

# **PUBLICATIONS**

## **1987**

FRUIT AND NUT CROPS RESEARCH IN TEXAS, 1987

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10	G. R. McEachern	
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19, 20	Dusty Menzies	Pecan

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**SUBJECT TOPIC:** General Horticulture With Emphasis on Fruit, Grapes and Pecans

**INVESTIGATOR(S):** Larry A. Stein - TAEX, Stephenville

**CROP(S):**

1. Peaches
2. Plums
3. Nectarines
4. Apricots
5. Grapes (table)

**ABSTRACT:**

General Approach and Findings:

1. The Central and North Texas area better known as the West Cross Timbers area has numerous fruit growers. Currently, we are looking at the varieties which perform best in these areas in order to update our recommendations. Crops which have consistently performed poorly in the area that growers would like to produce include apricots and nectarines.

Variety trials with the best potential varieties have been established in 1986 and 1987 to evaluate these new varieties. Along with varieties, we are making efforts to move growers to a total orchard management concept, i.e., optimum weed control, fertilization, irrigation, etc. However, we are also attempting to give growers options as to the different types of weed control, irrigation or fertilization systems available through result demonstrations and let them select the one best adapted to their needs both economically and physically.

2. The grape industry has literally exploded with growth since the success of plantings in the 1970's. Wine grapes have been the main thrust of the industry with vinifera varieties performing extremely well. Table grapes to date have only been planted on a limited scale.

Several table grape variety evaluation result demonstrations have been established to evaluate California, New York and Arkansas varieties. Along with variety performance, pruning and management techniques, and disease and weed control systems will be evaluated.

3. One major problem facing Texas grape growers is that of having an ideal rootstock. Soil problems faced by growers include cotton root rot, post oak root rot and iron chlorosis in high pH soils. The native, wild, mustang grape may make an ideal rootstock; however, they have been hard to root and graft with the desired

varieties. Recent work by Hawkins and Smith showed that dormant stem mustang cuttings could be induced to root with high concentrations of IBA (10,000 ppm).

In demonstrations performed last year, we obtained 60% rooting and survival with the best treatment. These stocks have since been bench grafted to table grape varieties to evaluate graft compatibility and rootstock performance. In addition, we are continuing work on rooting different strains of mustang to evaluate their potential as a rootstock.

ABSTRACT

Objectives:

To determine the water, nutrient, and cultural requirements of deciduous fruit and berry crops in north central Texas.

General Approach and Findings:

1. Water use of Peaches and Pecans as compared to Pan Evaporation and Other Meteorological Parameters

Water use of well-watered peach and pecan trees will be measured with weighing lysimeters and compared to weather data. Leaf and soil water potentials will be monitored.

2. Influence of Soil Moisture Stress on Water Use of Pecans

Water use of pecans will be monitored with weighing lysimeters as soil moisture is varied from field capacity to permanent wilt. Leaf and soil moisture potentials will be recorded. Since only two weighing lysimeters are available, one tree will be stressed while the other serves as a standard. The procedure will be reversed to see if the results are reversible.

3. Automation of Thermocouple Psychrometer Measurements Using an Apple Computer

At the present, measuring soil or leaf water potentials with thermocouple psychrometers involves manual hookup of sensors, and manual switching to apply the cooling current on which the determinations are based.