

Pollen Confirms Purity of McDowell County Honey

Ed Speer

Did you know that every bottle of authentic unfiltered honey carries a unique pollen signature that reveals exactly what plants the honeybees were feeding on, where and when those plants were growing on the earth, and even gives the percentage of the honey derived from each type of plant? However, it takes a melissopalynologist (a honey-pollen expert with a microscope) to reveal the details.

Beekeepers across McDowell County annually submit samples of their local honey for this kind of pollen analyses. The samples are analyzed by Dr. Vaughn Bryant, Director of The Palynology Research Laboratory at Texas A&M University in College Station, Texas. Dr. Bryant is unquestionably the most experienced pollen expert in the US. He has devoted his career to identifying modern and ancient pollens from all over the world and his services are in high demand for scientific, forensic, criminal, and truth-in-labeling investigations.

Dr. Bryant's pollen analyses of McDowell County honeys assure consumers that they are getting only pure, raw, local, healthy, original pollen, and honeybee produced honey.

Since honey purity is not well regulated in the US, processed or altered honey (and even non-honey sugar syrup) are occasionally sold as pure honey. It's truly buyer beware when honey is involved as claims of purity, floral source, country and region of origin, etc. can only be verified by proper pollen analyses, which is seldom available to the consumer. Pollen-free honeys (which may or may not be legal depending on how the honeys came to be free of pollen) have been found in more than 70% of the US retail-store honey samples tested by Dr. Bryant; and the buying public is increasingly becoming more concerned.

Unverifiable Honey found in Retail Stores in McDowell County

The McDowell Beekeeping Club recently submitted three different honey brands bought at separate retail stores within the county and Dr. Bryant analyzed the standard 10-gram sample of each. These honeys were produced outside McDowell County by large commercial operations and each was labeled pure natural sourwood honey, insinuating that they were local honeys. However, not a single grain of sourwood pollen was found in any of the three samples. Since 1,000-10,000 grains of sourwood pollen are normally found in 10-gram samples of unprocessed sourwood honey (such as that provided by beekeepers within the county), these three honeys cannot be verified to be sourwood honey, despite what the labels say. In addition, since no pollen from nectar-producing blossoms was present, these three samples also cannot be verified to be from this part of the world, or even verified to be authentic honeybee produced honey. At worst, one or more of these samples may be pesticide-laden, pollen-free honey from China (which is illegal but commonly smuggled into the US), or high fructose corn syrup without pollen to begin with. At best, these three samples are sourwood honeys from the southeastern US which have

had their original pollen removed and thus were pasteurized at the same time. Dr. Bryant reports: "The only time you would get this low of a pollen count [*in real honey*] is when a sample was HIGHLY FILTERED to remove the pollen."

Removing Pollen and Pasteurization

Filtration of honey to remove pollen is accomplished by several methods involving high-heat pasteurization. Microfiltration employs heating the honey and using high pressure to force it through fine filters to remove most of the pollen grains. Ultrafiltration removes all the pollen but includes dilution of the honey with water, high heat and pressure to force it through extremely fine filters, followed by evaporation of the water again with high heat.

Note that the recommended pasteurization temperature for honey is 170°F for 15 seconds or 145°F for 30 minutes---about the same as that for milk. Microfiltration typically heats honey to 150-170°F so it will more easily pass through the filter; therefore, removal of pollen by microfiltration also results in partial or complete pasteurization.

The US Department of Agriculture Honey Standards allow for the removal of pollen from honey if it does not alter the identity of the honey (thus ultrafiltration is disallowed). Most large honey producers based in the US employ microfiltration to produce processed honey that is pollen-free and pasteurized. This is the honey for sale in most retail stores in the US.

However, the issue of pollen-free pasteurized honey is highly contentious. On one hand, microfiltration retards crystallization and kills yeast and bacteria, allowing longer shelf life (and thus lower retail prices) as well as gives uniform color and taste; all consumer-desired advantages. On the other hand, removal of pollen and the high heat destruction of enzymes and live cultures may compromise the taste and nutritional value of the honey in ways unacceptable to many consumers.

If fact, many people feel that once stripped of its pollen, enzymes and live cultures, it is no longer true honey but instead is unhealthy sugar syrup, which is otherwise indistinguishable from simple corn syrup. By contrast, the room-temperature gravity-fed screening employed by local beekeepers when harvesting honey from their hives does not remove pollen nor otherwise change the nutritional value of the honey.

How to find Raw Original-Pollen Honey you can Trust

The results of numerous honeys tested so far from various beekeepers across McDowell County, including the identification of every single grain of pollen, can be found on the Beekeeping Club's website at: <http://www.McDowellHoneybees.org> (follow link to **POLLEN SUMMARY**). Based on this widespread testing, we know that our locally produced honeys contain the expected and acceptable amounts and types of pollen---your assurance of the taste and quality of our pure, raw, natural, original-pollen McDowell County honeys.

We've found that our honeys are usually mixtures of up to 10 different plant nectars (i.e., up to 10 different pollen types); and each honey has its own unique and delightful flavor. Our springtime honeys are generally mixtures of many nectar sources, have lots of pollen, and robust flavors. Our summertime honeys generally are mixtures of only a few nectar types and have subtler flavors. Following the volunteer NC Honey Standards, if we label our honey a single floral source (such as sourwood), that means nectar from that floral source makes up more than 51% of the honey (based on actual pollen analyses).

McDowell County beekeepers are hobbyists and small farmers who produce limited amounts of real authentic honey; they do not remove pollen nor expose the honey to high heat. They are residents of the county and are only interested in offering high quality, great tasting honey to their neighbors. You can find these trusted beekeepers by visiting the **McDowell County Honey Trail** website at: <http://www.McDowellCountyHoneyTrail.org>.

Ed Speer is the president of the McDowell Honeybees Association. He and his wife Karen are certified Journeyman Beekeepers of the North Carolina State Beekeepers Association. They manage 25 bee hives on their farm in the Glenwood community and are owners of the Honey House at Sweet Betsy Farm.



Ed Speer in his bee yard