

# Action Plan for Our Beeyard

## A Year with our Bees

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Kim Mehalick

Oct 2019

# How did I become a beekeeper?

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**The Guilty Party** James my beloved first child. He wanted bees... after years of telling him don't bring bugs into the house we relented. First hives arrived March 2012. We now we have upwards of 20-40 hives in our back yard, and two outyards depending on the time of the year.



# The small print

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- Remember all beekeeping is local!
- Disclaimer: we follow 90% of the certified naturally grown guidelines. This means being proactive against varroa, using IPM methods such as drone pulls, screened bottom boards, freeman trays with diatomaceous earth, beneficial nematodes and regular monitoring of varroa levels before treating. This is reflected in this calendar.
- This calendar is for my area, which is central Prince Georges County in Maryland. It was developed to help new beekeepers have a more successful beekeeping experience, and understand what the basic work with the hives should be. This calendar takes into account a single nectar flow starting in late April, ending in Early June. First swarms usually April 15<sup>th</sup>.

# The Action Plan

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- Sit down and make a plan for how you would ideally handle your hives this year. This is ideal beekeeping. Life, work, family do not interfere. The weather is always wonderful, and the bees are always happy
- This planning step will allow you to adequately plan your resources, money spending and time allocations
- These are only guidelines, the bees will tell you what to do and when. With beekeeping you have to listen to the bees and adjust. Every year is different.
- Do not become regimented to the following date suggestions. They are suggestions.
- Set your goals for the year

**WRITE THEM DOWN, MAKE THEM TANGIBLE**

# My Goals for 2020

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- Do splits on all hives in early spring (four Snellgrove, rest OTS).
- Sell overwintered nucs, and some spring nucs
- Reduce down to 20 hives
- Start our long Langstroth hive FINALLY!
- Order some new VSH queen stock for July
- Create 5 nucs for overwintering, and possible sale following Spring
- Do at least 3 outreach activities
- Get a ribbon at the EAS honey show
- Get a blue ribbon at the MSBA honey show
- Work towards EAS Master Beekeeper certification

# Records make a difference

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- Use any method you want, except relying on your memory. My second worst method loose scrap paper.
- Kim Flottum says “ I have the most complete April records of anyone, decent May records and by June I have given up again”
- Computer apps look great, but in reality do not readily avail themselves like the ease of a pen and paper.
- Don't make them too complex, or detailed
- Spend \$1 and get a spiral notebook and use it
- Even keeping information with a sharpie on the top of the hives or those white box walls, is great. You can always come back after everything is closed up, and take your inspection notes
- Landi Simone at EAS, taught us to use a zippered 3 ring binder. It is bright green, barely fits in our bucket BUT it is flexible and allows you to record hives and outyards as your operation gets bigger

# Why keep inspection records on your hives?

- Determine when things happen (first swarm cells, first pollen bound frames, first wasp kill). This helps you with local dates in the future.
- Record Varroa testing results, and use it to determine what medications worked for you this year.
- Learning tool for beginners. If things go south, you will be able to tell people when you were in last, when you saw your last larvae, what things looked like so you can figure out a solution.
- Tool for evaluation what worked and didn't work (mite treatments, frames/foundations types you like, swarm mitigation activities).
- Honey harvest records (needed for farm records).
- Hive loss information for Bee Informed survey.

# Your inspection records

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- Should note what kind of equipment (8 or 10), how many boxes
- Information on the queen (type, age, is she marked)
- State of the hive (queen right, presence of pests, brood/food state)
- Swarm mitigation steps needed, or in process
- Listing of what you need to do next time. (bring grass clippers, start feeding, deal with roaches, replace poor condition equipment, add robbing screens, etc.)





Partnership to get the detailed status of hives in early August.

Note Temperature/weather, Temperament, Hive configuration, any sign of disease, presence of Young Eggs (YE), Uncapped, and Capped brood

Hive Number 17-6

Date	Notes	Fed	Posts	Honey	Loc.
3/22	Installed into (2) 5 frame nuc's	1-1			
3/26	Distrit released Queen				
4/9	Looked good. Nice brood pattern (have 3rd nuc box)	1-1			
4/10	moved by Mike into 5 frame (3) boxes				
4/23	Empty yellow feeder brought in to watch Young uncapped on center of top box. Not fully occupied in 3rd box. Entrance feeder pulled in. Added second distrit Tray had pollen pulled out.				
4-27	gave full breadman feeder				
5-7	Top box 18ths of nectar. Under super of green box. mainly foundation No more food				
5-14	moved to hull top				
5/29	Bees drawing comb + starting nectar - ready for box #5 (super)				
5/31	Added 5th box in position 4 - 7 frame wax foundation w/wire				
6/6	Added 6th box in position 5 - 7 frame wax foundation/strips				

# The new beekeeper should:

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- Feel free to keep going into the hives, until you are comfortable doing it. That may take 2 visits, it may take 20.
- This first year, you need to learn more than you need to “not disturb the bees.” It would be great to limit yourself to going weekly in your hive. Take advantage of other beekeepers and visit their hives, too!
- Feel free to wear any protective gear you want, without worrying about “what I saw on Beesource, YouTube or anything else.” Yes, I know some beekeepers work without veils and gloves and jackets. That is not the norm for first year people, but it does make for some great YouTube video. NEVER apologize for wearing protective equipment.
- Feel free to use the resources available to you. Talk to people. Your Local club is here to help.
- Beekeeping is local. **Take the internet advice with a grain of salt.** The three month, all summer long nectar flow in Upstate NY is not the 5 week, early spring flow of Maryland.
- Your assigned mentor is available CALL THEM, EMAIL THEM. They want you to succeed. You are not alone.
- You have permission to “Experiment.” They are YOUR BEES.

## CALENDAR DEPENDENT SCHEDULE

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- Check varroa levels monthly. I prefer the alcohol wash. Any count over 3 mites per 100 bees needs attention, over 5 treat now. You should have a varroa mitigation plan that **works for you**.
- Remove some drone brood every 21 days, starting in April depending on your hive.
- Keep your water source filled and available.
- Keep a small hive beetle trap in the top box of your hive, on the sunny side, near the outside edge. We also use unscented swiffer pads, and trays on our bottom boards with Diatomaceous Earth.
- Keep 1:1 on your hive until your **brood chamber** has drawn frames. Then STOP feeding. Brood chamber is defined as 3 medium or 2 deep boxes.
- Use an interior feeder. Boardman feeders in the front entrance of the hive are **ONLY FOR WATER**.

## “If you don’t have a Varroa Mitigation plan, you are planning to fail”

Dennis VanEngelsdorp

- Current varroa treatment recommendations from Dr. Dennis Van Engelsdorp, as of 2/17/18 are:
  - Spring: Amitraz
  - Summer: Formic acid
  - Fall: Thymol, then trickle oxalic acid as needed
- Bob Greenwell points out that the timing does not work for Maryland beekeepers because our high temperatures will not allow MAQS in the summer. Instead he recommends MAQS in the spring, Api Var after the honey supers are pulled, repeat MAQS in the fall as needed and OAV/OAD in the winter.
- Doing nothing about Varroa mites is not a practical option for most beekeepers.
- Personally with regular drone pulls, usually we do not see mite counts go up to treatable levels until August. Also, we mite test every hive, not a select few.

# Varroa Testing



#8 hardware cloth in a jar lid





The Good



The Ugly



# New Varroa Decision Tool

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The Honey Bee Health Coalition provides a fantastic varroa management decision tool:

<https://honeybeehealthcoalition.org/varroa/>

This tool will walk you through the treatment options available to you based on brood, mite levels, and organic/inorganic treatment options.



# March/April/May for TNB\*\*

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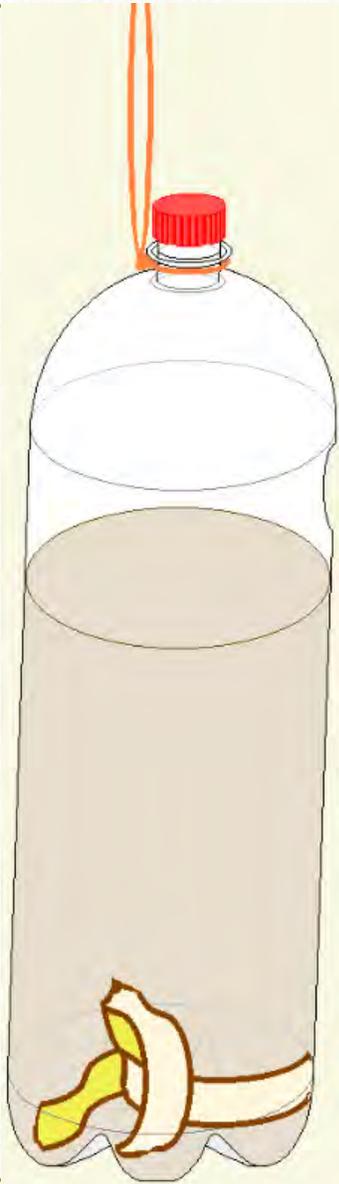
- Install your package or Nuc. The instructions remain almost the same for either type.
- Keep 1:1 on the hive UNTIL your brood chamber is drawn. This means 2 deep boxes or 3 medium boxes of drawn frames. After the first box, you can use a follower board to add empty foundation. It helps to draw out the comb better and limits the bees to as much space as they can manage.
- Use the Lee Travis Pillowcase technique to reduce the bees flying about while inspecting your hive.
- Consider putting on a robbing screen from the very beginning. You will have a weak hive until it grows this first year.
- If you start with an overwintered nuc, you might get a honey harvest your first year. Once the brood boxes are drawn, remove all 1:1 feed and add a honey super.
- Consider buying a piece of plywood and making a nucleus colony box. The plans for a simple one are at: <http://beesource.com/build-it-yourself/5-frame-nuc-d-coates-version/>. It makes four nuc boxes. Do it with a friend and keep two each. They make great quiet boxes to hold queens when you are doing inspections and can also be a good swarm trap.

\*\* TNB = The New Beekeeper

# March

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- Mid-month: FIRST full spring inspection of overwintered hive on a day when it is not windy or raining. Temperature is better over 50. Clean frames, check brood, and look at hive strength. Evaluate for varroa. Put in a new small hive beetle trap on the edge of the top box on the sunny side between frames 1 and 2.
- Evaluate for future splits.
- Put out your swarm traps.
- Relevel your hives if the stands have settled unevenly.
- Consider hanging a wasp/hornet/moth trap near your hives. We make one with a two liter soda bottle using <http://www.dave-cushman.net/bee/waxmothtrap.html>. It has been very effective. Getting a sole hornet queen in March is much better than 20 foragers in July.



Taken from <http://www.dave-cushman.net/bee/waxmothtrap.html>

Take an empty two liter soda bottle. Cut a one inch hole on the straight section.

Combine:

1 cup white vinegar

1 cup sugar

1 banana peel

Add enough water to fill half the bottle.

The banana is essential to keep the bees out. If you are hunting wasps and not wax moths you can add a little raw meat.

# April

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- When your brood boxes have high populations, remove the first split for the year. Books say 4/15. I have found that this is usually the first week in April for Italians, mid month for Carniolans. Depends on the hive buildup. [Note that Italians can be ready to be split weeks before Carniolans or Russians.]
- This is when I pull two empty frames per box that have aged out. If the 4/5 year old frames have brood or food, mark them for later removal and replacement.\*\*\*
- When the dandelion bloom hits, remove all 1:1 liquid feed, and SUPER UP with drawn frames. If you do not have drawn honey super frames, then add only one box of foundation at a time. Add the next super when the bees have drawn 80% of the box, and you are starting to see white wax on the tops of frames.

\*\*\* my frames are marked by year the wax was made. I remove them on a four year schedule because I run 8 frame equipment (two frames per year are rotated out, usually in April) This is part of my regular hive maintenance. If you run 10 frame equipment, you can use a five year schedule.

# May-June

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- Continue varroa checks and drone pulls. Check regularly for back filled brood nests. Tilt box up looking for swarm cells. The goal is to add real estate so the bees do not swarm, if you get behind then take a false swarm (split) and checkerboard in some drawn frames to give the queen some instant egg laying locations. Read Swarm Essentials by Steve Repasky for solid techniques.
- Snelgrove boards make taking a vertical split easy, and gives you extra queen cells for expansion without losing the honey crop.
- Make your resource nucs before the flow ends. Consider creating 1 per every three hives.
- We enter the dearth (i.e. no large nectar sources) beginning in mid/late June. The bees do not have incoming resources, and begin to become more defensive of their hives.
- Add robbing screens now, if you do not already have them in place. Some see basswood flow in late June. I do not.
- Consider hanging a wasp/hornet/moth trap near your hives. We make one with a two liter soda bottle using <http://www.dave-cushman.net/bee/waxmothtrap.html> It has been very effective.
- Attend the June MSBA meeting.

# July

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- Take your honey crop. Be sparing. We like to see 90% capped on the frames. If you have Italians leave 70-80 pounds on the hive.
- Once honey crop is over, this is usually when I **treat for varroa** to get ready for making winter bees if the alcohol test counts show a need. This is a good time to consider taking out your current queen into a small split, leaving your main hive queenless on purpose. This \*OTS split will create queen cells, and have a temporary 3 week loss of brood which will knock down the varroa population. [The split will need to be fed until at nucleus colony strength for overwintering as an insurance policy against hive loss. At minimum keep the old queen until you are sure the new queen is as good in her laying pattern before squishing.] If this is done in late May/early June, Bob Greenwell calls it a honey bomb. Once the bees make queen cells, they have nothing to do but cure the honey. The trick is finding the queen in a populous hive.
- If feeding, only use internal feeders, and feed at dusk/night.
- Once the Nectar Dearth begins your bees will evolve into a different behavior. In my apiary, we lovingly call it “Pissy bee syndrome.” They become more defensive of their resources. We usually highly limit the amount of time we leave a hive open to reduce setting off a robbing incident. Any inspections are quick and to the point.
  - *\*OTS splits - described by Mel Disselkoen as “The Ultimate, Chemical-Free Miticide”*

# These are bee beards.



August is HOT in MD. The hives are full of bees. Bee beards are normal, this is NOT a swarm about to happen.

# August

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- In our area, August 1 is the beginning of the new bee year. Our hives need to be healthy, and ready to make the winter bees necessary for overwintering success.
- What you do in August directly impacts what happens in March.
- Bees naturally switch over to creating winter bees now, following nature's clues. Typically we start some 1:1 feed on low weight hives to get them strong for raising brood.
- Drones start being strongly evicted by the middle of the month.
- August is a time for assessment, and decision making:
  - How is your queen?
  - What are your mite counts?
  - What is your food situation?

# Winter Bees

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- Summer bees live six weeks, winter bees up to 6 months.
- A Winter bee is physiologically different than honey bees produced in Summer. They have enlarged fat bodies in their abdomens and heads. These fat bodies produce vitellogenin. Vitellogenin increases the lifespan of bees and boosts their immune systems.
- Bees with high levels of vitellogenin are able to store protein reserves. This enables the colony to begin raising brood without a plethora of pollen present.
- Studies have found that colonies with varroa mite infestations do not fully develop into typical long-lived winter bees.

# August

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- How is your queen? Do you have a young vigorous queen to survive the winter and start laying like crazy in the spring?
  - We also introduce new genetics now. Thanks to Dennis Roundy we have two new Log Cabin Bee Farm VSH. We also worked a trade with another beekeeper who received a fantastic Bob Greenwell queen this spring. We are taking one of the daughters, who was created during the nectar flow. Speak to other beekeepers, arrange a swap of queen cells next spring when the flow is heavy and wonderful queens can be made.
  - Final chance to requeen is August. This is when you decide how you want to progress. Do you want a newly mated purchased queen? Did you setup your own cell builder and raise queen cells from your favorite top producing hives? Did your OTS split result in a nice new queen for your production hives? Many believe that a queen made after the summer solstice is the best queen for overwintering a hive.  
\*\*\*(it is too late to make a new well mated queen, there are limited drones out)
  - Typically we have found summer virgins overwinter very well. Virgins that start in the spring, and work an entire season tend to swarm in the following spring right after overwintering.

# August

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- What are your mite counts?
  - At the latest by July, you should be doing monthly mite counts. We are a proponent of checking every hive. This year, in the first 20 hives checked only three had more than 2 mites total in the 300 bee sample. Those three hives have been treated, and should be ready to make winter bees starting in August. Note one of those hives had 25 mites... quite a difference from the others. If we had spotchecked we would not have caught this potential mite bomb in our own apiary.
  - The Honey Bee Health Coalition has a fantastic varroa management decision tool available at <https://honeybeehealthcoalition.org/varroa/>
- What is your food/stores situation?
  - During dearth, your new nucs and splits need to continue to be fed until their full brood nest (3 mediums or 2 deeps) are drawn. George Imirie, EAS master beekeeper from Maryland, was famous for pounding his fist and saying “don’t let the jar run dry”. I agree with that, but please note that you need to ensure you do not feed them into swarming. If they backfill the brood nest with 1:1 sugar water, they will begin swarm preparations. So watch your bees, give room as needed. We do not find it necessary to add any pollen patties. Pollen our bees have in droves. Nectar is not available.

# September

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- Reduce your hives. Undrawn frames removed as early as August. Take off extra boxes. Brood chamber = 3 mediums or 2 deeps
- Use 2:1 in top feeders to get the stores brought up to the ideal 60-80 pounds of capped food in each hive. 70 lbs. is about 12 CAPPED deep frames or 18 CAPPED medium frames. Never feed commercially made honey because it can be contaminated with American Foul Brood (AFB) spores in the honey which could kill your bees.
- In Late September/Early October, rearrange your hives to bring all the brood and the queen down into the center of your bottom brood box. Give her one empty frame to lay in if she has no room. This sets up the hive so the cluster starts together and is not forced to split to cover brood. Honey stores go in the upper brood boxes.

# October

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- Mouse guards go on. (Make sure the mice are not already in place.)
- Provide an upper entrance.
- This is the most dangerous period for re-infection with Varroa. Your strong hive, finds a dead out and brings it home. Be suspicious if your hive gets full of honey during this time. Our goldenrod flow is not that strong. Your robbing bees will be dead by spring if you do not treat again after they have become infected. Keep up your varroa testing. Some recommend switching to varroa testing every two weeks during this time period.
- Insulate your hives in late October if you choose to use it. In Maryland, most do not. Add a moisture quilt on the top box. We have successfully used candy boards. Candy boards have traditionally given us our personal best overwintering. Charlie Brandts uses hay in the top box as an insulator.

# Fall Hive Loss

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- Starting in September/October, hives untreated/unmonitored for varroa will start to collapse. No your hive did not swarm, it absconded to die. It is actually proving to be nearly the largest loss time of the year for Maryland beekeepers. Look for white particles near the tops of the drawn frames while breaking down your deadouts. That is varroa feces.
- This is also a dangerous time for robbing. Make sure your boxes are tight, and robbing screens are in place
- When doing your inspections be suspicious if you see capped drone brood after early September. It might be an Italian hive, still hoping for a longer season. But usually it is a queen issue. There are two scenarios, neither pretty but both recoverable with your resource nuc.
  - 1 . A queenless hive that is going drone layer (laying workers)
  - 2. Your queen is running out of sperm and is becoming a drone layer

# November-December

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- Attend the November MSBA meeting
- Ensure your wind breaks are in place
- Use a hand held thermometer to track your cluster location without opening your hives. This will not work for insulated hives.
- In December make your candy boards, and install them.
- Drink mead!
- Take inventory of your equipment for the next bee year. Note where repairs are needed
- Sit down and read your Bee Culture/American Beekeeping magazines.
- Plan on making a few nuc boxes. Make repairs to equipment. Pick a new piece of equipment for your apiary for next season. Might I suggest a Snelgrove Board??

# Candy board creation

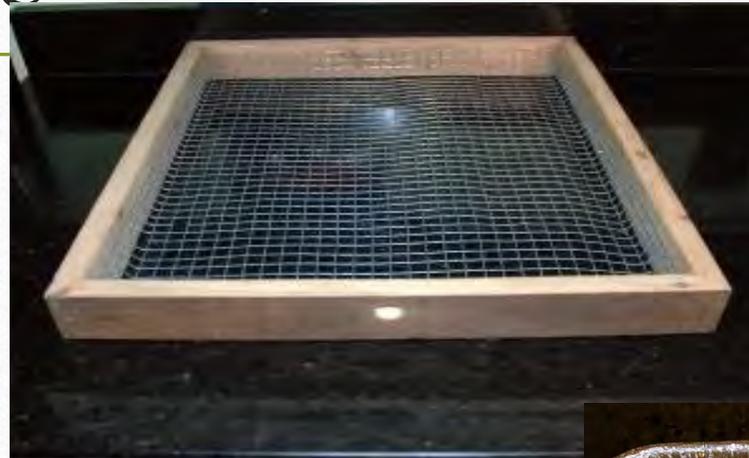
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- We have adapted our sugar boards through the years. The best description I have found, and the one we used for years is <https://www.beverlybees.com/i-want-candy-so-lets-make-a-candyboard-for-winter-feeding/>. Pictures and recipe
- This makes for very large candy boards 5-10 pounds of sugar per hive.
- We did not use paper lining.
- We did not include a pollen patty due to SHB.



# Candy Board Recipe

- 5 lbs sugar
- 1 cup water
- 1 tablespoon vinegar
- 1 table spoon Honey Be Healthy (optional)



Simply stir the ingredients together, shape, and then let dry.

(usually takes 2-3 days in the open)

- The wood is simply 1x2 board.
- There is a hole drilled for an upper entrance.
- The screening is #4 (four squares per inch) hardware cloth. Bees can easily pass through that size.
- We now make candy in Al foil pans, and split them in half BEFORE they dry. This can fit in a nucleus colony, or two in a full size colony.



# January

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- Check for food needs by popping the top and looking down on any day over 45 Degrees. This is NOT a hive inspection, but a quick peek. Do not pull frames. If your bees are begging on the inner cover add FONDANT or a sugar block NOW on the cluster.
- Time to plan your garden: Pollinator patches, new trees. Seed catalogs start coming in now.
- Clean, Build and Paint equipment. Dream of a wonderful honey flow next year.
- Take an advanced class through the UMD Bee Squad, MSBA or your club.
- Read a beekeeping book.

# February

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- Attend the MSBA meeting.
- Check for food needs by popping the top and looking down on any day over 45 Degrees. This is NOT a hive inspection, but a quick peek. Do NOT pull frames. If your bees are begging on the inner cover add FONDANT or a sugar block NOW on the cluster.
- If it is over 50 degrees, consider adding a pollen patty starting in mid-Feb to help the hive grow. [We do not use them, the skunk cabbage is coming in by mid Feb. Most people in our Maryland club do NOT use them.]
- Start liquid 1:1 feed over the inner cover once days are regularly over 32 degrees Jim Fraser recommends Feb 14 to start 1:1 feeding.
- Read a new beekeeping book.

# March

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- Congratulations you have overwintered your hive....
- Bee fun begins again!

# Great Online Resources

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- Jamie Ellis Florida. Fastest speaking southerner you will ever meet
- Paul Kelly Guelph Canada. Lovely commonsense beekeeping
- Randy Oliver – scientist in a bee suit
- Mike Palmer- the self sustaining apiary
- Billy Davis, gentle sustainable beekeeping, VA. A large loss to the community when he passed
- National Honey Show (held just outside London, tapes their speakers and puts them on the internet)
- Parks Talley- from VA makes some great short videos. None star him, he is the cameraman!
- Brushy mountain videos...

# Recognition

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- I appreciate the willingness of a variety of beekeepers who have reviewed this schedule over the last years. (David, Toni, Jan and the ever gentle Mike Thank you)
- Plan on reading at least one good bee book each season.
- EAS conference is in Maine this August. I strongly encourage everyone to attend. We learn more than you can imagine at that meeting.
- This is meant simply to start the conversation. It was never intended to be the perfect guide to Maryland Bees.
- We all have different tolerances for treatment, time to spend with our bees, and different end goals. Find your plan, and follow it. May you reach your goals!

Lanson

I'm not going to panic... There's a bee in the car, but there's nothing to fear... I'll just pull over and let it out... I'm not going to panic...

