

# FRUIT AND NUT CROPS RESEARCH IN TEXAS, 1987

Page	Participating Scientists	Crops	Location of Research Station, and Cooperative Research Sites
3, 5	David H. Byrne	Peach	College Station
3, 5	Terry Bacon	Plums	
7	J. Dan Hanna	Apricots	
9	Calvin G. Lyons	Grapes	
10	T. Glynn Littleton	Pecans	
10	G. R. McEachern		
10, 20, 46	Gerald Johnson		
12	J. Benton Story		
46	Berry Thompson		
15	R. D. Mardard	Pecan	
17	L. Austin Stockton	Grapes	
17		Apples	
19, 20, 21, 23	John A. Lipe	Peach	Fredericksburg
19, 20	Duery Menzies	Pecan	

## COMPILED AND EDITED BY:

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**SUBJECT TOPIC:** Stonefruit Rootstock Development

**INVESTIGATOR(S):** David H. Byrne - TAES, College Station  
 Terry Bacon - TAES, College Station  
 T. Glynn Littleton - TAES, College Station

**CROP(S):**

1. Peaches
2. Nectarines
3. Plums
4. Apricots

**ABSTRACT:**

Objectives:

1. Identify useful rootstock materials tolerant to various edaphic and pathogenic stresses.
2. Collect native wild Prunus species to evaluate as possible sources of tolerance to the edaphic/pathogenic stresses encountered in Texas.

General Approach:

1. The development of screening procedures and the assessment of the variability and the level of tolerance to various nutritional stresses have been emphasized.
2. The collection and establishment of native Prunus accessions from throughout Texas and from other habitats is the first step. Once established, the accessions will be evaluated for tolerances and horticultural traits (vigor, ease of propagation, suckering, etc.)

Findings:

1. Preliminary work was shown variability in Prunus for tolerance to alkalinity, salinity and acidity (Al and Mn toxicity). A laboratory procedure to screen for tolerance to alkalinity is being tested. Field screening plots are being developed. Nemared seedlings when subjected to moderate alkalinity stress showed a 60% decrease in dry weight after 31 weeks. Under the same conditions, hybrid ('Titan' x Nemaguard) seedlings showed little chlorosis and no growth reduction. The hybrid was more variable, more vigorous, and produced fewer suckers than Nemared or Nemaguard.
2. Accessions of Prunus angustifolia, P. umbellata, P. mexicana, P. rivularis, P. texana and P. minutiflora have been collected from various parts of the state. More accessions are being collected especially from areas with alkaline soils, severe soil-borne disease



problems and with periodic waterlogged conditions. Once established these will be evaluated for tolerances to various soil stresses and horticultural characteristics.

INVESTIGATOR(S):  
David H. Byrne - TACS, College Station  
Terry Bacon - TACS, College Station  
T. Lynn Lister - TACS, College Station

PROP(S):  
1. Peaches  
2. Nectarines  
3. Plums  
4. Apricots

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##### Findings:

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2. Accessions of *Prunus angustifolia*, *P. umbellata*, *P. mexicana*, *P. rivularis*, *P. texana* and *P. minor* have been collected from various parts of the state. More accessions are being collected especially from areas with alkaline soils, severe soil-borne disease