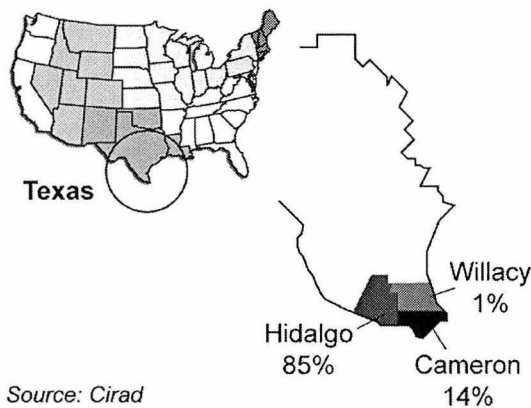


Texas grapefruit

Texas is one of the world's main grapefruit production zones. Plantations are concentrated in the extreme south of the state to limit the risk of harmful frosts and annual production totals 190 000 to 240 000 tonnes of high quality red grapefruit. The origin is focused on the domestic market and was discreet on the international scene until 2004-2005. The serious decrease in the quantities available from Florida generated a distinct regaining of interest in Texas, although its development potential is limited by its small water resources.

Grapefruit - Texas
Cultivated areas



Source: Cirad

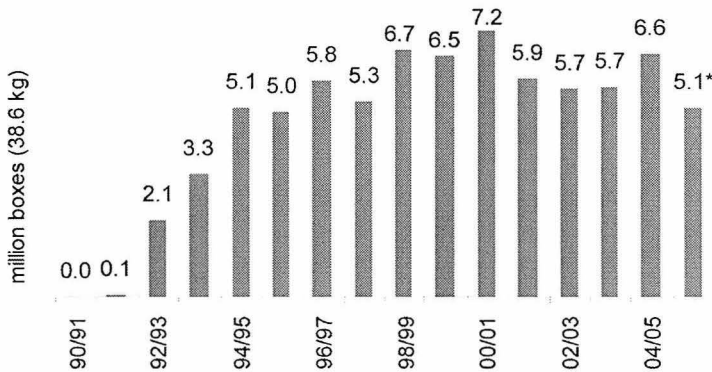
Production zone

The map of citrus growing in Texas has been modelled by frost. The production zones in the north-east part of the state (mainly between Galveston and Houston) were dominant in the 1920s but have now been practically completely abandoned. Since the 1930s and 1940s, production has been very strongly concentrated in the lower Rio Grande valley, the part of the state with the least risk of frost. The climate in the region is subtropical but rainfall is limited (500 to 750 mm per year). It has been strongly devoted to horticulture since the 1900s with the introduction of irrigation and the development of rail transport. The citrus plantations stretch for about 160 km from the mouth of the river upstream. In addition to its suitable climate, the zone has fertile alluvial land. A large proportion of the soil in Hidalgo county, where 85% of the area under grapefruit is to be found, is deep, well-drained and rich. The rest of production is further downstream in Cameron county. Tristeza is the main sanitary problem. Producers, grouped in the Texas Valley Citrus Committee, receive technical support from a fair number of federal and state bodies, including Texas A&M University.

Volumes

Production reached significant proportions at the end of the 1920s and developed rapidly in the 1940s, peaking at nearly 800 000 t in 1947 and 1948. Subsequently, severe frosts—extremely damaging in such a concentrated production zone—drastically reduced the areas. The two most recent in 1983 and 1989 reduced plantations from 28 000 to 5 000 ha. The area under grapefruit recovered to 8 000 ha at the end of the 1990s and has been stable at 7 500 ha since 2002-2003 with production of between 190 000 and 240 000 t per year (5.7 to 6.6 million 80-lb boxes—the reference used in Texas). Urban spread and above all the strong competition for limited water resources are serious limiting factors. Thus the international Amistad and Falcon reservoirs, the main resources available, are operated jointly by Mexico and the United States for supplying towns and agriculture. The cost price is also higher than in Florida because yields are substantially smaller and more call is made on irrigation, which is made expensive by the only medium size of farms.

Grapefruit - Texas - Production



Source: USDA / *: 05/06 estimate

| Grapefruit — Texas — Production calendar | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|
| | S | O | N | D | J | F | M | A | M | J | J |
| Ruby-Sweet | | | | | | | | | | | |
| Flame | | | | | | | | | | | |
| Rio Star | | | | | | | | | | | |

Fruit availability in Florida/Different periods on the export markets

red varieties grown around the world and that form the core of the Texan range were selected or bred in Texas (with the work of Professor Hensz at Texas A&M University's Kingsville Citrus Center at Welasco). Two red varieties are the most commonly planted—'Rio Red' and 'Ruby Red'—with respectively some 72% and 17% of total production). They are sold under the Rio Stars® brand. The pink varieties sold with the Ruby Sweet® label consist mainly of 'Henderson' and 'Ray Ruby' and form about 11% of production. The season runs from October to May.

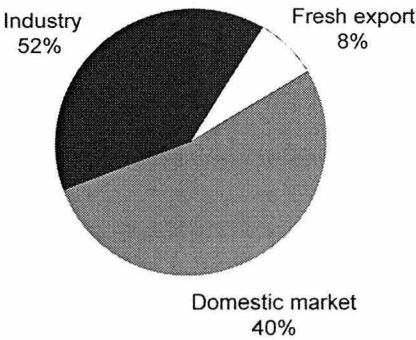
Production calendar

Only coloured varieties are grown in Texas. White grapefruit were strongly present in the first part of the twentieth century but they were not replanted after the frosts of the 1950s and 1960s. A large proportion of the

Outlets

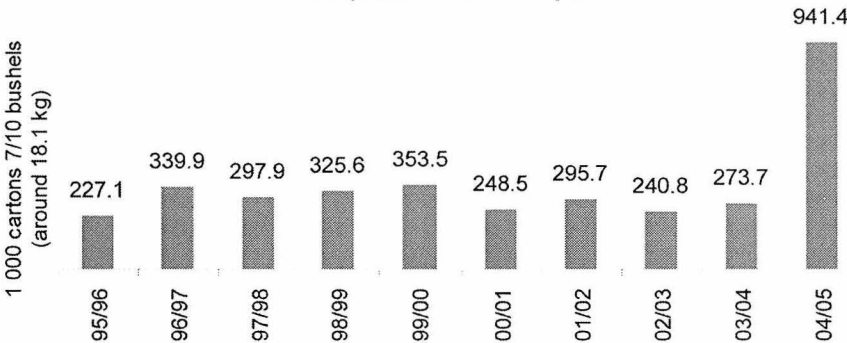
Fresh sales on the domestic market form the main outlet for Texan production. A large proportion of the volumes is marketed by three entities. Texas Sweet, Texas Valley Citrus Committee's marketing sword arm, funded by producers, runs promotion aimed at showing the difference between Texan fruits and their Floridian counterparts: red fruits, Rio Stars® brand, segmentation into two quality categories consisting of the top of the range Texas Fancy and Texas Choice. Texan grapefruit was traditionally marketed west of the Mississippi and is now tending to develop on east coast markets, especially with the shortage of fruits from Florida. Sorting rejects are processed by the Texas Citrus Exchange, a juice production unit based near Mission. Renewed interest on the international market after the sudden fall in production in Florida led Texan growers to increase the quantities earmarked for export (from 4% of production in 2003-2004 to some 13% in 2004-2005).

Grapefruit - Texas - Outlets



Source: TVCC 2004-2005 season

Grapefruit - Texas - Exports

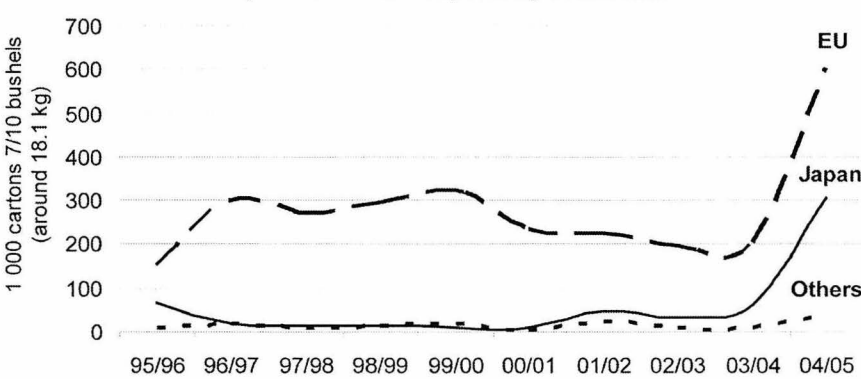


Source: Texas Valley Citrus Committee

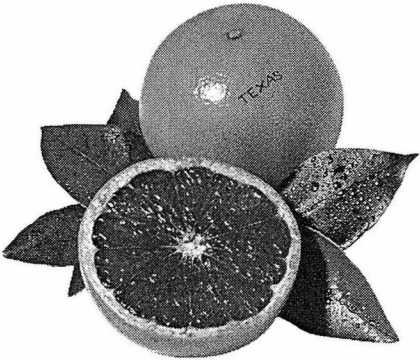
Exports

The history of the Texan grapefruit industry is not export-oriented. The quantities shipped to destinations outside North America have always been marginal or limited. They varied from 250 000 to 300 000 boxes (40 lbs), that is to say 4 500 to 6 300 t, in the ten seasons preceding the problems in Florida. The 2004-2005 displayed a distinct change and a reawakening of international interest in the origin. Shipments flirted with the million box mark (940 000 to be precise). Europe and Japan took most of the exports with 600 000 and 300 000 boxes respectively.

Grapefruit - Texas - Exports by destination



Source: Texas Valley Citrus Committee



Logistics

Small volumes are shipped to Latin America from the port of Brownsville in the Rio Grande valley close to the river mouth. In contrast, goods for the EU and Japan are first transported by road for a fairly long distance to larger ports on the east coast (for Europe) and the west coast (for Japan).

| Grapefruit — Texas — Logistics | | | | |
|--------------------------------|-----------------------------|--|---------------|--|
| Markets | Main shipping lines | | Shipping time | Observations |
| | Port of departure | Port of arrival | | |
| EU | Charleston, Savannah, Miami | Antwerp, Rotterdam, Le Havre, Felixstowe | 10 to 14 days | Numerous lines (Maersk and Hanjin in particular) |
| Japan | West Coast | | | |
| South America | Brownsville | Argentina, Guatemala, Brazil | Various | |