Texas is now the 3rd most populous state. It ranks 2nd in cash receipts of $10 billion from farm and ranch marketing, with assets exceeding $62 billion, and ranks 3rd in overall agriculture crop production. Texas, which includes 254 counties, is an extremely complex state, primarily as a result of its size and diversity.

There are 15 distinct land resource regions in the state, which range from the coastal marsh and the semitropical bottom land of the Rio Grande Valley, to the semiarid regions of the High Plains, with altitudes approaching 4000 feet above sea level. Likewise, there exists tremendous variation throughout the state in mean annual temperature; there is a 10°C (18°F) difference between the Rio Grande Valley [23.3°C (74°F)] and the northwest corner of the High Plains [13.3°C (56°F)] (Fig. 1). Average rainfall patterns in the state follow a very definite and distinct east to west pattern, with 142.2 cm (56 inches) near Beaumont to 20.3 cm (8 inches) in the El Paso area of far West Texas (Fig. 2).

If there is a single pervasive issue that cuts across all of Texas agriculture, it must be water. There is no question that the goal of the Texas agricultural community is to move from its overall position of 2nd to first in total farm and ranch marketing. If there is a single factor which may prevent this occurrence, it is a limited water supply. Texas presently is exceeding the safe and firm yield of both ground and surface water resources by about 2.1 million acre-feet (approximately 2.6 billion m³) per year, and is using about 7.1 million acre-feet (approximately 8.8 billion m³) of groundwater per year, more than is being recharged by natural means. The high rate of increase of the Texas population will put an even greater strain on the developed water resources. Therefore, not only is there competition among agriculture industries for this precious commodity, there is also an ever-increasing competition between the urban areas and agriculture-based rural areas of the state. It is felt by some that horticultural commodities consume excessive amounts of water, and that this type of production should be curtailed. A larger school of though holds that available water should be utilized primarily on high value horticultural crops. Certainly, the depletion of the various aquifers and/or the general availability and quality of water will have a great influence on horticultural production and distribution in the state in years to come. Of major concern, at present, is the depletion of the Ogallala Aquifer, which for the past 30 years has provided abundant irrigation water for the impressive fertile and highly productive High Plains area of the state. Improved efficiency in the use of irrigation water in the High Plains and far West Texas has made it feasible to continue irrigated farming in spite of drastically increased energy costs of pumping. This concern will provide a focus for horticultural research in Texas in the 1980s and beyond.

**Horticultural research & extension in Texas.** Texas horticulture is as diverse as the climates, soil types, native vegetation, and temperatures across the state; the needs for horticultural research are equally complex. In order to serve the diverse areas of Texas, a statewide network which includes 30 research and extension centers or station/extension units (Fig. 3) has been located in critical geographical and agricultural regions of the state. Those with strong horticultural missions include Overton (vegetables, fruits, roses), Dallas (urban horticulture, including landscape crops and turf), Stephenville (fruit crops and pecans, the latter in cooperation with the USDA Pecan Field Station at Brownwood), Chillicothe-Vernon (vegetable crops), Lubbock (vegetables and grapes), El Paso (vegetables, pecans, ornamentals, grapes), Uvalde (vegetable crops), Weslaco (vegetables, ornamentals, and citrus, the latter in cooperation with the Texas A&I Citrus Research Center), and College Station where all areas are addressed on a statewide basis. Two new major research and extension centers are scheduled for construction in Houston and San Antonio. These will be large centers with a strong urban horticultural orientation, similar to the existing Dallas Center.

The horticultural sciences research and teaching faculty of the Texas A&M University System includes 30 professionals, with 17 located at College Station. Most of these individuals have joint teaching and research appointments. There are an additional 13 full-time researchers located at 6 research and extension centers throughout the state. The 31-member extension horticulture staff consists of 11 state specialists located at College Station, 10 area specialists, and 10 county horticulturists. Although the professional staff may appear large, when compared to gross agricultural receipts there is much room for growth and expansion. Texas invests less than any other southern state in agricultural research and extension (relative to agricultural income) and only 3 of the 35 major agricultural states in the United States invest less than Texas relative to income. This situation, however, is being aggressively addressed by the Directors of the Texas Agricultural Experiment Station and the Texas Agricultural Extension Service.

**Horticultural education.** Texas A&M University, the state’s oldest public institution of higher education, was established in 1876 and is the state’s land-grant institution. Horticulture has always played a prominent role in the University, in fact, the first MS degree granted was in horticulture in 1898. During the early and mid-1900s, there were separate departments of floriculture and horticulture. In 1962, these departments were combined with agronomy and soils to form the Department of Soil and Crop Sciences. As a result of the very significant increases in enrollment in horticulture experienced at Texas A&M and other universities in the late 1960s and early 1970s, the Department of Horticultural Sciences, including floriculture, was reformed in September 1976. On this date, it was the 4th largest of 14 departments in the College of Agriculture.

Like many other departments throughout the country, the Horticultural Sciences Department at Texas A&M has experienced sharp declines in undergraduate enrollment, falling from 500+ in 1976 to about 200 in 1983.

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