Monthly Beekeeping Tips by Todd Balsiger - Oregon State Beekeepers Association

Beekeeping is not going to get easier, and our hive management practices will need to change to address new concerns. There are two main concerns: a more virulent form of Nosema which is active all year (N. ceranae), and the loss of synthetic miticides to control Varroa (old news?). Time will tell how these issues will play out. Maybe Nosema ceranae will not be as virulent as some are suggesting – stayed tuned. In regards to synthetics not being effective (fluvalinate and coumaphous, in particular), we now have alternatives – many of which are natural chemicals – like formic acid. For your overall strategy, consider the following points:

- Breed or purchase mite–fighting bees (the most important thing we can do according to Randy Oliver)
- Adopt integrated pest management practices
- Use natural chemicals for Varroa control, and synthetics as a last stop
- Provide nutritional feeding (especially if stressed by commercial pollination)

January

- In general, disturb your bees as little as possible.
- If you are concerned about starvation, lift the back of the hive to assess hive weight. Provide emergency feed to featherweight colonies. Check with your mentor on what to feed.
- Brood rearing and metabolism increase at this time of year, which adds to hive moisture, so make sure lids are water tight (rain and snow can't get in), that hives are tilted so water drains away, and that there is sufficient ventilation (allowing excess moisture to be vented from inside the hive).
- Make periodic checks of your apiary, especially after a wind storm to make sure nothing is amiss.
- Prepare for next month's tasks – in the past we have always started to manage Varroa mites in February or even at the end of January, if weather allows. If we get a break in the weather, where the daytime temperature gets into the 50's and the bees begin to fly, you can apply Hopguard 2 to start managing those pesky mites.
- For the non procrastinators, this is a good time to assemble hive components, while there is not much else to do.
- If you haven't already done so, now's the time to order Springtime queens and packages

February and March

February and August have historically been the two months on the opposite sides of the nectar flow to treat for Varroa mites, but this is not written in stone. There are new mite control options and they have different temperature range requirements and honey super withdrawal times.

- In a nutshell, we do not want our Varroa mite populations to get too high – 3,200 has been cited as the economic threshold for the U.S. And, we do not want to skip a treatment window, if that means the threshold number will be exceeded before the next treatment window.
- The need to treat should be based on your current mite population. If you have a high mite population, you should treat immediately. In early February your option is Hopguard 2 or Apivar (Amitraz). If you have a low mite population, you can delay and treat in March or April with controls that require shorter withdrawal times before supering but higher daily high temperatures for use. Mite Away Quick Strips (formic acid) can be used between 50-92 degrees F and Apiguard or ApiLife Var (thymol) between 64-95 degrees F.

- Our most efficacious mite controls buys you about 4 months which includes the treatment period before you need to treat again. Note that this period can be extended by using mite tolerant stock, screen bottom boards, drone brood removal, powder sugar, etc.
- A word of caution on mite management: Unless you are **positive** that you **know** your mite loads and are following a closely monitored plan, one application of any mite management agent ("hard" or "soft" chemicals), once a year has proven to be ineffective. There is no "Silver Bullet" nor a "Stake Through the Heart," when you are dealing with Varroa mites.
- One possible and viable treatment option for Treasure Valley beekeepers is to use Mite Away Quick Strips in the spring (March/April) and Apiguard in August. Hopefully, one day soon, oxalic acid will be registered for use during winter broodless periods.
- How do you estimate how many mites you have? Here are two techniques: the alcohol wash and the natural drop count.
    - An alcohol wash can be used to estimate Varroa populations with or without the presence of brood. A mite count is simply a ratio of the number of mites per given number of bees multiplied by the total estimated bee population, and then factoring in the Varroa population hidden in the brood. An estimated ⅔ of the mites are within the capped brood. An example: brood is present, and there are 30,000 adult bees. You find 5 mites in a ¼ cup alcohol wash (about 150 bees). This is equivalent to one mite per 30 bees, or 1000 mites total on the adult bee population. Add the 2/3 hidden in the brood, and you have roughly 3,000 mites, which is close to the economic threshold number of 3,200.
    - The natural drop estimate for Varroa population requires full cycles of brood. Incidentally, these numbers for both techniques come from Dave VanderDussen – the Mite Away Quick Strip proprietor. A three day, 24 hour sticky board drop count is best. Each fallen mite represents 1% of the total mite load. This means you multiply the average drop count by 100. An average drop count of 32 mites in 24 hours would equal 3,200 total mites, or the economic treatment threshold.
- Other tasks aside from worrying about Varroa mites…
    - Heft hives to find any light ones. Provide light hives emergency feed, preferably sugar candy/fondant or frames of honey. This is prime time for starvation, as brood production increases energy demands.
    - Look for signs of Nosema infected hives. Symptoms include: slow build-up (best indicator), disjointed wings, distended bloated abdomen, a lot of yellow streaks on the outside of the colony and crawling bees outside of the hive. These symptoms may also be associated with tracheal mites. Make sure suspect hives have good ventilation and as a last resort, be prepared to treat with fumagillin syrup (follow the directions exactly, overdosing does not help, and treat fumagillin with respect, as this material is dangerous stuff).
    - Find and remove queenless or dead out colonies. If pollen is actively being brought in, this generally indicates a healthy queen and hive.
    - Remove dead outs and find out why the colony succumbed – queenlessness, starvation, disease? If the equipment is disease free and in good shape (frames are not all dark, with thick cell walls, riddled with drone brood cells), store for future use in dry location stacked on end so air and light can penetrate to discourage mold growth and wax moth activity.
    - Spring usually brings some of the wildest and windiest weather. Make sure the lids are secured after you break the seals.
    - If you feel your area lacks sufficient natural nectar flows and pollen to fuel high-energy growth to make full-sized production colonies in time for the main nectar flow (end of May), feed sugar syrup and pollen substitute when the daily highs exceed 55 degrees.

    - Wax moth activity dramatically picks up when the temperatures rise. Keep an extra eye out for stored frames that have had brood and have pollen. Moth crystals (paradichlorobenzene) can be used for control, as well as freezing the frames. Exposing the frames to light can inhibit the moths, too.
- Here's one last thought: Don't feed pollen substitutes too early. I would consider too early as January, February, and maybe the first part of March. Brood production will increase, which may exhaust winter food supplies prematurely. Early feeding also increases activity, metabolism, and hive moisture. The weather may be inappropriate for cleansing flights, increasing the likelihood of developing dysentery. Dysentery is the quickest and most effective way of converting a slight Nosema infection into a severe one. Winter should be a time of quiescence for the bees that enables the bees to live to take the colony over the period when little or no brood is being reared. My two cents worth.

April

Each spring we need to verify that colonies are queenright, healthy, and well fed so they can build up to maximum populations by mid to late May. During this inspection we need to do some "cleaning" within the hive box.

- Mouse guards can be removed.
- Spring is usually when starvation occurs… Find light hives by lifting (tilt one side up) and feeling the relative weight to other hives in your bee yard. Feed light hives — syrup is okay now. If they're starving, make a thick syrup; for stimulation, make a thinner mix. You can also transfer excess frames of honey from overly heavy hives to lighter hives.
- On a calm, warm day go through hives and clean them. By "clean," I mean to make your hive easy to work again – to free and unbind frames from the clutch of wax and propolis. Burr comb should be removed. Poor quality frames or brood frames older than 5 years can be replaced with new comb or foundation. At least move the poor quality frames to the sides of the brood boxes, and center the best quality frames in the middle. The best practice is to separate the brood boxes to isolate the queen, and to work one brood box at a time.
- Change out (or at least clean) the bottom boards that the bees have been using since last summer and exchange them for clean, dry bottom boards. Screen bottom boards should be okay.
- Swap out the bottom board for a clean, dry one.
- When reassembling the hive, if the lower brood box is mostly empty (which is often the case), reverse locations and put the empty lower box on top of the box containing all the bees. This will relieve congestion and provide expansion room for the queen and the brood nest. There are times when you may not want to reverse based on the brood nest configuration. For example, if brood is located in both boxes and the bees are still early in spring with cold temperatures, chilled and dead brood can be caused by reversing and separating a portion of the brood from the main group of bees, and then not having enough adult bees to cover both areas of brood. In another example, if the queen is already working in the lower box, and the upper box is still mostly food stores, then reversing would not increase space for the queen. In this case, a better practice would be to pull excess frames of honey and replace them with empty frames.
- You may want to requeen weak hives and make divisions out of strong hives. The assessment of whether a hive is weak or strong is based on the hive population. A large adult population, lots of brood and a solid brood pattern are indicators of a good queen and a strong hive. A queenright hive has eggs and brood, so unless you want to requeen or make a division at that time, you do not need to find her. Always scan brood frames for the presence of foulbroods, particularly AFB.

- April is the best time to make divisions to make a robust honey crop the current year (some start in March). Making divisions is a form of Varroa control, as splitting disrupts the brood cycle and sets the mites back (swarming does the same thing but to a greater extent). Keep in mind that well mated queens are not always available early in spring, and that additionally feeding and the need to make well balanced divisions (ratio of adults to brood) may be necessary to prevent chilled brood.
- Consider adding disease free dead-out brood boxes to booming two-story hives in anticipation of making divisions with them when your queens arrive. This will relieve congestion and give these overly populous hives something to do – clean and refurbish frames — and will make an excellent division later.
- Continue to look for signs of Nosema-infection. Effects of Nosema include reduced bee life spans, increased supercedure and colony death, slow spring build up, and reduced honey yield.
- According to the OSBA *Honey Bee Pests and Diseases Update,* April is an ideal month to test for Nosema infestation levels.
- It is suggested to keep the front of hives clear of grass to promote ventilation and forager access.
- If you believe Tracheal mites are a problem in your apiary, consider the use of plain extender patties (two parts sugar to one part vegetable shortening). Place patty in the middle of two-story colony, or on the top of a single story.
- Determine your Varroa mite load and whether the parasite population should be reduced. This is a good time (and maybe your last window of opportunity) to use controls that require higher daily high temperatures for use, and shorter withdrawal times before supering. Mite Away Quick Strips can be used between 50F and 80F and Apiguard, between 60F and 90F.
- When planning to super remember the withdrawal time requirements for medications and mite treatments. Also, if you use paradichlorobenzene for moth control, air out supers on a warm day to vaporize the chemical residues.
- If you want to give your hives a boost begin stimulating feeding (equal parts sugar and water by weight) 6 weeks prior to the major nectar flow (so start about mid April). DISCONTINUE simulative sugar feeding before supering.
- Swarm season starts with the flush of new growth on plants and trees, and will continue into June. Nuc boxes containing one frame that has had brood, one frame of honey and pollen, and the balance foundation are ideal for catching swarms. Consider pouring sugar water all over the frames to increase the attractiveness and to provide additional resources to draw foundation.
- Wax moth activity dramatically picks up when the temperatures rise, so keep an eye out on your stored supers – especially supers that contain pollen and had brood. Moth crystals (paradichlorobenzene) can be used for control, as well as freezing the frames. Exposing the frames to light can inhibit the moths, too.
    - Chemical protection of bee equipment should be used as a last resort in an integrated pest management program. Clemson University, a highly authoritative and respected source on beekeeping, reports the following:
        - There are two chemicals available in the US to control wax moths, paradichlorobenzene (PDB) and aluminum phosphide (Phostoxin). Beekeepers are strongly advised to air out stored chemically exposed supers for a day or two away from PCB prior to placement on colonies because the chemical is toxic to bees at high concentrations.
        - Mothballs which contain <u>naphthalene</u> are <u>not registered for wax moth control</u> and are <u>illegal</u> for use in protecting beekeeping equipment.
            - http://www.clemson.edu/extension/beekeepers/publications/wax_moth_ipm.html

May

Like last month, the overriding objective is for all colonies to be queen-right, healthy, and well fed so they can build up to maximum populations for the onset of the major nectar flow. The major nectar flow begins in most areas by late May.

- Light hives can still starve if the weather turns bad. After the maples and fruit trees bloom there is actually a decrease in available nectar until the summer nectar flow begins in earnest. Although very infrequent, in past years feeding well into summer to prevent starvation has been necessary. Stimulative feeding can be done at this time prior to the main flow, but discontinue before supering!
- Swarming is at a zenith in May (end of April too), so continue swarm control practices. The following phrase still has meaning: a swarm caught in May is worth a load of hay; a swarm caught June is worth a silver spoon; and a swarm caught in July ain't worth a fly.
- Nuc boxes containing one frame that has had brood (a dark frame), one frame with honey and pollen, and the balance foundation are ideal for catching swarms. Swarms draw out foundation fast and do an excellent job. Remember frames need to be tight together when drawing foundation– too much space and the likely result will be burr or misshapen comb. You can feed sugar water to accelerate growth just like for divisions.
- Consider setting up decoy hives (just like the nuc box above) to catch stray swarms in your apiary.
    - Make sure the mice can't get in!
- More on swarms… Decreasing queen pheromone production and distribution within the hive triggers the swarm impulse, so the two best ways to reduce swarming are to regularly requeen (young queens produce more pheromones) and to reduce congestion (reversing, equalizing, splits).
- Visually look at colonies for health and investigate why some hives are not keeping up with their peers… Does the hive have an underperforming, old queen? Has the colony become queenless and developed laying workers? Does the colony have a disease? Has the colony swarmed (don't destroy the swarm cells!)? Are the bees raising a supercedure queen? Take appropriate action (which could be doing nothing). If you don't know what to do, go to your next local beekeepers' association meeting and ask.
- Look for signs of a need to super your hive, e.g., the bees lose interest in syrup, the bees have zero robbing tendencies, and you see a new film of white wax especially on the top bars.
- Provide abundant room for storing honey early in the season. I consider two supers as abundant. If paradichlorobenzene crystals are used for wax moth control, then air out supers on a warm day to vaporize the residues.
- Bees work from the center up, so foundation centered in the hive will be drawn the fastest. In general, always use 10 frames when drawing foundation to prevent burr and misshapen comb. After the frames are drawn, we recommend going to 9 frames for supers to make uncapping easier. For 10-frame brood boxes, either 9 or 10 frames are okay.
- Research has found no difference in top-supering vs. bottom-supering. Do what is easier for you. Just like whether to run 9 or 10 frames per brood box, top-supering vs. bottom-supering is one of those highly debatable issues among beekeepers.
- I recommend queen excluders (there are exceptions). I consider brood in supers as a big problem and hassle. Not the least of which are frames that have had brood are dramatically more attractive to wax moths and will require extra protection.
- Bees collect water in the summer as avidly as nectar and pollen. If appropriate water resources are absent, provide water early and let the bees train themselves to use the source. This is especially important for urban settings – where your bees may end up in your neighbor's swimming pool or pet bowl instead.

- Varroa mites: You may want to sample to estimate your Varroa mite load, and treat if your estimate is high (more than 3 mites per 100 bees sampled out of the broodnest). This may be your last opportunity to treat with controls that have short withdrawal times before supering but require higher daily high temperatures for use. Check this cool poster out if you have any questions about testing your bees for that despicable, miserable vermin, the Varroa d. mite: http://tinyurl.com/akx2yzc Manage Your Mites!

June

Summer floral sources are in full bloom this month; nectar flow will be at a zenith.

- Super ahead of the need for space - this will increase honey production and reduce swarming. You may want to walk through your apiary and reshuffle the supers away from hives that are lagging behind and give them to strong hives that are packing the honey in.
- If you have foundation to draw, now's the time. Summer's nectar dearth is around the corner.
- Continue to replace old, poor quality brood frames with foundation. We recommend replacing brood frames every 5 years.
- Remove and extract supers containing *well ripened honey* -- the moisture content should be around 17.8% or less. Honey harvested early in the season (June) has more moisture than late season honey (late July/August). Avoid harvesting frames of uncapped honey early in the season or risk having too much moisture. You can check the ripeness of uncapped honey in a given frame by giving the horizontal frame a hard, downward shake. If there is a shower of nectar, then clearly the honey is too wet to extract.
- If you have hives around agriculture crops (e.g., vetch, red clover, Christmas trees, etc.) be cognizant of the dangers from pesticides. Make inquiries -- find out what's going to be sprayed, when, and the danger to your bees. You may want to move your bees out. See OSU Extension Publication 591 for more information on how to reduce bee poisoning.
- If you find hives with the beginnings of swarm tendency, remove the forming queen cells and rotate the brood boxes. Pull a couple of frames of sealed brood and fortify weaker hives. Place foundation in their place. Note that swarm cups are a natural condition in the hive; their presence does not necessarily mean the hive will swarm.
- Swarms issue one or two days after the first queen cells are capped! If you find capped queen cells, then there is a good chance the hive has already swarmed. If you think the hive has not swarmed, then one way to try to prevent swarming is to split the hive hard and make divisions. Note that if you plan to make nucs from the swarm cells and allow the bees to raise their own, in some peoples' opinion this is bad practice because you are selecting for swarminess. With the introduction of the Varroa mite and the benefit of breaking the brood cycle in reducing Varroa numbers, swarming may not be as bad today as in the past.
- Provide a steady supply of water.
- Continue to be on the lookout for American Foulbrood disease.

July

Unless you're near a commercial crop or at higher elevations, the summer nectar dearth begins about mid July (maybe August 1st this year). At this time we should be thinking about nest consolidation and honey harvest.

- In late summer we crowd the bees. We begin this in earnest in August along with mite treatments, but for now don't leave extra supers on colonies light on stores. Also, avoid having extra supers on colonies as the nectar flow tapers off as this leads to half-filled frames --an inconvenience at harvest time.

- As usual, keep an eye out for colony health. Any colony not keeping up with the others in the bee yard needs to be inspected to make sure the queen is laying and healthy.
- Requeen any colony with undesirable characteristics such as poor production, European foulbrood (not AFB), poor brood pattern, mean temper, etc.
- Queenless hives are a real problem and need to be either requeened with a nuc or retired. Typically, queenless hives have an abundance of pollen stored in multiple frames (no brood to feed). This condition typically is followed by the development of laying workers. Signs of laying workers are multiple eggs per cell, eggs on the side of cells (opposed to one egg centered on the bottom), and drone brood development in worker cells. If requeening, always place the nuc in the top brood box and to one side (easier to defend). You may want to reverse brood boxes first as there may be fewer bees in the lower box (again, easier to defend). If you retire the hive, shake the bees out and share the frames with other hives - the workers will perceive the eggs as foreign and unwanted and will eat them. After the drones hatch from the elongated worker cells, the workers will cut the cells back to their regular length.
- Keep on the lookout for American foulbrood as robbing season is imminent and AFB infected colonies make easy targets. AFB is highly infectious and early detection is important for disease control.
- Remove and extract supers. Honey removed in late July will have less moisture content than honey in June, so you do not have to be as judicious about making sure that all cells are capped. Moreover, in late season the nectar flow can end, and the bees will be unable to cap the honey cells even though they are ready (sufficiently dehydrated). As a general rule you can always check the moisture content and ripeness of honey in a given frame by shaking the horizontal frame hard, downward and seeing if nectar falls out. If a shower of nectar falls out, then that frame was not ready.
- Be prepared to do the most important treatments of the year for your hive in early August: Varroa mite management treatments, and reducing hives down to winter configuration.

August

August is a difficult time to work bees - The days are hot and the bees have a strong inclination to rob. There are vital tasks to be done that will greatly increase the odds for winter survival that we must do.

- Remove all supers and configure colonies into winter configuration (generally two deeps). Do this regardless of how populous you think your colony is!
- Treat for Varroa in early August - the latest you should delay is the 15th. Our objective is to raise a healthy crop of winter bees. Some of our mite treatments are hard on the bees too, and that is partly why you must begin your treatments early, so that they have time to recover.
- Find queenless hives and requeen with a nuc or close them down.
- Be cognizant of the problem of robbing at this time of year. Do your best to prevent this bee yard problem. Once robbing begins, the pandemonium is hard to stop. Try to work quickly, and at either ends of the day (morning/evening) when there is diminished flight. If you only have a few hives, this probably won't be a problem.
- As usual, keep a lookout for American foulbrood. Inspect weak hives and find out why they're in that condition. Weak hives (which could be caused by AFB) are prime candidates to be robbed.
- Check for both American and European foulbroods. If you suspect foulbrood, take some pictures with your phone and send the information to one of the TVBC mentors. Act quickly as there's not a lot of time to get an infected hive ready for winter.

- Extract as soon as possible after removing supers. Wax moths are very active at this time of year and will quickly find brood and pollen in supers. Wax moths and their larvae are a nuisance during extraction - best to avoid them altogether.
- Provide water continuously, if the bees don't have access to a reliable source.

September

September beekeeping activities are a continuation of those started in August. You will need to tend to nest consolidation, pest and disease control, fall feeding, and winter preparation.

- Colonies should be in winter configuration -- too much space is a liability now.
- Check hives to make sure they are queenright, healthy, and have populations sufficient to overwinter. Small hives can be united.
- Check for adequate food stores -- heft hives (tilt one side up). They should be noticeably heavy. If not, feed for weight -- heavy sucrose syrup, 60% sugar by weight.
- Finish Varroa treatments and retest for Varroa to insure efficacy of treatments. Always be on the lookout for American foulbrood.
- Insure that lids are water tight and that there is an upper ventilation hole. Dry bees can endure cold and survive, but if wet from leaky lids or condensation, they may not.
- Add entrance reducers/mouse guards.
- If possible have an ideal winter yard. An ideal winter yard is protected from wind and pockets of cold air, and exposed to the sun. Face hive entrances towards the sun and away from prevailing wind. Tilt hives so water drains away from the entrances.
- Try to prevent robbing. Don't keep hives open too long.
- Protect extracted supers from wax moths.
- Lastly, once your hive is set for winter, don't keep popping the lid off, for when the weather is cold, the bees will be unable to re-glue the lid down. Use a heavy object, if you do break the seals.

October

October is a transition month from fall to winter in our weather. Generally, the weather is relatively benign for the first two or three weeks, and then winter arrives in earnest by Halloween, or so. This is our last opportunity to feed syrup and finalize winter preparation before dormancy.

- Continue to check for light hives. Heft hives (lift one side up). They should be notably heavy. If not, feed a saturated sugar solution (60% sugar; balance water by weight). Feed early enough to allow syrup to ripen.
- Place a barrier between the bottom of the hive and the ground. Pallets are ideal for this.
- Keep hives exposed to the sun with entrances faced away from prevailing winds.
- Tilt hives so water drains away from the entrance. Ensure proper ventilation and that lids do not leak.
- Add entrance reducers/mouse guards.
- All superfluous items within the hive, e.g., *Varroa* treatments, queen excluders, and extra rims, should be removed by now.
- Find and remove deadouts. Place all unused equipment in storage.
- Protect frames. Moth crystals (paradichlorobenzene) are typically used for this purpose. Stack supers (or brood boxes), and put crystals on a piece of paper on top of every 5th super, or so. Then place a lid on top. Vapors kill moths and larvae, but not eggs. Freezing is an option and will kill eggs. Also, wax moth activity is suppressed if supers (and the frames within) are left open and exposed to light.

- If hives are opened/lids lifted late in the active season (or past), the propolis seals have been broken. Take care to secure the lids to keep them from being blown off during winter winds.

November and December

November and December are two months to enjoy the lack of bee work. That being said, I will still make you think that there is a lot to do by what I write below:

- For us in the Northwest, excessive moisture in our hives is one of our biggest concerns. Make sure lids are watertight, that hives are tilted so water drains out and away, and that there is sufficient ventilation. This is even more important in January when brood rearing and metabolism increase hive moisture.
- At this time the bees are clustered together in dormancy, except for those periodic warm spells that allow the bees to break their cluster, move closer to stored honey, and make those all important cleansing (defecating) flights.
- These periodic warm spells afford the opportunity to visually assess the health of our hives and to do emergency manipulations, if necessary. As a rule, never open a hive during the winter unless there is a good reason and the temperature is at least 45°F. Work *around* the cluster rather than *through* the tightly formed bees.
- Take note of the colonies that are flying little or not at all during these periodic warm spells. Do a cursory check for weight (lift the hive to assess) and to determine whether or not the hive is alive (place your ear against the wall, thump the hive with your hand, and listen for the *buzz*).
- For hives low on stores, feed fondant or frames of honey, or possibly retire the colony. Do not feed syrup at this time. Bees cannot remove the extra moisture, and too much water in the bees diet in conjunction with confinement leads to dysentery.
- An ideal way to feed fondant is to use lids with rims and to pour the fondant directly into the void. These lids can have up to 5 pounds of feed and last 2-3 weeks.
- Drivert has been discussed as an alternative to regular fondant (or dry sugar) on the OSBA Message Board. Drivert has existed for at least 30 years as a potential alternative for emergency feed. This feed is composed of 92% finely pulverized sucrose along with 8% invert sugar. According to C&H, drivert is "a dry fondant sugar used in icings and pan-coated confections."
- For dead-outs, determine why the hive succumbed (usually queenlessness) and make sure frames are free of scale from American foulbrood. Shake out the dead bees. Then, clean and return the equipment to storage.
- Check your apiary occasionally -- especially after a wind storm. Make sure that the lids are secure and verify that animals (e.g., mice, bears, and humans) have not been bothering (e.g., chewing, eating, or vandalizing) the hives.
- Consider placing your order for queens now. Demand for queens has increased during the last few years.
- Give honey and/or candles to family, friends, farmers, and growers for the season and holidays.

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