

# Research Briefs

## *Short Reports on Current Research in Agricultural Sciences*

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Agricultural researchers at the University of California, Riverside, have discovered that certain beneficial fungi can increase nutrient absorption by citrus and avocado plant roots, increase water uptake, and improve fruit yields. The ultimate goal of a project now in progress is to develop methods of using these unique fungi as "biotic fertilizers" to increase crop yields and fertilizer efficiency.

### **PREDICTING COTTON YIELDS**

Data collected at U.C. Riverside over the past six years show that cotton yields can be predicted two to three months ahead of harvest. Sixty cotton fields were randomly selected in the San Joaquin Valley. Flowers, squares, and bolls were counted weekly. Data from each field are being correlated with a 1974 base temperature from various areas and are being used to construct five or six cotton-plant growth models. In this way, unnecessary chemical treatments for cotton insect pests can be eliminated after the crop is set. Also yield estimates will be improved.

### **PLANT EXTRACT AIDS RESPROUTING**

The ability of chaparral plants to resprout from crowns after the tops have been burned off is a crucial factor in the management of brushlands. Basic mechanisms of resprouting chaparral are being explored in growth chamber studies at the Department of Agricultural Botany, U.C. Davis. Researchers found, among other things, that water extracts of chamise foliage act in the same way that some externally-applied plant growth regulators act. At one stage of growth, they induce resprouting and at other stages they inhibit it.

### **DRIP IRRIGATION STUDY**

Researchers at the Citrus Research Center in Riverside have been growing citrus trees for eight years with no surface application of water except rainfall. All irrigation water is applied by subsurface or drip applicators into the root zone of the crop. Several applicators are being tested in an effort to decrease labor and reduce water losses, even evaporation. Subsurface and drip irrigation are good irrigative methods for citrus and avocados. Studies also have shown success in use of drip irrigation for growing potatoes, tomatoes, cantaloupes and zucchini squash.

### **TRAINING CITRUS TREES**

Efforts to train citrus trees for mechanical harvesting or hedge row planting at the South Coast Field Station of the University of California have been discontinued because the trees wouldn't cooperate. As soon as growing restraints were removed the trees would return to a normal configuration. Trees skeletonized to two horizontal branches have yet to set fruit after two years growth, and researchers at the San Jose station now expect that they will be back to a bushy tree configuration before they are again in production.

### **INCREASED DEER HARVEST**

Wildlife biologists of the Division of Agricultural Sciences, U.C., have concluded after years of study that the state's deer harvest could be increased at least 200 percent without depleting the breeding population by taking antlerless deer as well as bucks. The researchers found that greater fawn production and survival resulted from reduced competition for range forage.

### **NEW STRAWBERRY VARIETY**

The "Tufts" strawberry named for the late Warren P. Tufts and released by the University of California in 1973 shows evidence of becoming another major California variety, rivaling the success of "Tioga." In 1974, Tufts' performance on limited acreage was good, but the 1975 crop proved to be truly outstanding on considerably more acreage in south coastal and central coastal California. Not only is the fruit from Tufts larger than Tioga, the standard California variety, but its production is more prolonged and its harvest costs are lower. Tufts is likely to prove extremely valuable to California strawberry growers in the continuing struggle to maintain the dominant competitive position they have occupied for some years.