GEORGESON BOTANICAL GARDEN

UNIVERSITY OF ALASKA FAIRBANKS

University of Alaska Fairbanks
School of Natural Resources and Extension

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Methanol - A Garden 'Miracle' Product?

by
Pat Holloway

"Improve growth of vegetable crops and strawberries by at least 50 percent!" Sounds intriguing, doesn't it? Drs. Andrew Benson, professor emeritus and Arthur Nonamura, botanist, University of California, San Diego, caused quite a sensation two years ago when they claimed that a dilute solution of methanol (wood alcohol) sprayed on the plants would boost yields, improve quality and conserve water in the commercial production of cabbage, eggplant, melons, strawberries and tomatoes.

According to Benson and Nonamura, methanol works by increasing the amount of carbon dioxide available for photosynthesis, the process by which plants create complex carbohydrates, the building blocks for plant tissues, flowers and fruit. On the hottest, sunniest days, photosynthesis is limited by the amount of carbon dioxide in the atmosphere. Plants become starved for carbon dioxide. Photosynthesis in methanol-treated plants would exceed normal levels, thus promoting production of more carbohydrates and increasing plant growth.

Fairbanks certainly has no lack of sunshine, and some days in late June and July can get pretty hot. We decided to try the methanol sprays on tomatoes to learn if we could also benefit from this so-called agrimethanol technology. We planted 15, 'Subarctic 25' tomatoes during the first week of June 1993. They were grown through clear polyethylene mulch and fertilized with 500 pounds per acre, 10-20-20.

Six randomly selected plants received a 10 percent spray of methanol on June 25, and three of these plants were sprayed again July 2. Six other plants received a 20 percent spray; three were sprayed once, and three, twice. Three plants were sprayed with water as a control. The methanol spray also contained a spreader-sticker, Tween 20®, to promote absorption of the methanol into the plant. Plants were sprayed until the liquid dripped off the leaves.

We harvested fruit weekly throughout the summer and tallied the amount of ripe and green fruit each plant produced, the total yield per plant and individual fruit weight. The results are summarized in Table on the next page.

At first glance, it appears that the methanol treatments sprayed twice boosted yields slightly higher, and most of this was in green fruit. However, there was such a significant variation in yield from plant to plant, that any differences noted in yield are not significant. Individual fruit weight also did not differ among methanol treatments and the control. We certainly did not see a 50% improvement as noted by the California researchers. Perhaps our days simply are not hot enough (what might happen in a greenhouse?). Perhaps our timing was wrong. Whatever the reason, the methanol didn't work.

Incidentally, we also sprayed a couple of our 'O-S Cross' cabbages with methanol to see if these giants would increase 50 percent in size. No such luck. Although we didn't weigh the heads, they certainly looked the same as the untreated cabbages.

Fruit yield of 'Subarctic 25' tomatoes treated once or twice with 0, 10 or 20 percent methanol				
Methanol Treatment	Ripe Fruit (g)z	Green Fruit (g)	Total Fruit yield (g)	Fruit Weight (g)
One spray				
10 percent	1970	4816	6786	39.1
20 percent	2001	5031	7033	42.7
Two Sprays				
10 percent	2136	5335	7471	43.2
20 percent	2330	5182	7534	38.0
Control	2242	4751	6993	38.3
zgrams x .002 = pounds				

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