Cantaloupe Response to CN9™ Fertilizer

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Abstract

Field experiments were conducted at four sites in 2005 in the Yuma Valley, AZ (approximately 150 ft. elevation) to evaluate the performance of CN9 fertilizer [a N-calcium (Ca) based fertilizer (9-0-0-11)] in comparison to a conventional N fertilizer source with irrigated melons/cantaloupes (Cucumis melo L.*). Each field was divided into two equal (approximately 40 acres) sections. One section received the grower's N fertilizer source (Conventional) while the other section received the CN9 fertilizer. Basic plant growth and development measurements, aboveground biomass, total and marketable yield, Sugar fruit content as well as total nutrient analysis were among the main variables analyzed. In general, all phenology variables responded similarly between conventional and CN9 treatments. Fresh weight yields ranging from 4,000 to 10,000 kg/ha were observed between conventional and CN9 treatments. Statistical analyses show that total yield between conventional and CN9 was statistically the same; with the exception of the Perriconi site. Similar results were observed for marketable yield. Brix values ranged from 10 to 14 percent, statistical differences for Brix values between the conventional and CN9 treatments were found on the Perriconi and Mason 80 sites where the conventional treatment had higher sugar content in the fruit. Overall, there were no differences in nutrient uptake and allocation patterns due to the addition of CN9 among experimental sites or sampling dates. Regarding the allocation of nutrients in the rind and flesh of melons, the same patterns between treatments at all sites were observed.*

Key words:

Cantaloupe, *Cucumis melo* L., nitrogen fertilizer, calcium nutrition.

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Introduction

Arizona melon (cantalouopes, *Cucumis melo* L.) production ranks second to California in the United States. In 2003, about 15,200 acres of melons were harvested in Arizona, mainly in Yuma, Maricopa, La Paz, and Pinal Counties. Yield averaged approximately 370 Cwt/acre and the total farm value accrued for AZ amounted to more than $ 87 million dollars (Arizona Agricultural Statistics, 2003).

Good soil fertility management is critical for successful melon production in Arizona. Inadequate nutrient supply can lead to a loss of plant vigor, susceptibility to pests, and lower marketable yields (Thompson, 1998). The level of Nitrogen (N) fertility has more influence on the growth and yield of cantaloupes than any other single plant nutrient because it is the nutrient most commonly utilized by the plant in larger amounts and it is often deficient in Arizona soils (Doerge et al, 1991). Nitrogen fertilizers are relatively inexpensive and they can contribute to ground and surface water pollution through leaching and soil erosion. They also play a very important role in crop quality (Ruiz and Romero, 1999). The relationship between increases in yield and N fertilization also is apparent in most crops (Sinclair and Horie, 1989).

There is currently limited N data and information describing optimum growth and development and yield of melons as a function of N fertilizer sources in Arizona. A common concern among local growers is that melon yields can be positively influenced by using different N sources. Research conducted in lettuce by numerous researchers has shown no significant effect of N source on N uptake, head size, quality and yield (Gardner and Pew, 1972; Walworth et al., 1992). Similar N source research needs to be conducted on melons to evaluate the responses in growth and development pattern, nutrient uptake pattern, quality, and yield. Hence, the objective of this study was to determine the effect of Viking Ship CN9 ™ (CN9) fertilizer (relative to a commonly used source of N) on growth and development pattern, nutrient uptake pattern, quality and yield of melons as a function of heat units accumulated after planting (HUAP).

Materials and Methods

Field experiments were conducted at four sites in 2005 in the Yuma Valley, AZ (approximately 150 ft. elevation) to evaluate the performance of CN9 fertilizer [a N-calcium (Ca) based fertilizer (9-0-0-11)] in comparison to a conventional N fertilizer source (Table 1). Mr. T.T. Havins served as the farmer-cooperator on all sites and all crop management decisions were made in conjunction with Mr. Havins. Melon seeds were dry planted on 80-inch beds and watered up. Each field was thinned to approximately 12 inch plant spacing (6450 plants per acre). Composite surface 12-inch soil samples were collected from each field prior to any fertilization for complete nutrient analysis. All inputs such as fertilizer, water, disease, and pest control were managed throughout the season on an as-needed basis.

Each field was divided into two equal (approximately 40 acres) sections. One section received the grower's N fertilizer source (Conventional) while the other section received the CN9 fertilizer. Fertilizer applications were carried out in such a manner that equivalent amounts of N were added for each treatment. An Arizona Meteorological Network (AZMET) Station sited in the Yuma Valley monitored weather conditions on a daily basis throughout the growing season. The AZMET station is used to determine the hourly temperature values and the heat unit (HU) accumulations (86/55 ºF thresholds) are calculated by a method presented in Baskerville and Emin (1969) and modified by Brown (1989). The daily HU accumulations are summed up from the time of planting and reported as HUAP.

In-season data collection for each treatment included the following basic plant growth and development measurements: number of vines per plant, number of mainstem nodes, number of fresh flowers on each vine, and length (cm) of each fruiting vine. Also, the number of melons larger than "golf ball" size per two meters segments was counted. Plant measurements were made in regular 14-day intervals. In addition, aboveground biomass was sampled at four distinct growth stages (Table 2). Dry matter sampling involved removal of the entire aboveground biomass at five randomly selected locations (2 m of row length) in each treatment area for each date of sampling. Plant samples were taken to the

laboratory where vegetative and reproductive structures were separated. Marketable melons were separated, grouped by sizes, and weighed before being processed for oven drying. Sugar fruit content (Brix units) was measured using an ATC-1E handheld refractometer. Moreover, a composite sample of rind and flesh tissues was manually collected from all sites. Both vegetative and fruit samples were oven dried at 65 ºC until constant dry weights were achieved before final weights were taken. The dried and weighed samples were ground and sent to laboratory for total nutrient analysis. Statistical analyses were performed on all in-season data collected with statistical procedures consistent with those outlined by Steele and Torrie (1980) and SAS (SAS Institute, 199a and 1999b). Means comparisons for all dependent variables for the treatments were performed by appropriate analysis of variance procedures (PROC ANOVA) and an appropriate method of protected least significant differences procedures ($p \leq 0.05$) as outlined in SAS (SAS Institute, 1999a and 1999b) and Steel and Torrie (1980).

Results and Discussion

Plant growth and development (crop phenology). The 2005 in-season data is presented in Figures 1 to 4. In general, all phenology variables responded similarly between conventional and CN9 treatments. Statistical analyses showed no significant differences in growth and development variables between conventional and CN9 treatments for each sampling date on all sites.

Marketable yield. Table 3 presents marketable yield and total fresh weight yield results of melons on all sites. Fresh weight yields ranging from 4,000 to 10,000 kg/ha were observed between conventional and CN9 treatments. Statistical analyses show that total yield between conventional and CN9 was statistically the same; with the exception of the Perriconi site. Similar results were observed for marketable yield since no statistical difference in size was found between conventional and CN9 treatments.

Harvest Index. Harvest index (HI, proportion of dry matter in fruiting forms) values (Figure 5) were greater than 0.5 for all varieties. No significant differences were found between the conventional and CN9 treatments for all sites.

Sugar content (Brix analyses). Table 4 presents sugar fruit contents (Brix units) for all treatments and sites. Brix values ranged from 10 to 14 percent. According to the Reams composite chart (Reams, 1998), this corresponds to a sugar content rated either as average (10) or excellent (14), A Brix reading of 12 % is reported as a good content of sugar in melon fruit. Statistical differences for Brix values between the conventional and CN9 treatments were found on the Perriconi and Mason 80 sites where the conventional treatment had a higher sugar content in the fruit.

Nutrient uptake. Overall, there were no differences in nutrient uptake and allocation patterns due to the addition of CN9 among experimental sites or sampling dates (Tables 5 to 16). Regarding the allocation of nutrients in the rind and flesh of melons (tables 17 to 28), the same patterns between treatments at all sites were observed.

In the case of Ca, it was observed that for the Perriconi site in the third sampling date; the CN9 treatment promoted a greater allocation in the fruit flesh than in the conventional treatment. Also, on the fourth sampling date with the CN9 treatment, Ca allocation in the rind was 5 kg greater than in the conventional treatment. This behavior or pattern was not found among the remaining experimental sites.

Acknowledgements

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Table 1. CN9 Cantaloupe experiments; basic agronomic information, Yuma Valley, AZ, 2005.

Site	Variety	Wet date	Irrigation type	Soil type[1]
Bates Ranch	Ocotillo	1/21/05	Furrow	Holtville Silty Clay Loam [Clayey over loamy, montmorillonitic (calcareous) hyperthermic Typic Torrifluvents]
West Kelly	Gold Rush	2/16/05	Furrow	Gadsden Clay Loam [Fine, montmorillonitic (calcareous) hyperthermic Typic Torrifluvents]
Perriconi	Sol Real	3/01/05	Furrow	Holtville Silty Clay Loam [Clayey over loamy, montmorillonitic (calcareous) hyperthermic Typic Torrifluvents]
Mason	Gold Rush	2/18/05	Furrow	Gadsden Silty Clay Loam [Fine, montmorillonitic (calcareous) hyperthermic Typic Torrifluvents]

1] USDA. (1980). Soil Survey of Yuma-Wellton Area. United States Department of Agriculture Soil Conservation Service-Arizona Agricultural Experiment Station-California Agricultural Experiment Station

Table 2. CN9 Cantaloupe experiments; dry matter and soil sampling dates, Yuma Valley, AZ, 2005.

Site	First sampling date (HUAP) (4-6 true leaf stage)	Second sampling date (HUAP) (Golf-size melon stage)	Third sampling date (HUAP) (Early netting stage)	Fourth sampling date (HUAP) (Prior to commercial Harvest)	Soil sampling date
Bates Ranch	385	769	955	1319	3/02/05
West Kelly	No sample	619	824	1169	3/02/05
Perriconi	383	727	956	1401	3/02/05
Mason	No sample	610	815	1340	3/02/05

Table 3. Marketable yield and total fresh weight yield of cantaloupes as affected by a conventional and CN9 treatments, Yuma Valley, AZ, 2005.

			Marketable melon sizes mean yield (Kg/ha)					
Site	**Variety**	**Treatment**	**6**	**9**	**12**	**15**	**18**	**Total**
Bates	Ocotillo	Conventional	7,623 a	6,243 a	9,073 a	8,248 a	6,318 a	37,507 a
		CN9	6,205 a	9,875 a	5,732 a	7,025 a	3,689 a	32,526 a
		*$OSL_{0.05}$	0.1308	0.1541	0.1343	0.0620	0.0888	0.2545
		†$LSD_{0.05}$	§NS	NS	NS	NS	NS	NS
		¶CV (%)	12.7	11.7	9.8	4.3	6.2	12.6
West Kelly	Gold Rush	Conventional	12,861 a	9,534 a	11,038 a	7,151 a	3,663 a	44,247 a
		CN9	10,011 a	10,953 a	11,259 a	8,768 a	5,709 a	46,700 a
		*$OSL_{0.05}$	0.5471	0.1498	0.8450	0.2107	0.1473	0.1784
		†$LSD_{0.05}$	NS	NS	NS	NS	NS	NS
		¶CV (%)	17.0	11.6	15.2	18.5	9.2	14.4
Perriconni	Sol Real	Conventional	15,266 a	14,044 a	16,004 a	11,874 a	6,245 b	63,433 a
		CN9	4,767 b	10,272 b	19,820 a	13,711 a	8,978 a	57,548 b
		*$OSL_{0.05}$	0.0001	0.0311	0.0784	0.3086	0.0196	0.0224
		†$LSD_{0.05}$	693.3	3,214.8	NS	NS	1,927.0	5,221.2
		¶CV (%)	3.9	15.1	11.5	19.5	11.6	7.5
Mason	Gold Rush	Conventional	15,606 a	7,619 a	11,374 a	9,363 a	7,775 b	51,127 a
		CN9	5,166 b	9,250 a	15,819 a	9,001 a	10,124 a	49,360 a
		*$OSL_{0.05}$	0.0012	0.1524	0.0757	0.7504	0.0458	0.5071
		†$LSD_{0.05}$	1,352.1	NS	NS	NS	2,278.4	NS
		¶CV (%)	4.7	14.3	17.7	18.3	14,5	14.5

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter within a cell are not significantly different according to a Fisher's means separation test.

Table 4. Brix sugar content of cantaloupes as affected by a conventional and CN9 treatments, Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Percent sugar
Bates Ranch	Ocotillo	Conventional	11.1 a
		CN9	11.0 a
		*$OSL_{0.05}$	0.95
		†$LSD_{0.05}$	§NS
		¶CV (%)	18.8
West Kelly	Gold Rush	Conventional	10.59 a
		CN9	10.38 a
		*$OSL_{0.05}$	0.69
		†$LSD_{0.05}$	NS
		¶CV (%)	10.8
Perriconi	Sol Real	Conventional	14.07 a
		CN9	13.2 b
		*$OSL_{0.05}$	0.02
		†$LSD_{0.05}$	0.67
		¶CV (%)	4.9
Mason	Gold Rush	Conventional	11.17 a
		CN9	9.4 b
		*$OSL_{0.05}$	0.002
		†$LSD_{0.05}$	0.92
		¶CV (%)	8.8

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter within a cell are not significantly different according to a Fisher's means separation test.

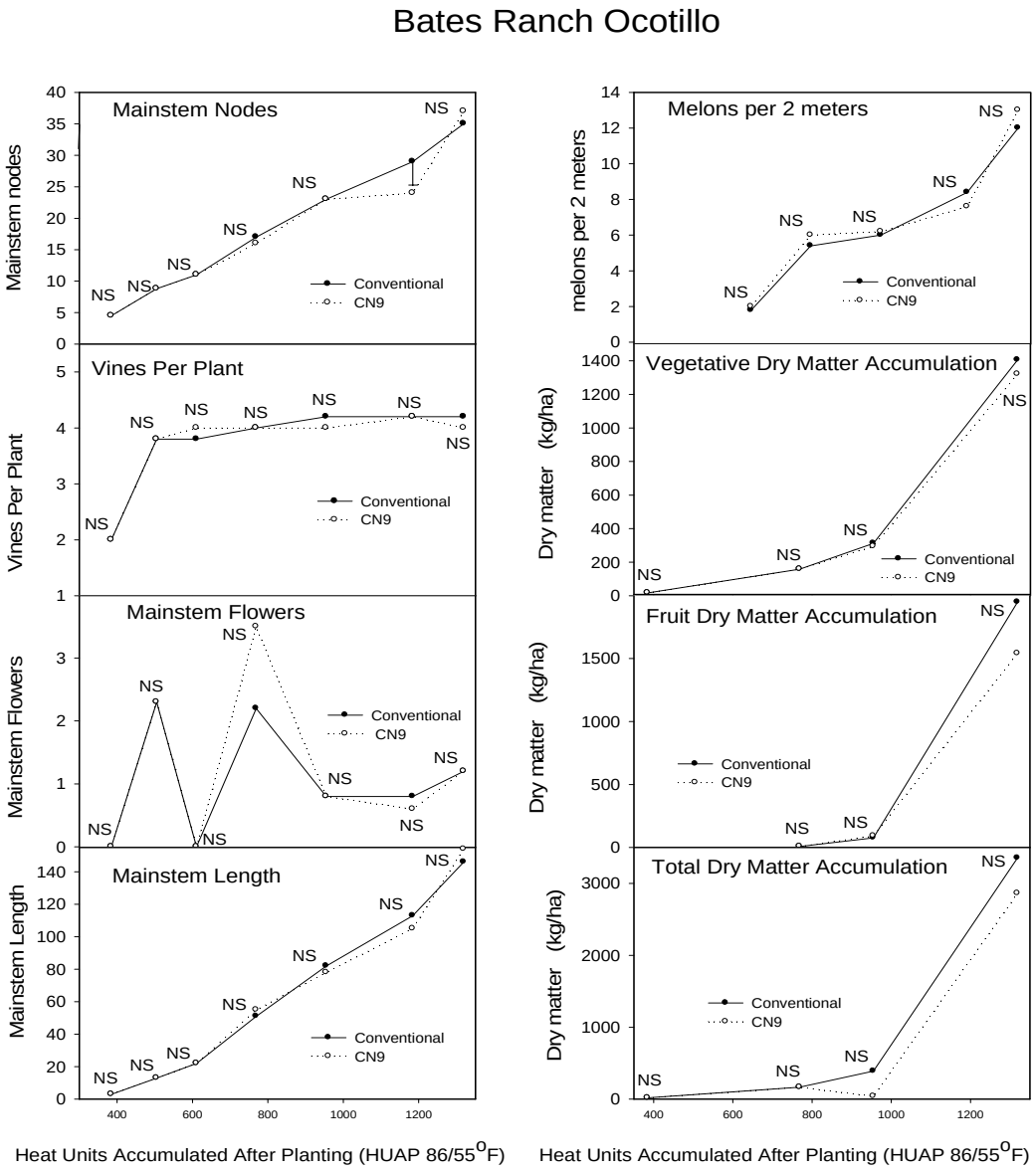


Figure 1. Growth and development variables as a function of HUAP for cantaloupes (var., Ocotillo), Bates Ranch field, Yuma Valley, AZ, 2005.

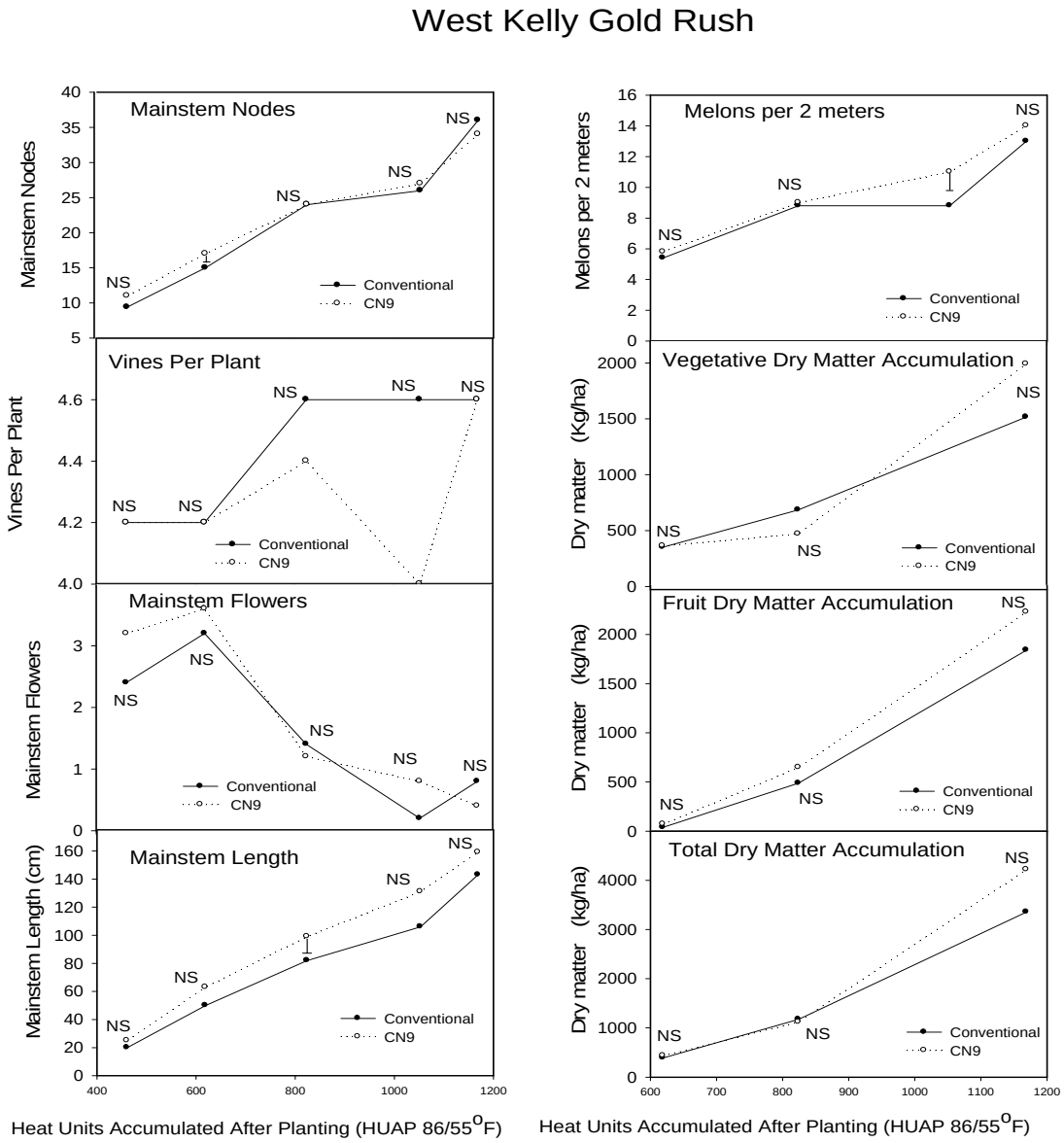


Figure 2. Growth and development variables as a function of HUAP for cantaloupes (var., Gold Rush), West Kelly field, Yuma Valley, AZ, 2005.

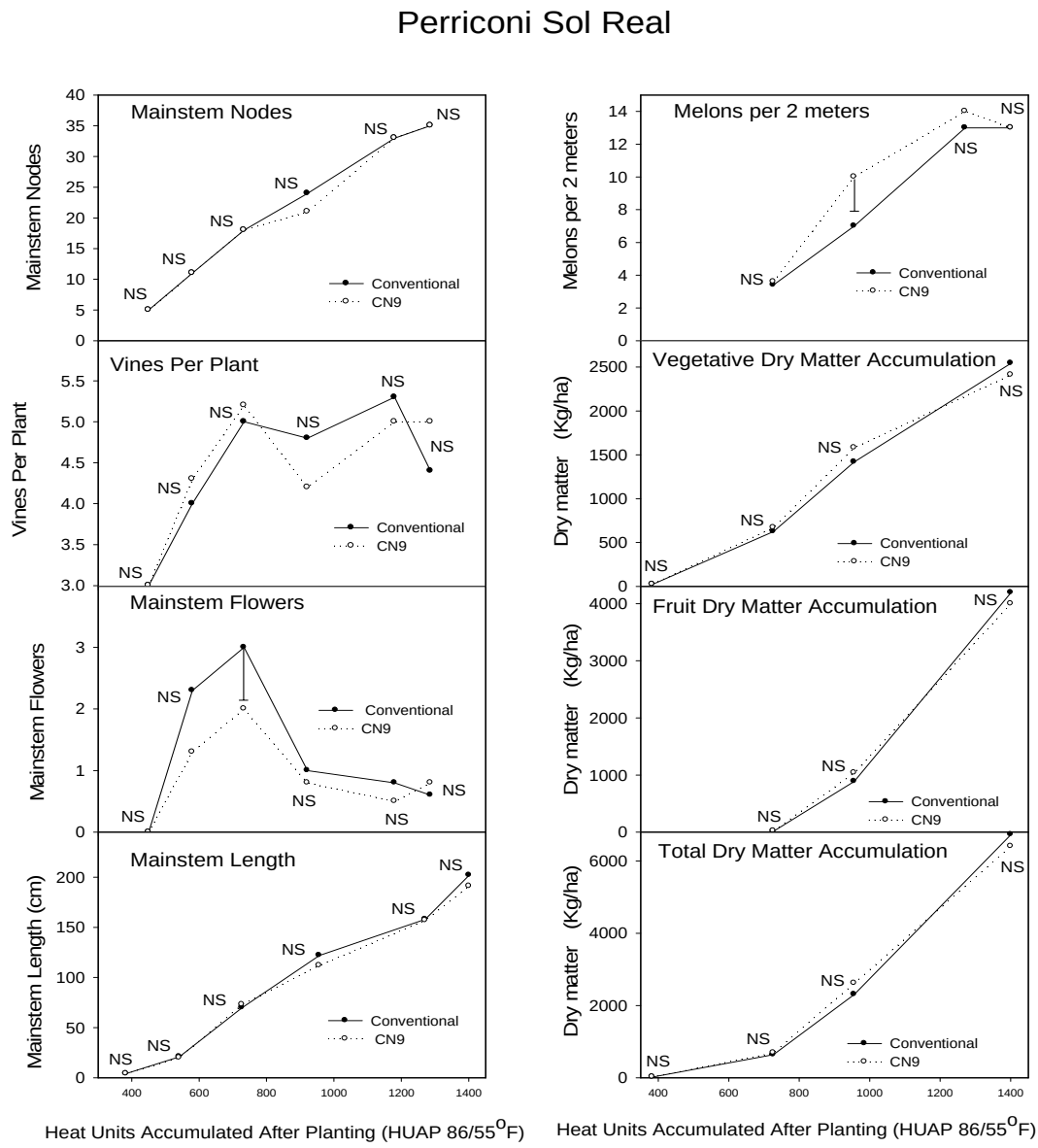


Figure 3. Growth and development variables as a function of HUAP for cantaloupes (var., Sol Real), Perriconi field, Yuma Valley, AZ, 2005.

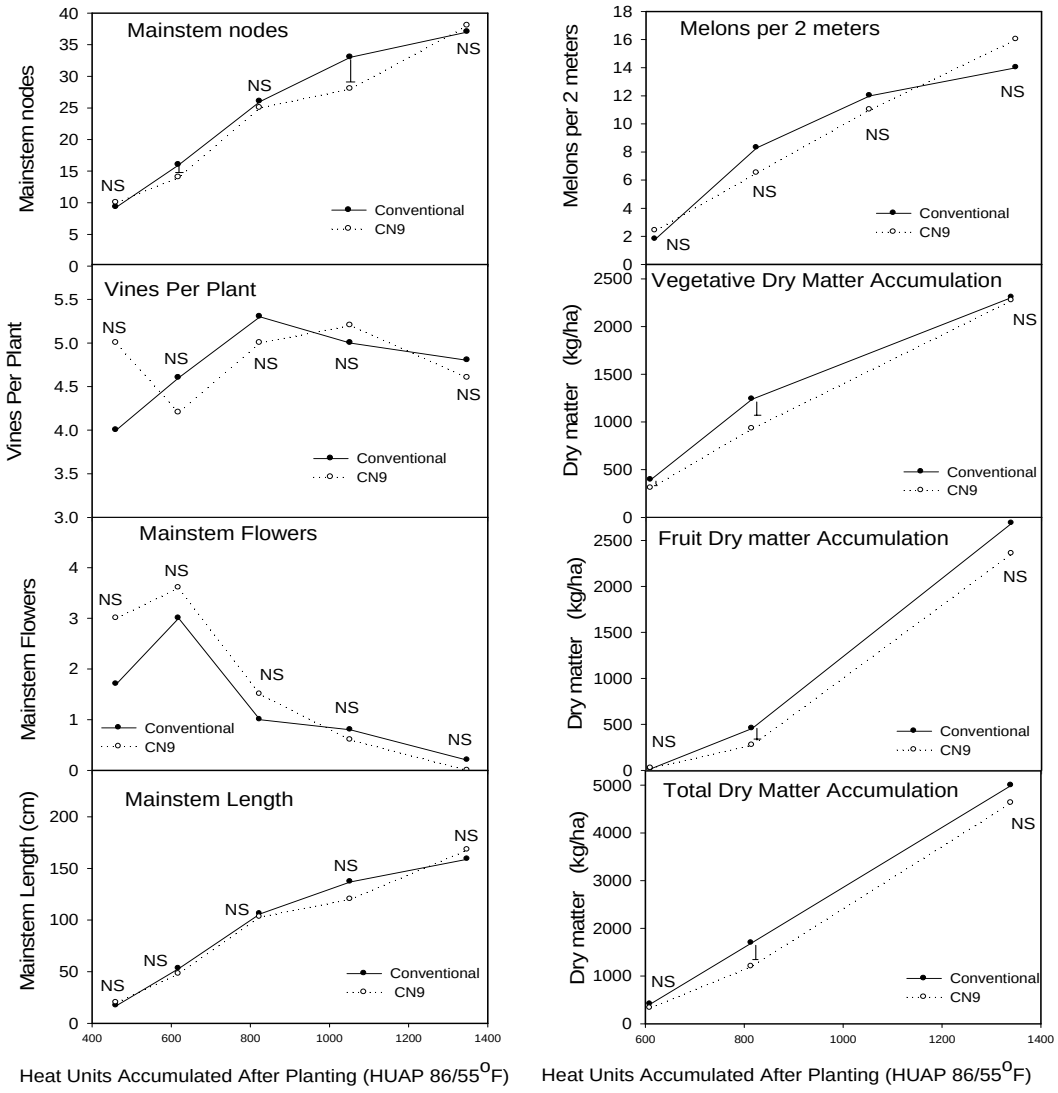
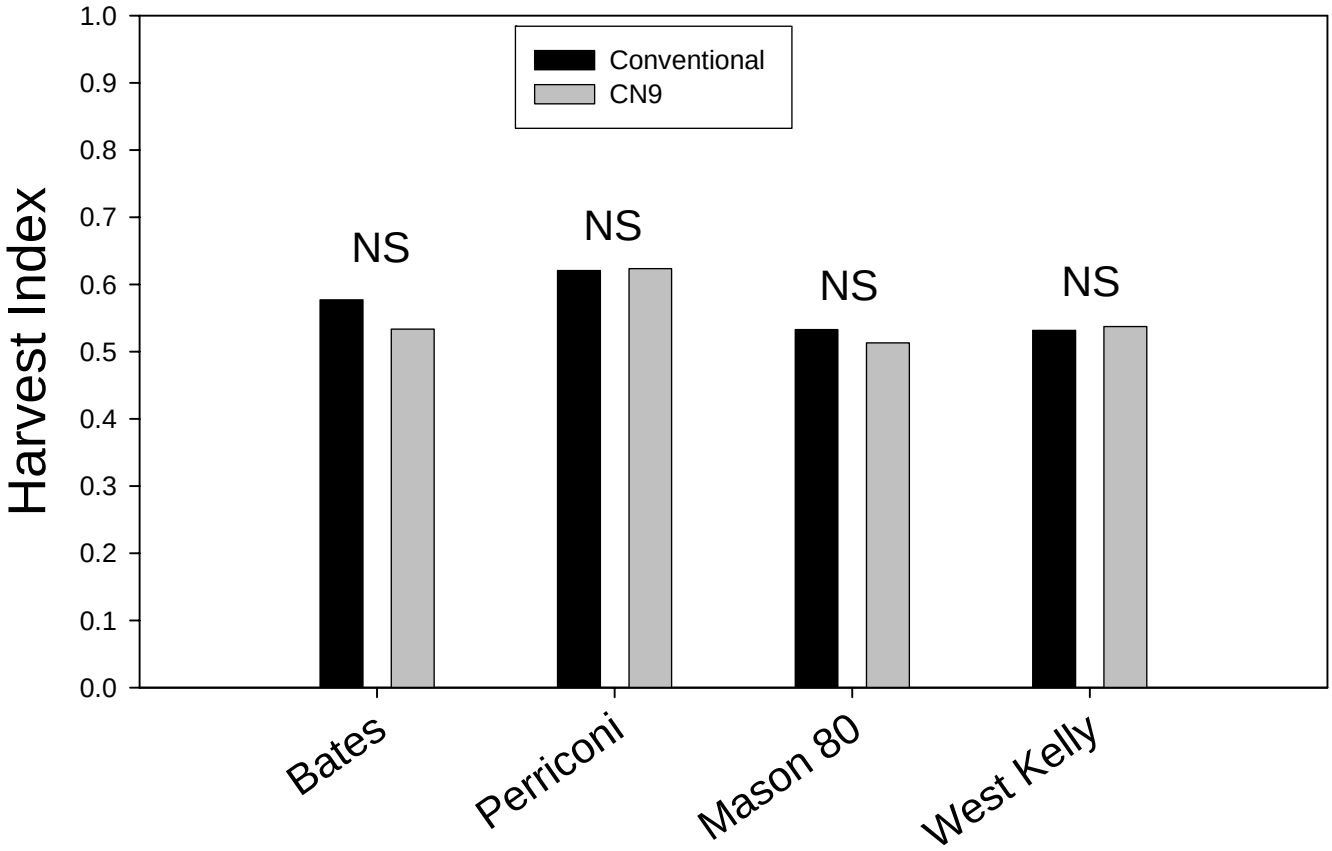


Figure 4. Growth and development variables as a function of HUAP for cantaloupes (var., Gold Rush) Mason 80 field, Yuma Valley, AZ, 2005.



NS = Not significant statistical difference (Fisher's means separation test; $p \geq 0.05$)

Figure 5. Harvest Index for cantaloupes for all sites, Yuma Valley, 2005.

Table 5. Vegetative (V), reproductive (R), and total (T), nitrogen uptake (kg/ha) as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 1			Sample Date 2			Sample Date 3			Sample Date 4		
			kg/ha											
			V	R	T	V	R	T	V	R	T	V	R	T
Perriconi	Sol Real	Conventional	1.16 a		1.16 a	21.41 a	0.49 a	21.9 a	44.3 a	23.1 a	67.4 a	65.0 a	91.3 a	156.3 a
		CN9	1.16 a		1.16 a	25.25 a	0.70 a	25.94 a	53.6 a	27.1 a	80.7 a	65.0 a	95.5 a	157.5 a
		*$OSL_{0.05}$	0.9	---------	0.9	.2708	0.3271	0.2143	.0974	0.1776	0.0821	0.9981	0.8736	0.8927
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)	0		0	14.8	24.8	13.02	13.9	15.5	12.4	16.4	12.2	8.6
Bates	Ocotillo	Conventional	0.80 a		0.80 a	6.99 a	0.42 a	7.35 a	12.40 a	2.84 a	15.24 a	45.7 a	66.2 a	111.9 a
		CN9	0.80 a		0.80 a	6.99 a	0.42 a	7.35 a	10.85 a	3.26 a	14.11 a	48.9 a	51.3 a	100.2 a
		*$OSL_{0.05}$	0.9	---------	0.9	0.9	0.9	0.9	0.4128	0.4774	0.5994	0.1679	0.2760	0.400
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)	0		0	0	0	0	22.9	27.4	19.8	5.3	27.0	15.9
West Kelly	Gold Rush	Conventional				14.67 a	1.57 a	16.24 a	27.3 a	16.6 a	43.9 a	50.0 a	63.8 a	113.8 a
		CN9				14.20 a	2.84 a	16.76 a	15.5 b	16.4 a	31.9 b	63.9 a	65.1 a	129.1 a
		*$OSL_{0.05}$	---------	---------	---------	0.3359	0.2781	0.7831	.05	0.8992	0.019	0.5636	0.8794	0.6039
		†$LSD_{0.05}$				NS	NS	NS	6.0	NS	8.8	NS	NS	NS
		¶CV (%)				15.9	26.1	16.8	16.04	16.5	13.3	20.3	10.8	24.6
Mason 80	Gold Rush	Conventional				18.4 a	0.68 a	19.13 a	51.1 a	14.5 a	65.6 a	72.4 a	83.5 a	155.9 a
		CN9				13.0 a	0.94 a	13.94 b	38.5 b	9.8 a	48.3 b	65.0 a	80.1 a	145.1 a
		*$OSL_{0.05}$	---------	---------	---------	0.0568	0.5477	0.0400	0.0122	0.0984	0.03	0.2040	0.8464	0.6154
		†$LSD_{0.05}$				NS	NS	4.9	7.4	NS	9.07	NS	NS	NS
		¶CV (%)				12.3	27.8	8.9	7.3	23.3	7.1	11.3	31.2	20.9

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 6. Vegetative (V), reproductive (R), and total (T) phosphorous uptake (kg/ha) as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 1			Sample Date 2			Sample Date 3			Sample Date 4		
			kg/ha											
			V	R	T	V	R	T	V	R	T	V	R	T
Perriconi	Sol Real	Conventional	.121 a		.121 a	1.87 a	0.044 a	1.90 a	3.8 a	4.5 a	8.3 a	5.2 a	13.8 a	19.0 a
		CN9	.121 a		.121 a	2.34 a	0.067 a	2.42 a	4.6 a	4.6 a	9.2 a	6.2 a	16.0 a	22.2 a
		*$OSL_{0.05}$	0.9	---------	0.9	0.0718	0.4011	0.0767	0.1052	0.9025	0.4570	0.2470	0.1264	0.0853
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)	0		0	8.3	23.5	9.1	13.9	18.7	14.9	21.1	12.2	10.9
Bates	Ocotillo	Conventional	0.076 a		0.076 a	0.66 a	0.064 a	0.725 a	1.12 a	0.49 a	1.6 a	4.3 a	11.2 a	15.5 a
		CN9	0.076 a		0.076 a	0.66 a	0.064 a	0.725 a	1.17 a	0.69 a	1.9 a	4.1 a	9.0 a	13.1 a
		*$OSL_{0.05}$	0.9	---------	0.9	0.9	0.9	0.9	0.8130	0.1919	0.3037	0.6731	0.1885	0.1653
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)	0		0	0	0	0	26.9	22.6	21.6	11.8	18.4	12.9
West Kelly	Gold Rush	Conventional				1.58 a	0.26 a	1.84 a	2.40 a	2.5 a	4.9 a	4.5 a	12.1 a	16.60 a
		CN9				1.60 a	0.52 a	2.12 a	1.37 b	3.2 a	4.6 a	5.7 a	12.8 a	18.50 a
		*$OSL_{0.05}$	---------	---------	---------	0.4505	0.7454	0.7159	0.0308	0.2209	0.6413	0.5970	0.9580	0.7139
		†$LSD_{0.05}$				NS	NS	NS	0.88	NS	NS	NS	NS	NS
		¶CV (%)				17.9	26.0	19.3	26.6	25.9	22.6	53.5	10.8	23.7
Mason 80	Gold Rush	Conventional				1.66 a	0.10 a	1.76 a	3.90 a	2.2 a	6.18 a	5.7 a	14.7 a	20.38 a
		CN9				1.30 a	0.14 a	1.44 a	3.20 b	1.5 a	4.73 b	7.3 a	16.7 a	23.98 a
		*$OSL_{0.05}$	---------	---------	---------	0.0746	0.5077	0.0964	0.0496	0.1285	0.033	0.0680	0.6027	0.4140
		†$LSD_{0.05}$				NS	NS	NS	0.70	NS	1.23	NS	NS	NS
		¶CV (%)				11.2	27.3	28.4	8.8	25.3	10.02	15.6	26.2	28.2

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 7. Vegetative (V), reproductive (R), and total (T) potassium uptake (kg/ha) as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 1			Sample Date 2			Sample Date 3			Sample Date 4		
			kg/ha											
			V	R	T	V	R	T	V	R	T	V	R	T
Perriconi	Sol Real	Conventional	0.947 a		0.947 a	25.9 b	0.610 a	26.53 b	57.6 a	39.1 a	96.70 a	99.2 a	163.6 a	262.8 a
		CN9	0.947 a		0.947 a	31.3 a	0.881 a	32.18 a	66.5 a	40.0 a	106.5 a	85.6 a	144.4 a	230.0 b
		*$OSL_{0.05}$	0.9	---------	0.9	0.0069	0.4087	0.0214	0.2699	0.8571	0.440	0.0891	0.1085	0.018
		†$LSD_{0.05}$	NS		NS	1.72	NS	3.32	NS	NS	NS	NS	NS	20.9
		¶CV (%)	0		0	1.90	27.6	3.51	17.6	19.7	17.9	10.4	9.6	4.8
Bates	Ocotillo	Conventional	0.739 a		0.739 a	7.8 a	0.49 a	8.22 a	12.95 a	4.21 a	17.14 a	50.9 a	109.6 a	160.5 a
		CN9	0.739 a		0.739 a	7.8 a	0.49 a	8.22 a	14.27 a	5.50 a	19.78 a	45.3 a	81.9 a	127.3 a
		*$OSL_{0.05}$	0.9	---------	0.9	0.9	0.9	0.9	0.5905	0.2558	0.3602	0.4709	0.1272	0.1276
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)	0		0	0	0	0	26.3	21.6	21.9	19.9	19.5	15.6
West Kelly	Gold Rush	Conventional				16.5 a	2.1 a	18.5 a	30.75 a	21.32 a	52.06 a	50.6 a	104.1 a	154.6 a
		CN9				18.4 a	3.9 a	22.9 a	18.04 b	25.99 a	44.00 a	56.8 a	107.9 a	164.7 a
		*$OSL_{0.05}$	---------	---------	---------	0.2746	0.6315	0.1207	0.020	0.2624	0.2510	0.7831	0.9001	0.8190
		†$LSD_{0.05}$				NS	NS	NS	9.7	NS	NS	NS	NS	NS
		¶CV (%)				17.5	25.9	17.2	22.6	23.9	19.8	28.3	14.5	29.4
Mason 80	Gold Rush	Conventional				17.5 a	0.79 a	18.29 a	49.2 a	19.3 a	68.48 a	59.04 a	123.5 a	182.6 a
		CN9				14.0 a	1.08 a	15.08 a	36.4 a	12.3 a	48.68 b	77.7 b	144.3 a	222.0 a
		*$OSL_{0.05}$	---------	---------	---------	0.0629	0.5679	0.0989	0.0043	0.1003	0.011	0.047	0.4458	0.2319
		†$LSD_{0.05}$				NS	NS	NS	5.2	NS	11.024	16.9	NS	NS
		¶CV (%)				8.5	28.1	30.9	5.4	26.6	8.4	14.1	29.0	21.9

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 8. Vegetative (V), reproductive (R), and total (T) calcium uptake (kg/ha) as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 1			Sample Date 2			Sample Date 3			Sample Date 4		
			kg/ha											
			V	R	T	V	R	T	V	R	T	V	R	T
Perriconi	Sol Real	Conventional	1.097 a		1.097 a	22.43 a	0.749 a	22.97 a	76.4 a	5.5 a	81.9 a	146.0 a	24.3 a	170.3 a
		CN9	1.097 a		1.097 a	27.38 a	0.537 a	28.12 a	85.8 a	6.1 a	91.9 a	134.2 a	20.6 a	154.8 a
		*$OSL_{0.05}$	0.9	---------	0.9	0.2867	0.2784	0.2419	0.3366	0.4107	0.3312	0.5374	0.0619	0.44
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)	0		0	17.8	25.1	16.2	16.7	17.7	16.4	19.6	10.2	17.6
Bates	Ocotillo	Conventional	0.63 a		0.63 a	7.98 a	0.06 a	8.05 a	13.37 a	0.56 a	14.04 a	85.7 a	17.6 a	103.3 a
		CN9	0.63 a		0.63 a	7.98 a	0.06 a	8.05 a	13.49 a	0.77 a	14.14 a	82.0 a	14.8 a	96.80 a
		*$OSL_{0.05}$	0.9	---------	0.9	0.9	0.9	0.9	0.9585	0.2950	0.9658	0.3571	0.3009	0.1012
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)	0		0	0	0	0	25.1	21.7	24.6	5.8	19.5	3.9
West Kelly	Gold Rush	Conventional				15.86 a	0.23 a	16.10 a	32.8 a	3.18 a	35.98 a	98.90 a	18.3 a	117.3 a
		CN9				17.49 a	0.40 a	17.89 a	27.1 a	3.91 a	31.01 a	147.4 a	16.9 a	164.3 a
		*$OSL_{0.05}$	---------	---------	---------	0.7712	0.3212	0.7441	0.1586	0.2570	0.2538	0.4832	0.6864	0.4952
		†$LSD_{0.05}$				NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)				20.6	28.9	21.8	17.4	24.7	17.6	22.5	10.1	27.7
Mason 80	Gold Rush	Conventional				14.5 a	0.09 a	14.59 a	53.2 a	2.7 a	55.99 a	139.5 a	17.9 a	157.4 a
		CN9				14.2 a	0.13 a	14.33 a	42.8 b	1.8 a	44.60 b	146.3 a	23.4 a	169.7 a
		*$OSL_{0.05}$	---------	---------	---------	0.6991	0.4907	0.7217	0.0308	0.1834	0.034	0.7958	0.2916	0.6894
		†$LSD_{0.05}$				NS	NS	NS	8.6	NS	9.65	NS	NS	NS
		¶CV (%)				12.5	21.4	28.7	7.9	22.1	8.5	24.8	24.8	27.8

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 9. Vegetative (V), reproductive (R), and total (T) sodium uptake (kg/ha) as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 1			Sample Date 2			Sample Date 3			Sample Date 4		
			kg/ha											
			V	R	T	V	R	T	V	R	T	V	R	T
Perriconi	Sol Real	Conventional	0.106 a		0.106 a	1.71 a	0.059 a	1.73 a	4.5 a	1.1 a	5.6 a	10.4 a	7.3 a	17.7 a
		CN9	0.106 a		0.106 a	2.04 a	0.038 a	2.10 a	5.4 a	1.2 a	6.6 a	12.9 a	8.5 a	21.4 a
		*$OSL_{0.05}$	0.9	---------	0.9	0.1856	0.355	0.1201	0.2384	0.6159	0.2496	0.2030	0.1974	0.1423
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)	0		0	10.7	23.2	9.53	20.5	16.3	18.9	22.5	16.2	16.7
Bates	Ocotillo	Conventional	0.077 a		0.077 a	1.79 a	0.028 a	1.80 a	2.88 a	0.29 a	3.18 a	12.8 a	12.3 a	25.1 a
		CN9	0.077 a		0.077 a	1.79 a	0.028 a	1.80 a	3.27 a	0.34 a	3.64 a	7.8 b	6.5 b	14.3 b
		*$OSL_{0.05}$	0.9	---------	0.9	0.9	0.9	0.9	0.3681	0.4653	0.2812	0.2018	0.1837	0.025
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	4.9	5.3	8.2
		¶CV (%)	0		0	0	0	0	19.6	27.6	17.1	21.0	25.2	18.5
West Kelly	Gold Rush	Conventional				1.84 a	0.058 a	1.90 a	4.22 a	1.28 a	5.5 a	10.9 a	10.0 a	20.90 a
		CN9				1.91 a	0.077 a	2.08 a	2.93 b	1.57 a	4.5 a	12.7 a	9.2 a	21.9 a
		*$OSL_{0.05}$	---------	---------	---------	0.9450	0.4450	0.3983	0.08	0.2696	0.1011	0.5228	0.4086	0.7322
		†$LSD_{0.05}$				NS	NS	NS	0.83	NS	NS	NS	NS	NS
		¶CV (%)				25.2	29.8	26.2	13.2	25.8	14.9	24.8	8.6	17.5
Mason 80	Gold Rush	Conventional				2.3 a	0.02 a	2.32 a	7.7 a	1.3 a	8.95 a	15.8 a	15.0 a	30.78 a
		CN9				0.9 b	0.03 a	0.93 b	3.6 b	0.50 b	4.08 b	12.6 a	13.5 a	26.08 a
		*$OSL_{0.05}$	---------	---------	---------	0.034	0.7040	0.019	0.008	0.044	0.007	0.1645	0.6875	0.4224
		†$LSD_{0.05}$				4.3	NS	0.692	2.0	0.7	2.32	NS	NS	NS
		¶CV (%)				24.6	26.1	20.7	15.9	37.0	15.8	21.2	38.1	29.27

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 10. Vegetative (V), reproductive (R), and total (T) magnesium uptake (kg/ha) as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 1			Sample Date 2			Sample Date 3			Sample Date 4		
			kg/ha											
			V	R	T	V	R	T	V	R	T	V	R	T
Perriconi	Sol Real	Conventional	0.238 a		0.238 a	5.16 a	0.122 a	5.3 a	14.1 a	3.0 a	17.1 a	24.0 a	12.5 a	36.5 a
		CN9	0.238 a		0.238 a	5.72a	0.156 a	5.8 a	15.5 a	3.1 a	18.61 a	23.2 a	11.2 a	34.4 a
		*$OSL_{0.05}$	0.9	---------	0.9	0.5186	0.3651	0.4561	0.3319	0.7648	0.3630	0.7035	0.2194	0.3457
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)	0		0	18.3	28.4	16.5	13.7	19.4	13.5	13.8	11.5	8.8
Bates	Ocotillo	Conventional	0.174 a		0.174 a	1.60 a	0.036 a	1.65 a	2.8 a	0.33 a	3.16 a	14.9 a	8.3 a	23.3 a
		CN9	0.174 a		0.174 a	1.60 a	0.036 a	1.65 a	2.8 a	0.44 a	3.24 a	14.2 a	6.3 a	20.4 a
		*$OSL_{0.05}$	0.9	---------	0.9	0.9	0.9	0.9	0.8705	0.3094	0.9328	0.5967	0.1190	0.0930
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)	0		0	0	0	0	22.2	28.8	22.2	12.9	18.4	7.5
West Kelly	Gold Rush	Conventional				3.0 a	0.15 a	3.15 a	5.69 a	1.55 a	7.24 a	15.0 a	8.2 a	23.20 a
		CN9				3.1 a	0.31 a	3.41 a	4.51 a	2.17 a	6.68 a	21.1 a	8.6 a	29.62 a
		*$OSL_{0.05}$	---------	---------	---------	0.9539	0.2082	0.9242	0.1069	0.0892	0.5254	0.4908	0.4908	0.5271
		†$LSD_{0.05}$				NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)				2.01	27.5	20.8	17.6	23.1	18.3	21.5	12.4	29.6
Mason 80	Gold Rush	Conventional				3.4 a	0.06 a	3.46 a	11.1 a	1.4 a	12.55 a	27.1 a	10.8 a	37.92 a
		CN9				3.3 a	0.09 a	3.39 a	8.3 b	0.9 a	9.250 b	27.8 a	12.0 a	39.86 a
		*$OSL_{0.05}$	---------	---------	---------	0.3368	0.4786	0.4226	0.0034	0.1290	0.005	0.8520	0.6386	0.7684
		†$LSD_{0.05}$				NS	NS	NS	1.1	NS	1.36	NS	NS	NS
		¶CV (%)				7.6	27.6	23.9	4.8	28.3	5.5	23.1	25.1	25.02

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 11. Vegetative (V), reproductive (R), and total (T) sulphur uptake (kg/ha) as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 1			Sample Date 2			Sample Date 3			Sample Date 4		
			kg/ha											
			V	R	T	V	R	T	V	R	T	V	R	T
Perriconi	Sol Real	Conventional	0.130 a		0.130 a	5.23 a	0.127 a	5.37 a	18.1 a	3.0 a	21.1 a	28.9 a	11.7 a	40.6 a
		CN9	0.130 a		0.130 a	6.15 a	0.172 a	6.34 a	22.0 a	3.5 a	25.5 a	26.5 a	10.9 a	37.4 a
		*$OSL_{0.05}$	0.9	---------	0.9	0.1344	0.4151	0.1147	0.13	0.2744	0.1225	0.5023	0.3390	0.4054
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)	0		0	9.3	24.1	8.9	16.1	16.9	15.1	18.9	11.3	14.6
Bates	Ocotillo	Conventional	0.095 a		0.095 a	1.50 a	0.036 a	1.54 a	2.76 a	0.33 a	3.1 a	13.9 a	7.9 a	21.7 a
		CN9	0.095 a		0.095 a	1.50 a	0.036 a	1.54 a	2.81 a	0.43 a	3.2 a	12.4 a	5.6 a	18.0 a
		*$OSL_{0.05}$	0.9	---------	0.9	0.9	0.9	0.9	0.9263	0.3262	0.8082	0.2890	0.1077	0.1058
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)	0		0	0	0	0	29.1	26.9	26.9	12.2	20.7	11.4
West Kelly	Gold Rush	Conventional				3.3 a	0.16 a	3.46 a	6.3 a	1.6 a	7.94 a	16.0 a	7.8 a	23.80 a
		CN9				3.7 a	0.30 a	4.00 a	4.8 a	1.7 a	6.54 a	23.3 a	7.6 a	30.92 a
		*$OSL_{0.05}$	---------	---------	---------	0.2394	0.4812	0.1762	0.1020	0.6224	0.1908	0.5462	0.4565	0.5603
		†$LSD_{0.05}$				NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)				20.7	20.4	21.9	20.5	20.1	19.4	28.9	9.9	25.9
Mason 80	Gold Rush	Conventional				2.77 a	0.06 a	2.83 a	9.1 a	1.5 a	10.69 a	24.4 a	10.1 a	34.92 a
		CN9				2.87 a	0.09 a	2.96 a	9.1 a	1.1 a	10.19 a	27.7 a	11.3 a	39.10 a
		*$OSL_{0.05}$	---------	---------	---------	0.8879	0.4425	0.8937	0.9854	0.1980	0.4052	0.3329	0.5476	0.3262
		†$LSD_{0.05}$				NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)				17.2	29.3	27.4	2.6	25.4	5.32	18.5	29.2	18.00

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 12. Vegetative (V), reproductive (R), and total (T) boron uptake (kg/ha) as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 1			Sample Date 2			Sample Date 3			Sample Date 4		
			kg/ha											
			V	R	T	V	R	T	V	R	T	V	R	T
Perriconi	Sol Real	Conventional	.0008 a		.0008 a	0.018 a	.0004 a	.0222 a	0.05 a	0.02 a	0.07 a	0.093 a	0.105 a	0.198 a
		CN9	.0008 a		.0008 a	0.022 a	.0006 a	.0187 a	0.06 a	0.02 a	0.08 a	0.112 a	0.106 a	0.218 a
		*$OSL_{0.05}$	0.9	---------	0.9	0.2799	0.3126	.2697	0.091	0.8929	0.2192	0.096	0.8790	0.1053
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)	0		0	17.9	20.7	15.5	12.8	19.1	13.1	13.4	11.3	7.4
Bates	Ocotillo	Conventional	0.017 a		0.017 a	0.008 a	0.003 a	0.009 a	0.016 a	0.003 a	0.019 a	0.06 a	0.07 a	0.137 a
		CN9	0.017 a		0.017 a	0.008 a	0.003 a	0.009 a	0.016 a	0.004 a	0.020 a	0.05 a	0.05 a	0.099 b
		*$OSL_{0.05}$	0.9	---------	0.9	0.9	0.9	0.9	0.8156	0.4047	0.9522	0.0880	0.0637	0.023
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	0.027
		¶CV (%)	0		0	0	0	0	27.5	24.8	25.7	12.3	20.0	10.17
West Kelly	Gold Rush	Conventional				0.011 a	0.001 a	0.012 a	0.02 a	0.01 a	0.034 a	0.05 a	0.06 a	0.111 a
		CN9				0.012 a	0.002 a	0.015 a	002 a	0.02 b	0.040 a	0.07 a	0.06 a	0.131 a
		*$OSL_{0.05}$	---------	---------	---------	0.2363	0.6121	0.7893	0.3609	0.026	0.2436	0.5864	0.6590	0.7422
		†$LSD_{0.05}$				NS	NS	NS	NS	0.005	NS	NS	NS	NS
		¶CV (%)				17.3	28.7	17.5	16.1	23.6	17.8	22.1	11.2	22.3
Mason 80	Gold Rush	Conventional				0.012 a	.0004 a	.0124 a	0.037 a	0.010 a	.047 a	0.15 a	0.08 a	0.226 a
		CN9				0.012 a	.0006 a	.0126 a	0.030 b	0.006 a	.036 b	0.12 a	0.09 a	0.211 a
		*$OSL_{0.05}$	---------	---------	---------	0.4410	0.4871	0.5286	0.026	0.1291	.015	0.2847	0.5410	0.6520
		†$LSD_{0.05}$				NS	NS	NS	0.003	NS	.0068	NS	NS	NS
		¶CV (%)				7.3	20.8	27.6	3.5	28.9	7.3	23.2	28.4	22.6

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 13. Vegetative (V), reproductive (R), and total (T) zinc uptake (kg/ha) as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 1			Sample Date 2			Sample Date 3			Sample Date 4		
			kg/ha											
			V	R	T	V	R	T	V	R	T	V	R	T
Perriconi	Sol Real	Conventional	.0008 a		.0008 a	0.024 a	.0005 a	.0242 a	0.04 a	0.03 a	0.07 a	0.067 a	0.158 a	0.225 a
		CN9	.0008 a		.0008 a	0.026 a	.0007 a	.0265 a	0.05 a	0.04 a	0.09 a	0.064 a	0.142 a	0.206 b
		*$OSL_{0.05}$	0.9	---------	0.9	0.6343	.4051	.5703	0.3084	0.4469	0.9253	0.7261	0.1937	0.0162
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	0.012
		¶CV (%)	0		0	18.2	26.1	16.8	14.7	24.1	16.6	14.9	10.5	3.3
Bates	Ocotillo	Conventional	.0005 a		.0005 a	0.008 a	.0022 a	0.011 a	0.012 a	0.005 a	0.017 a	0.05 a	0.10 a	0.144 a
		CN9	.0005 a		.0005 a	0.008 a	.0022 a	0.011 a	0.011 a	0.007 a	0.018 a	0.05 a	0.06 a	0.117 a
		*$OSL_{0.05}$	0.9	---------	0.9	0.9	0.9	0.9	0.6510	0.2347	0.7067	0.3898	0.0971	0.0998
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)	0		0	0	0	0	26.9	21.3	24.4	14.3	23.3	12.07
West Kelly	Gold Rush	Conventional				0.015 a	0.002 a	0.018 a	0.026 a	0.019 a	0.045 a	0.05 a	0.081 a	0.131 a
		CN9				0.013 a	0.005 a	0.018 a	0.013 b	0.024 a	0.037 a	0.07 a	0.095 a	0.165 a
		*$OSL_{0.05}$	---------	---------	---------	0.8680	0.7280	0.3934	0.0074	0.2081	0.1938	0.6314	0.5511	0.6081
		†$LSD_{0.05}$				NS	NS	NS	0.007	NS	NS	NS	NS	NS
		¶CV (%)				22.4	29.5	22.7	21.3	24.5	20.6	21.2	15.3	23.8
Mason 80	Gold Rush	Conventional				0.019 a	.0008 a	.0201 a	0.05 a	0.017 a	.0675 a	0.08 a	0.13 a	.2006 a
		CN9				0.012 a	.0010 a	.0130 a	0.03 a	0.011 a	.0407 a	0.07 a	0.12 a	.1960 a
		*$OSL_{0.05}$	---------	---------	---------	0.0954	0.4706	0.0863	0.0532	0.1113	0.0619	0.9507	0.9182	0.9208
		†$LSD_{0.05}$				NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)				24.9	26.3	23.5	23.4	26.9	24.1	23.6	23.9	24.04

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 14. Vegetative (V), reproductive (R), and total (T) iron uptake (kg/ha) as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 1			Sample Date 2			Sample Date 3			Sample Date 4		
			kg/ha											
			V	R	T	V	R	T	V	R	T	V	R	T
Perriconi	Sol Real	Conventional	0.018 a		0.018 a	1.52 a	0.037 a	1.553 a	1.7 a	0.19 a	1.91 a	3.12 a	0.567 a	3.68 a
		CN9	0.018 a		0.018 a	1.21 a	0.031 a	1.241 a	1.7 a	0.16 a	1.82 a	1.43 b	0.424 a	1.86 b
		*$OSL_{0.05}$	0.9	---------	0.9	0.7873	0.9418	0.7911	0.8447	0.3547	0.7889	0.009	0.4784	0.015
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	0.99	NS	1.24
		¶CV (%)	0		0	25.2	26.3	24.3	28.4	21.4	26.2	24.7	58.4	25.5
Bates	Ocotillo	Conventional	0.005 a		0.005 a	0.11 a	0.024 a	0.111 a	0.12 a	0.017 a	0.134 a	2.3 a	0.92 a	3.22 a
		CN9	0.005 a		0.005 a	0.11 a	0.024 a	0.111 a	0.17 a	0.028 a	0.202 a	3.3 a	0.78 a	4.08 a
		*$OSL_{0.05}$	0.9	---------	0.9	0.9	0.9	0.9	0.4023	0.3155	0.3196	0.4537	0.6323	0.5205
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)	0		0	0	0	0	24.5	27.4	25.2	27.7	24.9	24.6
West Kelly	Gold Rush	Conventional				0.089 b	0.019 a	0.108 a	0.50 a	0.07 b	0.567 a	2.08 a	0.70 a	2.78 a
		CN9				0.197 a	0.091 a	0.288 a	0.32 a	0.13 a	0.456 a	2.65 a	0.69 a	3.34 a
		*$OSL_{0.05}$	---------	---------	---------	0.0033	0.8741	0.1126	0.3008	0.0186	0.5086	0.7913	0.1954	0.8775
		†$LSD_{0.05}$				0.037	NS	NS	NS	0.05	NS	NS	NS	NS
		¶CV (%)				28.8	23.02	27.4	26.7	26.6	27.4	29.9	12.5	25.3
Mason 80	Gold Rush	Conventional				0.14 a	0.003 a	0.143 a	1.16 a	0.063 a	1.222 a	3.1 a	0.47 a	3.566 a
		CN9				0.11 b	0.004 a	0.114 b	0.85 a	0.040 a	0.893 a	3.2 a	0.66 a	3.906 a
		*$OSL_{0.05}$	---------	---------	---------	0.005	0.5531	0.05	0.2496	0.2753	0.2261	0.8733	0.4724	0.7733
		†$LSD_{0.05}$				0.011	NSS	0.021	NS	NS	NS	NS	NS	NS
		¶CV (%)				2.9	23.7	21.8	20.1	29.9	28.9	23.5	27.8	26.6

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 15. Vegetative (V), reproductive (R), and total (T) manganese uptake (kg/ha) as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 1			Sample Date 2			Sample Date 3			Sample Date 4		
			kg/ha											
			V	R	T	V	R	T	V	R	T	V	R	T
Perriconi	Sol Real	Conventional	.0017 a		.0017 a	0.05 a	.0011 a	.0485 a	0.105 a	0.016 a	0.121 a	0.165 a	0.061 a	0.227 a
		CN9	.0017 a		.0017 a	0.04 a	.0011 a	.0441 a	0.103 a	0.016 a	0.118 a	0.123 a	0.053 b	0.176 b
		*$OSL_{0.05}$	0.9	---------	0.9	0.8965	.6797	.9089	0.8877	0.7828	0.8655	0.0673	0.019	0.04
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	NS	0.007	0.047
		¶CV (%)	0		0	25.1	27.5	24.1	18.9	19.6	17.8	18.3	6.6	13.4
Bates	Ocotillo	Conventional	.0012 a		.0012 a	0.008 a	.0030 a	0.011 a	0.013 a	0.002 a	0.015 a	0.11 a	0.054 a	0.164 a
		CN9	.0012 a		.0012 a	0.008 a	.0030 a	0.011 a	0.013 a	0.002 a	0.015 a	0.13 a	0.046 a	0.176 a
		*$OSL_{0.05}$	0.9	---------	0.9	0.9	0.9	0.9	0.8406	0.4390	0.6907	0.3285	0.2956	0.3782
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)	0		0	0	0	0	12.6	21.5	15.9	24.5	17.1	13.2
West Kelly	Gold Rush	Conventional				0.016 a	.0007 a	0.017 a	0.039 a	0.009 a	0.048 a	0.12 a	0.05 a	0.170 a
		CN9				0.018 a	.0017 a	0.020 a	0.026 a	0.011 a	0.037 a	0.16 a	0.05 a	0.210 a
		*$OSL_{0.05}$	---------	---------	---------	0.1759	0.4852	0.1449	0.0935	0.2069	0.1974	0.6062	0.8563	0.6499
		†$LSD_{0.05}$				NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)				28.3	23.4	21.5	29.7	22.9	27.2	23.4	21.8	20.1
Mason 80	Gold Rush	Conventional				0.015 a	.0003 a	.0153 a	0.068 a	0.007 a	.0743 a	0.16 a	0.050 a	.2040 a
		CN9				0.013 a	.0004 a	.0134 a	0.053 b	0.005 a	.0577 b	0.18 a	0.062 a	.2393 a
		*$OSL_{0.05}$	---------	---------	---------	0.3905	0.4861	0.3812	0.024	0.2483	0.029	0.6170	0.3437	0.5101
		†$LSD_{0.05}$				NS	NS	NS	0.01	NS	0.0134	NS	NS	NS
		¶CV (%)				17.9	27.5	25.3	9.2	20.8	9.00	23.2	24.6	24.9

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 16. Vegetative (V), reproductive (R), and total (T) copper uptake (kg/ha) as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 1			Sample Date 2			Sample Date 3			Sample Date 4		
			kg/ha											
			V	R	T	V	R	T	V	R	T	V	R	T
Perriconi	Sol Real	Conventional	.0002 a		.0002 a	0.011 a	.0002 a	.0103 a	0.023 a	.0082 a	0.032 a	0.061 a	0.030 a	0.090 a
		CN9	.0002 a		.0002 a	0.010 a	.0003 a	.0122 a	0.027 a	.0113 a	0.038 a	0.059 a	0.031 a	0.091 a
		*$OSL_{0.05}$	0.9	---------	0.9	0.5124	.2924	.4637	0.1856	0.4258	0.2638	0.9101	0.9443	0.9233
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)	0		0	22.6	22.2	21.3	12.4	27.7	21.9	35.6	10.9	25.3
Bates	Ocotillo	Conventional	.0001 a		.0001 a	0.002 a	.0005 a	.0026 a	0.004 a	0.001 a	.0054 a	0.031 a	0.029 a	0.060 a
		CN9	.0001 a		.0001 a	0.002 a	.0005 a	.0026 a	0.004 a	0.001 a	.0054 a	0.038 a	0.024 a	0.062 a
		*$OSL_{0.05}$	0.9	---------	0.9	0.9	0.9	0.9	0.8470	0.6151	0.9552	0.2396	0.1955	0.4720
		†$LSD_{0.05}$	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)	0		0	0	0	0	17.3	24.5	19.4	18.3	16.7	3.77
West Kelly	Gold Rush	Conventional				0.006 a	.0005 a	.0065 a	0.012 a	0.006 a	0.018 a	0.046 a	0.028 a	.0740 a
		CN9				0.006 a	.0011 a	.0078 a	0.008 b	0.005 a	0.014 a	0.061 a	0.028 a	.0889 a
		*$OSL_{0.05}$	---------	---------	---------	0.2098	0.5633	0.3937	0.042	0.2282	0.1984	0.7345	0.6629	0.8021
		†$LSD_{0.05}$				NS	NS	NS	0.004	NS	NS	NS	NS	NS
		¶CV (%)				26.5	29.3	29.6	20.0	20.8	17.8	29.9	16.2	25.3
Mason 80	Gold Rush	Conventional				0.006 a	.0002 a	.0062 a	0.023 a	.0040 a	.0266 a	0.06 a	0.03 a	.0922 a
		CN9				0.005 a	.0004 a	.0054 a	0.017 a	.0032 a	.0204 a	0.07 a	0.04 a	.1070 a
		*$OSL_{0.05}$	---------	---------	---------	0.2275	0.3600	0.3169	0.0557	0.4430	0.0526	0.7192	0.3006	0.5374
		†$LSD_{0.05}$				NS	NS	NS	NS	NS	NS	NS	NS	NS
		¶CV (%)				12.5	29.9	23.6	12.8	22.4	11.9	28.6	22.2	24.9

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 17. Nitrogen uptake (kg/ha) in the rind (r) and flesh (f) of melons as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 3		Sample Date 4	
			r	f	r	f
Perriconi	Sol Real	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	10.384 a 14.011 a 0.1128 NS 23.2	12.165 a 14.165 a 0.1932 NS 20.7	28.911 a 36.251 a 0.6110 NS 29.9	49.07 a 43.3 a 0.6736 NS 23.3
Bates	Ocotillo	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	27.548 a 21.753 a 0.3235 NS 28.2	25.917 a 23.171 a 0.6846 NS 25.3
West Kelly	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	21.197 a 23.845 a 0.8029 NS 6.6	29.139 a 32.018 a 0.4295 NS 11.8
Mason 80	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	28.338 a 30.052 a 0.5541 NS 14.4	42.03 a 43.01 a 0.9441 NS 28.8

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 18. Phosphorous uptake (kg/ha) in the rind (r) and flesh (f) of melons as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 3		Sample Date 4	
			r	f	r	f
Perriconi	Sol Real	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	2.1979 a 2.5179 a 0.1804 NS 13.2	2.5485 a 2.9615 a 0.2132 NS 16.0	5.880 a 6.400 a 0.8083 NS 21.5	8.707 a 6.985 a 0.4661 NS 23.1
Bates	Ocotillo	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	5.497 a 4.330 a 0.1623 NS 18.2	4.486 a 3.871 a 0.6774 NS 25.3
West Kelly	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	4.689 a 5.844 a 0.2368 NS 10.3	5.613 a 5.905 a 0.7092 NS 13.7
Mason 80	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	5.293 a 4.913 a 0.4605 NS 14.4	6.487 a 7.396 a 0.7072 NS 21.3

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 19. Potassium uptake (kg/ha) in the rind (r) and flesh (f) of melons as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 3		Sample Date 4	
			r	f	r	f
Perriconi	Sol Real	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	22.41 a 25.70 a 0.2354 NS 15.5	20.28 a 24.15 a 0.2792 NS 22.1	55.46 a 67.73 a 0.5602 NS 14.5	89.86 a 82.34 a 0.7385 NS 29.1
Bates	Ocotillo	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	47.121 a 38.299 a 0.3824 NS 28.6	49.25 a 45.20 a 0.6100 NS 28.4
West Kelly	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	40.038 a 46.977 a 0.9350 NS 8.5	49.956 a 59.470 a 0.1729 NS 9.1
Mason 80	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	42.467 a 51.242 a 0.1539 NS 16.9	61.71 a 61.33 a 0.9841 NS 26.3

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 20. Calcium uptake (kg/ha) in the rind (r) and flesh (f) of melons as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 3		Sample Date 4	
			r	f	r	f
Perriconi	Sol Real	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	2.805 a 3.450 a 0.1368 NS 17.5	2.053 b 3.039 a 0.0179 0.706 15.8	7.694 b 12.682 a 0.02 2.97 21.5	9.036 a 3.837 a 0.2986 NS 10.6
Bates	Ocotillo	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	9.347 a 8.075 a 0.3823 NS 20.2	3.533 a 2.658 a 0.4949 NS 21.6
West Kelly	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	7.686 a 9.323 a 0.4805 NS 22.1	4.048 a 3.316 a 0.5155 NS 26.9
Mason 80	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	8.975 a 9.831 a 0.4258 NS 16.3	4.154 a 5.717 a 0.2974 NS 21.8

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 21. Sodium uptake (kg/ha) in the rind (r) and flesh (f) of melons as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 3		Sample Date 4	
			r	f	r	f
Perriconi	Sol Real	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	0.7933 a 1.0840 a 0.0811 NS 21.1	0.36925 0.45148 0.3783 NS 22.01	2.347 a 4.238 b 0.04 1.11 15.4	3.365 a 2.699 a 0.6230 NS 25.3
Bates	Ocotillo	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	5.673 a 3.469 a 0.2020 NS 21.9	2.83 a 1.89 a 0.2794 NS 22.5
West Kelly	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	4.775 a 5.191 a 0.8870 NS 21.9	3.098 a 3.059 a 0.8769 NS 29.7
Mason 80	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	4.144 a 5.504 a 0.1591 NS 23.7	4.318 a 3.721 a 0.7414 NS 26.3

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 22. Magnesium uptake (kg/ha) in the rind (r) and flesh (f) of melons as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 3		Sample Date 4	
			r	f	r	f
Perriconi	Sol Real	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	1.4432 a 1.7129 a 0.1574 NS 15.6	1.4779 a 1.8600 a 0.1166 NS 18.1	4.210 a 6.283 a 0.0982 NS 19.7	5.953 a 4.371 a 0.4377 NS 26.3
Bates	Ocotillo	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	4.29 a 3.16 a 0.1488 NS 22.1	2.945 a 2.356 a 0.5568 NS 27.6
West Kelly	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	3.362 a 4.280 a 0.4150 NS 14.5	3.3126 a 3.6328 a 0.7058 NS 15.2
Mason 80	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	4.411 a 4.367 a 0.9354 NS 18.1	3.913 a 4.466 a 0.6788 NS 26.9

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 23. Sulphur uptake (kg/ha) in the rind (r) and flesh (f) of melons as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 3		Sample Date 4	
			r	f	r	f
Perriconi	Sol Real	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	1.5985 a 2.1609 b 0.0291 0.47 14.2	1.414 a 1.848 a 0.0698 NS 17.1	3.965 a 5.690 a 0.2056 NS 24.7	5.689 a 5.152 a 0.7111 NS 21.7
Bates	Ocotillo	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	3.989 a 2.767 a 0.1627 NS 27.8	2.923 a 2.273 a 0.4820 NS 24.2
West Kelly	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	3.1902 a 3.944 a 0.3394 NS 12.1	3.098 a 3.343 a 0.4444 NS 14.4
Mason 80	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	4.014 a 4.227 a 0.6448 NS 16.4	4.133 a 4.428 a 0.8197 NS 24.7

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 24. Boron uptake (kg/ha) in the rind (r) and flesh (f) of melons as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 3		Sample Date 4	
			r	f	r	f
Perriconi	Sol Real	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	0.01482 a 0.01627 a 0.3591 NS 14.2	0.011344 a 0.014012 a 0.1894 NS 21.0	0.0395 a 0.0581 a 0.0749 NS 18.07	0.0540 a 0.0425 a 0.5586 NS 29.5
Bates	Ocotillo	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	0.0317 a 0.0254 a 0.2850 NS 24.0	0.0227 a 0.0186 a 0.5212 NS 28.2
West Kelly	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	0.0255 a 0.0314 a 0.7255 NS 14.3	0.0221 a 0.0258 a 0.6651 NS 19.1
Mason 80	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	0.0324 a 0.0345 a 0.6070 NS 17.9	0.03068 a 0.02902 a 0.8429 NS 21.5

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 25. Zinc uptake (kg/ha) in the rind (r) and flesh (f) of melons as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 3		Sample Date 4	
			r	f	r	f
Perriconi	Sol Real	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	0.013264 a 0.015207 a 0.2935 NS 17.9	0.017920 a 0.022399 a 0.1105 NS 16.9	0.0339 a 0.0402 a 0.7193 NS 20.2	0.0611 a 0.0711 a 0.5766 NS 29.7
Bates	Ocotillo	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	---------- 	---------- 	0.0324 a 0.0257 a 0.1880 NS 18.9	0.0459 a 0.0386 a 0.5697 NS 28.3
West Kelly	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	---------- 	---------- 	0.0287 a 0.0370 a 0.6341 NS 26.3	0.0512 a 0.0504 a 0.9659 NS 29.6
Mason 80	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	---------- 	---------- 	0.0326 a 0.0369 a 0.4975 NS 26.4	0.06622 a 0.05436 a 0.4917 NS 21.1

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 26. Iron uptake (kg/ha) in the rind (r) and flesh (f) of melons as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 3		Sample Date 4	
			r	f	r	f
Perriconi	Sol Real	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	0.10265 a 0.13974 a 0.1156 NS 24.1	0.08817 a 0.11727 a 0.1394 NS 24.3	0.885 a 0.229 a 0.3705 NS 19.6	0.2072 a 0.2746 a 0.6343 NS 26.0
Bates	Ocotillo	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	0.2586 a 0.2677 a 0.9152 NS 22.3	0.1894 a 0.1439 a 0.4017 NS 29.6
West Kelly	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	0.2355 a 0.2522 a 0.9751 NS 26.6	0.1411 a 0.1685 a 0.3746 NS 15.1
Mason 80	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	0.1699 a 0.1953 a 0.5041 NS 20.0	0.1451 a 0.1399 a 0.8980 NS 21.9

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 27. Manganese uptake (kg/ha) in the rind (r) and flesh (f) of melons as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 3		Sample Date 4	
			r	f	r	f
Perriconi	Sol Real	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	0.0073125 a 0.0089385 a 0.1255 NS 16.4	0.008866 a 0.110746 a 0.0739 NS 12.6	0.0218 a 0.0211 a 0.8426 NS 23.2	0.0269 a 0.0219 a 0.4990 NS 23.3
Bates	Ocotillo	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	0.0198 a 0.0186 0.6839 NS 17.3	0.01455 a 0.01274 a 0.6783 NS 20.9
West Kelly	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	0.0182 a 0.0197 a 0.6363 NS 17.1	0.0153 a 0.0163 a 0.7042 NS 13.2
Mason 80	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	0.0136 a 0.0187 a 0.1563 NS 28.9	0.0212 a 0.0194 a 0.8014 NS 21.6

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.

Table 28. Copper uptake (kg/ha) in the rind (r) and flesh (f) of melons as affected by a conventional and CN9 treatments for various sites in Yuma Valley, AZ, 2005.

Site	Variety	Treatment	Sample Date 3		Sample Date 4	
			r	f	r	f
Perriconi	Sol Real	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	0.0034995 a 0.0040774 a 0.2032 NS 15.9	0.0048115 b 0.0070910 a 0.0189 0.0017 15.9	0.0114 a 0.0121 a 0.9834 NS 20.02	0.0146 a 0.0189 a 0.3082 NS 24.6
Bates	Ocotillo	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	0.0089 a 0.0074 a 0.2707 NS 18.8	0.0108 a 0.0104 a 0.9126 NS 23.9
West Kelly	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	0.0071 a 0.0091 a 0.2913 NS 13.17	0.01227 a 0.01328 a 0.6903 NS 13.6
Mason 80	Gold Rush	Conventional CN9 *$OSL_{0.05}$ †$LSD_{0.05}$ ¶CV (%)	----------	----------	0.0084 a 0.0104 a 0.1001 ND 15.5	0.01789 a 0.01825 a 0.9557 NS 22.4

§NS = not significant; *OSL = Observed Significant Difference; ¶CV = Coefficient of Variation; †LSD = least significant difference - means followed by the same letter are not significantly different according to a Fisher's means separation test.