

Rapid propagation method developed for fruit

BELTSVILLE, MD. — Miniaturization has been extended to horticulture. Scientists of the USDA's Science and Education Administration (SEA) recently propagated over 700 strawberry shoots in a jar about four

inches in diameter. More importantly, each shoot was a potential full-size strawberry plant.

The 4-inch jars also house masses of apple shoots and clusters of blackberry and blueberry shoots supported by a synthetic growth medium. Racks of these jars in a laboratory at SEA's Beltsville Agricultural Research Center in Maryland, where scientists are coaxing tiny cuttings of fruit and berry plants to multiply rapidly in a clear medium containing nutrients and hormones.

The technique, called tissue culture (or micropropagation) has been in use for several years to propagate many of the house plants on the market today. Now scientists at Beltsville and at other horticultural

laboratories are working to make the technique commercially feasible for mass-producing fruit trees and several varieties of berries.

The technique could "cut to a fraction" the time it takes nurserymen to propagate these plants, says Richard Zimmerman, plant physiologist and research leader. And it can reduce the space needed for propagation, especially for fruit trees.

For example, apple trees are now propagated by grafting shoots from the parent tree onto rootstocks, producing only one tree for each shoot, whereas, tissue culture could produce thousands of trees from a single shoot. It now takes up to 12 years and several acres for nurserymen to propagate enough apple trees of a new cultivar (cultivated variety) to introduce to the general market. By micropropagation, "it might take only a year or two and the space of a few laboratories," says Zimmerman.

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Olivia Broome takes a close look at multiplication results of a few apple shoots implanted in a clear, synthetic medium containing the "proper" amounts of nutrients and hormones.

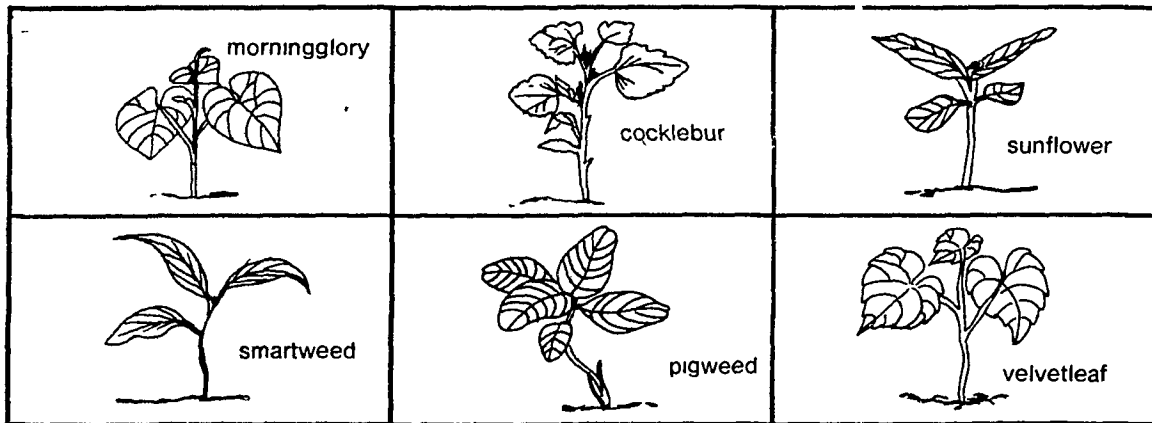


A graduate student transfers strawberry shoots to a culture jar containing fresh shoot-inducing medium.



A potential orchard of apple trees is contained in this 4-inch-diameter jar where a few apple shoots have produced about 50 new shoots in a synthetic growth medium.

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