

Stahlman beekeeping notes for 2021

Issue # 27 Summer honey crop

Extraction of a honey crop is one feature of beekeeping that many beekeepers look forward to. I usually mentor five students each year and new beekeepers often do not get honey from a hive during their first season. If you are a new beekeeper take this in stride. This report is based on the experience of several students that began beekeeping last year and a few others from previous years.

It takes a large number of foraging bees to gather nectar. Nectar is converted into honey by the honey bee and the process consists of inverting most of the sucrose in nectar to the simple sugars dextrose and levulose by enzymes and the evaporation of the water. Honey also contains pollen grains, minerals, acids, and as indicated last week some residue collected from the environment.

Contamination of honey is a real concern especially when done intentionally such as feeding sugar or mixing the honey with corn syrup.

Honey from different plants vary in flavor, aroma and color. Most honey we gather from our bees can be called wildflower honey because it is produced from many different sources. I have been told that there are over 300 honey producing plants which can be identified as single source honey. Honey identification depends on identifying the pollen in a honey sample. If a single source has over 50% of a particular pollen, it can be called by the name of the plant source. It is a mistake to call all light-colored honey clover as is usually put on jar labels bought in the grocery store. Commercially sold honey is usually a blend of many sources – designed and formulated to be milder tasting, lighter in color, and having a long shelf life.

Usually, I have gathered light colored honey in the spring and darker colored honey in the fall. Certain honey producing plants have distinct flavor, aroma, and color. Tulip Poplar for example here in North Carolina produces a fine tasting dark color honey. Sourwood trees produce a superior tasting light color honey. Buckwheat produces a dark almost molasses type of honey which might be objectionable to some people's taste buds.

Clover honey is mild tasting and widely grown and because of this it is highly favored as a blending honey. Some strong-tasting honey sources are considered bakery grade and commercial honey buyers pay less for it.

The two honey jars below were produced this spring in the Raleigh area of North Carolina. A bee buddy – someone who was a former student last year got her first honey crop this year!



Sharon and her husband, Craig had a great opportunity to compare honey from their two hives this spring. We had a good honey flow in early spring. The photos used in this story were provided by Sharon with her permission.

The first jar shown was extracted prior to the Tulip Poplar honey flow. It is typical of the early spring honey produced in this area. It had a mild flavor and aroma and I would guess it was made up of the many nectar sources available from the many flowering plants such as flowering cherry, maple, pear, crabapple, dandelions, clover, etc.

The second jar represents honey from just one source – Tulip Poplar trees which are abundant in the Raleigh area. The honey flow occurred in just three weeks.

Flavor between the two honey samples was distinct. First the light honey was mild tasting and somewhat bland. However, the tulip poplar honey was very distinct – stronger tasting and the favorite of the Schwinger family.

The point here is that single source honey can be produced by either putting supers on a hive just before a flow begins, or in this case, taking off a honey crop and replace supers for the single source flow. This is done by many North Carolina beekeepers moving hives to the mountains in the western part of North Carolina to get the sourwood honey flow. Bees are currently harvesting that crop as I write this article.

Extracting honey from frames:



Extracting is easier when beekeepers work together as a team. This is Craig uncapping a frame of honey with a hot uncapping knife. The equipment needed are quite simple: Something to hold the frame firm, a bucket/container to collect the cappings, and a scratcher or knife to remove the cappings.

Cappings cut from the surface of the comb allow the honey to flow out of cells. The extractor then spins the honey out of the cells.



Last year I wrote an article about the number of the different kind of extractors in use. Getting honey out of frames is a matter of centrifugal force. Honey is thrown against the side of an extractor, and drains down the sides to collect in the bottom. This is good as long as too much honey does not collect in the bottom of the extractor. If the honey touches the rotating basket within the extractor, air will be added to the honey. This results in cloudy looking honey and foam appearing around the top of the container

in which the honey is stored.

Raw honey:



Honey in the extractor is drained by a honey gate (Valve). Note, extracted honey contains bits of wax. This is raw honey.

See last week's article on clarification and processing honey!

Warm honey flows better than cold honey.

Viscosity in honey is measured by its resistance to flow.

High moisture honey flows faster than a heavy-bodied honey with lower moisture content. Viscosity is very sensitive to temperature. Thus, some beekeepers will warm honey prior to extracting it.

Honey does change physical characteristics if it is overheated. Discoloration (honey gets dark) occurs naturally over a period of time. Heating honey can result in a burned taste added to the honey as well as discoloration of the honey. Commercial packers often

heat honey to 160° F and use pressure filter systems to process honey. The honey is then cooled rapidly to avoid overheating issues. Most hobby beekeepers refuse to heat their honey – a strong selling point vs. the honey sold in retail stores.

Why is honey heated by packers? Pure honey will granulate. This is the crystallizing of honey. Thus, to clarify and give honey a longer shelf life, it is heated.

Some honeys crystallize very quickly. Honey can be restored to the liquid state by heating. I should point out that some beekeepers sell "creamed honey". If you are interested in making creamed honey, check the number of books and internet sites that share the delicate art of making it.

 **Ohio Honey Farms**
13h · 🌐

I just finished filling 118 - 5gal buckets (7080lbs) with a 36 mm Extra Light Amber-Wildflower blend. The moisture was 15.6 % . Last week I filled 48 buckets of 11mm Extra White Clover Honey. The moisture was 17.1%. The honey is put in several 300 gallon settling/ storage tanks for 2 weeks or so and then pumped/pushed through a 300 micron filter. This makes for a nice strained not filtered honey. After straining it goes right into a 5 gal bucket or a 300 lb bottling tank.



I would like to share a FB post I received from David Heilman this week.

I am grateful to call him a good friend. He was Jim Tews' bee technician at OARDC in Wooster, Ohio and has been instrumental in speaking about honey bees in Ohio for many years.



This picture was taken at an EAS Meeting in 1995. We have changed a bit since then!

But the information in his post is very interesting. Although most hobby beekeepers do not have 300 gallon settling/storage tanks available, smaller units will do the same thing.

It is not the fact that he filled 166 five-gallon buckets with honey that attracted me to his post.

What does that 36 mm Extra Light Amber-Wildflower blend mean? What does that 11 mm extra white clover honey mean?

USDA Color Designations of Extracted Honey	
USDA Color Standards Designations	Color Range Pfund Scales Millimeters
Water White	8 or less
Extra White	Over 8 to and including 17
White	Over 17 to and including 34
Extra Light Amber	Over 34 to and including 50
Light Amber	Over 50 to and including 85
Amber	Over 85 to and including 114
Dark Amber	Over 114

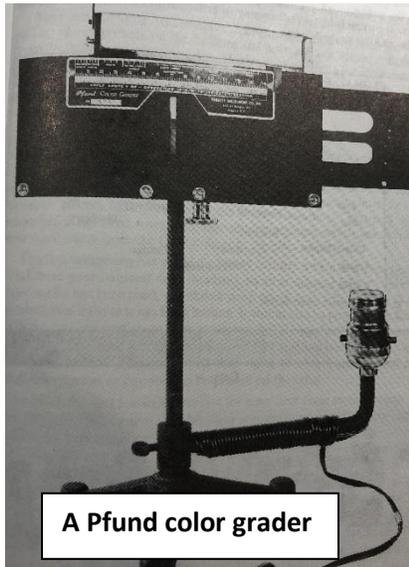
This means that the honey Dave harvested was tested to see which class of honey it fell into. The scale shown here indicates that to be classified extra light amber, the honey had to fall between 34 and 49 mm on the light transmittance scale. 36 mm is well within

the range of light transmittance for the Extra Light Amber classification. The clover honey was listed as 11 mm which if you look at the scale is also well within the classification of Extra white honey scale.

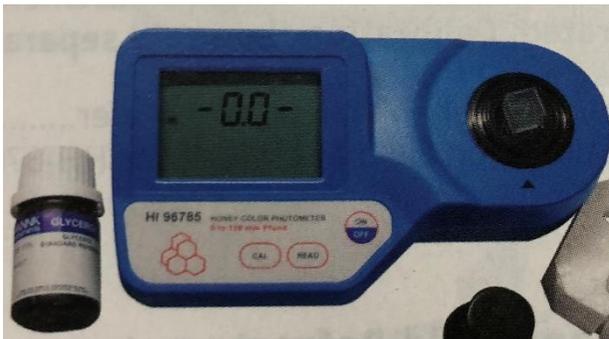
This information is very important to buyers of honey. Higher prices are paid for light honey classes. Both of Dave's batches of honey will be desirable to any who desire to blend it with darker honey sources. The moisture levels were well below the accepted 18.6% moisture content.

Honey is graded for color using the scale shown on the previous page.

The scale is called the Pfund Scale measured in millimeters of light transmittance of honey. If honey is entered into a honey show, the person entering the honey generally selects the class in which the honey will be judged. The chart shown above lists the light transmittance of the way honey is classified. Various instruments are available to determine the light transmittance of honey. They can be very expensive instruments to own.



A Pfund color grader



The Hanna Color Grader above is portable and can be easy to read. It will cost about \$500.00. The additional accessory kit will add another \$100+ to the cost.

Other graders use comparison charts, or jars of a liquid representing a particular sample. These are inexpensive alternatives to the graders shown.

I would like to share his method of straining honey!

Letting honey settle for a period of time was the standard way honey was clarified for many years. Honey scum rises to the top of stored honey regardless of the depth of a container. Letting honey settle prior to passing it thru a filter/strainer is a good idea because the scum is accumulating at the top of a tank and clear honey is removed from the bottom of the tank. Scum blocks and slows the efficiency of clearing honey with a filter or sieve.



For those of you familiar with the stainless-steel double sieves commonly used to filter honey, the top filter measures in 20 meshes (841 microns) and the bottom fine filter measures in 40 meshes (420 microns). That is plenty adequate for hobby beekeepers. Filters are available for 5-gallon buckets in the range of 600 micron to 200 micron at very reasonable cost.

If you plan to sell your honey, honey can be stored in a 5 gal. pai with a honey gate or one can purchase a stainless-steel bottling tank of 15 gallons or more with a stainless-steel bottling valve. It all depends on how much honey one has to prepare for sale.

For hobby beekeepers the photo shown below will indicate how honey can be allowed to settle before bottling begins.



This is a bucket/pail used to settle out honey.

The valve is a bit tricky to use because it is very easy to overfill a jar – thus one has a mess on their hands – literally.

If a beekeeper has a need for a larger settling tank-- plastic 50 gal. drums – food grade can be used. Check with companies that buy corn syrup or honey in barrels.

It may take longer for honey to settle if the temperature is cooler. One will have no trouble letting honey settle during the 90° F weather we have been having in the Raleigh area.

One important note: Do not leave honey in a settling tank that can not be heated. Granulated honey in a settling tank is a bummer to get out.

If you have a volume of honey to process and sell, I think the most important thing is the type of bottling valve one would use. A quick release drip free valve made of stainless-steel is well worth the investment.

I appreciate the permission I received from both the Schwinger family and David Heilman to use their pictures and information gathered from them.