

NEW YORK FRUIT QUARTERLY

Editorial

Mineral Nutrition in the Modern Orchard

Springtime brings numerous orchard tasks like pruning, fertilizing, weed control and pest control. For experienced growers, the tasks of the new growing season are part of a comfortable and familiar routine. Each year, new problems such as insect or disease outbreaks and weather challenges keep growers from becoming complacent. Fortunately, research continues to provide new answers to both old and new problems faced by growers. Hopefully, the new answers will keep us one step ahead of the problems. It is our job in research and extension to educate growers about the new answers garnered from research. Many of these are presented at winter fruit schools and other workshops over the winter season. Fruit growers in New York have a long tradition of attending these educational events, and trying to improve their orchard management practices.

Many growers pay keen attention to advances in new pesticides and growth regulators, but the topic of mineral nutrition has become stagnant for many people because little seems to change from year to year. Although many of the dramatic advances in mineral nutrition were made years ago, there continues to be significant advances that all growers should pay attention to. In recent years, much of the focus has been on the environmental impacts of modern fertilization practices. This has given rise to the term “nutrient management” instead of fertilization.

Modern nutrient management is based on understanding the plant’s need for each nutrient and then supplying it at the right time of year in an environmentally safe manner. Greater emphasis on environmentally responsible fertilization programs has arisen from the excessive use of fertilizers which has resulted in leaching of nutrients (primarily nitrogen) into the ground water, and the contamination of surface water resources by runoff.

Fortunately for fruit growers, the soil management systems used in orchards incorporate many good soil and nutrient management characteristics. Fruit orchards, then, have one of the least negative impacts on the environment of any agricultural crop. Using sod-row middles limits surface runoff of applied fertilizers, and the lack of soil tillage limits soil and nutrient erosion. In addition, the negative impact of high nitrogen on fruit quality has limited the excessive use of nitrogen on fruit trees as growers have become more conscious of high fruit quality.

Yet we must continue to ask ourselves this question—can we improve the soil and nutrient management systems we are currently using? The question is important from a fruit production/quality standpoint because high yield and fruit quality are so important to the successful marketing of apples, but the question is also important from an environmental perspective. Environmental impact issues are becoming more important for the successful marketing of apples with the institution of Eurepgap certification for export apples.

Both this issue and the next of the *NY Fruit Quarterly* focus on mineral nutrition and fertilization of apple and pear. The collection of papers was developed for the 2003 in-depth winter fruit school held in both Eastern and Western New York. These papers represent up-to-date research along with the current recommendations from Cornell for managing mineral nutrients in the orchard. The focus is still on nutrient management to improve yield or fruit quality, but you will also find a common and significant thread of environmental stewardship throughout the papers. Although the basics of mineral nutrition have not changed, I hope these papers will help you evaluate your mineral nutrient management program and incorporate the latest research-based methods of managing nutrients in an environmentally safe and profitable manner.

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FRONT COVER: Nutrient management is based on the apple trees need for nutrients and minerals. This entire issue is devoted to that topic.

BACK COVER: Spring planting reminds us that damage from inadequate nutrient management will result in late-season symptoms.

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