SDWA 114

LABORATORY ANALYSIS REPORT EVALUATION

JOHN TAYLOR FERTILIZERS

Fieldman: Albert Giannecchini **Customer: ABF**

Sample ID: 19

Sample Date: August 31, 2001

Soil: **Tissue:** X **Water:**

Crop: Walnut

As suspected by visual examination these young trees are suffering from acute chloride toxicity. The toxicity threshold for chloride in walnuts is 0.3%. At existing levels of 2.75% the source of chloride accumulation must be determined and aggressive corrective measures must be implemented or risk significant mortality. Steps should include periodic monitoring of irrigation water particularly if salt-water intrusion is suspected. Backhoe pits should be excavated this fall to observe the soil profile and collect soil samples at various depths to identify where in the profile Cl has accumulated. Some form of subsurface drainage systems may need to be installed to prevent this event from reoccurring in the future.

REPORT NUMBER

01-248-016

A & L WESTERN AGRICULTURAL LABORATORIES

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Client No: 1420

SEND TO:

JOHN TAYLOR FERTILIZERS
PO BOX 15289
SACRAMENTO, CA 95851-

GROWER: ABF

SAMPLES SUBMITTED BY:

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PLANT ANALYSIS

SAMPLE NUMBER	REPORT OF ANALYSIS IN PERCENT									REPORT OF ANALYSIS PARTS PER MILLION							
	N NITROGEN	S SULFUR	P PHOSPHORUS	K POTASSIUM	Mg MAGNESIUM	Ca CALCIUM	Na SODIUM	Cl CHLORIDE	Fe IRON	Al ALUMINUM	Mn MANGANESE	B BORON	Cu COPPER	Zn ZINC	NO_3-N NITRATE NITROGEN	
19								2.75								

Sample # 19 | Date 08/31 | Lab # 47275 | Crop WALNUTS | Stage/Part

DEFINITION OF INTERPRETATION RATINGS

When interpretation of plant analysis results are given, they will be listed as follows:

D or Deficient	Plants should be showing visible symptoms of a nutritional deficiency. Plant growth would definitely be curtailed by an insufficient amount of this element.
L or Low	Plants may be normal in appearance but probably will be responsive to fertilization with this element.
S or Sufficient	Plants contain adequate amounts of this element for maximum yield and are normal in appearance.
H or High	Optimum yields can be expected and plants are normal in appearance. However, concentrations of this element are higher than normally anticipated.
E or Excessive	Plants probably show symptoms of a nutritional disorder or stunted growth. Yields may be reduced significantly by an excessive amount of this element.

This report applies only to the sample(s) tested. Samples are retained a maximum of thirty days after testing.

A & L WESTERN AGRICULTURAL LABORATORIES

By MIKE DUTTWEILER, CPAg

Chloride Toxicity

The 2.0% Cl found in the most recent leaf sample clearly indicates a chloride toxicity. No chloride containing fertilizers have been applied so the source is either naturally in the soil or is carried in the irrigation water. The portable EC meter I used to test puddles formed below emitters revealed a water EC of approximately 1.0. This is higher than desired and it is possible that we are experiencing salt intrusion from the river. Complicating the problem is the deficit irrigations being practiced. As we dry down the soil the amount of salt remains static but the CONCENTRATION in the soil water increases, thus the accumulation in plant tissues. In arid climates where crops are grown using saline water, such as in Israel, they minimize salt damage by maintaining adequate soil moisture and avoiding dry down. This is a dilemma for ABF as they need to deliberately stress the vines for quality but by doing so they may be exaggerating salt injury. We may wish to excavate a few backhoe pits this fall-winter to explore the soil profile looking for layers that may be restricting leaching of salts as well as collect soil samples throughout the profile to determine where salts are accumulating.

TO: Albert Giannecchini

FROM: Carl Bruice

DATE: September 6, 2001

SUBJECT: ABF Grape Issues