PROGRESS IN DEVELOPMENT OF A DRIP-DELIVERABLE CARBON+NPK PRE-PLANT TREATMENT

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Summary

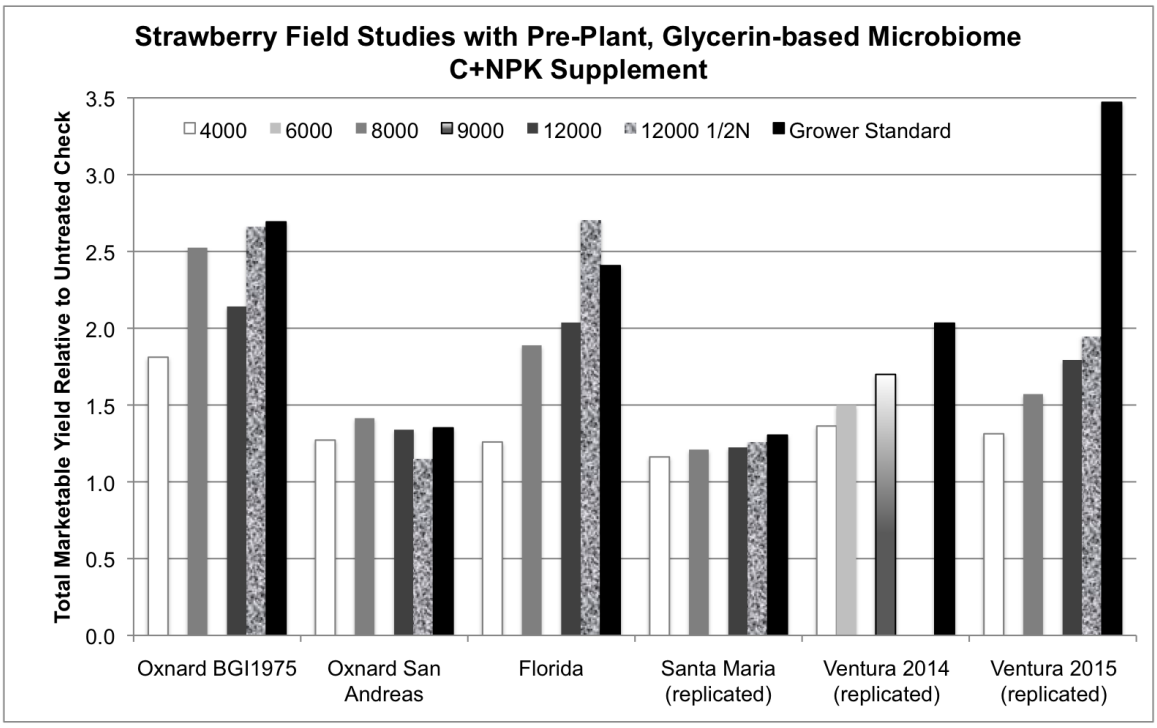
Glycerin is a co-product of biodiesel production from sources including used restaurant cooking oil, rendering, bio-ethanol residual oils, or oilseed crops. It is also a highly available carbon source for microbial growth. Based on research originating at Auburn University, the Renewable Energy Group (REG) has been sponsoring field testing of drip-delivered, carbon plus NPK formulations as a pre-plant soil amendment designed to initiate a microbiome growth episode (aerobic and anaerobic) in tarped, fully-wetted planting beds. Strawberries planted into these treated beds have, in several commercially relevant settings, demonstrated vigor and yield comparable to those seen using industry standard fumigant treatments. The status of these on-going efficacy tests will be discussed.

Background and Methods

The supplement carbon plus NPK material, consists mainly of crude glycerin as well as smaller amounts of urea, phosphoric acid, potassium hydroxide, propionic acid and water. In nine field trials initiated in 2014 and 2015 this solution was tested at rates ranging from 2,000-12,000 pounds per treated acre delivered through the drip irrigation system to tarped beds in a total water delivery of 1-1.5 acre inches. Strawberries were planted 2-3 weeks later.

Results

In six of the studies (3 of which were replicated and three of which were strip studies), several of the experimental treatments showed enhanced yield relative to the check and in some cases comparable or better than the standard fumigant treatment (see bar chart below). This included a site near Oxnard, CA with known *Fusarium* pressure in which case the treatments were most beneficial in conjunction with use of the less *Fusarium* resistant cultivar BGI-1975 vs cv San Andreas. A strip trial in Florida was conducted on a site with severe sting nematode infestation and all the experimental treatments had better yield than the check. One treatment (12,000 lbs with ½ of the standard amount of urea) had higher yield than the Telone C-35 standard.



Additional testing is underway in Florida and California for the 2016/17 season to further resolve use rates and better define the range of conditions under which this approach is effective.