



## West Virginia Department of Agriculture

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Commissioner

# Guide Lines for Protecting Honey Quality

*To be used in conjunction with Honey House Sanitation Guidelines*

## Field or Yard Operations

- Honey contaminated by dirt, chemicals and other foreign material should not be used or delivered to the extraction plant or honey house with the expectation that it will be cleaned and foreign matter removed by settling or other treatment.
- Bee equipment used in the bee yard should always be clean and free of foreign material to avoid spreading disease or contaminating the hive.
- During supering, special attention should be given to the condition of the supers to avoid exposing the hive and honey to contamination from rats, mice, birds, other insects and residues of chemicals or materials foreign to the hive.
- During honey super pulling operations, stands should be used to avoid accidental contamination of honey and equipment because of supers falling or being placed on the ground.
- Pallets or drip boards should be transported and handled outside the extraction plant or honey house and placed face to face to avoid exposure to dust and other contaminating materials.
- If chemical boards are used to remove bees from honey supers, extreme care is necessary applying the chemical on the boards to avoid dripping the chemicals onto the top super.
- The chemical-treated pad should not come in contact either honey or comb during use. After use of chemicals, supers must be adequately aired prior to extracting. Setting overnight in an adequately ventilate storage area appears adequate for dissipation of chemicals.
- Care must be taken while removing supers to avoid excessive breaking o either the cap or the honeycomb which leads to excessive dripping of honey.
- Blowers used to remove bees should not be used in such a way that dust, grass or other contaminating materials are blown onto the honey in the supers.
- Do not use chemicals for bee removal which are not approved by FDA and local state health officials.

- Pallets or drip boards for hone supers should have a painted or hard surface to facilitate cleaning.
- Employees should be made aware of the characteristics of green honey to avoid subsequent deterioration of honey quality through contamination with uncured honey.

## **Transporting**

The part of the vehicle(s) used to transport supers shall be clean. Protection can be provided by plastic or canvas tarps, inverted wooden drip boards or flats or the use of an enclosed van and shall be so loaded and lidded to protect them from rain, dust and other contaminants while in transit. A secondary benefit of proper protection of the load is minimizing or elimination robbing during certain times of the honey season. Special efforts should be made to protect the honey during storms, dusty or other unusual conditions.

## **Storage**

The storage areas for honey in supers may be overlooked source of contamination particularly from mice, birds, ants, etc. Storage areas where overheads are not enclosed can result in dust or other foreign materials falling into the honey supers. Condensation on overhead pipes or leaks in the pipes may cause dilution and contamination of the honey. If chemicals are used to remove bees in the pulling of honey, supers must be uncovered in storage.

## **Uncapping and Extracting**

- The uncapping and extracting operations generally are the point where honey becomes contaminated due to the number and nature of the operation.
- In removing frames from supers, care should be exercised to avoid knocking dirt, paint and other foreign materials off the outside of the super into pans, wax melters or other containers in the area. Frames should be checked to avoid mechanically uncapping those that have dirt, mice nests, insects and/or other foreign material. Such frames can often be handled separately with adequate pre-cleaning to avoid contaminating the honey
- Frames having brood of any kind should be hand uncapped to prevent the larvae from the brood entering the honey. Avoid removing supers containing brood from the hive, if possible.
- During scraping of the burr comb from frames, watch for residues from chemicals used in disease control or residues of feed parries and do not allow these materials to get into the honey or cappings.

- Sides or catch pans should be used on equipment to prevent cappings or honey from spilling on the floor. Any honey cappings or other materials should not be removed from the floor or the contaminated surfaces and placed back into the process.
- Grease used in lubrication of uncapping and extracting equipment must be food grade. Oil, such as mineral, should be used instead of motor oil. Care must be exercised to avoid any oil or grease from contaminating the honey or cappings.
- Since several different methods and systems are used for extracting honey, each one must be examined to avoid contamination of the honey. Open systems shall be protected from air-borne contaminating materials.
- Extraction systems should be designed and operated to avoid spillage or leakage of honey and must be protected from access by insects, rodents, etc. during non-use periods.
- During or immediately after extracting, the honey should be heated sufficiently or otherwise processed to permit separation of wax particles and other materials from the honey. Both top and bottom baffles should be used in a tank or sump system. Screens can be used successfully in some applications.
- Melters should be protected from all sorts of foreign materials and should be designed and operated to entrap foreign materials and provide easy and efficient removal of "slum gum" from the surface.
- Centrifugal cappings separators and melters shall be protected from insects, rodents and any other foreign materials that may fall into the equipment from pipes, overheads, other equipment, etc.

### **Storage of Honey**

- After extracting and separating, honey must be protected from any type of contamination. This includes foreign materials, dilution, reaction with tank surfaces or coils, etc.
- Tanks must be totally enclosed and constructed of materials that will not permit any reaction of the acid in the honey.
- Tanks for honey storage should be placed in areas which are clean, well-lighted, adequately protected from rodents and insects and properly ventilated.

### **Filling Containers**

- Those areas used for filling of honey and storage of clean containers shall be protected from contamination of all kinds
- Containers must be approved for food use and must be adequately cleaned and sanitized prior to filling to remove all traces of previously filled honey, dirt, water and other foreign material and free from rust.

- Drums with bungs and rolled rims require special attention to remove dirt and residues of honey which may have hardened or crystalized in the seams and or threads.
- Cleaned containers must be checked for chips, etc. prior to filling to assure that they have not been re-contaminated.
- After filling, containers should be protected from direct sunlight and excessive heat to avoid deterioration of the honey
- Containers should not be stored where dust, rain or other foreign material might enter the container through a loose or partially sealed lid.

### **Maintaining Honey Quality**

- Avoid excessive heat during extraction, wax separation and cleaning operations.
- Reduce chemical deterioration using stainless steel on all contact surfaces of equipment and tanks.
- Coils or heating surfaces of other than stainless steel should be plated to avoid acid reaction to copper
- Eliminate, as much as possible, the incorporation of air during extracting and pumping.
- Steam or hot water heating in the honey process should allow for checking for leaks of water into honey to avoid dilution and possible subsequent spoilage.
- Use a cleaning method that efficiently removes propolis, honey, grease, oil and other types of dirt without contaminating honey or the cappings.
- Equipment subject to propolis and/or dirt buildup should be cleaned at the end of each working day.