



UNIVERSITY of CALIFORNIA

# Agriculture & Natural Resources

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COOPERATIVE EXTENSION • YOLO COUNTY

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## **BORON: WHAT IS IT AND WHY SHOULD YOU CARE?**

Boron is a salt that exists in our underground water sources in Davis and in Woodland. Our wells are supplied by an outflow from Cache Creek and that water has filtered through rock formations and streams that are high in boron as well as other minerals.

Boron is an essential plant nutrient and is deficient in some Northern California soils. In parts of Yolo County, however, boron tends to build up in finer-textured (clay) and other slow-draining soils. When boron accumulates in these soils, plants that are sensitive to these conditions begin to show symptoms such as burned leaf margins. Dead areas may appear on older leaves of plants such as camellias or holly.

Watering lightly and frequently promotes deposition of boron and other salts in the root zones of plants. Boron is washed away from the root zones by watering more thoroughly and less frequently. Thus, periodic flooding of sensitive plants can help move the boron out of the root zone. Low boron winter rains help to leach out salts more effectively, so plants shielded from rain by roof overhangs may exhibit more serious symptoms. Conversely, planting salt-sensitive plants next to downspouts will assist in leaching of damaging salts by rainwater. Some people collect rainwater for use on sensitive plants during dry weather. Houseplants will also benefit from the use of rainwater, as their confinement in limited soil volume accentuates problems from boron and other salts in our tap water.

Although boron is leachable, removing this salt is more difficult than removing other salts such as chloride. This is because the borate ion binds to organic matter in the soil; thus, when you wash out the boron from the soil, additional boron may come from organic material to replace it. Thus frequent leaching with low boron water (such as rainwater) may be required. Organic soil amendments can help open up heavy clay soils and allow water to move through root zones more quickly, thus assisting in leaching excess boron. Amending soil with the addition of gypsum is often believed to improve water penetration but does so only in certain soils, such as those that contain high sodium.

Some plants that are particularly sensitive to boron include citrus, avocado, beans, camellias and azaleas, Japanese maples and gardenias. Native plants often are more tolerant but are not exclusively so. It may be best to check with a local nurseryman to determine if a specific plant will perform well in high boron soil.

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