

# The Traveling Beekeeper



## POLLEN COLLECTION

by LARRY CONNOR  
Wicwas Press

1620 Miller Road, Kalamazoo, MI 49001  
LJConnor@aol.com • www.wicwas.com

### Why collect bee pollen?

There is a strong interest in collecting bee-gathered pollen. The upper end of the market is for fresh-frozen pollen that is used as a human and animal food supplement. Considerable pollen is sold as a dried product. In the United States there are no clear legal claims anyone can make about consuming pollen, but in other countries, and within the medical community (both human and animal), there are research studies showing the benefit of consuming pollen. It is the riskiest hive product to market, in my opinion, since pollen can trigger the same allergic reactions that folks get when they are exposed to certain air-borne pollens, but in larger concentration. For that reason I like to see customers start out consuming small amounts and carefully increase the amount of pollen they consume to make sure they do not experience any runny eyes, itchy skin, tongue or throat, or more severe symptoms associated with an allergic response.

Ironically, part of the pollen market is stimulated by this allergic situation, as some allergists and other medical professionals start folks with a small amount of pollen to build up the protective antibodies against the allergens that might cause a reaction and in some cases an asthma attack. These same professionals recommend the consumption of honey that has not been overly filtered or heated, keeping all the pollen in its near-natural state. This is a key argument for consuming locally produced honey. We thus extend that logic to locally produced pollen.

### How to collect pollen

There are several types of pollen traps on the market, each making claims for some aspect about the pollen collection process. Look for traps that do not damage the bees' body parts—sharp edges that while removing the pollen pellets from the legs of the bees might also tear off legs or wing tips. I like traps that keep the natural debris of the hive from falling into the collection area of the trap, although it is not difficult to clean pollen with a series of different meshed screens or in a seed cleaning devise.

Pollen traps all use the same idea: make the returning pollen forager pass through a grid or hole that is big enough for the bee to enter, but more difficult for the pollen pellets to pass without being removed. Most traps are not 100% effective at pollen removal, and this is probably a good thing, since it means that there is still pollen entering the colony to support brood rearing and colony growth. Because of the potential risk of damaging the colony by over collecting, many pollen-collecting beekeepers use one of several concepts to collect pollen. Here are a few:

1. Collect a single crop. If a beekeeper is collecting for just one plant, say sweet clover or goldenrod, this reduces the time the traps are in place. The colonies should be examined for stressing the brood nest while this goes on.
2. Collect for a few days, and rest a few days. Watching the weather in humid or rainy areas, beekeepers only trap when the sun is shining and the bees gather a bonus surplus of pollen.

Once pollen is removed from the bees' legs, it falls into a container (hopefully screened for air ventilation) where it stays until the beekeeper removes it. Removal should be daily in humid areas, where mold and rain can ruin the collected pollen. In dry climates (where there is more pollen collection activity by beekeepers) the removal may be on a several day interval. Collection less frequently degrades the quality of the nutrition of the pollen, and it gives time for secondary pollen feeders, from pollen mites to sap beetles, to enter the trap and compromise the pollen.

Take the time to clean the pollen as soon as it is collected, using a series of screens of finer and finer mesh until all the dust and hive dirt is removed from the grains. If you are in a humid area, you may need to spread the pollen out on shallow trays and air dry for a few hours before it is cleaned. You do not want the pollen to be overheated in the sun, and you do not want mold growth to start in the dark. A warm room with a strong fan may give you an ideal drying situation. The pellets should remain chewy, not hard.

Immediately after drying and cleaning, put the pollen into plastic bags or tubs and place these in the freezer, the colder the better. From now on the pollen should remain frozen, even at the marketplace.

### Pollen nutrition

In the beehive, bees add honey and a large number of microbes to newly returned pollen to create beebread. This does not happen if you use pollen from a trap. So, keep the pollen frozen to maintain all the proteins. This will help your product stand out against



There are many different types of pollen traps. Choose the one that works best for you.

the dry samples in jars at sales locations. The drying and room temperature storage produces a lower protein level, and many of the vitamins and aromatics will be destroyed rather quickly.

The best example I have seen of pollen nutrition preservation was during a visit to France, where I visited Patrice Percie du Sert, outside of Toulouse. Du Sert contracts with fifty beekeepers who collect pollen and propolis from specific flows. The key to his program is that the pollen is collected and immediately frozen, and transported frozen to his large facility where it is cleaned under frozen conditions. The pollen is packed into plastic tubs where the protecting cover is pulled over the pollen, a vacuum is pulled, and nitrogen gas injected into the package to prevent oxidation (=deterioration) of the pollen proteins. It is a pretty amazing system, and the model for anyone serious about collecting and selling pollen at the retail level. The pollen sells at a very high price, way above the jarred dry pollen.

#### Chemical contamination

Since certain plant communities and especially monoculture crops are subjected to agricultural chemicals (insecticides, herbicides and others), no pollen should ever be collected when there is any risk of chemical contamination. It may be necessary to have samples tested for contamination before being placed in the market. This may prohibit pollen collection in the spring and early

summer when many ag chemicals are applied within your colonies' three to four mile foraging radius. Unlike honey, where nectar is less likely contaminated, the pollen is very likely contaminated, in part due to the static electrical charge of the bee that attracts dust and dry chemical residues. These may end up in pollen pellets.

Mitocides and certain hive treatments should keep the beekeeper from pollen collection. While there may be a low risk of contamination from certain compounds, I certainly would not want to take the risk! Powdered sugar dusting is a clear no-no when collecting bee pollen.

#### Other contamination

Dust is everywhere in dry climates, but nowhere more dominate than along heavily traveled dirt and gravel roads. While your colonies could be some distance away, the bees may be foraging on plants growing along roadside ditches and picking up considerable earthen contamination on the plants, and eventually on the pollen. One might argue that 'if the dust does not hurt the bees, it will not hurt me' but I find gritty pollen less than appealing. Biting into dirt in a salad does not appeal to me either, even though I am pretty sure it will not hurt me.

Colonies infested with brood diseases chew out the mummies or residual body parts, and in most pollen traps, the debris falls into the pollen. Unfortunately, some of these dead bee parts are grey in color, and

about the size of pollen grains. Under a dissecting microscope they are clearly visible to the observer. To the human or mammal these dead bee parts will cause no known harm, but when fed to another bee colony may inoculate the hive with one or more diseases.

\* Chalkbrood—One of the best ways of infecting a healthy colony of bees with chalk brood is to feed ground-up mummies in bee pollen or protein patties. Chalkbrood is a fungus, like bread mold, and small numbers of the spores are found in many places in the hive, but at very low levels. When chunks of dead bees loaded with the chalkbrood spores are ingested by worker bees, there are enough spores to infect the larvae and they die of disease. This is especially difficult on drone brood, which has a longer developmental period. I unknowingly fed chalkbrood-infested pollen to bees and had a nearly 100% mortality of drone brood. This is one of the silent killers of bees and a potential threat to any early season drone and queen rearing operation. When weather is wet and cold, the conditions are optimal for chalkbrood to develop in hives, killing the drone brood and some worker brood. I am not aware of any damage to queen larvae, but the emerged virgin queen will not find a large number of drones for mating in the drone congregation areas. The resulting queens will supersede early, if they are accepted. Or they may become drone-laying queens in the matter of a few days.

The key to pollen collection is to NEVER collect pollen with any active disease infection. This requires that every colony be inspected prior to the placement of the pollen trap, and periodic ten to fifteen day monitoring for both disease and colony strength. Any disease-contaminated pollen should be buried so it cannot contaminate other hives.

\*American foulbrood—Anyone calling her/himself a beekeeper must be able to recognize American foulbrood. This is a spore-forming bacillus that results in mummies firmly attached to the bottom and sides of the cell walls. In colonies with good house-keeping and those with good hygienic behavior, the bees will chew out bites of the AFB-killed mummies, and these may contaminate hives when fed to bees.

\*All pollen should be visually inspected prior to use or sale. This is an essential link



Fresh pollen should be collected often, cleaned and frozen quickly to keep it fresh and to retain its nutritive value.

to providing a quality produce. Some companies offer irradiation to kill microbes. While this may be fine for the elimination of disease, I suspect the process also kills the beneficial microbes needed in bee nutrition. The benefit of feeding pollen is that it is very valuable as a feeding stimulant, or phagostimulant. The introduction of a low percentage of pollen makes the feeding more attractive to bees.

In conclusion, pollen collection is an excellent form of income for beekeepers who have farm markets and retail stores seeking high end products. Keep the pollen free from disease, pesticides, dirt and other contaminants. Keep the pollen frozen throughout the holding and sales period, and tell customers to keep their pollen frozen or refrigerated before consuming.

Pollen for feeding for beehives is highly risky because of the chance of introducing diseases or pesticide residues to the food. There are excellent pollen substitutes that do not include pollen, and they should be the first choice for feeding bees. For an isolated beekeeper with a few hives, a mixture of carefully inspected bee pollen and sugar makes a high quality bee feed.

Ah, February! The depths of winter. Time to read books on bees and beekeeping. I have been working on Tom Seeley's *Honey Bee Democracy*, and find it very enjoyable and intellectually stimulating. In early March I travel to North and South Carolina, Georgia and Florida. A new season thus begins. Check things out at [www.wicwas.com](http://www.wicwas.com).

## QUEEN REARING for BEGINNERS

Grafting not Required!

|                   |         |
|-------------------|---------|
| Instruction Book  | \$19.95 |
| Cell Punch Tool   | \$12.95 |
| Frame & Cell Bar  | \$14.95 |
| Lighted Magnifier | \$11.95 |
| Complete Kit      | \$49.95 |

Ashley Bee Supply  
870-853-2412

<http://freemanbeetletrap.com>

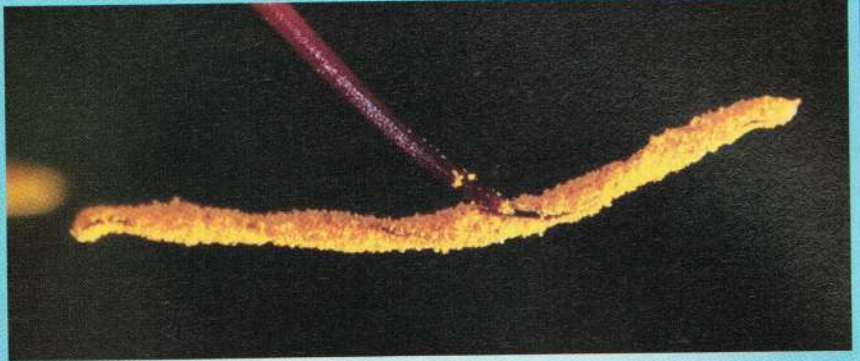


PHONE & FAX:  
(308) 745-0154

[www.cooknbeals.com](http://www.cooknbeals.com)

Serving the Honey  
Industry Since 1959

**CALL US FOR ALL OF  
YOUR WAX HANDLING  
SOLUTIONS.**



Pollen-covered anther of a tropical flower presents a large amount of pollen for various pollinators. The pollen on the flower has not been modified by the bees yet, and is able to perform the role of germination and fertilization.



Bee-stored pollen is packed into the cells. The bees use their heads to pack. Before this stomach contents (honey-nectar mix) is added to the pollen. This contains many microbes that help ferment the bee pollen and convert it to bee bread. This "bee bread" pollen no longer has viability for the flower, and is not the same as pollen collected in pollen traps, which can degrade quickly.

## HEITKAM'S HONEY BEES

Quality Queens Dependable Service

WE'RE SELECTING FOR HYGIENIC BEHAVIOR



Call or Write (530) 865-9562  
4700 First Ave., Orland, CA 95963

FAX (530) 865-7839

"Members of American Beekeeping Federation"