Some arborists and gardeners begin itching when planting or pruning certain ornamental plants

Recently, the owner of a tree service company asked this office for help in tracing the cause of a blistering eruption of the skin on his hands and forearms. He believed that the fig tree he had pruned was sprayed with some kind of pesticide that caused his problem. The skin inflammation was so severe that he needed special medical care which kept him from work for two weeks. After an interview, we solved the case. Some ornamental and edible figs, *Ficus carica*, have unusually large leaves with sandpapery textured surfaces that shed microscopic sandlike particles and wounds that exude sap containing photosensitizing furocoumarins (psorales), also called ficin. Because he wore a T-shirt and no gloves when pruning the fig tree, the plant-produced ficin in combination with intensive sun rays on his skin inflicted severe burns, called phytodermatitis. Diagnosing phytodermatitis may be difficult since it resembles sunburn. Prior to ultraviolet light irradiation, the sap from the plant must remain in contact with the skin, and in most cases the skin needs to be wet from sweat during this period of time for the eruption to occur. Other species besides the fig that cause phytophotodermatitis include wild parsnip (*Pastina sativa*), cow parsnip (*Heracleum maximum*), Bishop's weed (*Ammi majus*), the bergamot orange, lime, and a plant that is very common in our gardens, called gas plant or burning bush (*Dictamnus albus*).

More recently, a lady who owns a small gardening service noted that three days after she pruned a hedge of English ivy, *Hedera helix*, her hands and skin that came into contact with the sap displayed black spots and a skin rash. She was surprised when I stated that many people do not realize that *H. helix* can cause a serious skin problem. "We are talking about English, not Poison ivy", she stressed, believing that I had missed the point. I had not: English ivy is a skin offender for some people.

A listing of all offending species is well beyond the scope of this review. It is also not always easy to recognize the benign and toxic plants. Therefore, I have chosen only a few, mainly those plants that are commonly planted in the California landscape, to point out that there are many more plants that can be harmful to the skin than those suggested in the old saying, "leaves of three, leave them be".

The best way to approach the subject is to classify plant injuries into categories, and then relate them to specific plants. Stoner and Rasmussen (1983), in an article "Plant Dermatitis", classified skin injuries caused by plants in the following way: 1) mechanical injury, 2) pharmacological injury, 3) primary irritant phytodermatitis, 4) allergic phytodermatitis, and 5)
phytophotodermatitis (already described above). It is important to recognize the functional relationship between the skin and plant in order to identify the cause and cure.

In daily working with plants, **Mechanical injury** is the most common skin injury, but rarely brought to a doctor's attention. However, accompanying infection around traumatically implanted thorns, needles, or spines can be a bothersome problem, keeping a person from work for days. Thorns embedded deeply near joints can cause chronic arthritis and, when near bone, can mimic bone tumors. *Hakea sauveolens*, blackberry (*Rubus*), some *Melaleuca*(s), roses and some palms are the most often reported plants to cause the mechanical injury.

**Pharmacologic injury** occurs when a person comes in contact with a plant which releases pharmacologically active substances. The nettles (*Urtica*) are the most common but most of their stings are benign, self-limiting, and require no specific therapy.

**Primary irritant phytodermatitis** is caused by plants that contain substances which produce direct irritation to the skin. These chemicals can occur in leaves, bark, roots, flowers, etc. Some substances are released only when the plant tissue is crushed. Many plants causing primary irritant reactions are common houseplants or edible fruits, e.g., poinsettia (*Euphorbia pulcherrima*) or Pencil tree (*Euphorbia tirucalli*), daffodils, hyacinths and ornamental buttercup, *Ranunculus ficaria*. Bulbs of some plants are major occupational hazards for nurserymen and gardeners.

**Allergic phytodermatitis** is usually cell mediated. It is transmitted via pollen, causing hay fever and asthma. Lichens grown on rocks and trunks can cause contact dermatitis, mainly to forest workers. Orchids, ornamental garden tulips, (specifically their bulbs), primroses (*Primula obconica*), chrysanthemums, and dahlias can all be occupational hazards for gardeners and nurserymen. Primroses are becoming widely planted in California and we are going to see more frequent adverse reactions of the skin to this plant. In some cases contact must be made with the plant, in others with the pollen. In some cases reaction to this group of plants is short-term but if exposure of plantmen is seasonal, sooner or later they will find themselves off from work due to an attack, mainly on their faces. A few woody ornamentals belong to this category: tulip tree (*Liriodendron tulipifera*), Grecian laurel (*Laurus nobilis*), and Brazilian pepper tree (*Schinus terebinthifolius*). The skin eruption may be more extensive, if sawdust gets inside clothing and rubs directly on the body during pruning. Another tree is the silkoak, *Grevillea robusta*, which can cause dermatitis, mainly to the arborist, when sawdust comes into contact with the skin.

Plants belonging to this category can cause both acute and chronic contact dermatitis; with seasonal exposure, the disease becomes more widespread and lasts longer. The insecticide pyrethrin is derived from the flower of the African *Chrysanthemum cinerariaefolium* and can cause dermatitis.

The most feared "allergic phytodermatitis" plants are *Rhus* (*Toxicodendron*) species (poison ivy, poison oak and sumac). The chemical that causes skin injuries is known as urushiol, from the Japanese Kiurushi, meaning sap. Currently, eleven species of the genus *Rhus* are commonly sold in California. Some contain urushiol and some are benign. In this genus, the leaves, stems,
fruit, flowers, and roots exude a sap that turns black if the plant is poisonous. A number of other plant species, including fruit from the female ginkgo tree (*Ginkgo biloba*) and the sap of *Cotinus coggygara* (smoke tree), contain urushiol and exude it in oleoresin when injured or bruised. The female ginkgo is rarely planted here.

**Prevention is the best cure.**

Correct identification of offending plants helps to avoid them, but landscape personnel often come into contact with a plant or its sap unaware and the rash develops. Seek accurate diagnosis and proper therapy, because as is clear, many other plants besides poison oak can cause dermatitis and treatments vary. When you develop rashes and suspect that a plant was the cause, obtain a sample of all plants to which you were exposed. This is an important step to help the doctor identify the offender.

If you have been sensitized by previous contact with the sap of poison oak, or indeed any plant of the genus *Rhus* containing uroshiol or any other plant listed above, wear protective gloves, clothing and goggles.

If, during tree work or gardening, areas of your skin become exposed to any plant listed above, wash thoroughly with water as soon as possible. Do not use soaps containing oils: the oils can carry the toxins and help in their absorption to the skin. Keep detergents or hand cleansers in your tool box as they are most effective. Remember that clothing, shoes, tools, and even smoke from burning plants carry the poison, too. Wash all clothes and equipment after working with poisonous plants because the solidified exudates which remain are potentially hazardous for a long time (Varnish trees have been known to cause dermatitis after being buried for a thousand years!).

Prevent secondary infections from thorns, needles, or spines that penetrate the skin. Remove thorns immediately. If you have several, apply common white wood glue to the affected skin and then cover it with a piece of linen. After drying, peel off the linen and you should extract the spines also. If the thorn is deep, seek a doctor's help to prevent serious complications that might develop later.

**References:**


**Additional references re:** Toxicity of Plants to Humans

**NAME YOUR POISON:** A Guide to Cultivated and Native Oregon Plants Toxic to Humans. 1972. La Rae J. Dennis, Assistant Curator of the Herbarium, Dept. of Botany and Plant Pathology, Oregon State University, Corvallis, OR 97331. This 76-page manual is available for $3.95 from the OSU Bookstore, P.O. Box 489, Corvallis, OR 97339.

This publication provides reasonably comprehensive lists of cultivated and native plants in Oregon which are toxic to humans. The lists are not to be considered infallible as there is still much to be learned about poisonous plants.

There are two principal sections in this manual, **Cultivated Toxic Plants** and **Native or Naturalized Toxic Plants**. Lists of plants causing dermatitis have also been given.

The AMA Handbook of Poisonous and Injurious Plants. Published by the American Medical Association and Distributed by: Chicago Review Press, 814 North Franklin, Chicago, IL 60610 (also available at local bookstores) at a cost of $24.95 plus $2.95 to cover UPS delivery. Credit card orders, call: 800/621-8335.

The 432 page manual includes 437 full color photographs to aid in plant identification and an index by botanical and common names. The information is arranged for easy access into three major sections: Section I - **Systemic Plant Poisoning** takes you from *Abras precatorius* to *Zigadenus* with details of each plant, symptoms, management, and other references to help diagnose injuries from specific plants. Section II - **Plant Dermatitis** discusses reactions to common dermatitis-producing plans and gives appropriate therapeutic measures. Section III - **Mushroom Poisoning** concentrates treatment of injuries based solely on the history and symptoms.


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