April 21, 1987

MEMO TO: Pistachio Farm Advisor

FROM: Louise Ferguson
Extension Horticulturist

These are the new pistachio nutrient deficiency guides. These 5 copies are free to you. Otherwise, they can be obtained from me at $2.50 per copy. They were printed by California Pistachio Commission. Companion insect and fungal disease guides will follow.

LF: lrs

Enclosures
MINERAL NUTRIENT DEFICIENCY SYMPTOMS IN PISTACHIOS

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Deficiency symptoms of nitrogen (N), potassium (K), calcium (Ca) and magnesium (Mg) were developed on plants grown by a water culture method. Zinc (Zn) and boron (B) deficiency symptoms were found on trees in the field.

Nitrogen

Delayed bud break; short, thin shoots with reddish bark; small, but normal-shaped, pale-green leaves with reddish veins and petiole; leaves become reddish to yellow with time; early senescence.

Phosphorus

Delayed bud break; dull-green foliage; light-brown irregularly shaped necrotic spots (leaf-burn) close to the margins of lower leaves on the shoots, enlarging later in the season to cover most of the leaflets; later, these leaves dehydrate and shed.

Potassium

"Leaf-scorch;" pale-green leaves with marginal fading and interveinal chlorotic spots; later, margin becomes scorched; pale-green to whitish petioles.
**Calcium**

Severely reduced shoot growth; leaves are few, small and roundish; leaves cupped with marginal chlorosis; dehydration and shedding of basal leaves; shoot dieback.

**Magnesium**

Sparse foliage; pale-green leaves; marginal chlorosis becoming necrotic and light-brown in color, frequently leaving an inverted V-shaped green area at base of leaflet; small, dark-brown spots appear in the blade as scorching advances; basal defoliation.

**Boron**

"Crinkle-leaf;" delayed bud break; short internodes; "rosetting;" bushy type appearance; thickened, twisted, cupped, wrinkled, brittle, distorted, irregular-shaped leaves; death of apical buds and severe shoot-dieback. Deficiency symptoms can be expected to appear when leaf B concentrations are below 60 ppm in early summer or 70 ppm in late summer.

**Zinc**

"Little-leaf;" delayed bud break; short internodes; tufted appearance; wavy leaf margin; reddish petioles, leaves and shoot bark. Deficiency symptoms can be expected to appear when leaf Zn concentrations are below 7 ppm.
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