



Full Spectrum C+P Strawberry Research Results: Third Party Trial by Holden Research & Consulting



Trial Description

A trial was conducted with Holden Research and Consulting and Penny Newman Farm Products to test the benefits of using Penny Newman's Flagship Product Full Spectrum C+P. Full Spectrum C+P has been shown to help enhance water infiltration, mitigate salts, enhance water and nutrient uptake, and increase grower yields, and net profits. The results of this trial showed that there are significant benefits of using Full Spectrum that brought higher yields and net profits to the grower. Also, soil sampling results were consistent with Penny Newman's findings that this product can help break up salts in the soil and make nutrients more available, via the feeding and stimulation of beneficial soil microbes, which is one of Full Spectrum's key features.

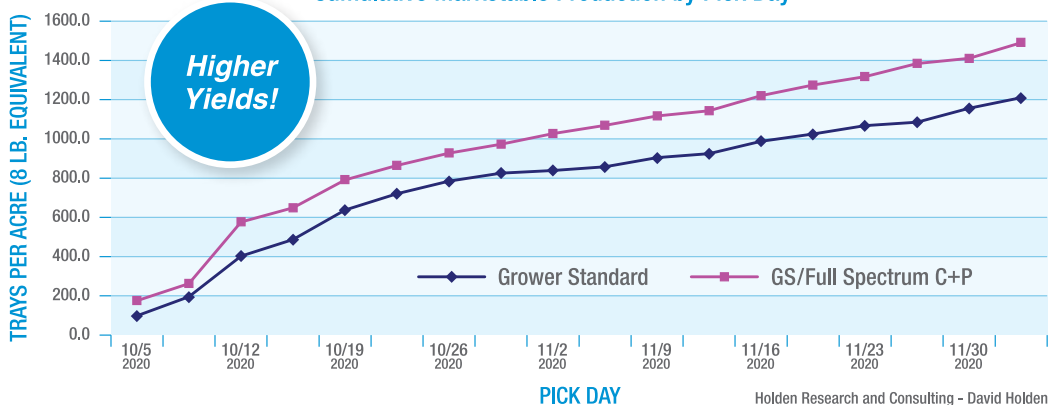
Trial Methods & Materials

The variety of strawberry (cv. Portola) utilized for this trial was grown in a grower's field in Ventura county, California. This trial was set up as a completely randomized block trial of two treatments with completely randomized data collection of six replicates maintained during the growing season. All treatments received in season applications of nutrients at various rates, along with seasonally necessitated foliar pest control. Full Spectrum was applied on the trial blocks at a rate of 4 gallons/acre split between two applications in the early spring and early summer.

Trial Results

- Full Spectrum produced the most flats of strawberries during the trial period over the grower's standard with 1,490 extrapolated flats per acre, compared to 1,210 flats per acre for the grower standard program.
 - 280 Trays per acre more!**
 - 23% increase!**

Penny Newman Strawberries - Ventura County - Fall 2020
Cumulative Marketable Production by Pick Day



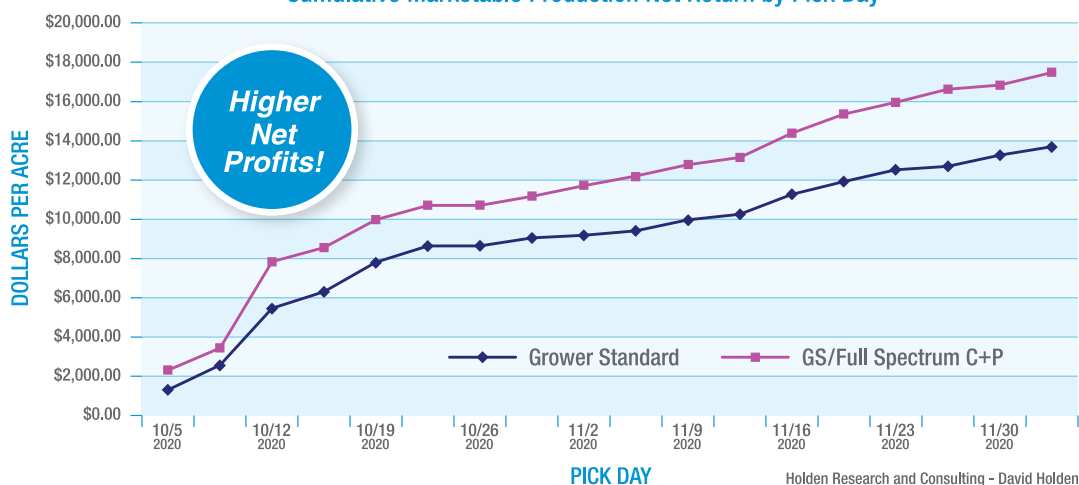


Trial Results (continued)

- After costs of approximately \$6.00 per tray were removed that would represent picking labor, carton and tray costs, transportation to the cooler, and cooling costs associated with picking the strawberries. Very nice cumulative returns to the farm over the grower standard saw a total of \$17,457.00 per acre for this program period for treatment 2 and over the grower standard of \$13,679.00.

- **\$3,779.00 cumulative returns per acre more!** • **27% increase!**

Penny Newman Strawberries - Ventura County - Fall 2020
Cumulative Marketable Production Net Return by Pick Day



- High heat and high winds significantly contributed to plant stress levels during this trial and Full Spectrum applied blocks showed higher yield and financial return despite the high stressors like heat and wind. In this trial, Full Spectrum served as an abiotic stress mitigator.

Soil Results

- Full Spectrum treated soils had higher sodium, salts, and chloride ratings compared to untreated soil. This is a common occurrence with Full Spectrum treated soils because salts are being solubilized and broken down into smaller particles to achieve leaching.
 - This shows Full Spectrum is mitigating salts by breaking up salts in the soil, allowing them to flush through the root zone easier, which can allow water and nutrients to better flow into the plant, allowing for results like higher yields and net profits
- Full Spectrum treated soils had higher nitrate nitrogen, and sulfur, along with other elements compared to untreated soil. They are higher because the Full Spectrum is making them more available in the soil solution via microbes breaking them down.
 - This indicates that by feeding soil microbes and making an environment for microbes to thrive, nutrients become more available in the soil for plants to utilize, thus leading the higher yields and net profits.

For more information please visit the "Field Trials and 3rd Party Research" page on our website: www.penny-newman.com