

## **While aspirin can help lessen headaches and other ailments, how useful is this universal medicine for potted and cut floral crops?**

Homemade brews (remedies) that reportedly make cut flowers last longer abound in the floral industry. Examples include using alcohol (such as vodka), aspirin, hydrogen peroxide, household bleach, soda, lemonade, and/or vinegar in vase solutions. While some of these “brews” do work such as adding 20 drops of household bleach to a quart/liter of water to help control microbes, others are questionable or simply do not work. Based on the number of questions asked and articles written, the most well known homemade brews generally contain aspirin. Because of the broad interest in this subject, the following is an updated version of an article that appeared on this website over five years ago.

In the fifth century B.C., Hippocrates, the father of modern medicine, reportedly used ground willow bark to ease aches and pains. Early settlers to America found Native Americans gathering bark from willow trees for similar purposes. Willow bark was subsequently shown to contain salicin, which can convert to salicylic acid, the forerunner of today’s aspirin. Unfortunately, this chemical was irritating to stomachs, which led to the less-irritating version in 1899 named acetylsalicylic acid, better known as aspirin. While being well documented for humans, what if any benefits do salicylic acid or aspirin offer floral crops?

Using one Internet search engine, thousands of sites were located that deal with aspirin and floral crops. Most noticeably are references that address whether cut flowers last longer when aspirin is added to vase water. A quick review of a number of these sites indicates that aspirin is supposedly of little or no benefit but with little or no data to support these claims.

Searching the Postharvest and Marketing Library Database <[http://www.chainoflifefnetwork.org/moa/dbs/post\\_harvest/default.cfm](http://www.chainoflifefnetwork.org/moa/dbs/post_harvest/default.cfm)> in this website using the three keywords aspirin or salicylic resulted in 148 articles delineating both positive and negative effects of these chemicals, up from 120 articles five years ago when the first version of this article was published. Some of these articles are summarized below.

- Very low levels of salicylic acid (about 1.0 parts per billion or ppb, which is 1.0 oz. per 7,500,000 gallons or 1.0 g per 1,000,000 liters) sprayed on African violets at 21, 28 and 35 days after potting increased leaf and flower numbers (Herrera-Campos, et al., 2003; Martin-Mex, 2005). Similar effects were found spraying Gloxinia plants with salicylic acid at just over 1.0 ppb (Uicab-Quijano, et al., 2003).
- Depending on the crop, salicylic acid can be produced by plants when they are under stress (drought, insect or disease attack, wounding, etc.). This chemical then acts as a signal to the rest of the plant resulting in defensive mechanisms being initiated to help control these stresses (Bowler and Chua, 1994; Housti, et al., 2002; Shulaev, 1995).
- Aspirin or salicylic acid does not increase the life of cut flowers and/or greens (Gill, 1936; Arnold, 1930; Bhatt, 1964; Hinesley and Blankenship, 1991; Hitchcock and Zimmerman, 1929; Kiplinger, 1955; Nichols, 1967; Wiggans and Payne, 1963).
- Aspirin or salicylic acid helps to extend the life of cut flowers (Hew, 1987; Laurie, 1928; Lesenko, 1997; Petridou, et al., 1999; Sakotani, 1983; Shafer, et al., 1996).

- Salicylic acid does not inhibit *Botrytis* growth (Gast, 2001; De Capdeville et al., 1998; Meir, et al., 2003; Meuwly, et al., 1995).
- Salicylic acid does inhibit *Botrytis* (Dinh, S-Q. and D. C. Joyce, 2007; Tian, S., G. Qin, B. Li, Q. Wang and X. Meng, 2007).
- Salicylic acid counters some negative effects of ethylene when used on *Schefflera* plantlets (Horton, 2001).
- A chemical cousin of salicylic acid (salicylaldehyde) is effective in controlling blue mold (*Penicillium*) on tulip bulbs (Smid, et al., 1994).
- Aspirin added to a vase solution containing carnations can inhibit ethylene synthesis by these flowers (Son, et al., 1994).
- Extremely low levels of salicylic acid greatly affect root growth in *Catharanthus roseus* (Echevarria-Machado, I., R. M. Escobedo-G.M. and A. Larque-Saavedra, 2007).

You will note from the above citations that there are positive, negative, and no effects of aspirin or salicylic acid. Translation: one should not make any bold statements as to the effectiveness of using aspirin or salicylic acid to extend the life of floral crops as their true potential values to the floral industry are not yet fully understood.

George Staby, Ph.D.  
Perishables Research Organization / Chain of Life Network® / PRO Institutes  
18210 Conifer Court  
Pioneer, CA 95666

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