

## Why Should You Use Gourmet Liquid Ant Bait in Agriculture

First, in an urban environment ants are a problem, because people don't want to tolerate them. Sometimes this is for health reasons, but quite often it is for aesthetic reasons. People, just don't want to live with lots of ants around. However, in agriculture it is different. Certain species of ants can do damage to crops directly and indirectly. Baits are not going to stop a migrating horde of soldier ants, but they can be quite useful and cost effective in protecting high value crops.

It is important to keep in mind that ants are not the true target of an agricultural pest control program. Ants, in and by themselves do not cause most of the damage to grapes, nuts and citrus. It is the aphid, scale, whitefly and the diseases that they carry, that do the most significant damage. The ants function as protectors and transporters of these pests. They prevent natural predators and parasites from doing their jobs. The true test of the efficacy of the treatment and its cost effectiveness is the amount of damage reduction that can be realized by a program. This needs to be evaluated on a multi-season basis. Baits must work slowly to get penetration into the colony. Baiting tends to eliminate ant colonies and the amount of bait used can be reduced in subsequent years, whereas, with traditional spraying methods only the foragers are killed and the colony can regenerate year after year. Spraying may even select for more hardy colonies that are more resistant to the AI and require increased spray applications and greater frequency. This is a particular problem for some crops where the available AI's are limited.

Ants are a diverse group of creatures; they occupy almost every conceivable niche. It is unrealistic to expect one bait to be effective on all types of ants, as their feeding behaviors can be very specific and yet very changeable by season, by temperature, by stage of colony development. We have found that because we are targeting ants that cultivate homopteran pests and feed on their honeydew, that sweet based baits are most effective. In fact some of the protein feeding ants can be predators that help keep pest populations in check.

The advantages to using Gourmet Liquid Ant Bait (GLAB) in stations as opposed to sprays or granular treatments, as we see it are as follows:

1. Pesticides are not broadcast into the environment, therefore:
  - a. Workers have little or no exposure to toxic agents and can be in the field as pest control is being done.
  - b. There is no chance for airborne pollution
  - c. There is little or no chance for groundwater pollution
  - d. There are is no effect on non-target beneficial insects
    - i. This is especially important considering the honey bee die off being experienced in many areas around the world
  - e. Food crops have no exposure to the AI, therefore no Tolerances are required
2. The Active Ingredient Disodium Octaborate Tetrahydrate (DOT) is:
  - a. Not a neurotoxin, it is a stomach poison and works on the insects gut
  - b. Even when ingested it has an  $Ld_{50} > 5000\text{mg/kg}$
  - c. There is no absorption of toxicant through unbroken skin and therefore no problems when children or workers contact the chemical
  - d. DOT is a slow acting and makes its way through the colony
  - e. Stable and does not break down from UV light or heat
3. GLAB Can be diluted according to label directions:
  - a. This allows for the ability to increase feeding in finicky species by dilution with distilled water or a substrate similar to the one the ants are feeding on.
  - b. This allows for onsite mixing of additional attractants, such as brine from tuna or other protein sources.
4. Is cost effective:

- a. Over a multi year period, the cost of the bait stations can be amortized
- b. The number of bait stations used and the time to refill them can be reduced after the initial treatment
- c. There are strategies we have developed for treating ant reservoirs in the off season or early in the production cycle that can reduce the number of bait placements

Secondly, we have noted that around the world the most important invasive ant species effecting Citrus, Grapes and Nuts is the Argentine Ant. Argentine Ants is one of the most researched species of ants. Gourmet Liquid Bait has demonstrated area wide control of these ants in University sponsored research in California.. GLAB is currently being used in organic agriculture, where there are few effective alternative treatments and crops are of higher value. It would seem that the acceptance of these groups, where pest pressure is high, would be an important endorsement for the use of baits by retail consumers and professional pest managers, where is far lower insect pressures and alternative delivery systems that are far less expensive.

In summary, we believe there is a significant opportunity to use Gourmet Liquid Ant Bait in ant control programs that is good for the environment, good for the applicator, effective at reduces crop loss and reasonably priced, when looked at in a multi-year program.

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