



Note 1.09
 (Previously Note #15a)

ALLERGY TO INSECT STINGS

There is some confusion among the general public about insect stings and allergic reactions. Insect stings come from ants, bees, or wasps but not from other biting arthropods such as mosquitoes, ticks, or fleas. For example, a person may be stung by a wasp, but is bitten by a mosquito.

We've all heard people say that they are allergic to bee or wasp stings. Often, these people mention that they could die if they are ever stung. However, the fact is that true allergy to stinging insects is rare. Inaccurate statements about sting allergies cause people to have unneeded fears and unjustified prejudices against stinging insects.

People can have allergies to a variety of materials such as pollen, food, and dust. Stinging insect allergies specifically refer to reactions that take place in parts of the body distant from the place that the sting was inflicted. In fact, allergic reactions are usually whole-body or systemic reactions, and the effects are fairly widespread in the body. Differences between normal and allergic reactions to insect stings are listed in the following table.

Table 1: Reactions to Insect Stings*

Normal Reactions

- I. At the time of the sting
 - pain, sometimes sharp and piercing
 - burning or itching burn
 - redness around the sting site
 - a white area immediately surrounding the sting puncture mark
 - swelling at the sting site
 - tenderness to touch at the sting site
 - *large local (but non-allergic) reactions* are characterized by massive swelling around sting site over an area of 4 inches (10 cm) or more and frequently increasing in size for 24 to 72 hours, sometimes lasting up to a week
- II. Hours or days after the sting
 - itching at the sting site
 - residual redness at the sting site
 - small brown or red damage spot at the puncture site
 - swelling at the sting site

Allergic Reactions (Potentially Life-Threatening)

- I. Cutaneous (skin) reactions
 - hives or nettle rash anywhere on the skin
 - massive swelling *remote* from the sting site
 - generalized itching or tingling of the skin remote from the sting site
 - generalized redness of the skin remote from the sting site
- II. Systemic allergic reactions
 - allergic rhinitis or conjunctivitis (swelling and redness of nasal or eye membranes)
 - respiratory problems (difficulty breathing)
 - abdominal cramps
 - severe gastrointestinal upset
 - weakness
 - shock / unconsciousness
 - hypotension or fainting
 - difficulty breathing / laryngeal blockage (massive swelling in the throat)

*Table modified after Schmidt, J.O. (1993). Allergy to Venomous Insects. chapter in "The Hive and the Honey Bee." Bookcrafters, Chelsea.

NORMAL REACTIONS

Description

Normal reactions to insect stings take place at the site of the sting and are not considered to be allergic. Symptoms may include swelling, redness, and itching of the surrounding area. Even a large local reaction such as from a sting on the hand that results in swelling to the elbow is a normal, **non**-allergic reaction. If the swelling was caused by venom from a snake bite, the average person wouldn't consider the reaction to be "allergic". In fact, such swelling is exactly the type of reaction that the insect venom was designed to induce. Though the pain from the sting in a normal reaction should not last beyond a few minutes, swelling and itching may last for hours or days. Local reactions, however large they may be, are not a cause for concern unless they occur in places where they threaten to block air flow such as the neck, inside the mouth, or in the nose. Victims should also seek medical care for severe swelling near the eye.

Treatment

If a stinger is present, remove it as soon as possible. The stinger should be scraped away, rather than grasped and pulled. Remember only honey bees leave their stings--yellow jackets and other wasps, hornets, and bees do not have barbed stingers and can sting repeatedly. Treatment of normal reactions usually involves washing the wound to help prevent secondary infection, then utilization of ice packs and/or pain relievers to reduce pain. Heat or warm compresses should never be used. Oral antihistamines and topical anti-itch creams such as hydrocortisone may help reduce discomfort. See a doctor or pharmacist for recommendations.

CUTANEOUS (SKIN) ALLERGIC REACTIONS

Description

Reactions that take place on the body away from the sting site are considered to be allergic reactions, and are definitely a cause for increased attention and concern. Allergic reactions can be separated into two categories: cutaneous (skin) reactions and systemic reactions. Cutaneous allergic reactions are characterized by itching, tingling, swelling, or redness of the skin in places away from the sting site. This type of reaction is not life threatening, though it may be frightening.

Treatment

Those who suffer from cutaneous allergic reactions may decide to consult a doctor about immunotherapy.

SYSTEMIC ALLERGIC REACTIONS

Description

Systemic reactions can have a variety of effects on the body and range from stomach upset to respiratory problems to unconsciousness and even death. Any systemic reaction such as these or others (see Table 1) are cause for serious concern and immediate medical attention is needed.

Treatment

Immediate treatment for a systemic allergic reaction is needed if a victim is suffering from dizziness, difficulty breathing, abdominal cramps, or any other signs of a systemic allergic reaction. Use of an epinephrine (adrenaline) shot is recommended. The shot should be given on the way to the hospital, or while an ambulance is being called. Scraping off the stinger and use of ice to prevent spreading of the venom is also helpful, but these measures should never delay calling for an ambulance or driving to the hospital.

An epinephrine kit requires a prescription from a doctor and anyone who works with bees or is known to be allergic to stinging insects should become certified for administration of epinephrine. See a doctor about certification.

Immunotherapy for long term management can be very effective in preventing future allergic reactions. Anyone thinking about immunotherapy should discuss the pros and cons with an allergy specialist or other physician.

One important thing to remember is the psychological factor of having a good attitude. If you're having a systemic reaction, don't think you're going to die. Positive thoughts and level-headed responses help immeasurably in such emergencies.

MASS ENVENOMATIONS (Massive Sting Episodes)

Description

On very rare occasions, people and animals are stung hundreds or even thousand of times in a single episode. The total amount of venom from the stings in these mass envenomations can be extremely dangerous or fatal. The cause of death in these cases is not an allergic reaction but rather a result of the poison itself, much like the body's reaction to a snake bite.

Treatment

The number of stings that can result in death varies based on the person's age and body size. People receiving over 1,000 stings have often survived such attacks. Anyone receiving 100 or more stings in a short period of time should seek immediate medical treatment as for an allergic reaction. Treatment for infants and small children should be obtained at much lower sting numbers. If in doubt, bring the child to a doctor or emergency room.

IMPROBABILITY OF FATALITY

Though many of us have a real fear of insects, for the most people, this fear is unfounded. Insect stings cause less than 0.002 percent of all deaths. This figure is even lower for honey bees, less than 0.0008 percent. Put in perspective, the chance of being killed by a lightning bolt is more than twice that of being killed by an insect sting, and more than five times greater than being killed by a honey bee sting.

Refer to **Beekeeping Note 1.08 "Reducing the Likelihood of Stings During Outdoor Activities"** for information on sting prevention.

Prepared by: J.M. Rubinstein, Entomology Graduate Student
J.T. Ambrose, Extension Apiculturist
December, 1997