Frequently Asked Questions about CNG's Apiary Certification Standards

- Why does CNG recommend screened bottom boards?
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- Why does CNG allow Bee Quick but not Bee Go or Honey Robber in fume boards?

Why does CNG recommend screened bottom boards?

Screened bottom boards have been studied a lot in regards to Varroa mites. Although some studies have shown no benefit, most studies have shown them to be beneficial in regards to Varroa mites, although the benefit is small (screened bottom boards alone are not adequate against Varroa). Colonies on screened bottom boards do require more honey stores to survive the winter than those on solid bottom boards, but again the effect is small (about 10 – 15 pounds more). Colonies drop their cluster's temperature and eat less honey in early winter when there isn't brood present. It is only when the brood nest is re-established (by the queen laying eggs) that honey consumption and brood nest temperature increases. CNG suggests that solid occlusion boards be placed under the screens to improve heat conservation in the winter in cold climates to aid in this process, but this is not necessary for the colony's survival. Once bees are flying on a regular basis, the occlusion boards can be removed and the colony can regulate their brood nest temperature better with the improved ventilation that an open screened bottom board allows. And every little bit helps, when it comes to Varroa mites.

Why is any foundation that contains wax allowed? I heard that it contains chemicals that can harm my bees.

Foundation is much easier for the new beekeeper to learn on than no-foundation frames, and too many new no-foundation frames placed together can be pulled into a mess – where the comb spans 2 or more frames at an angle, so foundation is allowed. But commercial wax foundation (wax foundation or wax-coated plastic foundation) contains high levels of dangerous pesticides and miticides too, so you really can't win with any foundation long-term. Bees also make no-foundation frames quicker than they pull

any foundation types, but it's best to stagger the new ones between already-pulled frames so they don't get hooked together. This is why ultimately, no-foundation frames are the best, even though it's hard to start with them. Thus, foundation is allowed, but ultimately you'll do better with no-foundation frames (for brood) or painting your own locally processed wax onto uncoated plastic foundation (for honey supers). Still, it's a lot easier to start out with foundation as a new beekeeper and learn those skills later.

Why is plastic foundation allowed? Isn't plastic harmful for the bees?

CNG has chosen to allow - but discourage - plastic foundation on the grounds that every surface inside the hive - and especially the foundation - gets covered with propolis or wax or both, and therefore there is no direct contact between the chemical poisons that leach from the plastic and the bees, brood, or the products of the hive. Plastic foundation has other problems as well including the conductivity of both heat and vibrational signaling when compared to thin beeswax. And all commercial foundation that contains wax contains chemical residues - not just the wax-coated plastic. Since plastic foundation is stronger than even wire-reinforced wax-based foundation or no-foundation frames, many beekeepers prefer to use it in their honey supers. And since brood isn't reared in honey supers, and the majority of chemical residues end up in wax and not honey, plastic foundation in honey supers may actually be preferable to the alternatives. It is in the brood chambers where plastic foundation is most problematic. Again, no-foundation frames are ultimately the best for all brood chamber frames. And if plastic foundation is used in honey supers, CNG suggests painting your own locally processed wax onto uncoated or bare plastic foundation rather than use commercially coated plastic.

What about plastic comb substitutes (Permacomb and Honey Super Cell)?

Since CNG allows plastic frames and foundation, and the plastics that constitute Permacomb and Honey Super Cell are food grade, CNG allows them too. Honey bees actually store less honey in prefab plastic cells than their own beeswax cells and this includes the 'extra' time it takes for them to manufacture the comb! So although plastic comb substitutes are allowed in honey supers, they are discouraged. Plastic comb substitutes are probably best used in emergency feeding situations, since it's much easier to fill them with sugar syrup than wax comb. For emergency feeding, such a prefilled plastic comb frame can be placed directly next to the cluster of a struggling colony in late winter / early spring when no other alternatives (such as a scratched frame of capped honey or internal feeder) exist.

Why isn't more aggressive pollen collection allowed?

Dry pollen collected from flowers is processed by forager bees on the way home to the hive by the addition of nectar, enzymes, and microorganisms and then it is stored in cells that contain lactose fermenting bacteria, and fungi that predigest the pollen until it becomes bee bread. Bee bread is what

is essential to a healthy colony because that is what is eaten by nurse bees to produce brood food from their glands for young larvae and directly fed to older larvae. Pollen substitutes and dry pollen that is collected in a trap and processed by the beekeeper and then refed inside the hive - like on the top bars – is *not* processed into bee bread. It is only eaten by adult bees directly. Any long-term interruption of this natural process of pollen collection and the generation of bee bread is therefore more deleterious to the colony's health than the benefits of refeeding pollen later in the season.

Why isn't High Fructose Corn Syrup feeding allowed?

HFCS is a liquid sugar product that honey bees will eat, and it may not spoil as quickly as sucrose or white cane sugar syrup. But it is heavily processed and it may contain residual starch, mercury, and/or enzymes from the manufacturing process which may be harmful to bees. Also, honey bees reared on HFCS have a shorter lifespan than those raised on sugar syrup. Furthermore, HFCS competes with honey as a sweetener.

Why can't I use soy flour, Brewer's yeast, dried milk, potato flakes, corn meal, other flours, egg yolks, or vegetable oils in my home-made pollen substitute or grease patty?

Lactose (milk sugar) has been shown to be poisonous to bees. Whey protein, which is another milk product, is also harmful for bees. The benefit or harm of the other substances (and any not listed) is unknown but some of these substances contain stachyose, which is poisonous to bees. Although the components of commercial pollen substitutes (which are allowed by CNG) are unknown, those commercial substitutes have all been tested for their effects on bees and appear safe. Vegetable oils (such as Canola oil) – which are used to make grease patties - have some activity against tracheal mites, but most bees live in peaceful co-existence with this pest now and tracheal mite treatment is only allowed when an infestation is documented by microscopic bee dissection. Bees don't naturally collect oils. Thus home-made pollen patties are allowed as long as they ONLY contain the beekeeper's own pollen, water and white cane sugar syrup (or the beekeeper's own honey – but that would be discouraged because of transmission of AFB spores). No other substances are allowed. And grease patties containing oil are only allowed as part of treatment of a *documented* Tracheal Mite infection.

Why must commercial pollen patties be irradiated?

Pollen can transmit American Foulbrood (AFB) spores. Radiation kills those spores. CNG allows the beekeeper's own pollen to be processed into pollen patties without radiation (similar to feeding your bees your own honey) and also allows commercially available pollen substitutes as alternatives to non-irradiated commercial pollen.

I'm very concerned about Nosema. Why doesn't CNG allow Fumagillin?

Fumagillin is a water soluble antibiotic that is distributed into all the stored honey in the hive. It is then continually fed upon by the colony as the stored honey cells are uncapped later in the season or even into the following season. And although it is thought to be safe for human consumption, Fumagillin is one of the few synthetic substances that winds up in the honey (the miticides wind up in the wax). More importantly perhaps, as an antimicrobial Fumagillin alters the natural flora of the colony, including the microorganisms present in bee bread. Natural beekeepers who are careful not to squish bees and who feed pollen or pollen substitutes in the fall have little trouble with Nosema.

Why does CNG allow Bee Quick but not Bee Go or Honey Robber in fume boards?

Everything in Fischer's Bee Quick is both natural and food grade and it has a pleasant smell. The certifications from all the suppliers of Bee Quick's components meet USDA National Organic Program requirements. Bee Go and Honey Robber both smell horrible. They are both made with butyric anhydride (Honey Robber is cherry flavored). Although they may be safe to humans as a liquid (as long as it is washed off your skin immediately if spilled), the fumes can cause serious upper and lower respiratory damage (chemical pneumonitis) and butyric anhydride is not food safe.