

# OXALIC ACID DRENCH TREATMENT

First, a little background. Oxalic acid is basically an organic compound that is found in nature. A number of foods we eat are rich with oxalic acid, including spinach, swiss chard, rhubarb, beet greens, kale, sorrel, and chocolate. Oxalic acid is commonly sold as “wood bleach” but can also be bought at most bee supply stores.

Since oxalic acid is found in nature, and because it is a normal component of honey, oxalic acid is considered a “natural” treatment. The Certified Naturally Grown beekeeping program allows the use of oxalic acid for the treatment of *Varroa*.

There are 3 methods for using oxalic acid to treat for *Varroa* in a bee hive. The drench or dribble method, the heat vaporization method, and the spraying method. According to Dr. Marion Ellis, a professor of Entomology at the University of Nebraska (and someone who NC Apiary Supervisor Don Hopkins refers to as the most knowledgeable person on the use of oxalic acid), treating in the winter is most effective because if there is brood in the hive, 2/3s of the *Varroa* will be in the brood and not affected by the treatment. Other methods during warmer months require multiple treatments. This is a one-time treatment and the safest and most effective.

This method is applicable only in winter when the bees are broodless and clustered with temperatures between 32 and 41 degrees F. A mixture of oxalic acid and sugar solution can be dribbled over the cluster, causing direct damage to any *Varroa* mites infesting the bees. This treatment causes small damage to the honey bees themselves.

## **Recipe**

- 1 ounce of oxalic acid (two fluid tablespoons)
- 1 1/2 cups sugar
- 1 1/2 cups hot water

This recipe makes enough solution for 15 average hives.

## **Preparation:**

- Heat the sugar water to room temperature.
- Mix in oxalic acid.
- Place in thermos to retain heat for syringe application in bee hives.

## **Method of Application**

Using a syringe, trickle 5ml (1 teaspoon) of prepared solution along each seam of bees. With small colonies, such as nucs, use 4 ml per seam.

Total delivery of solution should be 30 ml for a weak colony; 40 ml for an average colony; and 50 ml for a strong colony.

Temperatures recommended for treatment are in the range of 32 degrees to 41 degrees. Bees need to be in cluster for application. Drench application takes about 1 minute per hive.

*Multiple or repeated treatment with oxalic acid should be avoided. This is a one-time application only.*

## **Beekeeper Protection**

*When using the drench method, beekeepers need to use rubber gloves. Prevent any spills on clothes or footwear. Do not splash near face or eyes. Do not inhale.*