

# Boron and apples – a healthy combination

Solubor® DF helps apples reach their very best

Mark Moore

The next time you bite into that big, juicy apple, it's certain that boron played a key role in its development. The same qualities you look for in an apple – large, uniform, free from blemishes and disease – are the same qualities that help an apple grower get the most profit. Fruit growers know boron nutrition is important for fruit quality and a high value crop.

## The apple of the producer's eye

This spring, Borax introduced a revolutionary new foliar boron product for fruit growers in North America. *Solubor* DF, developed in Europe by Borax, is the world's first and only dry-flowable foliar boron micronutrient. What's dry-flowable technology? Imagine a dust-free product that pours from a bag as easy as a liquid pours from a jug. In a nutshell, that's *Solubor* DF. *Solubor* DF joins *Solubor*, *Fertibor*® and *Granubor*® agricultural borates as quality, effective sources of 100 percent water-soluble boron.

## Boron keeps the deformity away

Here's where boron plays a significant role. Boron is one of 16 nutrients essential to all plants. Fruit trees need a constant supply of boron during all stages of growth, especially during flowering and fruit development. Without boron, root growth stops. New leaves and shoots become deformed and chlorotic, fruit set is light or non-existent, and fruit quality suffers.

In addition to apples, boron deficiency also is seen in crops like cherries, pears and nuts. Symptoms include poor fruit or nut set, pitting, internal corking, and poor fruit or nut development. When soils are dry and trees are stressed, the effects of boron deficiency are even more pronounced.

## Bringing forth fruit

Borax is in the forefront of delivering quality, economical and effective borate products to the fruit tree grower. The company invests in numerous research projects that determine the nutritional value of boron, and the most efficient and effective application rates and timing.

Research with apples has shown that proper timing of boron application is key. Ideally, an application of boron before flowering provides optimum fruit set and retention. Boron is also applied in May and June with the foliar nutrient calcium. For early season apples, boron can be applied post-harvest to provide adequate nutrition as buds begin to develop for the next crop.



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Apples require boron throughout the growing season.



### **Easy as pie**

*Solubor* DF was developed to meet the needs of today's agricultural producer by providing an economical and effective foliar boron product that's as convenient and easy to use as a liquid product. *Solubor* DF is concentrated with 17.5 percent boron. That's 75 percent more boron than the most popular 10 percent-boron liquid products, and *Solubor* DF can cover 50 percent more acres than an equal weight of liquid boron.

Producers benefit from ease of handling, mixing and measuring. Because it is a dry-flowable formulation, *Solubor* DF can be packaged in easy-to-use bags. Bags eliminate triple-rinsing and disposal problems that occur with liquid product jugs and buckets. Dry-flowable products are also easier to clean up. If *Solubor* DF is spilled, it is easily swept up. That's not an option with liquid products.

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### **Growers pick Solubor DF**

Independent market research in North America helped spur the introduction of *Solubor* DF. This research indicated that growers understand and like dry-flowable formulations. Growers who participated in the 1999 field test were very receptive to the introduction of *Solubor* DF. And, the product has been well received in Europe for the past three years.

The 1998 U.S. apple crop was valued at U.S. \$1.4 billion, according to the U.S. Department of Agriculture. Producers don't like taking risks with high-value crops like this. They want products that are effective, convenient to use, and give them a high return. *Solubor* DF provides these benefits, as well as being an economical alternative for foliar application. *Solubor* DF will play a key role for growers who understand the value of boron nutrition for increased yields of high-quality fruit.

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*Photos courtesy of the California Apple Commission, Washington State Apple Commission and F.J. Peryea, Washington State University*