

# *A Taste Of Honey . . .*



*Using Sensory Analysis To  
Evaluate And Market  
Your Honey*



Fruity, flowery, smoky . . . How would you describe your honey? Good? Sweet? Good to you might be sickeningly sweet to someone else. How about lime with a hint of mint or Jordan almonds and vanilla? A sommelier has the technique to analyze and evaluate wine and the vocabulary to describe it; with sensory analysis, beekeepers and honey aficionados can do the same with honey.

Whether choosing a new car or an apple at the market, most of the decisions we make are influenced by input from our senses, which give us the information necessary to decide if something is pleasing or not. Sensory analysis, also called sensory evaluation, uses perceptions based on sight, hearing, smell, touch and taste to evaluate honey. Whereas chemical analysis makes sure food meets FDA standards, and microscopic analysis, specifically of pollen content, determines botanic and geographic origin, sensory analysis is a part of quality control—quality being the combination of characteristics that make a product satisfying. It's used to identify the plant origin and determine if the honey is free of defects. And, perhaps most importantly, to simply determine which honey you like. Sensory analysis can be an effective tool for promoting and adding value to your product. Offering guided tastings at tradeshows, markets, fairs or privately organized events is a compelling way to teach consumers how to discern and appreciate the honey you have to offer.

Before the 1960s, traditional sensory analysis was conducted by an expert, a person who had applied experience. The "Principles of Sensory Evaluation of Food" (Maynard A. Amerine, Rose Marie Pangborn and Edward B. Roessler, June 1965) established the technique used for scientific, professional, and technical evaluation, and the text is still used today. Rather than rely on the expertise of one person as in the traditional method, the modern method uses groups or panels for sensory analysis and generates repeatable results. In the Autumn of 1978 and the Spring of 1979, following the technique used for wine tasting, Gabriel Vache, a beekeeper, and Michel Gonnet, a tasting expert, organized the first honey analysis seminars in France. A year later, after perfecting the method to assure an objective analysis, a third seminar was held in Italy. More than 30 years later, the sensory analysis seminars have evolved into a three-part course totaling 60 hours that includes an exam, which entitles those who pass to membership in the National Board of Experts in Sensory Analysis of Honey (Albo Nazionale degli Esperti in Analisi Sensoriale del Miele). Members' activities include giving guided tastings and judging honey competitions. This article won't make you an expert, but it can provide a starting point to practice in your own apiary.

Let's take a look at how we use our senses for evaluating honey. The words "taste", "tasting" and "taster" are used throughout for simplicity's sake but sensory analysis uses all the senses, not just taste. For a consumer tasting is subjective—it's about pleasure, liking or not liking something. With sensory analysis we go beyond good or bad and learn to objectively describe the honey being evaluated. By practicing and memorizing the characteristics of different unifloral honeys, we educate our senses, and then use those memorized, repeatable parameters to evaluate other honey. You might think that you have to have an acute sense of smell or extra-sensitive taste buds, but the truth is, like learning a language or musical instrument, it's more about training and practice than prodigy.

The analysis begins with sight. A few spoonfuls of honey are put in a balloon-shaped wine glass. This allows the taster to hold the glass by the stem without covering the honey. Honey can't be analyzed by sight alone, but it is an important parameter to be considered. For example, something's suspicious with a dark, crystallized honey that has been labeled as acacia, and bee parts floating in the honey make for a hard sell. Hold the glass by the stem and observe the following three visual characteristics:

Physical state – is it liquid or crystallized (solid)

Aspect – note everything that isn't the color: impurities, foam and for liquid honey, the limpidity or turbidity; for solid honey, the crystal size and homogeneity.

Color – the intensity: very light, light, medium, slightly dark, dark, very dark, and the tone: champagne, wheat, beige, light yellow, dark yellow, orange, red, light brown, brown.

After sight, comes smell. This is the most important step. Experts can determine the type of honey based on its

odor and then confirm with taste. Warm the glass in your hands and smear the honey around the sides with a spoon or tasting stick; this helps release the volatiles. Sniff the honey without inhaling too deeply. Before describing the odor itself, consider the intensity. Is it weak, medium, or strong? Then go on to describe the odor. The first reaction is often "smells like honey" or "smells sweet". Sniff again, a bit deeper this time, maybe it's floral or warm. Try to name what it smells like for you then refer to the odor and aroma wheel (Figure 1) to develop a descriptive vocabulary. The odor and aroma wheel offers a common vocabulary for honey tasters although each taster also uses personal descriptions that help memorize a honey. When I smell fir honeydew honey, it smells like Christmas, whereas to describe it to someone else, I'd use descriptors such as pine resin or balsamic. Dandelion honey smells like cat urine, it's unmistakable. Canola honey smells like







*Smelling the aroma.*

sauerkraut. We use these distinct descriptors to memorize and identify those honeys, but to a consumer, we might describe canola honey as astringent, since sauerkraut honey isn't much of a selling point. To many dandelion honey is lemony! If your nose gets overwhelmed, sniff your sleeve to reset your olfactory sensors; your own scent acts as a neutralizer.

There are two parts to the third step, technically called olfactive-gustative but for simplicity, aroma and flavor. Aroma follows the descriptors on the aroma wheel whereas flavor comprises the qualities of sweet, bitter, acid, and salty. Consider how our senses function. The tongue is divided into four areas each sensible to a specific flavor: bitter – at the back of the tongue, acidic – on the sides in front of bitter, salty – on the sides in front of bitter and sweet – on the tip of the tongue. Try to taste the honey with all parts of your tongue to pick up on each of the four flavors. Aroma is what an odor tastes like. Anatomically, we can't detect aroma without the sense of smell, think of how you can't taste food when you have a cold. If you hold your nose while the honey is on your tongue, you can't perceive the odor or aroma. Let go, and whoosh, the odor and aroma come rushing in.

To proceed with the analysis, with a spoon or tasting stick, scoop a bit of honey and put it in your mouth. First, notice the initial flavor impact, is it sweet, acidic or sour; then identify one of the seven groups on the aroma wheel and finally notice the fine points. Take notes to help you remember this type of honey. Rest a moment, drink some still water or eat a slice of a bland apple to clean your taste buds, then smell and taste it again to confirm what you found or identify finer characteristics. Grade the intensity, persistence and aftertaste of the honey. How long does the flavor or sensation linger in your mouth? Does something else arrive after you've swallowed?

Sweet and sour or acidic are always present in honey.

Sweet is classified as slightly sweet, normally sweet, and very sweet (almost sickeningly sweet, like powdered sugar). Acidic or sour, on the other hand, is either absent, weak, medium or strong. The two are perceived together. Citrus honey is normally sweet with an acidic level that can be weak to medium, whereas, acacia honey is very sweet with a medium or normal acidic level.

The same vocabulary is used for bitter: absent, weak, medium and strong. The bitter taste tends to become more evident in the aftertaste. It's difficult to say that honey tastes salty although the term is used but it indicates sapid or savory, similar to the taste of molasses.

In addition to the taste and flavor, tactile perceptions are communicated through the tongue. We consider the consistency, granularity and temperature. A liquid honey can be defined as very fluid, normally fluid or viscous, while a crystallized honey may be soft, pasty or compact. Crystallized honey merits a description of both the size and shape of the granules. Are they fine, medium or large? Round, sharp, easily dissolved? (The sense of hearing could be added here with the sound that chewing large crystals makes although it isn't something that's noted.) The consistency often determines the perception of temperature. Smooth honey with a fine crystal creates cool or refreshing sensation in the mouth and liquid honey tends to give a warm sensation. Honey that is very acidic may cause an astringent sensation. A metallic taste or sensation is considered a defect; not that the honey is necessarily non-comestible but it's not a desired quality.

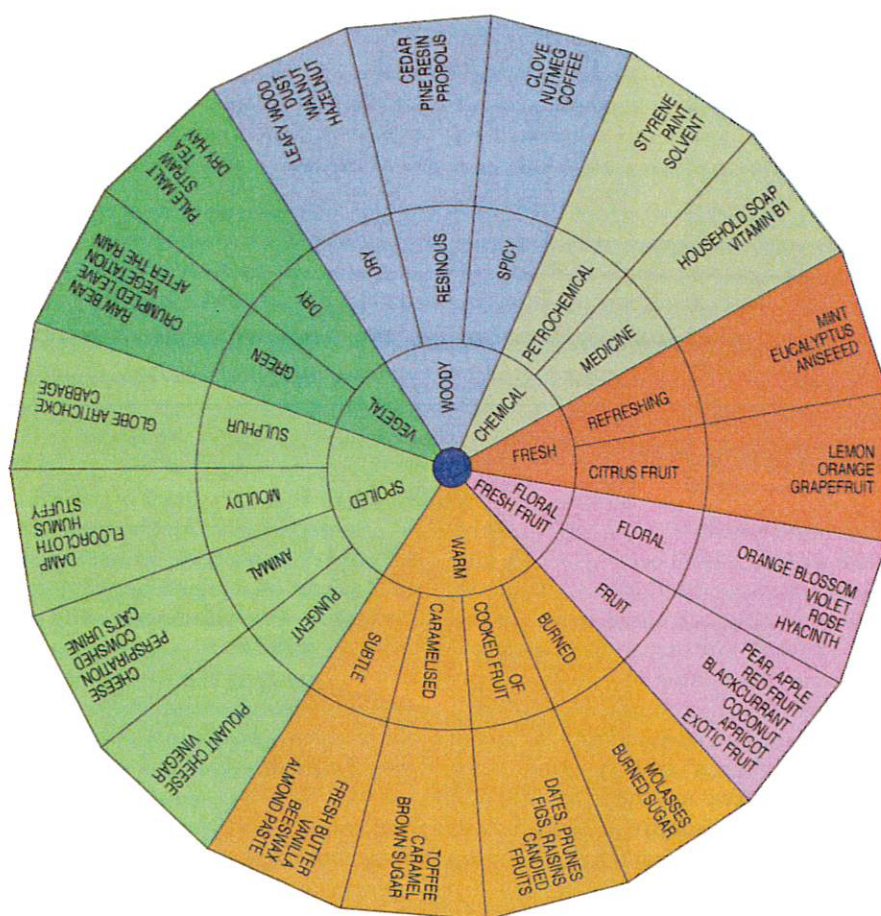
Aside from identifying the botanical origin of honey, sensory analysis is useful for evaluating honey quality. Fermentation takes place when naturally occurring yeast combines with a water content higher than 18 percent. If there is a high level of yeast in the honey, it may ferment at 17 percent. The honey will smell like ripe apricots or alcohol. If fermentation has just begun, it can be a pleas-



ant fragrance and difficult to detect. Odors absorbed from poorly timed thymol treatments, old moldy frames, overuse of the smoker or from the environment where the honey was stored detract from the honey's quality as well. In each of these cases, there's not much you can do to salvage the ruined honey but the lesson is learned for future honey harvests. Visual defects such as non-homogeneous crystallization or liquid floating on top of a crystallized mass won't affect the flavor of the honey but they make the honey less attractive to a consumer.

Sensory analysis is a great marketing tool. Honey consumers tend to be interested in the beekeeping process and have fun at guided tastings. Consumers are more likely to buy something they know more about. Ideally, the tasting takes place in a well-lit room with less than 60 percent humidity and a room temperature between 68 and 72°F. Still water and bland apples should be available to clean the

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**Figure 1.** Odor and aroma wheel. Sensory evaluation of wine, beer, coffee, chocolate, cigars, and water use odor wheels to describe the product. Groups of odor classifications fan out into subgroups, and the final outer circle gives descriptors. The honey descriptors were developed by Etienne Bruneau, Christine Guyot-Declerck from the Centre Apicole de Recherche et d'Information in Belgium and tested by the International Honey Commission (IHC).



## HONEY DESCRIPTIONS

Honey	Acacia	Canola	Citrus	Lavender	Linden	Thyme
<b>Sight</b>						
Physical State	liquid	crystallized/solid	crystallized	crystallized	crystallized	crystallized
Aspect	clean, limpid	homogeneous	large, grainy crystals,	homogeneous	homogeneous, large crystals	compact
Color	almost transparent, champagne	light beige/old ivory; amber in its liquid state	light beige, can also be white; transparent to light yellow in its liquid state	ivory, light beige	light beige, pearly; clear amber with green highlights in its liquid state	light brown; dark beige with orange pearlescence in liquid state
<b>Odor</b>						
Intensity	weak	strong	weak to medium	medium	medium	medium to strong
Description	warm, vanilla, Jordan almonds, powdered sugar	vegetable, pungent, propolis, sauerkraut, wet paper	floral, fresh, orange blossom; as it ages, becomes fruity, orange marmellade	floral, fresh vegetables, fig leaves, incense	fruity, fresh, bergamot, lime, mint, linden tea	proteic, both floral and spicy, clove, magnolia, grafite
<b>Aroma</b>						
Intensity	weak	strong	medium	medium	strong	strong
Persistence/Aftertaste	weak	medium	weak	absent	strong; if pure, bitter aftertaste	medium
Description	vanilla, Jordan almonds, corresponds to fragrance, sometimes irritates the throat	sauerkraut, vegetable	citrus, corresponds to fragrance, lightly acidic at the end	fresh, fruity, lavender flowers	fruity, lime, green apple, balsamic, herbs	spicy floral, pungent, potpourri-like, grafite
<b>Flavor</b>						
Sweet	very	slight	normal	normal	normal	normal
Salty						slight
Acidic/sour		slight	slight	slight		
Bitter					slight	
<b>Other sensations</b> (refreshing, astringent, burning, metallic)			fresh	refreshing	astringente	
<b>Tactile</b>						
Consistency	liquid	velvety, smooth	compact	homogeneous	very compact	compact
Crystals	none	very fine	large	very fine, round smooth	large but soluble	irregular
<b>Origin</b>						
Botanic origin	<u>Robinia pseudoacacia L.</u>	<u>Brassica napus L.</u>	<u>Citrus spp.</u>	<u>Lavandula spp.</u>	<u>Tilia spp.</u>	<u>Thymus capitatus</u>

able to clean the taste buds between one honey and the next. I host events with a professional beekeeper. We give a brief introduction to honey production then take the guests through a guided tasting. We concentrate on the types of honey we have to sell, but I try to have a couple of the more unusual honeys available to give guests an idea of the variety available even though we don't sell them. We also do what's called a Triangle Test – a "one of these honeys is not like the others" activity where three honey samples are presented, two are the same and one is different. We pick two honeys that are similar in color and consistency to make it confusing but the participants usually enjoy it.



Some of the more common honeys are described in the chart using the vocabulary referenced above. Use this as a reference tool and begin to keep a honey tasting log for honeys that you harvest and taste. **BC**

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