PLANT AND WOOD HAZARDS

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Both local and systemic manifestations occur from occupational exposure to plants, plant products, and woods. Dermatitis is frequently observed; other effects include asthma, hay fever, irritations, toxic effects, and allergenic responses.

PLANTS AND PLANT PRODUCTS

Dermatitis due to plants of the genus *Rhus* is the most frequently seen allergic contact dermatitis in the United States. Plants in the genus *Rhus* include poison ivy, poison oak, and poison sumac. The contact dermatitis caused by these plants is identifiable by characteristic linear and bullous lesions. At least one of the species of *Rhus* is found in every part of the continental United States. Poison ivy occurs in every state but California where it is poison oak that has been the main cause of occupational skin disease. The oakleaf form of poison ivy and poison sumac are found mainly in the south and east, from Texas to New Jersey. Western poison oak occurs in Washington, Oregon, and California.

The genus *Rhus* belongs to the family Anacardiacae which includes the cashew nut tree, the Japanese lac tree, the Indian marking nut tree, and the mango. A phenolic liquid is extracted from cashew nut shells, and this liquid, used to form resins for varnishes and brake shoe linings, is an irritant as well as a sensitizing agent. The fruit of the mango may cause contact dermatitis in *Rhus*-sensitive persons.

Dermatitis results from contact with the milky sap found in the roots, stems, leaves, and fruit of *Rhus* plants. In a dry atmosphere, the sap may retain its potency for months or perhaps years. The sap may be transmitted on soot particles when the plant is burned, or may be carried by animals, equipment, or apparel.

Allergic contact dermatitis may also be caused by the bastard feverfew (a common southeastern weed), English ivy, and castor bean plants. Allergic dermatitis may be caused by contact with certain flowers (such as primrose, chrysanthemum, poinsettia) and bulbs of hyacinth, narcissus, and tulips. The lipid fraction of ragweed pollen may cause eczematous dermatitis, while a water-soluble fraction may cause asthma or hay fever.

Contact dermatitis has occurred from handling fruits and vegetables, including carrots, asparagus, and some citrus fruits. Fruit and vegetable handlers may also suffer contact dermatitis due to insecticides and fungicides. Indirect effects of handling fruit and vegetables include chapping and moniliasis from exposure to moisture, photosenitization dermatitis from sunlight, and parasitism by mites.

Photosenitization is the delayed development of erythema, edema, vesicles, and bullae after contact with plant juices and exposure to sunlight. This accentuated localized sunburn is a phototoxic, rather than a

photoallergenic effect, and may result in either hyperpigmentation or depigmentation. Plants which cause photosenitization include fig, rue, lime, bergamot, parsnips, parsley, carrots, fennel, dill, and pink rot celery.

Hay fever, asthma, and urticaria frequently occur in castor bean processors, resulting from a potent allergen found in the dried pomace remaining after castor oil extraction. Castor bean workers, dock workers handling the pomace, or farmers using the pomace for fertilizer may be affected.

Historically, paprika sorter's disease was frequent in women splitting paprika fruit who inhaled spores and mycelia of a mold growing in the fruit. This exposure has been eliminated since the entire fruits are now ground mechanically.

Exposure to grain dusts may result in coughing, wheezing, breathlessness, dermatitis, and grain fever. The incidence of these symptoms is higher in individuals with a history of past allergy, suggesting that allergy may be party responsible for the response to grain dusts.

Tobacco cropper's or green-tobacco sickness, characterized by weakness, nausea, and vomiting, has been observed in persons pulling tobacco leaves from the plants during cropping. It is believed that a noxious material in green tobacco gum, most likely nicotine, is absorbed through the skin.

POTENTIAL OCCUPATIONAL EXPOSURES

- Agricultural workers
- Botanists
- Bulb handlers, plant
- Camp workers
- Canners
- Castor bean workers
- Construction workers
- Dock workers
- Field laborers
- Flower cutters
- Flower packers
- Foresters
- Fruit pickers
- Fruit processors
- Gardeners
- Grain elevator workers
- Highway workers
- Hop pickers
- Horticulturists
- Loggers
- Pipeline workers
- Road builders
- Surveyors
- Telephone linemen
- Tobacco croppers
- Utility workers
- Vegetable harvesters
- Vegetable processors

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WOODS

Woods, wood dusts, and substances from woods may be toxic, irritant, allergenic, or carcinogenic.

Toxic woods, such as East Indian satinwood, South African boxwood, and ipe, contain substances which cause systemic signs and symptoms when absorbed, inhaled, or ingested. Wood toxins are often alkaloids. Effects may include headache, anorexia, nausea, vomiting, bradycardia, dyspnea, or somnolence.

Irritant woods cause injury to mucous membranes upon contact, and severe irritants may affect intact skin, causing dermatitis. Examples of irritant woods are mansonia, dahoma, and cocobolo.

Allergenic woods such as certain members of the birch, pine, dogwood, beech, mahogany, mulberry, and myrtle families may cause allergic manifestations including asthma and contact dermatitis in sensitized individuals.

It is believed that the inhalation of fine dusts from wood, especially hard wood dust, causes nasal cancer. Many woodworkers in the furniture industry develop squamous metaplasia in the nasal mucous membrane.

Furniture workers frequently exhibit an allergic response to western red cedar. The response occurs after contact with the sawdust of this wood, and symptoms are intensified by contact with the wood. Symptoms include asthma, rhinitis, urticaria, dermatitis, and conjunctivitis. Asthma and rhinitis are frequent in carpenters, while conjunctivitis occurs more often in sawmill workers.

POTENTIAL OCCUPATIONAL EXPOSURES

- Cabinet makers
- Carpenters
- Furniture makers
- Lumbermen
- Musicians
- Sawmill workers
- Violin makers
- Wood workers

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