

**Effects of Foliar Applied Burst and Cytex on Yields of
Bell Peppers in Cochise County**

S. Laibi, N. Oebker, J. Kobriger and D. Young

Introduction

Many products, claiming to increase yields or maturity in vegetables, are currently on the market. Two such products are Burst (Burst Agri Tech Inc., Overland Park, Kansas) and Cytex (Atlantic & Pacific Research Inc., North Palm Beach, Florida). Both of these products have cytokinin activity. Cytokinin is a plant hormone which alters plant growth and development. Both these products have increased yields or earliness on some vegetables in some locations and seasons. However, these increases appear to be sporadic. The purpose of our study was to determine effects of these products on yields and maturity of bell peppers grown in southeastern Arizona.

Procedures

Bell peppers, cultivar 'California Wonder' were transplanted into the field on May 16, 1984, in Cochise County, and grown according to commercial practices.

When plants had six leaves emerged (June 13), the first foliar applications of Burst and Cytex were applied. For Burst, four application rates were used: 1) 1/4 pt/acre when plants had six leaves (1X), 2) 1/4 pt/acre when plants had six leaves plus 1/4 pt/acre two weeks later (1X + 1X), 3) 1/2 pt/acre when plants had six leaves (2X), 4) 1/2 pt/acre when plants had six leaves plus 1/2 pt/acre two weeks later (2X + 2X).

For Cytex, four application rates were also used: 1) 1 gallon/acre when plants had six leaves (1X), 2) 1 gallon/acre when plants had six leaves plus 1 gallon/acre two weeks later (1X + 1X), 3) 2 gallons/acre when plants had six leaves (2X), 4) 2 gallons/acre when plants had six leaves plus 2 gallons/acre two weeks later (2X + 2X). Some plants were also sprayed with water alone to serve as a check or control for comparison to the Burst and Cytex treatments.

All spraying was done with a hand held sprayer. Each treatment was repeated three times in the field. Plot size for individual treatments was 3.3 feet by 25 feet (or one row 25 feet long).

All mature green peppers were harvested by hand on July 9. Peppers were returned to the laboratory where they were sorted into two groups: 1) marketable, 2) unmarketable. Marketable fruit had good size and shape being free of blemishes, rot or red color. Unmarketable fruit had small size, poor shape, blemishes, rot or red color. After sorting, fruit in each group was counted and weighed.

Results and Discussion

The effects of Burst on bell peppers are shown in Table 1. Both marketable weight and marketable number of peppers tended to be higher from Burst treated plants than from control plants, although standard deviations overlapped and statistically, differences in treatments were not significant. For unmarketable weight and number, no differences between treatments were apparent. Application rates did not affect weight or number either since all rates of Burst resulted in similar responses.

The effects of Cytex on bell peppers are shown in Table 2. As with Burst, both marketable weight and marketable number of peppers tended to be higher from Cytex treated plants than from control plants, although again standard deviations overlapped and differences in yield were not significant. Unmarketable weight of fruit were similar for Cytex treated and control plants. No differences between application rates of Cytex were observed.

Burst and Cytex had only limited beneficial effects on marketable pepper weight and number. Although weight and number of fruit were slightly greater in Burst and Cytex treated plants than controls, these increases were not significant. It is unfortunate that only one harvest was completed since peppers are normally harvested several times commercially. Additional harvests might have shown different results.

Table 1. Effects of Burst on Bell Peppers Grown in Cochise County

Application ^z Rate	Marketable ^y		Unmarketable	
	Weight (lb)	Number	Weight (lb)	Number
Control	4.5 ± 1.0	16.7 ± 3.5	6.2 ± 0.7	37.3 ± 7.6
1X	6.9 ± 0.8	23.0 ± 2.6	5.8 ± 2.0	33.7 ± 12.5
1X + 1X	7.2 ± 5.3	24.7 ± 17.8	5.2 ± 0.5	32.0 ± 6.1
2X	7.3 ± 1.7	25.3 ± 5.5	6.9 ± 1.9	38.3 ± 15.5
2X + 2X	6.6 ± 2.0	22.7 ± 6.3	6.3 ± 0.9	35.7 ± 5.5

^zSee procedures for exact amounts.

^yMarketable vs. unmarketable based on size, shape, and presence or absence of blemishes.

Table 2. Effects of Cytex on Bell Peppers Grown in Cochise County

Application ^z Rate	Marketable ^y		Unmarketable	
	Weight (lb)	Number	Weight (lb)	Number
Control	3.5 ± 1.6	13.3 ± 5.7	6.0 ± 4.0	36.7 ± 22.7
1X	6.6 ± 1.8	24.0 ± 5.2	5.8 ± 1.0	34.3 ± 5.7
1X + 1X	4.3 ± 2.2	15.3 ± 7.5	5.6 ± 3.8	35.0 ± 21.7
2X	4.1 ± 2.2	17.0 ± 9.0	5.7 ± 0.1	35.0 ± 1.0
2X + 2X	6.6 ± 1.6	23.7 ± 6.0	5.9 ± 2.9	35.3 ± 16.8

^zSee procedures for exact amounts.

^yMarketable vs. unmarketable based on size, shape, and presence or absence of blemishes.