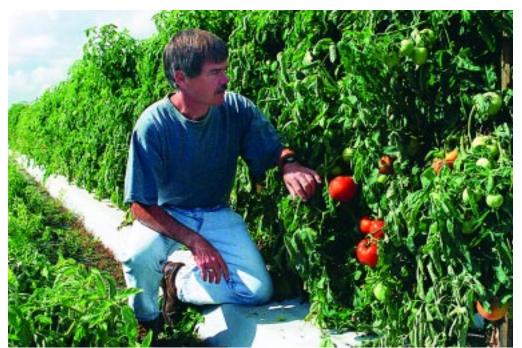
Tomato



Hybrid tomato breeding

Fresh market tomato is grown in Florida from October through June. The 50,000 acres under tomato production in Florida generate a farm gate value of over \$500 million per year. The program at FAES has provided improvements that have allowed tomato to be grown successfully in Florida and it has had a significant impact on production worldwide. Tomatoes are a good source of minerals, vitamins C and A, and carotenoids, such as lycopene, that are beneficial as cancer-preventing antioxidants.

Major achievements in the breeding program have been the development of disease-resistant varieties and the improvement of fruit quality. **Manalucie**, developed by breeder J.M. Walter, was a major breeding achievement of the 1950s, due to its multiple disease resistance and improved fruit quality. **Homestead** was widely grown in Florida for much of the 1950s and 1960s. In the 1960s, race 2 of Fusarium wilt

was causing major losses to the Florida tomato industry. The release of **Walter** by J.W. Strobel in 1969 marked the world's first variety with resistance to the Fusarium wilt pathogen. A coop-

erative project between the FAES and the H.J. Heinz Company resulted in the development of tomato varieties with improved fruit firmness that became the primary source of firmness for breeding programs around the world. This project led to Florida MH-1, a variety that could be machine harvested because it combined firm fruit, concentrated fruit setting, and jointless pedicels that allowed stemless fruit to be harvested. Flora-Dade proved highly adaptable and was grown commercially throughout the southeastern U.S. and in

many regions around the world, including Africa and Australia. **Floramerica** was the first hybrid released by FAES and won a bronze medal in the 1974 All America Vegetable trials. It has



Fresh market tomato



Harvesting tomato varieties

been widely grown in home gardens throughout North America. J.W. Scott, FAES's current tomato breeder, began releasing varieties and lines in 1985. Since then, he has released 18 varieties for the industry. **Solar Set**, produced

throughout the 1990s, exhibits a superior flavor and was the first variety to have heat-tolerant fruit-setting ability, a trait that enabled significant expansion of Florida production. The Fusarium wilt-resistance *I-3* gene was discov-

ered by FAES scientists, and 1-3 is now widely used in tomatobreeding programs around the world. Breeding line Florida **7547** is used in current hybrid varieties with Fusarium wilt race 3 resistance and it has proven valuable in breeding line development because of its superior horticultural characteristics. **Neptune** was the first bacterial wilt-tolerant variety released from the University of Florida. Micro-**Tom**, a miniature dwarf variety dubbed "the world's smallest tomato," was released primarily for the nursery industry. There have been six breeding-line releases since 1999, and some will prove useful as parents in future commercial hybrids. Florida 7804 is in the new Fusarium crown-rot-resistant hybrid Sebring from Syngenta Seeds.

Tomato Varieties and Breeding Lines Developed by FAES			
Variety	Date of Release	Variety	Date of Release
Marglobe*	1925	Florida 556	1972
Glovel*	1935	Flora-Dade	1976
Newell, Cardinal King, Ruby Queen 1940		Floramerica, Florida 1011, Walter PF,	
Manasota, Manahill	1949	Calypso	1977
Manalucie	1953	Burgis, Hayslip, FL2432, Florida 1A, 1B, 1C, FL Petite, FL Lanai,	
Homestead*	1953	FL Basket	1981
Manalee	1954	Horizon, Suncoast	1985
Indian River	1958	Floragold Basket	1987
Manapal	1960	Micro-Tom, Solar Set	1989
Floralou	1962	Equinox, Florida 7547, 7481,	
Floradel	1965	Micro-Gold,vNeptune	1994
Immokalee	1966	Florida 7771, Florida 7775, 77	
Tropi-Red, Tropi-Gro	1967	Micro-Tina*, Micro-Gemma*	1999
Tropic, Walter	1969	Florida 7946, 7804, 7692B	2002
Florida MH-1	1971	* In coo <mark>peration with the USDA</mark>	