

Aspirin Cures Common Plant Headaches

by All Minutolo – Shenandoah Rose Society

The following is an excerpt from the Question and Answer Section of the February 2007 issue of *Fine Gardening Magazine*. A reader asked if aspirin water promoted plant growth and prevented disease. Rebecca Brown, Professor of Plant Sciences at the University of Rhode Island, replied: “Although the complete effects of treating plants with an aspirin-water solution are unknown, studies have shown that applying salicylic acid (aspirin is acetyl salicylic acid) to plants can induce resistance to pathogens, environmental stresses and some insects. This protection should allow the plants to grow more vigorously. Under extremely stressful conditions or those highly favorable to the growth of diseases, however, salicylic acid may not prevent all damage from stress or disease.”

Salicylic acid is a naturally occurring compound in plants. When a plant is stressed or attacked by a pathogen, this compound stimulates the plant's internal defense pathways. Treating a plant with additional salicylic acid appears to trigger the plant's defense pathways in the same way.

In the summer of 2005, Professor Brown directed a group of master gardeners with experiments on tomatoes. The effects of two strengths of aspirin water and the commercial product Messenger were compared to plants sprayed with just water. Messenger activates the same internal defense system as salicylic acid but at a different point along the pathway, which may provide broader protection. Because of dry conditions, none of the plants developed any disease. All of the plants grew equally well. Plants treated with a solution of 250 milligrams of aspirin in 1 gallon of water and the plants treated with Messenger yielded more but smaller fruit than the control.

An aspirin-water solution of 250 to 500 milligrams (one or two regular aspirin tablets) of aspirin per gallon of water provides a solution similar to what has been tested; solutions at higher rates have been shown to burn foliage. Any brand of aspirin will work, but plain, uncoated tablets dissolve best. The solution should be applied every two weeks and may be used to water germinating seeds and new transplants.

Another form of salicylic acid that is gaining attention is willow water, made from steeping fresh-cut willow branches in water. Willows are naturally high in salicylic acid. The exact amount of salicylic acid in willows is unknown, however, so the amount to use and the timing of application is less certain. Willow water might be worth investigating as a source that could meet organic certification guidelines (neither aspirin nor Messenger do).

While there's no harm in experimenting with these solutions, keep in mind that aspirin water and willow water are not registered pesticides. All of these products need to be applied preventively, before the first sign of disease. They may prevent infection but will not kill fungi or bacteria already infecting the plant. It may also take two weeks for the salicylic acid to activate the pathway and protect the plant.

Comment: Last year, I used Messenger on roses and cut flowers such as zinnias, sunflowers and dahlias with noticeable good results. Stems were stronger, flower color more intense and the incidence of powdery mildew, especially on zinnias and dahlias reduced. I do not use chemicals that may be harmful to beneficial insects and my roses suffered severely from Japanese beetle attacks. However, once the beetles ran their cycle, the roses were pruned and they continued to grow vigorously and produce beautiful late blooms. I am anxious to experiment with aspirin water sprays to improve plant health and the scented fabric softener, Bounce to reduce Japanese beetle infestations.

If you would like to conduct your own trials, please share your results and observations. You may send you results to Al Minutolo, CR, Shenandoah Rose Society, sminutolo@aol.com or by regular mail 5380 Jones Mill Road, Crozet, VA, 22932-2613. If we have enough results from around the district, the results will be compiled and published in the November Courier.