

AGROMEDICINE PROGRAM UPDATE

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True or False: Facts About Poison Ivy, Oak, and Sumac¹

1. No more than 50% of people exposed to poison ivy, oak and sumac will develop an allergic reaction.
2. Urushiol, an oil found in plant leaves, vines, and roots, is responsible for the allergic reaction.
3. Burning poison ivy, oak, and sumac poses risks to sensitive people.
4. It is best to wash your self with hot water following exposure to poison ivy, oak, and sumac.
5. The allergic rash and blisters from poison ivy, oak, and sumac may be spread by contact from person to person.

Answers: 1-F, 2-T, 3-F, 4-F, 5-F

The American Academy of Dermatology reports 85% of all people exposed to poison ivy, oak, and sumac will have an allergic reaction. Urushiol, an oil found in leaves, vines, and roots, is responsible for the characteristic rash and itching. The rash may progress to swelling, red inflammation and blistering.

Urushiol can stick to just about anything and can remain active for months causing an allergic reaction in sensitive people. There have been cases of allergic reactions in the lungs of firefighters working brush and forest fires.

A person should wash with cold water as soon as possible if contact is suspected. It is believed that hot water opens the skin's pores al-

lowing any missed oil to penetrate the skin. Symptoms may be eased by over-the-counter ointments, oral antihistamines, and bathing in oatmeal or baking soda solutions.

The rash is not contagious even if the blisters are broken. Scratched blisters are at risk of secondary infection.

¹Facts about poison ivy, oak & sumac. *Skin Care Advisor* 2002; 4(1):1 & 3.

Case History - Biting Flies

The Cooperative Extension Service referred a resident of Georgetown County to the Agromedicine Program for consultation regarding an allergic reaction that she experienced after being bitten numerous times by flies.

The patient explained that she had been mowing her lawn when she was attacked by what she thought were mayflies. She was wearing a sleeveless shirt and shorts. Her body was covered with welts and she



Poison
Ivy



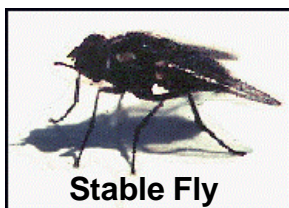
Poison
Oak



Poison
Sumac

soon developed diarrhea and difficulty in breathing as her throat began to swell. She was treated in an emergency room for systemic allergic reaction. The patient responded well to treatment and was discharged to a dermatologist for further evaluation. She now carries an EpiPen® in case of future allergic reactions to insect bites or stings.

The patient asked the Agromedicine Program to identify the fly. Mayflies are non-biting flies, but they may cause an allergic reaction when body parts are inhaled.



A likely cause of her bites and allergic reaction is the stable fly. This fly is known as an aggressive biter of humans and is also known to cause systemic allergic reactions in sensitive people. In fact, when people report being bitten by a house fly, it is usually a stable fly.

(Reference: Goddard G. A Physician's Guide to Arthropods of Medical Significance, 2nd ed., CRC Press, Boca Raton, 1996, chapter 18.)

Another DDT Study²

DDE is the major metabolite of DDT. Its environmental persistence is well documented and it is detected in people around the world. Several studies since 1995 have found DDE "... to bind with the androgen receptor in male rats and to inhibit the binding of androgen to the androgen receptor, androgen-induced transcriptional activity, and androgen action." It is unknown if these same effects occur in humans. If DDE is an androgen receptor antagonist in men, then normal sexual differentiation and fertility may be affected along with increased testosterone levels.

Scientists from the National Institute of Environmental Health Sciences and the University of Michigan School of Public Health collaborated in a study that was designed to assess the relationship between plasma DDE levels and serum androgens in male farmers. 137 black-male farmers and farm workers from North Carolina were recruited for study. These subjects were enrolled in the Agricultural Health Study. Only blacks were recruited for study because blacks have been found to have somewhat higher DDE plasma levels than whites.

The average age of the 137 farmers and farm workers was 62 years. Fifty-five percent reported farming for 25 years or more and 27% reported using DDT.

Blood samples obtained from the study participants were analyzed for DDE plasma levels and the following androgens: total testosterone (TT), sex hormone binding globulin (SHBG), bioavailable testosterone (BT), and 5 α -dihydrotestosterone (DHT). Study results include the following items:

- The median DDE level was 7.7 ug/l.
- DDE concentrations increased linearly with age.
- "Serum TT, BT, DHT, and free androgen index decreased linearly with age, whereas SHBG increased linearly with age. All of these associations were consistent with expectations."

The scientists found that overall DDE and androgen levels were unrelated among the study participants. They concluded that studies of men more highly exposed to DDT may be required to determine the effects, if any, of DDE on androgens.

²Martin SA et al. DDT metabolite and androgens in African-American farmers. *Epidemiology* 2002; 13:454-458.

CHEMICAL RELEASES INTO THE AIR, WATER, AND LAND HAVE DECREASED BY 48% SINCE 1988.

E.P.A. TOXIC RELEASE INVENTORY (MAY 23, 2002 / www.epa.gov/tri)