

PUBLICATIONS

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FRUIT AND NUT CROPS RESEARCH IN TEXAS, 1987

Page	Participating Scientists	Crops
3, 5	David H. Byrne	Peach
3, 5	Terry Bacon	Plums
7	J. Dan Hanna	Apricots
9	Calvin G. Lyons	Grapes
11, 12	T. Lynn Littleton	Pecans
10	G. R. McEachern	
19, 20, 48	Bert Johnson	
12	J. Benton Storey	
48	Berry Tompkins	
15	R. D. Marquard	Pecan
17	L. Austin Stockton	Grapes Apples
19, 20, 21, 23	John A. Lipe	Peach
19, 20	Duery Menzies	Pecan

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32, 34, 38	Larry A. Stein	Peaches
34, 38	J. W. Worthington	Plums
34, 38	James (Jack) [unclear]	Hickories
34	M. J. McFarland	Apricots
34	Susan Steinberg	Grapes
34	Michael Glenn	Pecans
34, 38	J. S. Newman	Others

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SUBJECT TOPIC: Deciduous Fruits and Pecans

INVESTIGATOR(S): J. W. Worthington - TAES, Stephenville
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CROP(S): 1. Peaches
 2. Pecans
 3. Other deciduous fruits and berries

ABSTRACT:

General Approach:

1. In 1985, the trees for the apple rootstock evaluation being conducted at Montague were moved to the Stephenville Station. There are 180 trees with a combination of 3 scions on 15 rootstocks.
2. In 1985, a planting of 'Loring' on Citation (a "dwarfing" rootstock) and Loring on Nemaguard (non-dwarfing) was made on spacings of 2.4 x 4.9 m and 5.5 x 7.3 m. Tree growth and longevity plus fruit yield and quality comparisons will be made between trees grown on each rootstock at both the close and normal spacing. Dwarfing rootstocks for use in the production of quality peach varieties in high density plantings may have a positive economic impact on peach producers.
3. Particular interest has arisen in the possible use of an (almond x apricot) x almond hybrid as a peach rootstock. Trees grown on this rootstock in high pH soil reportedly do not suffer from iron chlorosis as do trees grown on other peach rootstocks. Clonal propagation of this hybrid is being attempted to obtain large numbers of the plants for evaluation as rootstocks.

Objectives and Findings:

1. To grow and evaluate growth, hardiness, quality, and yield of deciduous fruit varieties for the 900 hour chilling zone.

We have 3-tree test plantings of some 75 varieties of peach, 9 of apricot, and 7 of Asian pear which are being evaluated on a number of criteria including yield and both tree and fruit quality.

2. To evaluate rootstocks to improve fruit tree hardiness, yield, fruit quality and fruit size of apples and peaches.

The need for plants for rootstock studies has led us to continue our efforts to develop practical, dependable techniques for obtaining plants from hardwood cuttings. This would be particularly useful in obtaining rootstocks since it would eliminate the genetic variability of rootstocks grown from seedlings.

3. To grow and evaluate growth, hardiness, quality and yield of seedlings of peach and apples from controlled crosses.

Seedlings from controlled crosses made by Dr. David Byrne were moved from Montague in 1985. There are approximately 450 peach trees and 250 apple trees now at the Stephenville Station.

4. To grow and evaluate growth, hardiness, quality and yield of seedling apricots from open pollinated apricot seeds.

At the Stephenville Station, are approximately 100 seedlings derived from locally selected apricot trees. These will be evaluated with particular interest in consistency of production. Quality seedlings will be clonally propagated and also budded to various rootstocks for further evaluation.

5. To determine the influence of water stress on growth and physiology of peach trees, and the influence of this stress on subsequent crops.

The orchard for this study was planted in February of 1987. Replicated trials using tensiometers to maintain selected soil moisture levels will be used. Extensive data on tree growth, fruit set, fruit quality, will be collected and evaluated.

6. To evaluate the effectiveness of certain cultural practices in increasing yield and quality of peaches.

These studies will include a) the effects of mulching on bloom date, tree growth, soil moisture, and fruit quality; b) the effects of girdling (and the timing of girdling) on tree growth, survival, fruit set, fruit quality and yield; and c) effect of tree height on yield.

7. To evaluate the effectiveness of various herbicides and herbicide tank mixes in control of noxious weeds and to identify any toxic effects these herbicides may have on orchard crops.