FRUIT AND NUT CROPS RESEARCH IN TEXAS, 1987

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SUBJECT TOPIC: Stonefruit Rootstock Development

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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.