



The Blue Ridge Poison Center

Tox Talks

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GIANT HOGWEED

Giant hogweed (*Heracleum mantegazzianum*) has recently entered the news in Virginia after having been spotted for the first time in the Commonwealth. Also known as giant cow parsnip due to similarities to native cow parsnip, giant hogweed is classified as a noxious weed and can reach up to 10-15 feet in height. The difference from cow parsnip can be determined partially by its height but mostly by the purple splotches of color on the stalk and the extremely wide leaves which can reach over a meter in diameter and have a serrated appearance. While both can cause photodermatitis, giant hogweed causes much more severe burns than cow parsnip.

Giant hogweed originates from Central Asia and was brought to Britain in the 19th century and finally to the US as an ornamental plant. It was known to exist in states such as Washington, Oregon, Michigan, New York, and other Northern East Coast states. Until recently, no giant hogweed has ever been reported in Virginia.

Contact with the sap of giant hogweed can cause intensely painful skin lesions, with symptoms appearing 24-48 hours after contact. The active compound in the sap of giant hogweed is a furanocoumarin and is found in every part of the plant but is most prevalent in the leaves. Furanocoumarins are also found in other plants, such as grapefruit, Seville oranges, celery, and limes though the concentrations of the chemical in these foods are not nearly as high and they contain different analogues of the furanocoumarins. The fruits contain less linear analogues and

more angular analogues which are less reactive and less potent. Bartenders can get photodermatitis from extensive exposure to the juices of limes called “margarita burns.” Coming in contact with giant hogweed, however, creates a more severe photodermatitis that can include the development of rashes, blistering, and permanent scarring. Blindness, temporary and permanent, have been reported when the sap comes in contact with the eyes.

There are three furanocoumarin analogue compounds in giant hogweed: psoralen, bergapten, and methoxsalen. These compounds are to blame for the severity of hogweed burns and also are the primary difference between giant hogweed and other umbellifers containing furanocoumarins like cow parsnip. Cow parsnip only shares the chemical bergapten with giant hogweed which does contribute to the burns. However, psoralens are the most potent of the furanocoumarins and are found only in giant hogweed, most abundantly in the leaves.

Sunlight is the activator for giant hogweed exposure cases. The UV light activates the furan ring in the furanocoumarin molecule and allows it to bind to the DNA pyrimidine bases through DNA interstrand crosslinking at cytosine and thymidine with the activated furan ring creating an adduct and resulting in epidermal cell nucleic acid damage. In rare cases, furanocoumarins in giant hogweed can cause significant necrotic damage with considerable depth of cellular death.

Medical treatment is largely supportive. A number of treatments have been described, including oral and topical steroids, intermittent ice application, limiting light exposure (natural or artificial), and various oral analgesics. Patients should be warned that lesions can persist for weeks with accompanying pain. Residual pain, systemic fatigue, and photosensitivity have been reported to linger for months. Post-inflammatory hyperpigmentation can persist indefinitely following exposure.

If questions arise on this or any other poisoning, the medical staff at the Blue Ridge Poison Center would happy to assist. Free medical consult is available 24 hours a day, every day: 1-800-222-1222.

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