



B-PLUS

BEEKEEPING REPORT FROM MICHIGAN STATE UNIVERSITY

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WINTERING

This is a subject that always gets interest at beekeeper's meetings, maybe in part because they have not been very successful in dealing with this problem. One year they think they have the formula worked out and then they get wiped out the following winter. Wintering success probably comes down to about two important criteria, and these are: 1) adequate population of young bees, and 2) sufficient honey properly placed in the hive. Lets take these up one at a time and then cover some other points that will help in winter survival of your bees.

I think that if you have a sufficient population of bees they will make up for a lot of sins on your part. Wintering is a time when the "tropical" honey bee is trying to live in the temperate regions. In order to do this they must make the inside of the cluster as much like the tropics as possible. They do this essentially by metabolizing honey, and in this process give off heat and moisture (the tropics). The giving off of this heat and moisture from the cluster is regulated somewhat by the surface area of the ball of bees (the cluster). Within limits, the bees will make the ball smaller when it is colder so that less heat is lost from the surface. If there are too few bees then the bees in the center of the cluster can not generate enough heat to keep the outer bees from freezing. These outer bees then die and fall off the cluster and reduce the size more. Additionally, it sometimes happens that the bees contract the cluster and in so doing leave honey and thus starve if it does not warm up soon enough. This may be one of the other major reasons it helps if there are more bees within the cluster -there is just more chance to cover more honey. Brood rearing can not begin in January if the cluster size does not permit it to generate brood temperature of 94° F. This brood rearing will help replace the older bees that are dying off. The longer this is delayed, by having smaller clusters, the weaker the colonies will be in spring.

Honey bees do not use a lot of honey in the heating of the cluster in winter. It is about a pound a week when no brood rearing is underway. This should mean that we could winter bees with somewhere near 20 lbs., yet we recommend that colonies have four or five times that amount. First, it may mean that we define winter a little better. If we mean from fall honey flow to spring flow, then it is obviously a longer time period and includes brood rearing. Then there are some other considerations that we need to cover. It is hard to place the honey precisely where the bees will always be in contact with it during those times when they can't move to get the honey. Then a further point is that the additional honey becomes a heat "sink" or buffer to changes in cold. This allows the cluster to make changes in its shape much more gradually when the temperature drops. For the most part the heat that escapes from the cluster goes

upward and this allows the cluster to work upward much easier than sideways. So the hive needs to have sufficient honey clustering room in an upward direction. This is in fact one of the main reasons that bees

starve towards the end of winter with some honey still in the hive. The temperatures are not yet warm enough to allow the bees to move sideways to the honey that may be there.

How do we insure that these two main criteria are taken care of in all of our colonies? Fall requeening or at least young queens will insure that there are more young bees for winter. Remember too that it is better to take your winter losses in the fall. This means to unite weak colonies in the fall and that way you will have colonies that survive the winter that you can divide in the spring to return the apiary to the same number of colonies.

Having the right amount AND placement of the honey may mean feeding syrup in the fall. In fact, some beekeepers find it easier to take most of the honey off and feed syrup back to the bees as-then the bees can place it in the proper position for winter. One concern is that feeding take place early enough to allow the bees to ripen the syrup into honey.

Finally, some additional things that help promote good wintering by a colony of bees. Upper entrances, or better, a vent between the inner cover and top hive body will allow excess moisture to escape and not condense on the inner cover. Feeding the antibiotic fumagillin (Fumadil-B or Nosema-X) in syrup via a fall feeding will reduce the amount of nosema and therefore the dysentery and stress caused by this parasite. Wrapping and/or insulating hives will also reduce food consumption and water condensation. The question of this operation revolves around the cost effectiveness of wrapping. Each beekeeper will have to determine that based on the amount of allowable loss that can be tolerated. In light of possible Africanized bees, mite quarantines, cost of replacement bees, this equation often changes.

BEEKEEPING ECONOMICS

At the August Eastern Apiculture Society meeting, held this year at Lancaster, Pennsylvania, there was an address given by L. Rodney Stewart, Jr. with the title "Economics and Beekeeping in the 80's". It was an excellent talk on the state of the industry, as a beekeeper-packer from Pennsylvania sees beekeeping and honey markets. I will try to give you some of the highlights and figures as I wrote them down. The Consumer Price Index (CPI) as of August, 1985 was at 322, which means that what cost you \$1.00 in 1967 (the current base year) will now cost \$3.22. Basically what the CPI does is track the rate of inflation. For example, in 1967 a 1 lb. jar of honey cost from \$.39-49, with an average price of \$.45. In 1985 the spread is from \$1.09 to \$1.79 with the average \$1.45. If you multiply the average price of 1967 times 322 you get \$1.45, so honey retail price is right on the index, which means that it has kept up with inflation. What about the wholesale price? This is a little mixed and I will try to show you why. First, there is also a Producer Price Index (PPI) that covers costs of production, etc. The PPI is currently at 294, or 28 percent under the CPI. Secondly, there is the difference between the wholesale price, world price, and the support price of honey. Mr. Stewart gave what he called the market price of white honey in 1967 of \$.135/lb., and in 1995 of \$0.45, which is an increase of 333% or about the CPI, but 39% higher than the PPI. When it comes to the support price there has been a real change. In 1967 the support price for white honey was \$0.124 and today it is 50.685 or an increase of 552! His contention is that the support program has only encouraged other countries to gear up their production because they knew there

would be a constant, or increasing, price for their honey. It may be hard to turn the importing/support price "ship" around when it has so much momentum. However, I -think the most realistic approach may

be to have some import protection (if only temporary) until the support price-to-world price of honey can be brought closer together.

Lets now turn to some real production costs in table form.

<u>Item</u>	<u>1967</u>	<u>1985</u>	<u>Chg.</u>	<u>± PPI</u>
Starline Queen	\$1.80	\$8.15	453	+159
10 Supers w/fr.	35.00	92.50	265	- 29
100 Sht. Foundation	41.00	84.00	205	- 89
144 1 lb. Jars	6.04	24.50	400	+113

It would appear that queens and jars are out of line with the PPI, and at least the items given for equipment are actually lower than the PPI. Mr. Stewart's summary was that the beekeeping industry is certainly well off compared to the rest of agriculture. Maybe prices and conditions are not what they were in the 70's, or maybe what they could be even now with better promotion --programs, but it could be a lot worse. -- Vive la beekeeping!

WOOD PRESERVATIVES SAFE FOR BEES

The USDA has tested several wood preservatives and found three that are safe to use on beehives. Some others were found to decrease bees' survival rate and also contaminate the honey and-beeswax. The wood preservatives found safe were:

Copper naphthenate
Copper 9-quinolinolate
Acid copper chromate

The preservatives found unsafe were pentachlorophenol (PCP), which is o+ten called "penta"; inorganic arsenicals; and creosote. It appears that the EPA will remove all registrations for the use of these chemicals