Oregon
Department
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Fact Sheet for Vinegar/Acetic Acid Recommendations

Background

In May 2002, USDA-ARS issued a press release describing their research on weed control using vinegar. The research was prompted by the organic farming community's need for an inexpensive and environmentally benign weed killer. Greenhouse and field studies indicated that while 5% vinegar solutions did not produce reliable weed control, solutions of 10, 15, and 20% provided 80-100% control of certain annual weeds (foxtail, lambsquarters, pigweed, and velvetleaf). Perennial weeds (Canada thistle) treated with 5% vinegar showed 100% shoot burndown but roots were not affected, therefore shoots always re-grew. Study details can be found at their Web site, http://www.barc.usda.gov/anri/sasl/vinegar.html . The ARS release noted the potential use of vinegar as an ideal sidewalk crack and crevice treatment. Homeowners had already heard about purported vinegar uses for killing blackberries in a June 2001 *Seattle Post Intelligencer* article and had deluged Extension offices and Master Gardener's for more information.

What Is Actually Registered For Use?

Five products containing acetic acid and marketed as herbicides are currently registered for use in Washington. Two of them are 25% concentrates with instructions to dilute down to 6.25% and use on rights-of-ways, non-crop, and industrial lands. Three of them are labeled for homeowner use (St. Gabriel Labs Fast Acting Burn Out RTU, Nature's Glory Weed and Grass Killer RTU, and Greenergy's Blackberry and Brush Block). Their acetic acid concentrations are 6.25%, 6.25%, and 7% respectively. Curiously, Greenergy's product label lists acetic acid as an inert ingredient; citric acid is listed as the active ingredient. By listing the ingredients this way, Greenergy is able to take advantage of EPA's "Minimum Risk Pesticide" definition. Products falling under this category are also known as “25(b) products” after the FIFRA rule describing criteria for minimum risk pesticides. Such products need not be registered at the Federal level and do not carry an EPA registration number. Washington law requires 25(b) products to go through the Washington State Department of Agriculture's (WSDA) registration process regardless, whilethe Oregon Department of Agriculture (ODA) does not require state registration of 25(b) products. Fast Acting Burn Out RTU (EPA Reg # 69836-2-63191) is not registered in Oregon, leaving two products, Nature's Glory Weed and Grass Killer RTU (EPA Reg #69836-2), and Greenergy's Blackberry and Brush Block (25(b) product so no EPA number) as legal to use in Oregon.

What Actually Works?

Preliminary field tests in Washington State using 7% vinegar solutions showed results similar to the ARS study at 5%, namely lack of reliable weed control. Extension personnel in Washington are able to legally recommend any of the three homeowner-registered products listed above, although data demonstrates erratic weed control. In other words, people should be told it might not work in their situation.

Higher Concentrations of Acetic Acid

A few weeks ago a product called Bradfield Horticultural Vinegar (20% acetic acid) was found in a local home and garden center. At first glance it seemed the answer consumers had been clamoring for. However, the product is not registered with EPA and does not qualify under the

Minimum Risk Pesticide category for non-registration. The company has found a gray area of the legal system. There is a part of federal law which states that if a product clearly has uses other than as a pesticide AND the company makes no claims about that product having pesticidal uses, it does not have to be registered as a pesticide. This law makes sense for things like citric acid, culinary herbs and their oils, and other products that are used in many other applications besides pesticides. Acetic acid has numerous other uses so it, too, falls under this category. Bradfield Industries has changed their product label; the current version does not make any pesticide claims and thus, does not have to be registered as a pesticide. Another party has attached (with a twist-tie) an information sheet discussing some of the common uses for acetic acid: cleaning farm equipment, lowering pH in fertigation and other foliar sprays, ***and as a herbicide***. Further investigation should be conducted to determine who is attaching these "pesticidal claims" to the product as the responsible party has transformed a legal product into a product in violation of state and federal law. In the meantime, this is a legal fine point that affects Extension personnel directly. If the material claims to kill pests (weeds) it becomes a pesticide. Making either verbal or written pesticidal claims for a specific product that is not registered by EPA, or legally exempt from EPA registration, may be considered a violation of federal law. University Extension cannot be in a position of making recommendations or pesticidal claims for any unregistered pesticide.

Why are we making such a big deal over these picky details? Two very good reasons: legality and safety. Legally, Extension is culpable (personally as well as through the University) in recommending unregistered pesticides (even 25(b) products for those of us in Washington State since they need WSDA registration). We also have practical safety concerns. Acetic acid concentrations over 11% can cause burns upon skin contact. Eye contact can result in severe burns and permanent corneal injury. The other concentrated acetic acid products registered through EPA and the states for commercial use all have restricted entry intervals of 48 hours and list personal protection equipment to be used by the applicator. None of this safety information is included on the twist-tie information on the jug of Bradfield Horticultural Vinegar. Because the public is used to thinking of vinegar as something you can safely splash on your salad and eat (household vinegar is typically 5% acetic acid), they are generally unaware of potential dangers of a higher concentration.

Bottom Line

At this time, the only acetic acid-containing products Extension personnel can currently recommend to homeowners for weed control are the ones mentioned in the product registration discussion above. As additional products are registered they can be found using the PICOL label database search feature at http://picol.cahe.wsu.edu/LabelTolerance.html.

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