

Phyto dermatitis: Skin Reactions Caused by Plants

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Christina Marino, MD, MPH

Washington State Department of Labor and Industries

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Becky volunteered to work at the Neely House demonstration garden on a cool, sunny July morning. She wore long sleeves, long pants and gloves being super cautious about sunburns and insect bites. By 1:00 PM, everyone who was volunteering for the day had finished weeding their section of the garden and was getting ready to leave. When Becky took off her gloves, her trademark Bakelite bracelet slipped off and fell in the compost heap of recently pulled weeds and invasive plants she had created from her garden section. She reached down with her left hand and found her bracelet deep in the pile. On the drive home to Seattle, it was so warm she kept her car window down. Two days later, Becky had a red, blistered rash that caused a severe burning sensation on her left wrist and the back of her left hand. The blisters eventually healed but the skin was brown and discolored everywhere the rash had been present. Do you know what caused the rash?

Becky had phytophotodermatitis, a rash caused by exposure to a plant that contains certain chemicals called psoralens and then subsequent exposure to ultraviolet light. The offending plant was rue that was in the compost pile she had reached into to find her bracelet. The sunlight on her arm when she drove home was the source of ultraviolet light.

Even though there are over 300,000 classified species of plants, the majority of plants are harmless to human skin. Phyto dermatitis is the term used for skin rashes caused by plants. Plants can cause five different types of reactions. Some plants can cause more than one type of reaction. With many of the plants, only specific parts cause the reactions. The reactions can be minor to severe. This article will briefly describe the five reactions to plants.

Mechanical Injury: cuts, abrasions and puncture wounds from thorns, spines, razor-edged leaves and hairy appendages on the plants. The wounds can become infected with bacteria and fungus. Prickly pear, pineapple, roses, yucca, cactus, bamboo, barberry and devil's walkingstick are examples of plants that cause these reactions. Falling coconuts are another example of mechanical injury caused by plants, in some cases fatal.

Irritant Reactions: are caused by chemicals in the plants such as acids, proteolytic enzymes and calcium oxylate crystals. Anybody with enough exposure to the chemical can develop a reaction. This is not an allergic reaction. Spurge is an example of a plant that has a sap so irritating to the skin that beggars used to rub it on their skin to cause blisters to invoke sympathy. It was also used to blind people as a form of punishment. Examples of other plants that cause problems are chile peppers, mustards, pineapple, cowhage and dieffenbachia.

Phytophotodermatitis: was the rash Becky developed from exposure to the psoralen chemicals in rue and sunlight. This is not an allergic reaction. When the blisters from

this type of reaction heal, the affected skin is left with a dark pigmentation for months. Giant hogweed, limes, Queen Anne's lace, bergamot oranges and celery are examples of plants that can cause this reaction. Squeezing a lime and rolling the lime peel on the skin while sunbathing is classic for causing this reaction. A famous perfume called Shalimar, which contained the oil from bergamot oranges, caused numerous problems in the 1960s. Grocery workers who handle celery that is infected with a fungus can also develop this reaction.

Urticaria (hives): from contact with a plant can be an allergic or non-allergic reaction. The reaction is usually immediate and will clear within a few hours. The stinging nettle is an example of a non-allergic reaction. There are pharmacological chemicals in the plants that cause hives on the skin when the plant is touched. This reaction can happen in anybody. The allergic type of hives develops only in certain persons who are allergic to the plant. Plants that cause allergic hives include strawberries, onions, garlic, tulips and lilies.

Allergic contact dermatitis: requires a person's immune system to be sensitized to a chemical in the plant prior to reacting. Therefore, not everybody will have a problem with these plants if they are not susceptible. (For example, not everybody develops allergies to ragweed pollen.) This skin reaction usually takes over 24 hours to develop and can last for a few weeks. Poison oak/ivy dermatitis, which is caused by a reaction to urushiol oil in the plant, is the most common cause of plant allergic contact dermatitis. Numerous species of plants in the *Compositae* family also cause allergic reactions. The sensitizing chemicals are called sesquiterpene lactones. Chrysanthemums, dandelions, goldenrod, daisies and tansy are examples. Tulips and Alstroemeria can cause serious problems with florists who are allergic to these plants.

Phyto dermatitis can be a problem for some persons in their occupation if there is exposure to plants. Florists, firefighters, farmers, agricultural, nursery and forestry workers, landscapers and food handlers are examples of occupations where exposure to plants can cause serious plant reactions in the skin. It can also be a problem for gardeners, hikers, campers and fishing enthusiasts. In other words, anywhere there is exposure to plants there is the potential for problems.

A list of plants, the types of skin reactions caused by the plants and more complete information about phyto dermatitis can be obtained from the Safety and Health and Research for Prevention (SHARP) Program with the Washington State Department of Labor and Industries (1-888-66-SHARP). This information is on the SHARP website (www.lni.wa.gov/sharp/derm). If you think you are having skin problems from plants, see a dermatologist. Not all reactions to plants are allergic, but you can be evaluated for possible allergies to plants if it is appropriate. As for Becky, she should stop wearing her Bakelite bracelet to Master Gardener activities and be more vigilant at identifying potentially harmful plants.

Christina Marino is a dermatologist and a graduate of the King County Class of 2000 Master Gardener Program.