

# Operational Equipment Expenses for a Commercial Beekeeping Operation in the Pacific Northwest

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Photo: Dan Wyns, © Michigan State University  
A beekeeper transporting honey supers to an apiary.

## Introduction

When developing a business plan for a commercial beekeeping operation, a beekeeper must plan for honey production. Even if other income sources, such as pollination or nucleus/package/queen sales, are expected to be the primary revenue stream, honey bees almost always make honey in the Pacific Northwest. The amount of honey will vary from year to year, but a plan for processing and selling honey is essential.

## Facilities

A beekeeping operation requires a warehouse or base facility for equipment assembly, storage and other operations. The facility must be secure, weatherproof and bee-proof. Bees are not stored in the facility and they must be prevented from entering it. Honey bees will collect unprotected honey and cause chaos if buildings are not completely sealed. A typical warehouse facility for a beekeeping operation has an employee break room, restroom, office space, woodworking area, chemical storage and equipment storage. Warehouse space used for building and repairing woodenware should be designed to prevent sawdust and other debris from contaminating honey or stored equipment. The cost of building a warehouse varies considerably (refer to the “Further reading” section for construction cost estimation guides).

A honey house is a building for extracting, filtering, packing and storing honey. A honey house is either incorporated into the warehouse building or is a stand-alone facility. For sanitation purposes, it must be a separate area. Honey-house costs are similar to warehouse costs, but have additional expenses. A honey house must have a warming room, extraction equipment area and packing room. The warming room heats honey supers to make honey flow easier for faster

## Budgeting for a Commercial Beekeeping Operation in the Pacific Northwest

### FACT SHEET #2

- Introduction
- Facilities
- Wholesale and retail honey sales
- Honey-extraction and wax-processing equipment
- Further reading
- References
- Supplemental material

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extraction. This room typically includes a heating element in the floor. Honey houses must meet food safety guidelines and are subject to inspection (refer to the “Further reading” section for licensing guidelines).

## Wholesale and retail honey sales

A beekeeper should decide if the honey will be sold wholesale or retail. There are advantages and disadvantages to each (Table 1). In general, selling wholesale is simpler and requires less labor, but selling retail can yield higher profits.

**Table 1. Key differences with wholesale and retail honey markets**

	Wholesale	Retail
Market sources	<ul style="list-style-type: none"> <li>▪ Honey packing cooperatives</li> <li>▪ Restaurants, breweries, bakeries</li> </ul>	<ul style="list-style-type: none"> <li>▪ Local grocery stores and other shops</li> <li>▪ On-site honey stand (passive sales)</li> <li>▪ On-site retail store</li> <li>▪ Farmers market vendor</li> <li>▪ E-commerce (e.g. Craigslist, Amazon, eBay)</li> </ul>
Proximity to market sources	Proximity doesn't matter	Close proximity required
Labor costs (e.g. advertising, customer service)	Low	High
Operational equipment costs	High	Higher*
Product purchase price**	Low	High

\*Requires additional equipment purchases

\*\*Refer to [Revenue Sources for a Commercial Beekeeping Operation in the Pacific Northwest](#) (PNW 742) for details on historic honey prices.

Wholesale honey is generally sold in 55-gallon barrels, which hold about 640–650 pounds of honey. Specialized equipment for wholesale honey includes a scale (such as a cattle scale or floor scale), lifter, heater, forklift and truck for barrels (Table 2, page 3).

For retail honey sales, there is further involvement in packing and marketing. Retail honey requires a separate packing room for bottling, labeling and packing honey for shipment. A packing room houses specialized equipment, such as bottling tanks, filter systems, barrel heaters, labelers, honey buckets or jars (Table 2). Automated equipment is available at every stage of the process.



Photo: Dan Wyns, © Michigan State University  
Hives placed near a field of meadowfoam in the Willamette Valley.

### Tips for beginning or growing beekeeping operations:

- *Infrastructure costs may be the highest expenditures for a beekeeping operation. A beginning beekeeper may be able to use a small shed, garage or storage container for storage and workshop needs. Another option is to lease space for storage until long-term facilities are acquired.*
- *Beekeepers can reduce the amount of facility space and capital investment if they contract another beekeeper to extract their honey. This typically involves a beekeeper transporting harvested honey supers to the hired beekeeper's honey house. The hired beekeeper will extract the honey and charge the client beekeeper at a rate per pound or per super of extracted honey. Arrangements vary, but it is common for the hired beekeeper to keep the wax byproduct from the extraction process.*

**Table 2. Purchase cost of handling equipment for honey processing**

	Cost range
<b>Wholesale honey</b>	
Barrel hand truck	\$430–\$690
Barrel lifter	\$800–\$4,809
Barrel scale	\$850–\$2,500
<b>Retail honey</b>	
Bottling tank	\$800–\$7,000
Barrel heaters	\$153–\$800

\*Sources: Information gathered from beekeepers, Betterbee (Greenwich, New York), Cook & Beals Inc. (Loup City, Nebraska), Dadant & Sons Inc. (Hamilton, Illinois), Mann Lake Ltd. (Hackensack, Minnesota) and Maxant Industries (Ayer, Massachusetts).

## Honey extraction and wax processing equipment

Operational equipment in the honey house includes honey-extraction equipment, wax-processing equipment, a hot-water system for heating tanks and warming room, pumps, and equipment for moving and storing honey. This equipment is either purchased as a package or in individual pieces. Equipment package prices for extraction lines range from \$25,995 to \$115,426, according to equipment manufacturers from Nebraska, Utah and New York. Figures in the “Supplemental material” section provide an overview of typical extraction line equipment prices (individually purchased) with two different wax-processing systems.

**Table 3. Purchase cost of honey extraction equipment**

	Cost range
Extraction equipment bulk package	\$25,995–\$115,426
Auger (spinner option*)	\$4,809–\$5,285
Auger (slurry option*)	\$4,185–\$7,904
Barrel, 55-gallon	\$20–\$50
Bulk equipment package	\$25,995–\$115,426
Cappings spinner	\$1,700–\$4,500
Deboxer	\$4,809–\$5,497
Extractor, auto-load	<i>Not sold separately**</i>
Extractor, radial	\$4,200–\$6,995
Heat exchanger	\$4,250–\$11,325
Holding tank	\$1,500–\$2,000
Honey sump	\$944–\$3,000
Pump, gear (2-inch)	\$1,600–\$5,850
Pump, high-output (3-inch)	\$3,083–\$9,700
Settling tank	\$3,000–\$7,000
Uncapper	\$2,595–\$22,805
Wax melter	\$4,795–\$9,420
Wax separator	\$9,995–\$17,450
Wax spinner	\$5,000–\$10,643

Sources: Cook & Beals Inc. (Loup City, Nebraska), Cowan Manufacturing Inc. (Parowan, Utah), Dadant & Sons Inc. (Hamilton, Illinois), Dakota Guinness Inc. (Abercrombie, North Dakota), Lyson via Betterbee (Greenwich, New York), Mann Lake Ltd. (Hackensack, Minnesota) and Maxant Industries (Ayer, Massachusetts).

\*Refer to the “Supplemental material” section for different for equipment setup options.

\*\*See extraction equipment bulk package prices listed in this table for an auto-load extraction option.



Photos: Jan Lohman (left photo) and Ellen Topitzhofer (right photo), © Oregon State University  
 Figure 1: Auto-load extractor, left, and radial extractor, right.

## Further reading

### Facility construction cost estimation guides

Oregon Department of Revenue. 2009. Cost Factors for Farm Buildings. [oregon.gov/DOR/forms/FormsPubs/303-417.pdf](http://oregon.gov/DOR/forms/FormsPubs/303-417.pdf)

Pray, R. (Ed.). 2019. *2019 National Construction Estimator* (67th ed.). Carlsbad, CA, Craftsman Book Company: 672 pp.

### Honey labeling

Office of Foods and Veterinary Medicine, Center for Food Safety and Applied Nutrition. March 2018. *Guidance for Industry: Proper Labeling of Honey and Honey Products*. Docket No. FDA-2006-P-0207. [www.fda.gov/regulatory-information/search-fda-guidance-documents/guidance-industry-proper-labeling-honey-and-honey-products](http://www.fda.gov/regulatory-information/search-fda-guidance-documents/guidance-industry-proper-labeling-honey-and-honey-products)

### Licensing guidelines

#### Idaho

Idaho State Department of Agriculture. Warehouses. [agri.idaho.gov/main/about/about-idsa/ag-inspections/warehouse-control-program/warehouses/](http://agri.idaho.gov/main/about/about-idsa/ag-inspections/warehouse-control-program/warehouses/)

Idaho State Department of Agriculture. ISDA licenses, registrations and certificates. [agri.idaho.gov/main/licenses/](http://agri.idaho.gov/main/licenses/)

#### Oregon

Oregon Department of Agriculture. Food processing and warehouse licensing. <https://www.oregon.gov/ODA/programs/FoodSafety/FSlicensing/Pages/ProcessingWarehouse.aspx>

#### Washington

Barrentine, P., C. Donovan and F. Berman. 2010. Selling honey. *WSDA Handbook for Small and Direct Marketing Farms* (6th ed., pp. 83–84).

Washington State Department of Agriculture. Food storage warehouses. [agr.wa.gov/departments/food-safety/food-safety/food-storage-warehouses](http://agr.wa.gov/departments/food-safety/food-safety/food-storage-warehouses)

### Beekeeping business plan guides

Daily, S., S. Jacobson, S. Kohler, and J. Buchholt. 2003. *Beekeeping Business Plan Workbook*.

### Tips for beginning or growing beekeeping operations:

- Beekeepers can acquire repurposed food-grade processing equipment (dairy storage tanks, for example) instead of buying new honey-processing equipment.

## The honey extraction process

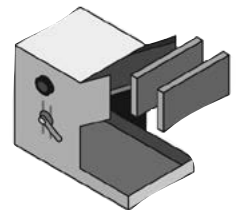


Illustration: Erik Simmons, © Oregon State University

An infographic explaining the two main options for honey extraction and wax handling equipment is available as a large-format (11-by-17 inches) supplemental poster in the Extension catalog at [catalog.extension.oregonstate.edu/sites/catalog/files/project/supplemental/pnw743/honey-wax-extraction-processing050420.pdf](http://catalog.extension.oregonstate.edu/sites/catalog/files/project/supplemental/pnw743/honey-wax-extraction-processing050420.pdf).

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- Providence of British Columbia, Minister of Agriculture, Fisheries and Food. Preparing a Business Plan: a Guide for Agricultural Producers, beekeeper example. <https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/animals-and-crops/animal-production/bees>
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- Oregon Department of Revenue. 2009. Cost Factors for Farm Buildings. [oregon.gov/DOR/forms/FormsPubs/303-417.pdf](http://oregon.gov/DOR/forms/FormsPubs/303-417.pdf)
- Pray R. (Ed.). 2019. 2019 National Construction Estimator (67th ed.). Carlsbad, California, Craftsman Book Company: 672 pp.
- Townsend, E. D. 1923. End-of-season problems: more about honey marketing, rendering wax from the cappings. *Gleanings in Bee Culture*, 51(9): 590–591.

## About this series

In this series, *Budgeting for a Commercial Beekeeping Operation in the Pacific Northwest*, we describe potential revenue streams and expenditures associated with a commercial beekeeping operation. This publication does not discuss depreciation, interest, taxes, insurance costs or enterprise budgets. Refer to the “Further reading” section for detailed beekeeping business plan guides.

Included in this series:

- [Fact Sheet 1: Revenue Sources for a Commercial Beekeeping Operation in the Pacific Northwest](#)
- [Fact Sheet 2: Operational Equipment Expenses for a Commercial Beekeeping Operation in the Pacific Northwest](#)
- [Fact Sheet 3: Beekeeping Equipment Expenses: Woodenware and Other Components](#)
- [Fact Sheet 4: Honey Bee Colony Maintenance Expenses: Supplemental Feed, Requeening and Medication](#)

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