

# EFFECTS OF EXPERIMENTAL LIQUID SOIL AMENDMENTS ON GEORGIA STRAWBERRY PRODUCTION

*William Terry Kelley, Extension Horticulturist, Tifton Campus, Horticulture Building, 4604 Research Way, P.O. Box 748, Tifton, Georgia 31793, wtkelley@uga.edu*

*Denne Bertrand, Research Associate, Tifton Campus, Horticulture Building, 4604 Research Way P.O. Box 748, Tifton, Georgia 31793*

## **Introduction**

Fresh market strawberry production has increased steadily in Georgia in recent years. Horizon Ag Products has several new liquid products with potential to increase strawberry yield. These are all numbered experimental compounds. These materials were applied at various rates and intervals to determine their effects on yield of strawberries.

## **Methods**

Strawberry transplants (variety “Camarosa”) were produced by a commercial plant grower. Plots were established at the Coastal Plain Experiment Station Tifton Vegetable Park (elev. 382 feet) in Tifton, GA. Plot land had been deep turned and disked in the spring. Beds had been fumigated with methyl bromide (134 lb. a.i./acre) and black plastic mulch and drip tape installed prior to the production of a spring crop of cantaloupes. Crop residue was killed with glyphosate and beds were fumigated through the drip tape with metam sodium three months prior to transplanting.

Strawberries were transplanted on November 9, 2006 into a Tifton sandy loam (fine-loamy siliceous thermic Plinthic Kandudults) soil. Plots consisted of two rows of strawberries (~12 inches between rows) planted on raised beds that were spaced six feet apart (from center to center). In-row spacing was 15 inches per plant. Plots were each 12.5 feet long and were replicated four times. The experiment was arranged in a Randomized Complete Block Design.

HM 0402 was injected at a 1.0 gallon/acre rate beginning one week prior to first flower at weekly, two week and four week intervals. HM 9947 was injected at a 1.0 gallon/acre rate at two week intervals beginning at the same time. HM 0506 was injected at 1.5 gallons/acre beginning one week before first flower at two and four week intervals and weekly beginning at first flower. The 1.5 gallon rate was also injected beginning four weeks and eight weeks after transplant and every two weeks thereafter. A 3.0 gallon/acre rate was injected every two weeks beginning at first flower. All injections were made through the drip irrigation system. These were compared to an untreated check.

Additional fertilizer was applied through the drip irrigation system approximately every other week from planting through mid February and weekly from then until the termination of the experiment. A total of 129.4 pounds of N and K was applied during the season. Strawberries were harvested on March 26, March 30, April 2, April 6, April 9, April 13, April 16, April 20, April 25, April 27, April 30, May 4, May 7, May 11, May 14 and May 18, 2007 and data collected on yield and fruit number. Other than soil amendments, normal cultural and pest control practices were used. Data was analyzed using the Statistical Analysis System and means separated using Least Significant Difference.

## **Results**

Results are presented in Table 1. Average fruit weights were not significantly greater in treated plots compared to the check. However, the highest rate of HM 0402 was greater than two of the HM 0506 treatments. The highest total application rates of HM 0402 tended to produce the heaviest fruit. Fruit number was greatest where HM 0402 was applied weekly, but only compared to two of the other treatments. HM 0402 at the highest total application rates produced the highest yields, but these differences were only significant when compared to two of the HM 0506 treatments and a lower rate of HM 0402. None of the treatments differed from the untreated check.

**Table 1. Average fruit weight, number of fruit per acre and yield of fruit per acre for strawberries grown with 11 soil amendments and one untreated check at Tifton, GA in 2006-2007.**

Product	Rate	Application Timing	Initiation of Treatment	Average Fruit Weight (g)	No. Fruit per Acre	Weight of Fruit per Acre (lbs)
Untreated				13.25 abc	153,506 ab	4489.4 ab
HM 0402	1.0 g/A	Every 4 wks	1 wk before 1 <sup>st</sup> flower	13.33 abc	143,574 b	4271.9 ab
HM 0402	1.0 g/A	Every 2 wks	1 wk before 1 <sup>st</sup> flower	12.97 abc	144,968 ab	4224.3 b
HM 0402	1.0 g/A	Weekly	At 1 <sup>st</sup> flower	14.11 ab	181,558 a	5646.8 a
HM 0402	2.0 g/A	Every 2 wks	1 wk before 1 <sup>st</sup> flower	14.43 a	153,854 ab	4902.0 ab
HM 9947	1.0 g/A	Every 2 wks	1 wk before 1 <sup>st</sup> flower	13.20 abc	161,346 ab	4774.7 ab
HM 0506	1.5 g/A	Every 4 wks	1 wk before 1 <sup>st</sup> flower	13.62 abc	162,043 ab	4880.6 ab
HM 0506	1.5 g/A	Every 2 wks	1 wk before 1 <sup>st</sup> flower	12.97 abc	139,741 ab	4014.6 b
HM 0506	1.5 g/A	Weekly	At 1 <sup>st</sup> flower	12.64 bc	150,718 ab	4202.8 b
HM 0506	3.0 g/A	Every 2 wks	1 wk before 1 <sup>st</sup> flower	12.99 abc	157,687 ab	4531.3 ab
HM 0506	1.5 g/A	Every 2 wks	At 4 wks after transplant	12.54 c	159,081 ab	4399.2 ab
HM 0506	1.5 g/A	Every 2 wks	At 8 wks after transplant	12.93 abc	158,907 ab	4520.6 ab
Mean of Test				13.25	155,581	4571.5
L.S.D. (0.05)				1.55	37,325	1406
C.V. (%)				8.1	16.7	21.4