

PREFACE

In the 14 years since this book came out there have been advances in soil and plant nutrition. Rather than rewrite the whole book please add the following supplements to the four chapters:

Water Quality (Chapter 1)

Gypsum machines (that feed and dissolve finely ground gypsum into irrigation water) have greatly improved water quality in many instances and are widely used in California. Get the latest (1989) edition of the FAO water quality publication, and see page 94 for an interesting discussion of magnesium, (a Mg: Ca ratio greater than 1 can be detrimental)

Potassium (Chapter 7)

The main need for potassium is during sizing of the fruiting parts of plants. Supplemental K at this time has shown significant yield benefits. Water-run K applications are widely used and K foliar sprays have shown merit (although foliar sprays can supply only a fraction of K needs).

Calcium (Chapter 9)

A lot of work has been done on calcium since 1980, but scratch the list of 5 disorders on page 90 as most or all of them are not related to calcium. Calcium stress problems have been associated with high N levels so often, that some disorders could be considered high-N disorders. Anything that increases vegetative growth will increase calcium disorders since growing points compete with fruiting parts for calcium. Most calcium disorders began showing up only after the widespread use of nitrogen in agriculture. Solving calcium related disorders still remains a difficult problem; breeding tolerant varieties (which should also be tolerant to high N) is the likely solution; growth suppressing chemicals represent another possible solution.

Foliar Fertilization (Chapter 18)

The statement on page 90 that "Urea sprays have not been effective on stone fruits" is incorrect. Some excellent work by Scott Johnson (U.C., Kearney Center) has shown that urea sprays are effective on stone fruit trees (including almonds). Other work (by Carol Lovatt, U.C., Riverside) has shown that urea sprays can increase flowering and fruit set on citrus (and other crops). Fall boron sprays continue to show benefits on deciduous fruit trees.

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