Potassium Critical Component In Maintaining Healthy Vines

ANDY ANDREWS
Editor

LANCASTER (Lancaster Co.) — You say your grapes don't look healthy? Harvest may be down?

The answer could be a simple lack of potassium in the vine's diet, noted several grape-growing specialists.

According to Dr. Tim Martinson, entomologist with the Finger Lakes Grape Program, and Hans Walter-Peterson, Cornell University Fredonia Vineyard Lab, vines are a major "sink" for potassium. Potassium hunger signs can make themselves seen readily in the plant.

Both spoke in mid-November this year at the Pennsylvania Association of Winegrowers (PAW) annual meeting at the Farm and Home Center in Lancaster. They spoke to about 70 PAW members and agri-industry representatives.

According to Martinson, waiting to see signs for potassium deficiency may not the appropriate time, since the damage may already be done. Cornell focuses on maintaining potassium levels at optimum levels as the most critical component for fruit set and yield.

Growers who observe symptoms, including a scorched look on the leaf margin, marginal yellowing, and interveinal scorching could be seeing signs of potassium deficiency.

However, according to Walter-Peterson, a balance of proper soil pH and critical nutrients such as nitrogen could also improve plant vitality and fruit set.

Cornell bases its nutrient recommendation programs on potassium. They look at the standard components of a nutrient program for grape crops, starting with nitrogen (N), potassium (K), boron (B), calcium (Ca), magnesium (Mg), zinc, and other elements.

A magnesium deficiency could show up as yellowing at the edges of leaves or brownshots at leaf edge.

Iron deficiency, usually manifest in standing water problems, includes yellowing of the leaves and shoots. Boron deficiency could show up as chlorosis of the leaves. Boron is critical because without it, there could be poor fruit set.

Boron is critical for the floral parts of the plant. "Boron is inexpensive and easy to apply and easy to monitor," said Martinson. "It could have a huge difference in the type of crop you get."

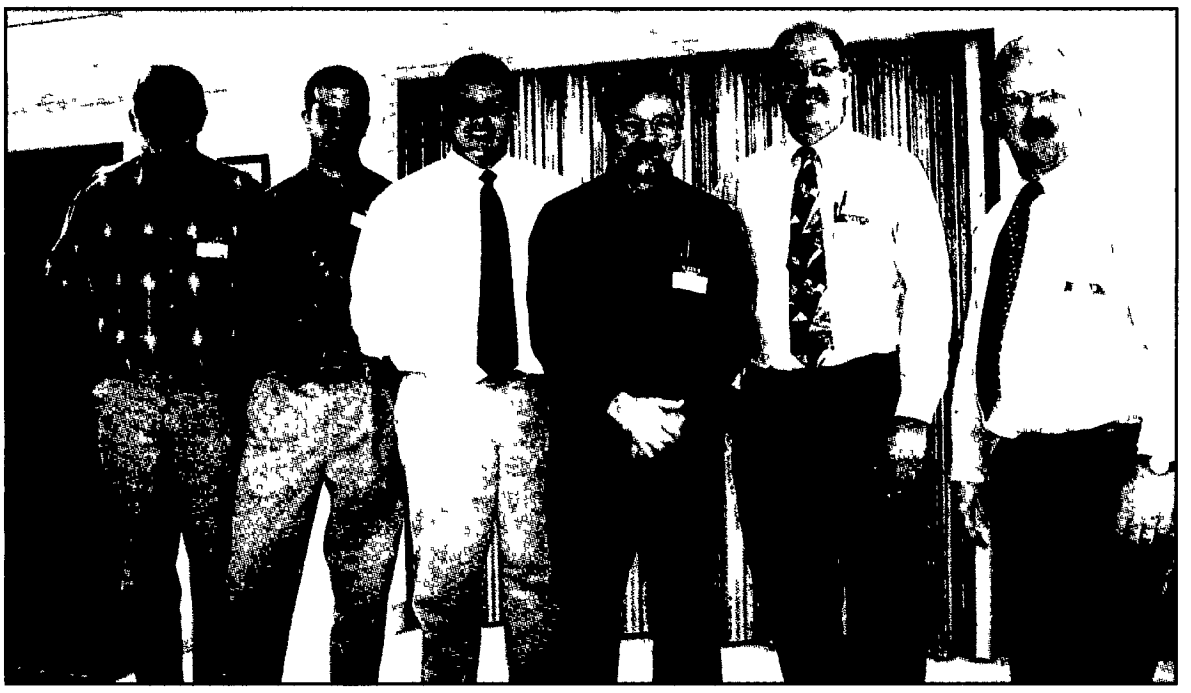
Other problems could be pest- or fungus-related, including European Red Mite (yellowing or browning of leaves), Foliar Botrytis (browning of leaves), viral diseases such as tomato ringspot, stylet oil injury from application, drought stress, basil leaf sublethal tissue injury, herbicide injury, Paraquat drift, oxidant stippling on Ives, or other factors.

Diagnosing the problems is difficult simply because of other factors, such as the vine's inability to transport nutrients, for reasons that leave plant specialists mystified.

Also, the critical ratio of potassium to magnesium and calcium plays a huge role during the interaction of other nutrients. The target ratio on K-Mg-Ca should be 1.2:1:10. That relationship "will dictate potassium use," said Martinson.

Growers should take regular soil and petiole samples to ensure that what the plant has available in the soil also is transferred to plant tissue. During a dry weather season, simple drought stress could mimic foliar or pest problems.

(Turn to Page E8)



Speakers at the PAW annual meeting included, from left, Sam Coburn, USDA Risk Management Agency; Hans Walter-Peterson, Cornell University Fredonia Vineyard Lab; Terry Bates, Cornell Fredonia Vineyard Lab; Jim Travis, extension fruit pathologist, Penn State Fruit Research and Extension Center; Richard Cronce, Science Applications International Corporation program manager; and Tim Martinson, Cornell University Finger Lakes Grape Program.
Photo by Andy Andrews, editor