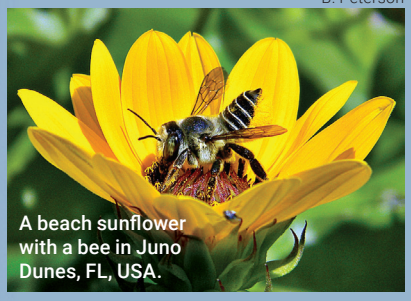
UV Color: Flower Power

Sunflowers (*Helianthus* spp.) can be found in almost every part of the world—from wet marshlands and sandy beaches to hot, humid or arid expanses. A University of British Columbia (UBC) study found that the UV colors in sunflower petals not only helped to improve pollination, but also assisted the flowers in responding to environmental stresses—providing potential insight into how plants can adapt to climate change.

B. Peterson



A beach sunflower with a bee in Juno Dunes, FL, USA.

Attracting pollinators

Sunflower petals have a UV bullseye pattern that is invisible to humans but that increases the plant's visibility to pollinators, including bees, making it more attractive.

E. Blasutto

A girasole in Limana, Italy.

Drought protection

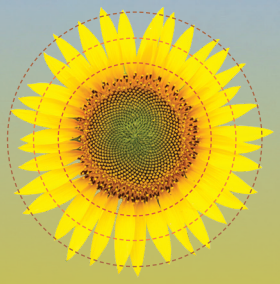
In drier climates, sunflowers have larger UV patterns, and UBC researchers found that those flowers were able to reduce evaporation and retain water more efficiently.

C.E. Vipin

A sunflower in Chalakudy, India.

Facing heat and humidity

Sunflowers in hot, humid environments have smaller UV patterns, which promote evaporation, keeping the plant cool and avoiding overheating.



UV bullseye pattern sizes vary widely—from small circles in the center of a sunflower to large bullseyes that cover the entire petal.

Researchers at UBC found that a single gene, *HaMYB111*, was responsible for most of the diversity in the floral UV patterns.

HaMYB111 controls the production of UV-absorbing flavonol compounds, which help plants survive under environmental stresses, like drought or extreme temps.

Inset sunflower: Vengolis

A Sonnenblume in Saxony, Germany.

Kora27

Source: eLife, doi.org/10.7554/eLife.72072 / Images: Wikimedia Commons; CC-BY 4.0 / Infographic by Alessia H. Kirkland