



Homemade Pesticide Issues

Understanding the Science *-by Sarah Bailey*

As the gardening season gets underway, lots of homemade weed-killer “recipes” are cropping up on social media, usually containing some combination of vinegar, Epsom salts and Dawn dishwashing soap. These are often accompanied by a comment such as “no need for pesticides!” It may feel good to use familiar household items to control pests in your garden, but it’s important to understand the science behind such mixes—and the potential risks. These may be do-it-yourself recipes, but they definitely are not natural. *These mixtures are pesticides.* They are intended to kill a pest, in this case weeds.

Vinegar

Vinegar is an acid. At the right concentration, it damages by burning any part of a plant it comes in contact with. If the plant is in the ground, it does NOT get the root; many plants will grow back. It is non-selective, meaning it will damage any plant it touches, including desired ones. Household vinegar is 5% acetic acid; to be effective on anything other than tiny seedlings the concentration needs to be at least 10%. Horticultural-grade vinegar is 20% and can carry a “Danger - caustic” signal word, which is stronger than many other herbicides on the market.

Salt

Salts work by desiccating plants—again, all parts of the plant it touches. Salts, however, build up in the soil and can harm desired plants nearby. Since most homemade recipes need repeated application to be effective, the salts will build up. Epsom salts are touted because they contain magnesium instead of sodium, but too much magnesium will interfere with phosphorus uptake.

Detergents/Soaps

Dawn detergent is not a naturally-occurring substance. It, like any soap, is used as a sticker agent, helping the other materials stay on the plant longer. Like many detergents, it contains methylisothiazolinone, which has acute aquatic toxicity and 1,4-dioxane, which is a known groundwater contaminant with carcinogenic properties.



An additional issue with home recipes is the variability of the mix. Many don’t even have specific measurements. Also, because home remedies are often perceived as “safer”, a person may choose to increase the concentrations, changing the potential environmental risk.

Many of these recipes do indeed kill—or at least reduce—weeds and unwanted vegetation. But they also have collateral impacts, some of which may be significant.

The garden center shelves have changed in the last several years. There are now many naturally-derived pesticides on the market, which have been tested for effectiveness, are labelled as to their environmental impact and deliver a consistent product every time. They generally are safer to use and pose less environmental risk than many of the older synthetic materials—the same goal of homemade mixes. Look for products that are OMRI certified. The Organic Materials Review Institute is a nonprofit organization that provides an independent review of products, such as fertilizers and pest controls that are intended for use in organic production.