBB.

Marketing of Honey

In the year 2019, the honey market in India was of Rs 17.3 Billion. Currently, India is one of the leading honey markets globally which has made a serious rivalry as far as advancement and cost. Moreover, the demand for honey in India is enlarging by developing customer's preference for natural and healthy alternatives of artificial sweeteners, rising mindfulness with respect to the advantages of honey, and expanding ubiquity of different flavored honey. India is one of the significant exporters of honey.

Major destinations included the USA, Saudi Arabia, UAE, Morocco, Bangladesh, Canada, and so on.

The government is also helping in the marketing of honey. Because this is the most important stage where the bee farmers are facing difficulty. The national bee board has launched various schemes to help the beekeepers for selling their honey products. Fresh and local honey is frequently more highly valued than imported honey, and numerous beekeepers sell their honey directly to the customers. Some sell honey in farmers' fairs and to local honey shops.

Many of the beekeepers of rural areas sell their honey in villages and town markets in whatever containers are available. In poor places, this might be in drinking bottles. Containers for marketing honey is ideally transparent so clients can see the item.

Honey is an item that sells depending on its looks, packaging, and the information provided on the label. This is usually all the information that the shopper needs to go on in concluding whether to purchase the item or not. So alluring, informative, and effective labeling is significant for attracting consumers.

Season based market

According to some reports, the autumn and spring seasons dominate the honey market. They are trailed by the winter, summer, and monsoon seasons.

Flavors of Honey

Based on flavors, multiflora honey is the most famous type of honey flavor in India. Other significant flavor types include eucalyptus honey, ajwain honey, sage Honey, litchi honey, Jamun honey, and many more.

Litchis are an excellent source at the time of its flowering period, which is during the months of March to May. The litchi honey produced in Muzaffarpur, Bihar is loved all around the country for its better taste and color.

Leading Honey-Producing State

Punjab is the major state in beekeeping in the nation, with around 35,000 beekeepers delivering around 15,000 metric tonnes of honey. This record is more than 39% of the nation's total honey production.

India's Leading Honey markets

Maharashtra is in the top position for the market of honey because most of the manufacturing facilities are situated here. Some of the other major markets include Tamil Nadu, Karnataka, Punjab, and Rajasthan.

Beekeeping or Apiculture is not a new concept in India, it has been referenced in ancient Vedas and Buddhist sacred writings. Beekeeping is one of the oldest practices in India but it has gained vast popularity in recent few years and currently, India has about 35 lakh bee colonies and the number of beekeepers and beekeeping companies is increasing day by day in a very fast speed. In 1953 the All India Khadi and Village Industry began the work of organizing the honey industry in India which was therefore taken over by the Khadi and Village Industry Commission (KVIC) in 1957.

The World Bee Day is celebrated every year on May 20 to raise awareness about the significance of honey bees and pollinators, problems faced by them, and their contribution to sustainable development and to recognize their role in the ecosystem. At the time when the entire World is celebrating The World Bee Day, let's know more and more about honey bees.

Honey bees not only produce honey; they also pollinate the crops to get higher yield and a better quality of produce. A study has found that if the pollination is well-managed, crop yields increased by a significant median of about 24 percent and the efficient pollination of flowers also helps to protect the crops against pests. So beekeeping is the best Agri-Business in current situations, especially for the rural areas, where it can act as a secondary source of extra income. Beekeeping cannot be restricted to honey only, products such as royal jelly, bee wax, pollen, propolis and bee venom are also marketable at a good price and can help the farmers to enhance their revenue.