

Evaluation of Plant Growth Stimulants

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Out of scientific curiosity, I obtained some biological growth stimulant products to see if they do indeed provide a growth response. I obtained 3 products from JH Biotech, Inc (www.jhbiotech.com); 1. Promot MZM, an organic starter fertilizer but which also contained fermentation by-products of a fungal fermentation process; 2. Superzyme, a biological growth factor with various bacteria and fungi and; 3. Mycormax, a mixture of several mycorrhizae.

Previous research has shown that the addition of mycorrhizae fungi can result in a growth response on potatoes in Kern County, especially if the field has been previously fumigated. I had very little experience with other growth stimulants but have seen them work in past experiments.

The field was fumigated with metam sodium prior to planting the field to bell peppers. At the time of transplanting, we removed several hundred plants from the planting tray and dipped them into a solution of either Promot, Superzyme, or plain water. The Mycormax was a powder and we simply rubbed the root balls in the powder. The transplant crew then planted the trial under our direction in a randomized complete block design.

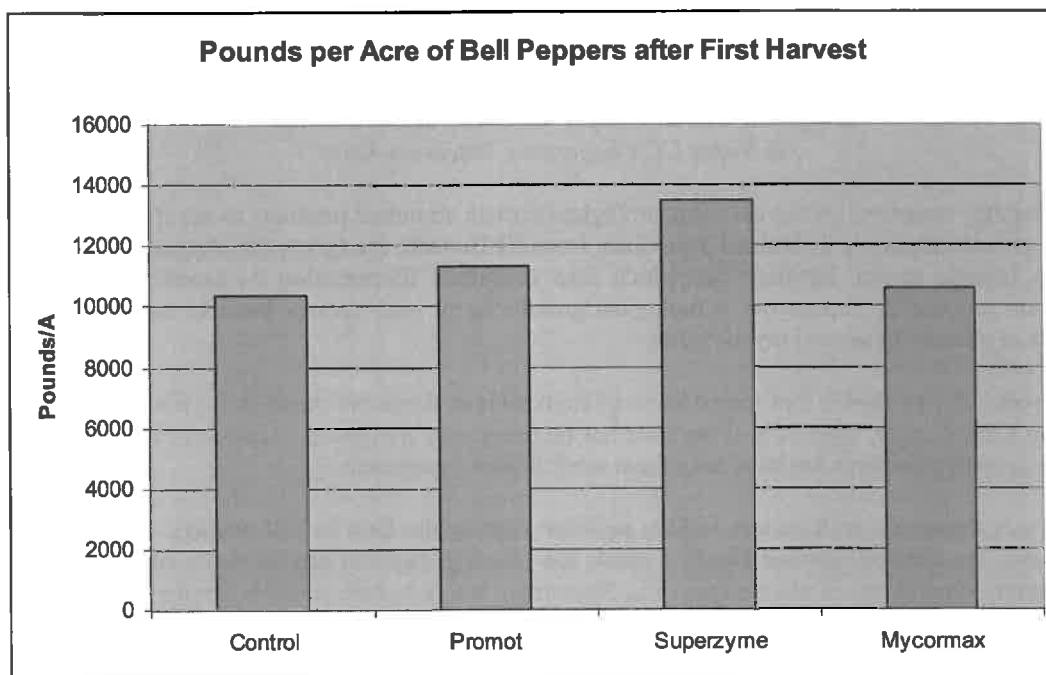
Within a week it could be easily seen that the Superzyme treated plants were noticeably larger and more vigorous. After 3 weeks the Superzyme and Promot treatments were larger than the control, but the Superzyme treated plants were much larger. At this time it was also noticed that the Mycormax plants were slightly stunted compared to the controls. These vigor differences remained visible until harvest.

The plants were harvested once for data. More harvests couldn't be done because it appeared that the harvest crew had harvested before we had a chance to do any more harvests. However we did see differences with just the first harvest.

The Superzyme plots yielded an average of 13,492 lbs per acre and the Promot yielded 11,366 lbs per acre. The control and Mycormax plots averaged 10,366 and 10,617 lbs per acre respectively (Figure 1). At an average price of \$1054 per ton between 2006 and 2007, the Superzyme brought in \$7,062 per acre compared to \$5,481 for the control.

The results are interesting but it must be kept in mind that this is just one trial. Often times it is difficult to get repeatable data with biological products. Often times they seem to work on a particular crop in a particular field. The same trial is currently being repeated on processing tomatoes but we don't have information on that trial as of now. But at \$25-30 a gallon for Superzyme and at a use rate of 2-4 quarts an acre it is certainly worth looking at.

Figure 1. Yield of bell peppers after one harvest.



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