

HOW DOES GIANT HOGWEED CAUSE SKIN BURNS?



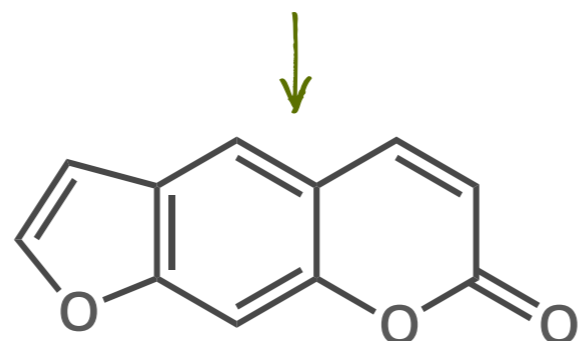
GIANT HOGWEED

HERACLEUM MANTEGAZZIANUM

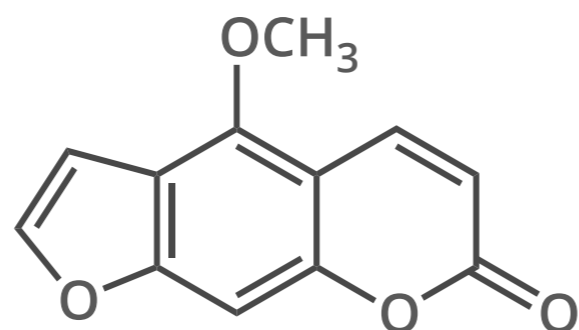
HEIGHT: UP TO 5.5 METRES

Giant Hogweed is a plant that is originally native to central Asia. In the 19th century it was introduced to the UK as an ornamental plant. Subsequently, it has spread to parts of the USA, Canada, and Europe.

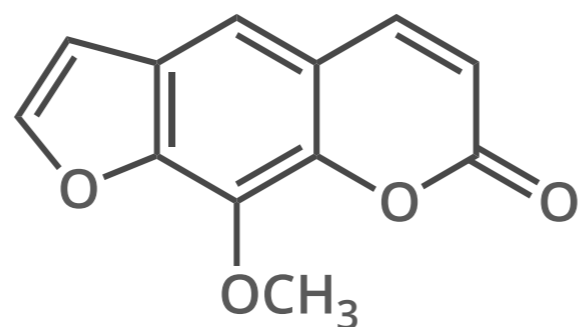
FURANOCOUMARINS



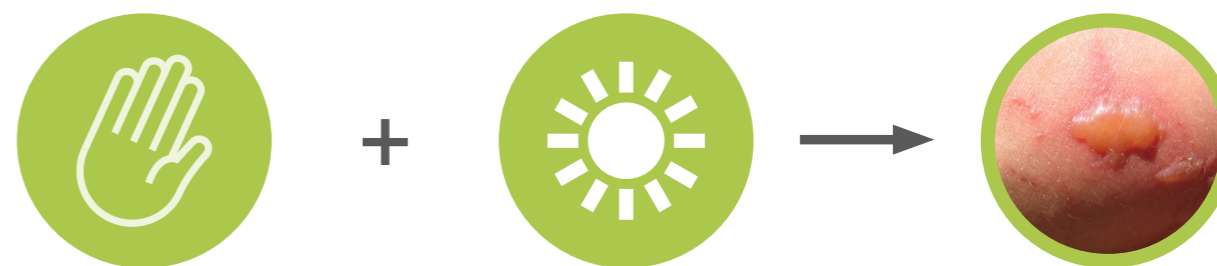
PSORALEN



BERGAPTEN



METHOXSALEN



Giant Hogweed's sap contains phototoxic compounds called furanocoumarins (also known as furocoumarins). They are found in all parts of the plant, but the highest levels are found in the leaves. When in contact with the skin, and exposed to UV radiation from sunlight with a wavelength of 320-380 nanometres, they can cause phytophotodermatitis (skin inflammation and burns).



The phototoxic effects of furanocoumarins occur due to their ability to react with bases in DNA to form adducts in the presence of UV-A radiation. These adducts can then react further with other bases to form crosslinks between DNA strands. These crosslinks lead to the characteristic blisters seen on exposure to Giant Hogweed sap.

