

Answers to Health Questions About Application of Spinosad and Diazinon

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Spinosad (product GF-120 NF Naturalyte™ Fruit Fly Bait), mixed with bait, attracts and controls multiple species of economic (tephritid) fruit flies infesting various tree, nut, vine and vegetable crops, ornamentals, and non-crop vegetables. Aerial and ground applications in agriculture production, or directed ground applications to individual plants, are permitted. In urban areas, however, use is limited to directed ground application.

Q: What exactly is spinosad?

A: Spinosad is an insecticide derived from the naturally occurring soil organism actinomycete, *Saccharopolyspora spinosad*.

Q: Is spinosad safe?

A: While all substances have some potential to cause harm if not properly used, spinosad has an exceptionally good toxicity profile, and the U.S. EPA has classified spinosad as a “reduced-risk pesticide.” In addition, the amount applied for fruit-fly control, and the manner in which it is applied (i.e., in a bait), should not expose members of the public to a significant risk. The small amount of spinosad people could contact as it is applied, either from the ground or by air, would not be toxic for humans.

Q: How is spinosad used to kill economic fruit flies?

A: The Florida Department of Agriculture and Consumer Services, in cooperation with the USDA, have developed an eradication program which uses spinosad mixed with a bait to attract fruit flies. The mixture is applied to trees where fruit flies may live. The adult flies are attracted to the bait and die after eating the spinosad/bait mixture.

Q: Why does spinosad kill fruit flies and yet doesn't present a major risk to people when applied aerially?

A: The concentration of spinosad and amount used is too low to cause adverse effects in humans and is considered to be low risk.

Spinosad acts by causing muscle contractions due to excitation of the central nervous system in insects. The concentration of Spinosad is too low to cause these effects in humans.

In application for fruit-fly eradication, a small amount of spinosad is mixed with bait made from sugar and attractants to attract the fruit flies. The mixture consists of a small amount of the active ingredient (0.02% spinosad A and D) and 99.98% bait which consist of the sugar and attractants.

Proper application techniques help to ensure adequate coverage and correct dosage necessary to obtain optimum control of the insect pests. The large spray droplet size of 4000 to 6000µm (4-6 mm) used are too large to be inhaled by humans. Coarse nozzles that will produce the desired droplet size and target 20-80 droplets per square meter are used for aerial application (aerial application is limited to agricultural areas only). Spinosad may be used as a ground, spot or strip spray applied on the inner canopy of fruiting plants or other fruit-fly habitats.

Q. What symptoms does spinosad exposure cause in people?

A: At doses that are much higher than should be encountered during fruit-fly control operations, spinosad may cause temporary irritation of the skin, eyes and/or upper respiratory system. Spinosad did not cause allergic skin reactions when tested in laboratory animals. Spinosad is not likely to cause a rash. Spinosad may cause temporary eye irritation, but, corneal injury is unlikely.

Q: Could any other adverse health effects occur from aerially applied spinosad-bait?

A: The concentrations of spinosad used for fruit-fly eradication are very low, therefore any adverse health effects in people are not expected. The eradication protocol is designed to limit human exposure, and the amount of spinosad people could be exposed to during a fruit-fly eradication campaign is many times less than the amounts that cause effects in laboratory animals.

Q: Does spinosad cause cancer?

A: There is no evidence to suggest that spinosad is a cancer-causing agent. Numerous laboratory tests indicate that spinosad is not a carcinogen or a mutagen even when tested in laboratory animals at very high levels.

Q: What does the Florida Department of Health recommend for protecting the public's health against spinosad poisoning?

A: Spinosad baits do not pose a risk to public health. In residential areas, ground sprayers will be used to spray infested trees. However for those who wish to limit their exposure, stay away from the trucks used in the treatment and wash hands, shoes, or any other body parts or clothing that may have come into contact with the treatment area.

Q: What can people do if they think spinosad might be making them sick?

A: It is not expected that symptoms will occur due to spinosad exposure following fruit-fly eradication because of the low concentration of spinosad used in the bait. People who are sick and believe that spinosad might be contributing to their symptoms should see their personal health care provider. They should contact their County Health Department or the Pesticide Surveillance Program at 1-800-606-5810. Health officials are interested in documenting any cases of illness thought to be related to spraying. Physicians who suspect that spinosad may be responsible for a patient's illness should report this to their County Health Department.

Q: Will my child get spinosad poisoning if he puts fingers or unwashed toys in his or her mouth while playing outdoors?

A: It is unlikely your child will become ill from such behaviors. Nevertheless, unnecessary exposures to pesticides or other chemicals and pathogens should be avoided, and we recommend that people take simple precautions to prevent contacting them whenever possible.

Q: What should I do if I am pregnant?

A: The available evidence indicates that spinosad does not cause birth defects or other problems with pregnancy.

Q: Should I close my windows and turn off the air conditioner during aerial application?

A: Given the large droplet size recommended in aerial applications and the controlled manner of ground application, drift of the spinosad/bait treatment into homes should not occur. Therefore, it should not be necessary to close the windows or turn off your air conditioner.

Q: Is it safe to eat fruits and vegetables from my garden after spinosad-bait has been sprayed on them?

A: Yes. The U.S. EPA allows farmers to apply spinosad to a number of food crops, and washing your produce should be sufficient to provide you with safe food. This product is listed by the Organic Review Institute (OMRI) for use in organic production.

Q: Does spinosad harm bees?

A: Although spinosad at a higher rate is considered toxic to honey bees, the bait product (0.02% spinosad) is not considered toxic to bees via contact exposure. In addition, honey bees are not known to be attracted to the bait; therefore, ingestion of the product by honey bees is not expected.

Q: Could use of spinosad harm wildlife or aquatic organisms?

A: Spinosad is considered practically non-toxic to wildlife, including birds and mammals. Although spinosad is considered moderately toxic to fish and highly toxic to aquatic invertebrates, the product will not be applied directly to water. In addition, any incidental drift or runoff of spinosad is not expected to impact aquatic organisms since the application rates are very low for this use. The use of the bait mixture which is designed to attract fruit-flies, and contains very low concentration of spinosad, is likely to only impact insects and other non-target invertebrate species that are attracted to and consume the bait.

Q: Is it safe to swim in a swimming pool that has been sprayed with spinosad?

A: The amount of spinosad that may be detected in swimming pool water after spraying should not cause any adverse health effects.

Q: What effects does spinosad have if it is sprayed over water?

A: The label instructions for GF-120 NF Naturalyte (containing spinosad) does not allow applications directly to water, to areas where surface water is present, or to intertidal areas below the average high water mark.

Q: What is the human health risk from the use of diazinon for soil application during fruit fly eradication?

A: Diazinon is applied directly to the soil only under trees or plants that have fruit or vegetables that have been found to contain active fruit fly larvae. The only way to be exposed to diazinon is to come into direct contact with the soil that has been treated, and applicators must follow instructions to minimize the possibility of contact with freshly treated soil. When these precautions are followed, subsequent incidental exposure to the soil is unlikely to cause any adverse effects in humans.

Q: How do I get more information about spinosad or diazinon?

A: If you have additional health questions about spinosad or diazinon, please contact the Florida Department of Health Bureau of Community Environmental Health at 1-800-606-5810.

For further information on spinosad and the fruit-fly eradication effort, please call the Department of Agriculture and Consumer Services toll-free at 1-888-397-1517.