HOW PLANTS USE BORON

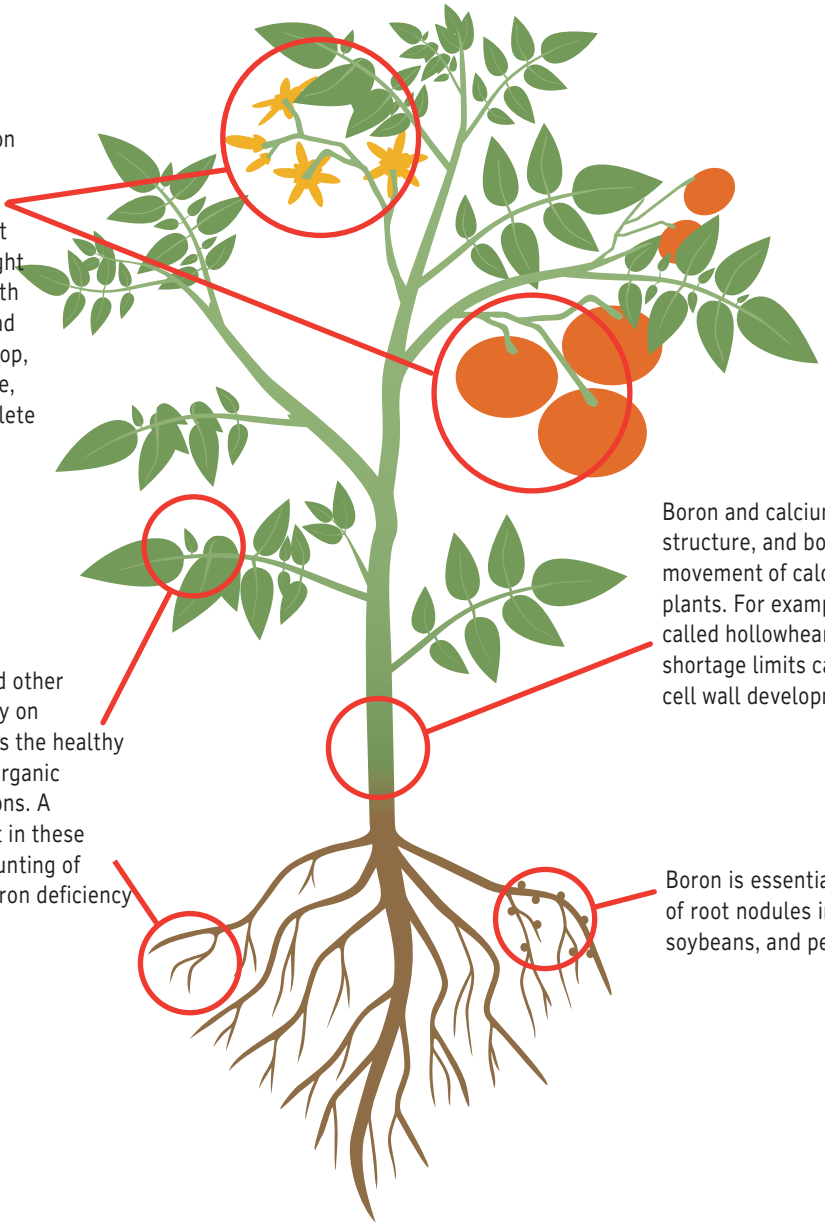
Although the first verifiable use of borates dates back to the 8th century, mankind has relied on them unknowingly since the advent of agriculture, nearly 10,000 years ago. In fact, plants cannot grow without boron. Boron is an essential micronutrient, integral to a plant's life cycle.

Required only in small amounts, boron is necessary in plants to control flowering, pollen production, germination, and seed and fruit development. It also acts as a fuel pump, aiding the transmission of sugars from older leaves to new growth areas and root systems.

Adequate boron is a crucial factor in high crop yields and quality. Existing research indicates that boron plays a significant role in:

- The strength of plant cell walls
- Membrane function and cell division
- Stimulation/inhibition of metabolic pathways
- Development of fl owers and fruit
- Both new and reproductive growth

Boron plays an important role in regulating plants' hormone levels and promoting proper growth. Boron increases flower production and retention, pollen tube elongation and germination, and seed and fruit development. Deficiencies that might not seem to affect vegetative growth might show up in poor fruit, nut, and seed production, bud and flower drop, and poor quality crops. For example, boron deficiency can cause incomplete pollination of corn or prevent maximum pod set in soybeans.



Boron and calcium are involved in cell wall structure, and boron facilitates the movement of calcium into and within plants. For example, a peanut ailment called hollowheart can occur when a boron shortage limits calcium movement, normal cell wall development, and cell division.

Root tips, new leaves and buds, and other active parts of the plant rely heavily on adequate boron. Boron also ensures the healthy transport of water, nutrients, and organic compounds to these growing portions. A shortage of boron will show up first in these areas. For example, rosetting or stunting of plants is a common symptom of boron deficiency in alfalfa, clovers, and legumes.

Boron is essential for normal development of root nodules in legumes such as alfalfa, soybeans, and peanuts.

20 MULE TEAM BORAX™