



Cornell University
Master Beekeeper Program

Beekeeping calendar for the Northeast



JANUARY

In the hive

The bees are in their winter cluster, except for very warm and sunny days (roughly 50°F and above), when they might leave the hive for a cleansing flight.

Queens may lay a few eggs, in which case the cluster will need to keep the brood warm.

Dead bees may pile up on the bottom board; on warm days, the bees may remove the bodies, and other bees may fly off to die. Dead bees scattered on the snow outside the hive are therefore a good sign.

Seasonal conditions

In Ithaca, NY, January is the coldest month. The average minimum and maximum temperatures are 15°F and 31°F, with 18" of snowfall and 2" of additional precipitation.

Nothing is in bloom except maybe some varieties of witch hazel (*Hamamelis* spp.).



Beekeeping activities

Inspection

- When inspecting a colony in winter, it is not necessary to open it. Do a quick external inspection, visual and auditory, to check the cluster. Listen for the bees with your ear directly on the upper part of the hive; if you do not hear anything, tap the outside of the hive and the bees should respond.
- You can open the hive if it is relatively warm and windless outside, but do not pull frames or break open the cluster if it is below 50°F. If you open the hive, check for moisture around the inner or outer covers. If the cluster is far to one side of the food stores, you can carefully move it closer, keeping it together while you do so, or move frames of honey closer to it.

Nutrition

- Check if the colony is light on food stores (you can tell by gently hefting the hive)... If so, use dry sugar, fondant, or a candy board on a warm day.

Equipment

- Order any replacement bees (packages, nucs, or queens) as soon as possible; producers generally run out fast.
- Check any stored equipment for pests such as wax moths.
- Take inventory. Fix, clean/sterilize, purchase, assemble, and paint equipment as needed.

Yard maintenance

- Ensure that the hive cover is properly secured.
- Check for evidence of critters living in the nice, toasty hive.
- Remove ice blocking the hive entrance, to give the colonies better ventilation. Don't worry about snow around the entrance or hive body; it allows enough airflow and may help insulate the bees.
- A few dead bees or a small amount of fecal matter outside the hive is nothing to worry about, especially after a warm day; this is a sign that they are still alive inside.

Education and outreach

- Don't forget to renew your membership in your local beekeeping club and get their meetings on your calendar. Also check their schedule for bee school; many bee schools are held in the late winter.
- The American Beekeeping Federation and the American Honey Producers Association usually meet in January.

FEBRUARY

In the hive

The bees are still in their cluster, perhaps breaking away for brief cleansing flights on the warmest days. The cluster has likely moved up to the top of the hive.

The queen begins or continues to lay a small number of eggs. Nutritional needs increase and the risk of starvation rises.

Seasonal conditions

In Ithaca, NY, in February, the average minimum and maximum temperatures are 17°F and 34°F, with 14" of snowfall and 2" of additional precipitation.

Nothing is in bloom, except perhaps witch hazel.



Beekeeping activities

Inspection

- When inspecting a colony in the winter, it is not necessary to open it. See the January guidelines for evaluating its health.

Nutrition

- Colonies are at a higher risk of starvation as the winter progresses. Depending on a number of factors (winter weather, fall stores), the bees' stores could be running low, since they do not ration their food. Feed them if the hive is light or the stores obviously empty, or if the bees are visible through the inner cover at the very top of the hive. Use dry sugar or a candy board. Some beekeepers feed their bees pollen patties at this time to stimulate and support brood rearing.

Equipment

- Finish fixing, cleaning/sterilizing, buying, assembling, or painting equipment as needed.

Yard maintenance

- As in January, ensure that the hive cover is properly secured, check for animal pests, remove ice blocking the entrance, and don't worry about a few dead bees on the snow outside the hive.

Education and outreach

- Consider teaching a unit in your local beekeeping club's bee school.

MARCH

In the hive

This is the month of the colony's minimum adult population, after winter losses, but before significant spring build-up. The queen is laying at or near full strength and brood is being reared if pollen/protein is available.

Bees may be able to bring some pollen into the hive on occasional foraging flights, but because of the growing population and limited external resources, nutritional needs increase and the risk of starvation is high.

Seasonal conditions

In Ithaca, NY, in March, the average minimum and maximum temperatures are 23°F and 42°F, with 12" of snowfall and 3" of additional precipitation.

Early spring flowers include pussy willow (*Salix discolor*), skunk cabbage (*Symplocarpus foetidus*), crocuses (*Crocus sativus*), and varieties of witch hazel.

Red and silver maples (*Acer rubrum* and *A. saccharinum*) also bloom and provide pollen. The sugar maples bloom later this month or next month, and provide more nectar.



Beekeeping activities

Inspection

- When inspecting a colony in the winter, it is not necessary to open it. See the January guidelines for evaluating its health.

Nutrition

- Most colonies that starve die in late winter or early spring. They need more food for brood rearing, but cannot yet forage. At this point, they should have at least 3-4 combs full of honey. Feed them if the colony is light or the stores obviously empty, or if the bees are visible through the inner cover at the very top of the hive. Use dry sugar, fondant, or a candy board, or replace empty combs with combs of capped honey. You will likely need to continue to feed until nectar and pollen are available and accessible outside.
- The location/proximity of the bees to their food stores is key. If the cluster is far to one side of the food stores, you can carefully move it closer, keeping it together while you do so, or move frames of honey closer to it.
- You might consider feeding pollen substitute or supplement to support or further stimulate egg laying. If you do so, be sure to use clean pollen.
- If you plan to rear queens this year, lavishly feed the cell finisher colony chosen in the fall (carbohydrates and protein) for early spring buildup.

Pests, parasites, and diseases

- Mites are breeding in the colony. There is no need to monitor and treat just yet, but be aware that the mite population is starting to rise.

Equipment

- Your equipment should be fixed, cleaned, bought, assembled, or painted by now.

Yard maintenance

- Ensure that the hive cover is properly secured.
- Remove ice blocking the hive entrance, to give the colonies better ventilation. Don't worry about snow around the entrance or hive body; it allows enough airflow and may help insulate the bees.
- A few dead bees or a small amount of fecal matter outside the hive is nothing to worry about, especially after a warm day; this is a sign that they are still alive inside.

APRIL

In the hive

On cold days, the bees are still clustered, but on warm sunny days, they should be bringing in lots of pollen and nectar. If their flights are limited by cold or inclement weather, they may still be at risk of starvation.

The colony, if big enough, begins to rear drones in greater numbers.

Seasonal conditions

In Ithaca, NY, in April, the average minimum and maximum temperatures are 34°F and 56°F, with 3" of snowfall and 3" of additional precipitation.

Maples, crocuses, willows, skunk cabbage and witch hazel are ongoing. Dandelions (*Taraxacum officinale*) are an important source of both pollen and nectar, even though their pollen is an incomplete source of protein.

Other blooms include deadnettle (*Lamium* spp.), wild strawberry (*Fragaria* spp.), yellow rocket (*Barbarea vulgaris*), Eastern redbuds (*Cercis canadensis*), elm trees (*Ulmus* spp.), and poplar trees (*Populus* spp.).

Corn may be planted toward the end of the month; pesticides in the "dust" from planting may pose a threat to colonies.



Beekeeping activities

Inspection

- On the warmest days, you can quickly inspect a colony's brood pattern and food stores, taking care not to chill the brood.
- If the bottom brood chamber is empty, move it to the top of the brood nest. Doing so before a day or two of warm temperatures will help brood survive the move.
- After installing a new package or nuc, allow two weeks for the colony to establish before an inspection.
- You might consider feeding pollen substitute or supplement to support or further stimulate egg laying. If you do so, be sure to use clean pollen.
- Feed package bees or nucs upon their arrival.
- If you plan to rear queens this year, lavishly feed the cell finisher colony chosen in the fall lavishly (carbohydrates and protein) for early spring buildup.

Nutrition

- The colony should have at least 3-4 combs full of honey. Feed them if the colony is light or the stores obviously empty. Feed them if the hive is light or the stores obviously empty, or if the bees are visible through the inner cover at the very top of the hive. Use dry sugar or a candy board, or replace empty combs with combs of capped honey. Sugar syrup is also an option: feed a 1:1 mix in a feeder that holds enough syrup that it doesn't need refilling every day, but not so much that it gets moldy before the bees finish it. If the bees are reliant on this food, you will likely need to continue to feed until nectar and pollen are accessible outside.
 - The location/proximity of the bees to their food stores is key. If the cluster is far to one side of the food stores, you can carefully move it closer, keeping it together while you do so, or move frames of honey closer to it.
- ### Pests, parasites, and diseases
- Begin monthly monitoring for *Varroa* mites. At this point in the year, if you find two or more mites (per 100 bees) from a sugar shake, ether roll, or alcohol wash, you will want to treat. Treatment methods will depend on your management goals, the condition of the colony, and external conditions. This is an ideal time to use treatments that cannot be used when supers are present.
 - If drones are being reared in significant numbers, you can use drone comb for early *Varroa* management, but be sure to return within 28 days at a minimum, to ensure that it doesn't become a haven for mites!
 - Carefully check every brood frame in each colony for an American foulbrood infection.
 - Cleaning dead bees and detritus off the bottom board during the first thorough inspection may help keep the hive disease- and pest-free.

Population management

- Install any new packages or nucs that arrive.
- Equalizing can be accomplished through donating a frame or two of brood from one hive to another or swapping hive locations.
- If your inspection reveals that a queen is underperforming, if you want the vigor of a young queen, or if you want to introduce new stock for hygienic behavior or other traits, you might consider requeening. This is a good month to do it, although local queens are probably in short supply this early in the year.
- To rear queens yourself this year, continue to build your cell builder colony while preventing it from swarming. Check often for swarm cells, and cut out any you find.

Equipment

- Remove insulation, winter wraps, mouse guards, etc. Entrance reducers can be left on; many beekeepers use them year-round.

Hive products and services

- Cut-outs tend to be easier this time of year, when populations are low.
- Apples are commercially pollinated this month in the Northeast.

Yard maintenance

- Check that any bear fencing is still working properly and replace batteries if necessary.

Education and outreach

- In the event that some colonies did not survive the winter, this is a good time of year to diagnose deadouts and learn from your mistakes.

MAY



In the hive

Egg laying and brood rearing are in high gear, with the brood area expanding rapidly. The bees are foraging for pollen and nectar to support this colony growth. They are likely to be less defensive than in fall, with less to protect and lots to do!

With the growing population and possible overcrowding, mid-May is the beginning of swarm season. Queen cups are being built along the lower edges of brood frames. If the hive is crowded, some cups will likely be laid in. The drone population is growing.

The *Varroa* mite population is also building.

Seasonal conditions

In Ithaca, NY, in May, the average minimum and maximum temperatures are 44°F and 67°F, with 3" of precipitation. The last frost is in mid-May.

Dandelions, maples, deadnettle, wild strawberry, yellow rocket, oak, honey suckle, elderberry, elm trees, willow, and poplar trees are ongoing.

Fruits and fruit trees are blooming: wild and cultivated cherry, peach and plum trees (*Prunus* spp.), pear trees (*Pyrus* spp.), and apple and crabapple trees (*Malus* spp.), as well as blueberries (*Vaccinium* spp.), raspberries, and blackberries (*Rubus* spp.).

Other blooms include black locust (*Robinia pseudoacacia*), mustard (*Brassica* spp.), hawthorn (*Crataegus* spp.), tulip poplar (*Liriodendron tulipifera*), clovers (Dutch white: *Trifolium repens*, alsike: *Trifolium hybridum*, red: *Trifolium pratense*), and autumn olive (*Elaeagnus umbellata*).

Beekeeping activities

Inspection

- Colony inspections should now take place every two weeks and include evaluating the brood pattern, confirming the presence of the queen and/or eggs, evaluating colony growth and available room, monitoring for pests and diseases, and other metrics. Recordkeeping is key to making these inspections useful and actionable.
- If you cannot inspect every one of your colonies, inspect those that are not showing as much activity on the outside.
- If the bottom hive body is empty, you might consider moving it above brood nest.
- If you install a package or nuc, allow two weeks for the colony to establish before you inspect it.

Nutrition

- The bees should be foraging for what they need, but they also need a lot at this time, so remain vigilant and prepared to feed sugar syrup or a pollen supplement if necessary.

- Provide supers if the brood chambers are full and the population/stores are growing with the first honey flows of spring.
- Feed package bees or nucs upon their arrival.

Pests, parasites, and diseases

- Monthly inspections should include monitoring for a range of pests and diseases: look for problems on the outside of the colony, in the brood, and on the adult bees themselves.
- Monitor *Varroa* mite levels. At this point in the year, if you find two or more mites (per 100 bees) from a sugar shake, ether roll, or alcohol wash, you will want to treat. Treatment methods will depend on your management goals, the condition of the colony, and external conditions. Drone comb can be an effective cultural method at this time of year. This may be a good time to break the brood cycle (and therefore the *Varroa* reproduction cycle) by caging the queen or making splits.

- Monitor for *Nosema*. It is present all year, but regular monitoring will still help you understand your normal levels and when/if they peak, particularly if you are seeking to understand why a colony is struggling.
- Replace with fresh foundation or newly drawn comb two of your oldest frames in each hive body to reduce the accumulation of *Nosema* spores, American foulbrood spores, and pesticides.

Population management

- Install any new packages or nucs that arrive.
- Swarm control: if you do not want your bees to swarm, provide them with plenty of room and check that the colony is not honey bound (meaning that there is honey in or around the brood nest effectively restricting the access of the queen from other areas where she would lay eggs). Move the honey combs out of the brood nest and into a super if needed.
- Keep an eye out for swarm cells. You may consider splitting the strongest colonies, particularly if you are looking to grow your operation or keep nucs in reserve. Cutting out swarm cells can prevent swarming as well, but needs to be done thoroughly and often (every few days).
- You may be able to catch swarms this month.
- Combine weak and strong colonies or equalize them if you want, but only after you have checked for diseases in the weak colony.
- If your inspection reveals that a queen is underperforming, if you want the vigor of a young queen, or if you want to introduce new stock for *Varroa* resistance or other properties, you might consider requeening. This is a good month to do it, although local queens are probably in short supply this early in the year.
- This is the best time (swarm season) to rear queens. To get from an egg to a mated and laying queen takes about one month. Continue to build your cell builder colony while preventing it from swarming. Check regularly for swarm cells, and cut out any you find.

Equipment

- Remove any remaining insulation, winter wraps, mouse guards, etc. Entrance reducers can be left on; many beekeepers use them year-round.
- Consider adding a queen excluder to manage the honey supers more easily.
- Set up bait hives if you want to catch a swarm.
- Foundation will be more likely to be drawn out during a honey flow.

Hive products and services

- Cut-outs tend to be easier this time of year, when populations are low.
- You may be able to trap a small amount of pollen for later use or sale; this needs close monitoring to keep the pollen usable and frequent breaks to keep the bees adequately provisioned.
- Blueberries and apples are commercially pollinated this month in the Northeast.

Yard maintenance

- Mow the yard as necessary.

JUNE

In the hive

June and July are the months of maximum population in the colony. Depending on your area and management style, the population will vary. Most estimates are in the range of 40-60,000 but some go up to seven digits.

The colony, if big enough, continues to rear drones. Swarm season also continues in June.

The *Varroa* mite population continues to build.

Seasonal conditions

In Ithaca, NY, in June, the average minimum and maximum temperatures are 53°F and 76°F, with 4" of precipitation. The longest day of the year is June 21. The earliest sunrise, however, is on June 13, at 5:28am, and the latest sunset is on June 28 at 8:48pm.

Lots of blooms continue: deadnettle, black locust, tulip poplar, hawthorn, autumn olive, willow, dandelion, oak, apple, cherry, plum, honeysuckle, pear, elderberry, blueberries, raspberries, blackberries, and the earlier clovers- plus white sweetclover (*Melilotus alba*) and yellow sweetclover (*Melilotus officinalis*). Basswood/linden (*Tilia* spp.) may bloom by the end of the month. The European species, littleleaf linden, can usually be found in parks and urban areas. It blooms slightly earlier than the American basswood (July), which is generally found in the wild. Other blooms include catalpa trees (*Catalpa speciosa*), milkweed (*Asclepias* spp.), yellow rocket (*Barbarea* spp.), birdsfoot trefoil (*Lotus corniculatus*), hairy and purple vetch (*Vicia villosa*, *Vicia americana*), chicory (*Cichorium intybus*), grape (*Vitis* spp.), and sumac (*Rhus* spp.). These also include invasives such as purple loosestrife (*Lythrum salicaria*), knapweed (*Centaurea* spp.), and Russian olive (*Elaeagnus angustifolia*). Alfalfa (*Medicago sativa*) may also be in bloom, although it is generally cut for hay before it flowers.



Beekeeping activities

Inspection

- Colony inspections should take place at least once a month and include evaluating the brood pattern, confirming the presence of the queen and/or eggs, evaluating colony growth and available room, monitoring for pests and diseases, and other metrics.
- If you cannot inspect every one of your colonies, inspect the colonies that are not showing as much activity on the outside.
- If you install a package or nuc, allow two weeks for the colony to establish before you inspect it.

Nutrition

- Feed package bees or nucs upon their arrival.
- Provide supers if the brood chambers are full and the population/stores growing.

Pests, parasites, and diseases

- Monitor *Varroa* mite levels. At this point in the year, if you find two or more mites (per 100 bees) from a

sugar shake, ether roll, or alcohol wash, you will want to treat. Treatment methods will depend on your management goals, the condition of the colony, and external conditions. Drone comb can be an effective cultural method at this time of year. This may be a good time to break the brood cycle (and therefore the *Varroa* reproduction cycle) by caging the queen or performing splits.

Population management

- Swarm control: see the guidelines for May.
- This is the best time (swarm season) to rear queens.

Equipment

- Foundation will be more likely to be drawn out during a honey flow.
- Consider adding a queen excluder to manage the honey supers more easily.
- Set up bait hives if you want to catch a swarm!

Hive products and services

- Depending on the strength/size of your colonies and your management goals, you may consider extracting the spring honey. Extract immediately after removing the supers to prevent a small hive beetle infestation.
- You may be able to trap pollen.
- Blueberries and cranberries are commercially pollinated this month in the Northeast.

Yard maintenance

- Mow the yard as necessary.

Education and outreach

- National Pollinator Week is in June; check your local club or extension office for events.
- Register for the Eastern Apicultural Society annual meeting.

JULY

In the hive

The major swarm season winds down in mid-July, even though the population is still high.

Left untreated, the *Varroa* mite population continues to build.

The summer heat requires the bees to ventilate and perhaps beard outside the hive on the hottest evenings.

Seasonal conditions

In Ithaca, NY, July is the hottest month. The average minimum and maximum temperatures are 58°F and 80°F, with 4" of precipitation.

Ongoing blooms may include milkweed, chicory, purple loosestrife, sumac, clovers and sweetclovers, raspberry and blackberry, Russian olive, knapweed, hairy and purple vetch, birdsfoot trefoil, tulip poplar, pear, elderberry, yellow rocket, grape, dogbane, and alfalfa.

New flowers may include summersweet or sweetpepperbush (*Clethra alnifolia*), buttonbush (*Cephalanthus occidentalis*), thistle (*Cirsium* spp.), buckwheat (*Fagopyrum esculentum*), viper's bugloss (*Echium vulgare*), mints (*Mentha* spp.), Joe-Pye weed (*Eutrochium* spp.), common jewelweed (*Impatiens capensis*), goldenrod (*Solidago* spp.), and asters (*Aster* spp.). Japanese knotweed (*Polygonum* spp.) (also called Mexican bamboo) is another invasive. The American basswood nectar flow usually starts around July 4th. Corn (*Zea mays*) may also be a source of pollen, even though it does not rely on insect pollination.

Despite this long list, as flowers fade and temperatures rise, there may be a dearth of forage for your bees. Monitor their food stores and behavior (especially robbing).

Beekeeping activities

Hive inspection

- Colony inspections should take place at least once a month and include evaluating the brood pattern, confirming the presence of the queen and/or eggs, evaluating colony growth and available room, monitoring for pests and diseases, and other metrics.
- If you cannot inspect every one of your colonies, inspect those that are not showing as much activity on the outside.

Nutrition

- If there is a dearth of forage and if you have taken off spring honey, monitor honey stores.
- If the weather is dry and there is no good water source near to the hive, consider providing one. They may need it to cool the hive.

Pests, parasites, and diseases

- Monitor *Varroa* mite levels. At this point in the year, if you find two or more mites (per 100 bees) from a sugar shake, ether roll, or alcohol wash, you will want to treat. Treatment methods will depend on your

management goals the condition of the colony, and external conditions. Drone comb can continue to be used as a cultural method at this time of year, but fewer drones are produced. This may be a good time to break the brood cycle (and therefore the *Varroa* reproduction cycle) by caging the queen.

Population management

- Swarm control: see the guidelines for May.
- If you want to split colonies this season, this month may be your last chance, unless there are unusually favorable conditions in August.

Equipment

- Consider adding a queen excluder to manage the honey supers more easily.

Hive products and services

- The nectar flow may require you to put more supers on the hive. If you are producing varietal (monofloral) honey, remove the capped honey once the nectar flow is over.



- Depending on how you choose to treat, you may need to remove the supers to avoid chemical residue in the honey.
- As propolis collection increases, you may consider harvesting it.
- You may be able to trap pollen.
- Cranberries and pumpkins are commercially pollinated this month in the Northeast.

Yard maintenance

- Mow the yard as necessary.

Education and outreach

- The Eastern Apicultural Society often has its annual meeting in July.
- It's state fair season; check to see whether there is a beekeeping display at your state's fair – or whether it's up to you to create one!

AUGUST

In the hive

There is a second, smaller swarm season in August and September.

The bee population begins to diminish faster than it is growing; the brood area may contract. Many of the bees born from the end of August onward are called “winter bees” and live longer than their summer sisters.

Left untreated, the *Varroa* mite population usually peaks in August or September. Remember that *Varroa* is tough to manage because the mites thrive in healthy, populous colonies, unlike many of the other maladies that affect honey bees.

The summer heat requires the bees to ventilate and perhaps beard outside the hive on the hottest evenings.

Seasonal conditions

In Ithaca, NY, in August, the average minimum and maximum temperatures are 56°F and 79°F, with 4” of precipitation.

Blooms that began last month or earlier are ongoing: milkweed, summersweet or sweetpepperbush, buttonbush, common jewelweed, alfalfa, hairy and purple vetch, clovers and sweetclovers, mint, chicory, viper’s bugloss, asters, birdsfoot trefoil, purple loosestrife, Joe-Pye weed, sumac, buckwheat, Japanese knotweed, corn, knapweed, and thistle.

The goldenrod (*Solidago* spp.) nectar flow is greatest in August. “(Don’t be alarmed by the smell of its honey, which has been compared to dirty socks!)”



Beekeeping activities

Inspection

- Inspections should be especially thorough, particularly for pests and diseases. Your colonies should be able to take on the fall honey flow and then overwinter successfully.
- Check that the hive is not honey bound. Move the honey combs out of the brood nest and into a super if needed. The queen should have all the room she needs to lay, to have a strong young cohort of winter bees.
- The bees will need at least two double-sided frames of pollen/bee bread by late winter/early spring. Supply bees with pollen or pollen substitute if they are short on protein. In autumn, bees use the decrease in pollen flow as a cue to begin rearing winter bees.
- If the weather is dry and there is no water source near the hive, consider providing one.

Nutrition

- August is the month when colonies begin preparation for winter. A full-sized colony should have at least 70-90 pounds of honey to eat by the beginning of October, or more than one full super (the hive would weigh about 135 pounds total). Nucs of course need less. Estimate the weight by slightly tipping and hefting the hive. If you extract honey, leave enough for the bees or feed them sugar syrup to make up for the difference.
- If you feed the bees sugar syrup, it should be a 2:1 ratio, thicker than the spring feed; the bees can evaporate the excess moisture from the hive faster from this thicker syrup.
- Pests, parasites, and diseases
 - Monitor for *Varroa* mites and treat if necessary. The threshold for treatment changes at this time of year to 3 mites per 100 bees, as the number of mites rises. Note that a fall population spike may be due to mites coming in from bees from other colonies, in addition to natural population growth within the colony of interest. Therefore, even if you have diligently managed mites through the summer, continue to monitor consistently.
 - Carefully check every brood frame in each colony for an American foulbrood infection.

Population management

- Swarm control: see the guidelines for May. It is probably too late to split colonies to ensure they are strong enough to overwinter.
- Combine weak and strong colonies or equalize them if you want to ensure strong populations going into winter, but only after you have checked for diseases in the weak colony.
- If you are considering requeening, this is a good month to do it. An overwintered young queen should start laying in earnest in the spring.

Equipment

- Prepare for the fall flow with at least one super and be prepared to add more if necessary.
- Upper entrances will help the bees ventilate the hot hives and evaporate the excess moisture from their honey.
- Removing bees from honey supers may require a fume board, bee brush, bee escape, or other tools; they each have advantages and disadvantages for different beekeepers and in different environmental conditions.

Hive products and services

- You may be able to trap pollen.
- Pumpkins are commercially pollinated this month in the Northeast.

Yard maintenance

- Mow the yard as necessary.
- If bears live in your area, you may want to fence off the yard, in anticipation of a fall visit.

Education and outreach

- The Eastern Apicultural Society may have its annual meeting in August.

SEPTEMBER

In the hive

The queen's rate of egg laying slows and the brood area continues to contract. Little drone brood is laid. This is the end of a second, smaller swarm season.

Nectar sources continue to diminish, although resin/propolis collection continues.

Left untreated, the Varroa mite population usually peaks in August or September.

The bees may be more defensive, protecting their hive and robbing other colonies.

Seasonal conditions

In Ithaca, NY, in September, the average minimum and maximum temperatures are 49°F and 71°F, with 4" of precipitation. The first frost is in mid-September.

Flowers are abundant in the fall in the Northeast, including goldenrod, buckwheat, asters, clovers and sweetclovers, purple loosestrife, Japanese knotweed, knapweed, sweetpepperbush, and thistles.

Beekeeping activities

Inspection

- This is the last month when a beekeeper can expect to perform thorough colony inspections. Roger Morse once wrote, "I often think of September as the month when one corrects errors made in August".
- The queen's egg laying slows dramatically by the end of the month, so the brood pattern may be difficult to accurately evaluate.
- You should have been keeping records the entire active season, but it is especially important now as your hive is readied for winter. Take note of the number of the bees/size of the cluster, the amount (weight) and position of honey stores they have, etc., so that if the colony fails, you can make a more accurate deadout diagnosis in the spring.
- Bees may rob hives left open during a long inspection. Be thorough but efficient.
- If you feed the bees sugar syrup, it should be a 2:1 ratio, thicker than the spring feed; the bees can evaporate the excess moisture from the hive faster from this thicker syrup. The bees will need at least two double-sided frames of pollen/bee bread by late winter/early spring. September is the last month it is recommended to feed pollen or pollen substitute for the remainder of autumn, as bees use the reduction in pollen flow as a cue to begin rearing winter bees.
- If the weather is dry and there is no water source near the hive, consider providing one.
- If you plan to raise rear queens next year, begin to prepare cell finishers this fall: feed it lavishly now (carbohydrates and protein).

Nutrition

- A full-sized colony should have at least 70-90 pounds of honey to eat by the beginning of October, or more than one full deep. (Nucs of course need less.) Estimate the weight by slightly tipping and hefting the hive, or use a hive scale. If you extract honey, leave enough for the bees or feed them heavy sugar syrup to make up for the difference.

Pests, parasites, and diseases

- Monitor for *Varroa* mites. At this point in the year, if you find three or more mites (per 100 bees) from a sugar shake, ether roll, or alcohol wash, you will want to treat. If you have extracted your honey harvest, this is a good time to use treatments that cannot be used when supers are present.
- Remove drone comb foundation for the remainder of the year.



- Monitor for *Nosema*. It is present all year round, but regular monitoring will help you understand your normal levels and when/if they peak, particularly if you are seeking to understand why a colony is struggling.

Population management

- Consider combining weak colonies with strong ones or culling them: if a colony can accurately be judged as doomed, it will probably be a waste of resources to try to overwinter it individually.
- If you are considering requeening, this is a good month to do it. An overwintered young queen should start laying a good pattern in the spring.
- Do not interrupt the brood pattern in September as it may disrupt the production of winter bees.

Equipment

- Removing bees from honey supers may require a fume board, bee brush, bee escape, or other tools; they each have advantages and disadvantages for different beekeepers and in different environmental conditions.

Hive products and services

- If you remove fall honey, it should be extracted immediately afterward to prevent a small hive beetle infestation. Fall honeys usually granulate more quickly than spring honeys and may need to be warmed a bit to flow through filters or other equipment.

Yard maintenance

- Mow the yard as necessary.

Education and outreach

- Many beekeeping clubs have meetings on winterizing hives this time of year.

OCTOBER

In the hive

There is little to no egg laying in October. Drone populations dwindle and any drones that remain in the hive are kicked out by their sisters.

Bees tend to form their winter cluster at around 50°F, usually starting in the middle of the month.

On warm days, the bees venture out looking for food and may rob unprotected hives.

Seasonal conditions

In Ithaca, NY, in October, the average minimum and maximum temperatures are 38°F and 59°F, with 3" of precipitation.

A few asters may still be in bloom. Fall witch hazel may flower, too.



Beekeeping activities

Inspection

- The weather may be too cold for extended inspections. It will also be difficult to correct any problems this late in the season.

Nutrition

- A full-sized colony should have at least 70-90 pounds of honey to eat by the beginning of October, or more than one full deep. Nucs of course need less. Estimate the weight by slightly tipping and hefting the hive. If you extract honey, leave enough for the bees or feed them sugar syrup to make up for the difference.
- If you feed the bees sugar syrup, it should be a 2:1 ratio, thicker than the spring feed; the bees can evaporate the excess moisture from the hive faster from this thicker syrup.
- The bees will need at least two double-sided frames of pollen/bee bread by late winter/early spring. It is better to feed protein earlier in the season, although you can do so in late winter/early spring if necessary.
- Do not feed pollen or pollen substitute for the remainder of autumn, as bees use the reduction in pollen flow as a cue to continue rearing winter bees.

Pests, parasites, and diseases

- At this point in the year, if you find three or more mites per 100 bees...from a sugar shake, ether roll, or alcohol wash, you will want to treat. Treatment methods will depend on your management goals,

the condition of the colony, and external conditions. Treatments that are most effective when there is no brood present are good options now.

- Always remove chemical *Varroa* mite treatments according to label directions, but make sure none remain in the hives before you winterize them.
- Carefully check every brood frame in each colony for American foulbrood infection.

Equipment

- Winter preparation should continue: remove extra supers and queen excluders, secure the hive cover with a rock or straps, add a mouse guard (after confirming that a mouse has not yet moved in), and add an entrance reducer (if it is not already in place). Consider raising the hive up off the ground, if it is not already. Remove any supers that have not been filled.
- You may insulate the hive, but be sure foremost to avoid moisture build-up in the hives. Cold is less of a problem for bees than condensation. Since much of the heat escapes out of the top of the hive, some beekeepers add a super with an insulating, absorbent material (e.g., dry leaves, woodchips). Others wrap the hives in black tarpaper or similar materials. Leave an upper entrance open for the exhaust of moisture. Tilt the hives forward a few degrees so that any moisture that does accumulate can drain out the bottom entrance.

Yard maintenance

- Consider moving your hives to sunny winter yards. They can be crowded in these yards, since they will not be foraging. Be sure that these yards and the spring/summer yards will be accessible in mud season (early spring).
- Consider setting up a wind break near the hives.

Education and outreach

- Register for the American Beekeeping Federation Conference and/or the American Honey Producers Association, which usually meet in January.

NOVEMBER

In the hive

The bees are in their winter cluster, and there is little to no egg laying in November.

Seasonal conditions

In Ithaca, NY, in November, the average minimum and maximum temperatures are 32°F and 48°F, with 5" of snow and 3" of other precipitation. The latest sunrise of the year is on November 3, at 7:43am.

Nothing is in bloom, except perhaps some varieties of witch hazel.



Beekeeping activities

Equipment

- You may insulate the hive, but be sure foremost to avoid moisture build-up in the hives. Cold is less of a problem for bees than condensation. Since much of the heat escapes out of the top of the hive, some beekeepers add a super with an insulating, absorbent material (e.g., dry leaves, woodchips). Others wrap the hives in black tarpaper or similar materials. Leave an upper entrance open for the exhaust of moisture. Tilt the hives forward a few degrees so that any moisture that does accumulate can drain out the bottom entrance.
- Be sure that any equipment you are storing during the winter that may harbor wax moths has been frozen and/or is stored carefully.

Yard maintenance

- Consider setting up a wind break around the hives

DECEMBER

In the hive

The bees are in their winter cluster, and there is little to no egg laying in December.

Seasonal conditions

In Ithaca, NY, in December, the average minimum and maximum temperatures are 22°F and 36°F, with 13" of snow and 2" of other precipitation. The shortest day of the year is December 21, although the earliest sunset is on December 8 at 4:32pm.

Nothing is in bloom, except perhaps some varieties of witch hazel.

Beekeeping activities

Equipment

- Order any replacement bees (packages, nucs, or queens) as soon as possible; producers generally run out fast.
- Clean your honey house, freezer, or other areas that are chaotic/full in the active season.
- Take inventory. Fix, clean/sterilize, purchase, assemble, and paint equipment as needed.

Yard maintenance

- Remove ice blocking the hive entrances, to give the colonies better ventilation. Don't worry about snow around the entrance or hive body; it allows enough airflow and may help insulate the bees.

Education and outreach

- Spend this time reflecting on what went well and what you might change next year. Plan for your upcoming year: do you want to downsize or scale up, try out a new form of honey production, get into the pollination business, or something else?
- Catch up on Bee Culture and American Bee Journal - and renew your subscription!





Cornell University
Master Beekeeper Program