Plums

Effect of Converted Organics™ XP on the Quality and Size of Plums

California produces 93% of the plums in the United States, representing almost $90 million in sales according to the California Department of Food and Agriculture statistics (2003). Growers are constantly looking for ways to improve harvest yields, crop quality and plant uniformity, in addition to reducing fertilizer and pesticide usage plus protecting the largest investment of all – their soil.

BACKGROUND

Product testing was conducted on four year old plum trees (October Sun) during the 2003 season. The trial was conducted to compare the efficacy of an organic 1-8-0 product, *Converted Organics™ XP* against a conventional 1-3-10 fertilizer with a humic acid product. The 10 acre plot was divided into equal 5 acre parcels. One parcel received the organic product and the other parcel received the conventional product. The *Converted Organics™ XP* was side dressed on top of the furrows at a rate of 50 gallons per acre (gpa) at approximately 50 days before harvest and just before flood irrigation. The other parcel of the orchard received 50 gpa of conventional liquid fertilizer (1-3-10) and 1 gpa of HA-45 (a humic acid product). Each parcel in the orchard was irrigated as per the growers' standard program (see Table 1).

Table 1: Plum Trial Conditions

Product Tested	Converted Organics™ XP
Crop	Plums (October Sun)
Soil Type	Clay Loam
Irrigation Schedule	Every other row every week
Planting Date	1999
Application Date	07/26/03
Application Schedule	50 gpa
Growers Standard Program	50 gpa of 1-3-10, 1 gpa HA-45
Application Method	Side dressed on top of furrow, followed with flooding
Treatment Location	5 acres treated, 5 acres control
Harvest Date	09/15/03 to 09/16/03

DATA COLLECTION and ANALYSIS

Two weeks before harvest (5 weeks after application) fruit size from each side of the orchard was tested by measuring the outside, lateral diameter (girth) of the plums with a set of calipers. From each treatment side of the orchard 3 trees from different rows were chosen at random. Seventy two consecutive plums were measured on each tree, starting always on the south side of the tree. All measurements from each treatment were pooled and subjected to the paired samples t-test analysis (see Table 2). During harvest the two lots were kept and processed separately. After harvest, the grower submitted his pack-out report as generated by the packing house (see Table 3).

Table 2: Effect of Converted Organics™ XP on size of Plums[1]

Treatment	Mean (mm)	SD (mm)	t-statistic	2-tailed p[2]
Converted Organics™ XP, treated	59.70	3.82	14.80	<0.0001
Control[3]	54.22	4.08		
Difference	5.48	5.45		

[1] Sample size (n) = 216 plums measured in each group
[2] 100-p = Statistical level of confidence (i.e. confidence >99.9999%)
[3] Control fertilizer was a chemical mixture of 1-3-10 & HA-45

Table 3: Effect on Size of Plums Converted Organics™ XP v. Conventional Fertilizer (1-3-10) w/ Humic Acid

Parameter	Converted Organics™ XP US #1 (ctn)	Converted Organics™ XP Utility (ctn)	GSP US #1 (ctn)	GSP Utility (ctn)
25's		74	43	31
30's	126	204	122	75
35's	441	535	424	292
45's	245	414	451	228
55's	8	9	28	13
65's	48	52	94	69
Total (ctn)	868	1288	1162	708
Price ($/ct)	$12	$8	$12	$8
Revenue ($)	$10,416	$10,304	$13,944	$5,664
Total Revenue		$20,720		$19,608
Total acres		5		5
Yield ($/acre)		$4,144		$3,921
Gain (Loss) ($/acre)		**$222.40**		

CONCLUSIONS

It is more than 99.9999% certain that using *Converted Organics™ XP* at a rate of 50 gpa, 50 days before harvest resulted in **statistically significant increase in fruit diameter**, 2 weeks before harvest, of October Sun plums as compared with a conventional blend of 1-3-10 and HA-45 (humic acid). The return on investment when replacing the growers' standard program 1-3-10 ($1.00/gallon) fertilizer with *Converted Organics™ XP,* provided a **net gain of $147.40 per acre**.

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