

Enterprise Budget:

Beekeeping

HONEY BEES HAVE BEEN PRODUCING honey for over 150 million years. Annually in the United States approximately 200 million pounds of honey are produced, valued at \$140 to \$170 million dollars. Beekeeping can be a very profitable enterprise. Honey, beeswax, pollen, royal jelly, and pollination are all revenue generating parts of beekeeping. The main sources of revenue in a beekeeping enterprise are honey and pollination services. Without the services of beekeepers, especially pollination services, the costs of many fruits, vegetables, and other agronomic crops would be greater than they are today. Many beekeepers start out small, with two to four colonies, and let their operation grow with their experience and management skills.

Physical Attributes

Honey bees produce and store honey for food used during the long winter months. Honey bees usually produce more honey than they can eat; this excess honey is what beekeepers harvest. Honey bees are social insects



with a strict division of labor between the various types of bees in the colony. Colonies include a queen, drones and workers. The queen is the only sexually developed female in the colony and is the largest bee in the colony. The queen is responsible for laying eggs that will grow into new workers, drones, and every once in a while a new queen. A productive queen can lay 3,000 eggs in a day. Drones are stout male bees that have no stingers. Their sole purpose is to mate with the queen. If the colony is short on food, drones are often kicked out of the hive. Workers are the smallest bees in the colony and are sexually undeveloped females. A colony can have 50,000 to 60,000 workers. The lifespan of a worker is approximately 30 days. Workers feed the queen and larva, guard the hive, and keep it cool. Workers collect nectar to make honey. Workers are responsible for the production of all the products marketed in a honeybee enterprise.

Potential Return

Yields

In 2008, according to the National Agricultural Statistics Service (NASS), the average yield per colony was 70 pounds. The Iowa average yield was reported at 62 pounds per colony.

Price

The prices for honey have been increasing in the past few years. Retail prices are around \$4.68 a pound and wholesale at \$3.46 a pound. Products sold at the local level will have varying prices.

Enterprise Assessment

Capital needed for startup



Importance of experience with grain crops



Managerial input needed



Labor input required



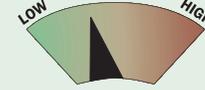
Years needed to develop production expertise



Years needed to develop marketing expertise



Years to financial break-even point



Return on investment (%)



Risks

Bees are at risk for some diseases and mites. However, strict guidelines in the industry help prevent the spread of some of these diseases. It is important for beekeepers to be alert for diseased bees when they check the hives. It is also important to place the hives away from fields that would be sprayed with insecticide, potentially killing some of

Beekeeping

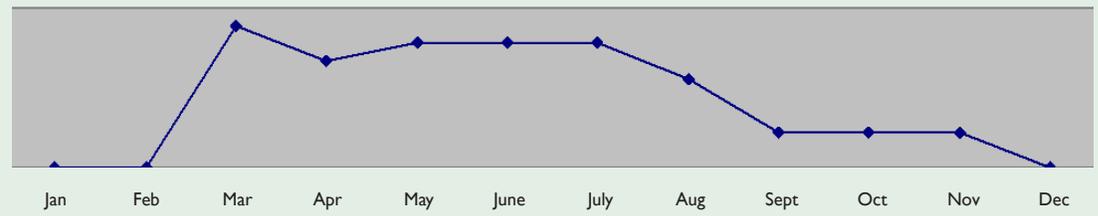
the bees. Climate also can have an effect on the bees. If the area is getting a lot of rain, this can prevent the bees from going out to collect nectar.

Marketing

There are three main products that honeybees produce that are marketable: honey, pollination service, and wax. Each of these products has unique characteristics and requires different production techniques and equipment. Producing honey for profit is highly dependent on successful marketing. This will be comprised of a combination of high-quality honey, packaging, advertising, and service to customers. Most honey is sold as liquid honey. Alternatives to liquid honey are finely crystallized or creamy honey, chunk honey, cut-comb honey, and section-comb honey. It is recommended that beginning beekeepers start with comb honey because it is the easiest to produce and package.

Places to market the honey products include: farmer's markets, health food stores, roadside stands, direct sales, and agritourism sites. Some producers have contracts with companies. Renting hives to growers for pollination services can be another important source of income for beekeepers. This will provide increased cash flow and access to plenty of plants for the hives. Written agreements should be

Chart 1: First-Year Labor Hours



established between beekeepers and renters. Spelled out in the agreement should be dates of service, location, number and pattern of colonies, rental fees, and billing dates. There are strong markets for honey and bee products. You should start out small and expand as your market and demand expand. This also will allow your hive numbers to grow with your management ability.

Management

Establishing colonies is usually done in the spring. New colonies can be established with swarms, package bees, nucleus colonies, and established colonies. The easiest and most expensive way to establish colonies is to purchase already established colonies. The established colony is already assembled, in production, and usually has a recorded history. You may want to watch for standardization of equipment, dilapidated equipment, and disease. Nucleus colonies consist of four to five frames of brood, honey and pollen, adult bees, and a laying queen. These types of colonies are cheaper than established colonies, usually contain younger, more productive bees, are easier to handle and can produce honey in the first year.

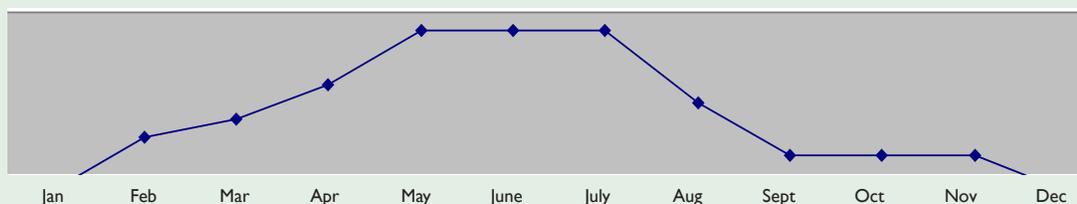


Look for the same flaws in the hives as the established colonies. Package bees are caged worker bees with a queen. Packages usually consist of 3 to 5 pounds of bees. These packages can be delivered through the mail. Package bees are free of disease, cheap, and very easy to handle. Package bees usually do not produce honey in the first year. Package bees also will require more labor and care to ensure a healthy colony. Swarms can easily be collected and placed in a hive. New queens will be required; most swarms are led by old queens.

The management of honey bees is mainly focused on ensuring the most vigorous and healthy hive for the spring and summer honey crop. Once colonies are established, beekeepers prepare their operation for spring harvest. Feeding and medication are normally done January through

February. Queens begin laying eggs in January and soon after the size of the colony increases quickly. Some colonies will need supplemental feeding of sugar syrup (water and sugar) during

Chart 2: Established Labor Hours



Beekeeping

Economic Considerations: Capital Budget

Item	Cost (\$)	Life	Deprc.	Interest exp.
Hives	1,340	25	53.60	67.00
Protective clothing	40	25	1.60	2.00
Hive and tool/smoker	35	10	3.50	1.75
Feeder	23	25	0.92	1.75
Queen excluders	57	25	2.28	2.85
Fume board	25	25	1.00	1.25
Extractor	950	25	38.00	47.50
Bottling tank with cover and strainer	715	25	28.60	35.75
Uncapping tank	195	25	7.80	9.75
Uncapping knife	67	5	13.40	3.35
Total	3,447		150.70	172.35

this time. In February inspections of hives will need to be performed. On warm days (at least 45°F), check colony health and growth. At this time treatments for disease and re-queening should be performed if necessary.

Before removal of surplus honey comb, be sure the colony has enough nutrients to sustain itself. Harvest will continue from spring into fall. Take care to ensure the colony will have adequate food supplies for the winter. Hives do not require housing in the winter. The colony will seal its hive and regulate its temperature in the winter, assuming enough food supplies remain in the hive for the winter. Colony health must be monitored year round. Bees are susceptible to disease, parasites, pests, and predators. Most pests and predators can be controlled easily. Management skills are an integral element to beekeeping. Before entering into apiculture, be sure to consult with experts about management techniques.

Market Outlook

The market for honey is currently very strong, especially for locally produced honey. Production increased from 2007 to 2008 with prices continuing to rise. China, the world's largest consumer of

honey, has also increased demand, which has an effect on the market.

Sources

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American Beekeeping Federation

<http://www.abfnet.org/index.cfm>

National Honey Industry

<http://www.honey.com/honeyindustry/>

National Agricultural Statistics Service

<http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1191>



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Economic Considerations: Apiary Enterprise Budget

Revenue	Dollars (\$)
Honey (620 lbs at \$1.56/lb)	967.20
Pollination fees (spring, summer)	550.00
Wax	25.00
Total	1,542.20
Variable Costs	
Bees	114.00
Disease control	186.95
Sugar (food)	25.00
Jars/labels	262.10
Paint/equipment	94.00
Total	682.05
Fixed Costs	
Hives	141.90
Clothing equipment	9.80
Processing equipment	192.20
Depreciation	150.70
Interest expense	132.75
Total	627.35
Net Income	232.80

Pennsylvania State University

agalternatives.aers.psu.edu/Publications/bees.pdf

National Sustainable Agriculture Information Service

<http://attra.ncat.org/attra-pub/beekeeping.html>

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