

New organic herbicides thanks to the sunflower's secret weapon against weeds

LOCATION: Puerto Real, Cádiz

DURATION: 1'29"

SUMMARY: Why aren't there generally weeds in the sunflower fields? Scientists from the University of Cadiz started their study with this question, and the answer, they claim, lies in the sunflower itself. Behind its' leaves accumulates certain substances that are capable of eliminating competing plants. Thanks to this discovery they have been able to develop new, organic herbicides.

VTR:

Sunflower fields are beautiful, but in addition to that, only a few weeds can grow in them. Why is that? Scientists from the University of Cadiz have found the answer, and it is in the sunflower itself. Using extracts from the plant, they have successfully created natural and organic herbicides.

Francisco A. Macías
UCA Professor

"The natural products that we find with this capacity have two peculiarities. The first is that they are usually active at a very low concentration, something that, of course, is very useful to us. And the second is that they tend to be quite selective."

The chemicals that avoid the weeds are precisely here, in the back of the leaves, in some glands called "trichomes". In the field, these substances enter the ground by roots and water of a sprinkler, rain, or dew.

FRANCISCO A. MACÍAS
UCA Professor

"The nighttime dew or a humid night is capable of condensing the trichomes in the leaves, and after this there is a natural extraction and it falls to the ground. Then we have the compound in the ground."

In the laboratory these scientists cleanly extract the chemicals using natural solvents that are in a critical state. In other words, they are subjected to a huge pressure.

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UCA Professor

"Solvents that have the capacity to be a liquid or gas, and in this important transition they are capable of dissolving organic material that after, due to decompression, completely free the material without leaving any type of residue."

This makes the extracted herbicide applicable to organic agriculture. Now their idea is to introduce them to intelligent fertilizers, or in other words, turning them into nutrients that also avoid the competing plants in the crop itself.

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