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## **Spray Weeds With Vinegar?**

By Don Comis

Some home gardeners already use vinegar as a herbicide, and some garden stores sell vinegar pesticides. But no one has tested it scientifically until now.

Agricultural Research Service scientists offer the first scientific evidence that it may be a potent weedkiller that is inexpensive and environmentally safe--perfect for organic farmers.

ARS researchers Jay Radhakrishnan, John R. Teasdale and Ben Coffman in Beltsville, Md., tested vinegar on major weeds--common lamb's-quarters, giant foxtail, velvetleaf, smooth pigweed and a thistle--in greenhouse and field studies.

They hand-sprayed the weeds with various solutions of vinegar, uniformly coating the leaves. The researchers found that 5- and 10-percent concentrations killed the weeds during their first two weeks of life. Older plants required higher concentrations of vinegar to kill them. At the higher concentrations, vinegar had an 85- to 100-percent kill rate at all growth stages. A bottle of household vinegar is about a 5-percent concentration.

Canada thistle, one of the most tenacious weeds in the world, proved the most susceptible; the 5-percent concentration had a 100-percent kill rate of the perennial's top growth. The 20-percent concentration can do this in about 2 hours.

Spot spraying of cornfields with 20 percent vinegar killed 80 to 100 percent of weeds without harming the corn, but the scientists stress the need for more research. If the vinegar were sprayed over an entire field, it would cost about \$65 per acre. If applied to local weed infestations only, such as may occur in the crop row after cultivation, it may only cost about \$20 to \$30.

The researchers use only vinegar made from fruits or grains, to conform to organic farming standards.

ARS is the U.S. Department of Agriculture's chief scientific research agency.