

ME DACF Best Management Practices 2019
Livestock Management- Bees
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Bees

For further guidance regarding bee health and raising bees in Maine, please contact Jennifer Lund, the State of Maine Apiarist and Bee Inspector: jennifer.lund@maine.gov or 207-287-7562. The focus of the following guidelines is the management of animal welfare, disease control programs and environmental resources.

Housing, Handling and Habitat

All honey bee hives in Maine are required to be licensed and registered with the State of Maine Apiary Program on an annual basis. Any bees or equipment imported to the State of Maine must receive approval in the form of a permit prior to the importation. This allows the program to monitor for the presence or emergence of regulated diseases of honey bees in Maine.

Beekeepers should make an effort to place hives in a location that will minimize bee traffic through a neighboring property or other area frequently used by domesticated animals. This will decrease the incidence of negative interaction between people and the honey bees. Hives should be protected from trespassers, domesticated animals and wildlife by construction of a fence line around the perimeter of the beehive area. Ideal honey bee habitat provides both flowering plants and a source of shallow water within close proximity to the hive. Hives should be regularly inspected for signs of pests and disease. Honey bees are very mobile so it is important to recognize diseases before the bees have had an opportunity to spread infection to other hives.

Resources:

1. Title 7 Chapter 521- Licensing Requirements:
<http://www.mainelegislature.org/legis/statutes/7/title7ch521sec0.html>
2. Title 7 Chapter 523 - Importation Requirements:
<http://legislature.maine.gov/statutes/7/title7ch523.pdf>
3. University of Maine Cooperative Extension- Understanding Native Bees. This article describes the habitat and biology of several species of bee commonly found in Maine. While the honey bee is not a native species, they will benefit from the same pollinator habitat management strategies described here: <https://extension.umaine.edu/publications/7153e/>
4. Cornell University - Wintering Bees in Cold Climates. This article describes the preparation of the hive for winter challenges such as temperature extremes, disease pressure and nutrition limitations:

<https://pollinator.cals.cornell.edu/sites/pollinator.cals.cornell.edu/files/shared/documents/Wintering%20Bees%20in%20Cold%20Climates.compressed.pdf>

5. Penn State College of Agricultural Science- Bee Management Fact Sheets. This page brings the user to a menu of free PDF articles collected by entomologists at Penn State Extension.

These pages provide guidance for several specific conditions affecting honey bee management:

<https://ento.psu.edu/extension/bees/bee-management-fact-sheets>

6. University of Florida- Siting Honeybee Colonies: Good Neighbor Guidelines. This introductory level article discusses the needs of bees, and how you can plan ahead to help your bees access these resources in a safe and effective way: <http://edis.ifas.ufl.edu/aa137>

Nutrition

Like other species, honey bees require a full spectrum of nutrients, vitamins and minerals for optimal growth, production and disease resistance. Flowering plant species provide the nectar and pollen that bees collect to meet their nutritional needs. The beekeeper should arrange hives or manage the surrounding plant environment in a way that provides optimal nutrition, in terms of quality and quantity. When nectar supplies are low due to decreased natural forage, bees are likely to demonstrate robbing behaviors which may have a detrimental effect on weaker hives or may transmit disease between hives. To prevent this behavior and to maintain a constant plane of nutrition to the hives, honey bees should be supplemented with a nectar and pollen substitute such as sugar water and pollen patties. Bees also require a regular, nearby water supply throughout the year.

Resources:

1. Cooperative eXtension- Honey Bee Nutrition. This is an in-depth article about the nutritional requirements of bees: <https://articles.extension.org/pages/28844/honey-bee-nutrition>

2. Agriculture Victoria- Feeding Honey Bees to Prevent Starvation. This article is published by the government of Victoria, Australia, however the guidelines are broadly applicable to winter feeding of honeybee colonies: <http://agriculture.vic.gov.au/agriculture/livestock/honey-bees/compliance-and-management/feeding-honey-bee-colonies-to-prevent-starvation>

3. University of Florida- Robbing Behavior of Honey Bees. This is a short article that describes the robbing behavior of honeybees, how to recognize it, prevent it and if necessary, respond:

<http://edis.ifas.ufl.edu/in1064>

Health Management/ Euthanasia

Frequent observation of the bee colony will alert the beekeeper to changes within the hive, resulting in early disease detection. Inexperienced beekeepers should consult with a mentor, local beekeepers organization, agricultural extension service, or the Maine State Apiarist. Certain

diseases are considered regulated diseases in Maine, meaning if they are detected, the incident must be reported to the Maine Apiary Program. This will initiate a disease response aimed at containing and eliminating the disease. Basic biosecurity practices are effective methods for preventing transmission of disease between hives of honey bees. This includes preventing contact between distant populations of honey bees and avoiding sharing of any equipment with unrelated hives.

Occasionally, a hive will need to be destroyed due to infection. There are several reasonable methods for euthanizing a colony of bees, or an unproductive queen. Two of the articles cited below describe common diseases of honey bees and recommend a treatment or disposal method. Specific questions can be addressed to the State Apiarist.

Resources:

1. Title 7 Chapter 525 - Disease Control:

<http://www.mainelegislature.org/legis/statutes/7/title7ch525.pdf>

2. North Carolina State University Extension- Disease Management and Guidelines for the Honeybee. This website provides a description of common pathogenic and parasitic infections of bees, and includes color photos: <https://content.ces.ncsu.edu/disease-management-and-guidelines-for-the-honey-bee#>

3. Penn State Agricultural Extension- A quick reference Guide to Honey Bee Parasites, Pests, Predators and Disease. This reference has a color photo brochure available for download: <https://extension.psu.edu/a-quick-reference-guide-to-honey-bee-parasites-pests-predators-and-diseases>

4. University of Florida- Minimizing Honeybee Exposure to Pesticides. This is a lengthy article that describes the high risk environments for bees pollinating agricultural crops, and provides guidance for pollinator safety measures and recognizing signs of pesticide toxicity in honeybees: <http://edis.ifas.ufl.edu/in1027>

Additional Resources

Resources:

1. Maine State Beekeepers Association. This website has a wealth of information for beekeepers in Maine, and is a connection to the local beekeeping community:

<http://mainebeekeepers.org/about-us/>

2. Maine Department of Agriculture, Conservation and Forestry Apiary Program. This page provides information about Maine regulations for beekeeping and import, contact information from the State Apiary Program, and other informative links for beekeepers:

<https://www.maine.gov/dacf/php/apiary/index.shtml#Licensing>

3. Honey Bee Health Coalition- Hive Management Additional Resources. This website is a menu of honeybee management articles of varied focus. The resources have been reviewed for quality by the Honey Bee Health Coalition: <https://honeybeehealthcoalition.org/hive-management-additional-resources/>
4. Honey Bee Health Coalition- Best Management Practices for Bee Health. This document describes how to monitor the health of your hives, and details infectious, toxic and nutritional causes of disease: https://honeybeehealthcoalition.org/wp-content/uploads/2019/01/HBHC_Hive_BMPs_v1.0_reduced.pdf
5. University of California- Honey and Pollination Center: <https://honey.ucdavis.edu/>
6. Xerces Society for Invertebrate Conservation: <http://xerces.org/pollinators-great-lakes-region/>