

Healthier walnut and apple trees possible

Healthier, more vigorous apple and walnut trees may result thanks to technique developed by University of Missouri-Columbia plant pathologists.

"We adapted a technique used by the flower industry," reported Dr. Daniel Millikan. "It allows us to eliminate brown line in apples, a disorder which seriously hampers our export of nursery stock, because Canada has a quarantine against it.

"A further modification of the technique can be used to eliminate 'bunch' and 'ambers' in walnut, disorders which reduce walnut production efficiency."

Bunching of the terminal branches of the walnut tree makes the tree more susceptible to winter kill. The result is a devitalized, less productive tree.

Ambering in walnut meat causes flavor to be bitter or sour.

The methods for producing apples and walnuts free of bunching and ambering were reported recently at a joint meeting of the Missouri and Illinois academies of science, at the University of Missouri-St. Louis by Millikan's doctoral candidates, Shu-Ching Huang and Anna Lenartowicz.

Basically, the technique involves using tip meristem, a growing point in the plant. A microscopic piece of the growing point is removed from an infected plant in a sterile medium (free from bacteria and fungus). Then, with proper nutrition, it is grown into a vigorous disease-free plant.

"This plant can then serve as a source of healthy material for variety that was previously universally infected," said Millikan.

"This plant material can then be grafted onto another rootstock, and

we can produce a disease-free tree that can be sold in Canada.

The tree will not only be more vigorous, but it will be a more efficient producer, because other virus problems will be eliminated, too."

Millikan said past experience with this technique on cherries resulted in 20 percent more trees being produced per acre.

"Besides," said Millikan, "all the trees were more uniform — all Grade A — which sold for about 20 percent more than lower grade."

He said that nurserymen will use his technique to completely eliminate brown line in five years.

"The result will be better, more efficient production which will ultimately benefit the consumer," he added. "Right now, brown line cuts nurserymen's production by about 30 percent. In the case of walnuts, the elimination of ambering and bunching will take a little longer." □

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