

Skalko's Honeybee Farm was the recipient of a SARE USDA Grant to facilitate the survival of honey's bee's in the winter months in N.E. Minnesota. This project allows honeybees to be stored inside an insulated shipping container with ventilation, CO2 controls and heat control at about 42 degrees. With the enclosed ventilation system stale air, humidity and CO2 will be vented out at the vent on an exterior wall with an induct fan. This project (Bee House) is a prototype that I would share with other beekeepers to increase their winter survival of honeybees. Temperature and humidity are necessary to be maintained because if it gets too cold bees can freeze and too hot will cause brooding and additional intake of existing food supply. Humidity must be monitored because too much moisture will kill the bees (too much moisture in a house will cause molds, illness etc.) Temperature and humidify gauges will be monitored to provide a controlled environment.

Suggested calculations for the environment controls:

Humidify	50 % - 60%
CO2	2000 ppm
Temperature	38 – 42 degrees

### **Contribution to Sustainable Agriculture**

Pollinators (honey bee's) pollinate about 1/3 (one third) of the agriculture crops we eat. Without pollinators we would not be able produce enough food to feed the people of this planet.

Albert Einstein once said, "If the bee's disappeared off the surface of the earth then man would have four years of life of to live. No more bees, no more pollination, no more plants, no more man"

Historical method to winter honeybee indoors in the 1878 – 1951 consisted of putting the honeybees in a cellar, shed or barn. All these required a dark environment with some type of constant temperature. Also required was an adequate supply of honey (nectar), which was about 45 pounds of honey, depending in the geographical area where the bees are being wintered. It should be pointed out that giving a second hive body was needed. The success consists of three things room for the development of the brood, stores of good quality honey and pollen and protection for the wind and cold.

### **SOME MEASURES OF SUCCESS IN CELLAR WINTERING INCLUDE:**

1. During the winter the temperature should be about 52 degrees.
2. There should never be moisture on the cover of the hive
3. The cellar should be kept dark at all times
4. If there is dead bees on the floor to entrance to the hive there shows poor wintering.

5. If the bees were in good condition in the fall and have been wintered well the loss during the winter will never be more than one-sixth of the total population of the hive
6. **THE ABOVE IS THE CRITERIA USED FROM 1878 – 1951.**