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**TENTH DISTRICT  
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# HIGH TECH MEETS THE Old West

**N**ot much besides hunting leases or the occasional tourist brings “outsiders” to the old cattle town of Fort Davis, Texas. But soon, many residents from nearby surrounding communities like Alpine and Marfa will find themselves driving there every day.

That’s because the small, untouched rural community wrapped in the dry West Texas heat is now home to the nation’s largest hydroponic tomato greenhouse — and with it, 180 new jobs for the locals. The high-tech facility, partially financed by Texas PCA, is spread across 41 acres near the Davis Mountains. It is expected to yield an anticipated annual crop of 18 million pounds of premium quality Beefsteak tomatoes per year.

Agro Power Development (APD) Inc. was founded in New Jersey in 1989, and is the parent company for the Fort Davis site. APD plans to

bring in six of its own people to run the greenhouse. “Most of the \$2.8 million payroll will roll back into the Fort Davis area economy,” predicts Kevin Cobb, APD senior vice president and chief financial officer.

APD also plans to buy supplies within the region, such as one million cardboard boxes per year for shipping, which will be purchased from El Paso; and the company currently is seeking a local supplier of wooden pallets.

Opening this November, the greenhouse is expected to supply both a higher volume per year, and twice the winter-time volume, of the next largest U.S. hydroponic tomato grower. Tomatoes from the “Southwest Greenhouse” at Fort Davis will be grown from July through September and harvested weekly from October through June, to fill the demand of APD’s existing customers during the winter.

While the hydroponic growing technology has been prevalent in Europe for several decades, it only reached the U.S. within the past 10 years. Today, Europe hosts more than 22,000 acres of tomato greenhouse production, while only 271 greenhouse acres are in production in the U.S. The Fort Davis “farm” alone will increase that acreage by 15 percent.

“Hydroponics is a very capital intensive industry. It’s expensive to get into because it requires state-of-the-art greenhouses, equipment, technology and expertise to remain successful. But the systems we’ve installed meet the Environmental Protection Agency’s regulations for today and, most likely, will be required in the future,” Cobb says.

Sources from the Texas Agricultural Extension Service say that hydroponic techniques also require

an immense amount of supervision and time involvement to be successful. However, Cobb notes, “properly managed, hydroponics can produce 15 times the yield of traditional tomato acreage. The industry is becoming more viable because more consumers are demanding it.”

APD’s tomatoes are sold primarily in large grocery store chains and, although they may be displayed near field-grown varieties, Cobb says the two types of tomatoes target two very different market segments and are rarely in direct competition with each other. “Our greatest competition is the ‘backyard’ garden growers, who for about two months out of the year can supply their own tomatoes,” Cobb says. “Our market is composed of consumers who demand great taste and fresh produce. The cost of our product is higher primarily because it costs more to produce.”

Hydroponic tomatoes make up only a small percentage of the total U.S. market, and comprise only about two percent of tomatoes worldwide being imported into the country.

According to APD Chief Operating Officer Albert Vanzeyst, many challenges faced by traditional growers are overcome through the use of advanced irrigation and circulation systems, fully automated fertilizing systems, and natural predators to control insects inside the greenhouse.

Unlike traditionally grown tomatoes, hydroponic tomatoes are grown in a man-made, inert material called rockwool, rather than soil. Peat moss, gravel and styrofoam can be used as alternatives, but rockwool produces more consistent results and stronger roots than the other substances, says Vanzeyst.

After each harvest, the tomatoes float down an artificial “stream,” which automatically sorts them by size, then whisks them off to the packing and shipping area. There, they are hand-placed in plastic inserts resembling large “egg crates,” so the tomatoes do not touch each other. Each box is then placed on wooden pallets and stored in a cooler until shipping. “Our packing and

growing. Since each plant is fed an exact amount of nutrients and water which drips into the rockwool, Vanzeyst says the tomatoes produced are virtually all the same size, quality and taste.

“Since 1993 we’ve grown tomatoes for summer production in two greenhouses, located in New York and Pennsylvania. Ninety-eight percent of those tomatoes are premium sale

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## “Fort Davis had all the right elements for winter seasonal production.”

— Albert Vanzeyst,  
Agro Power Development, Inc.  
Chief Operating Officer

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shipping methods are meant to prevent blemishes traditionally caused by bulk shipping. And, the boxes are ready for immediate display when they arrive at the store,” Vanzeyst says.

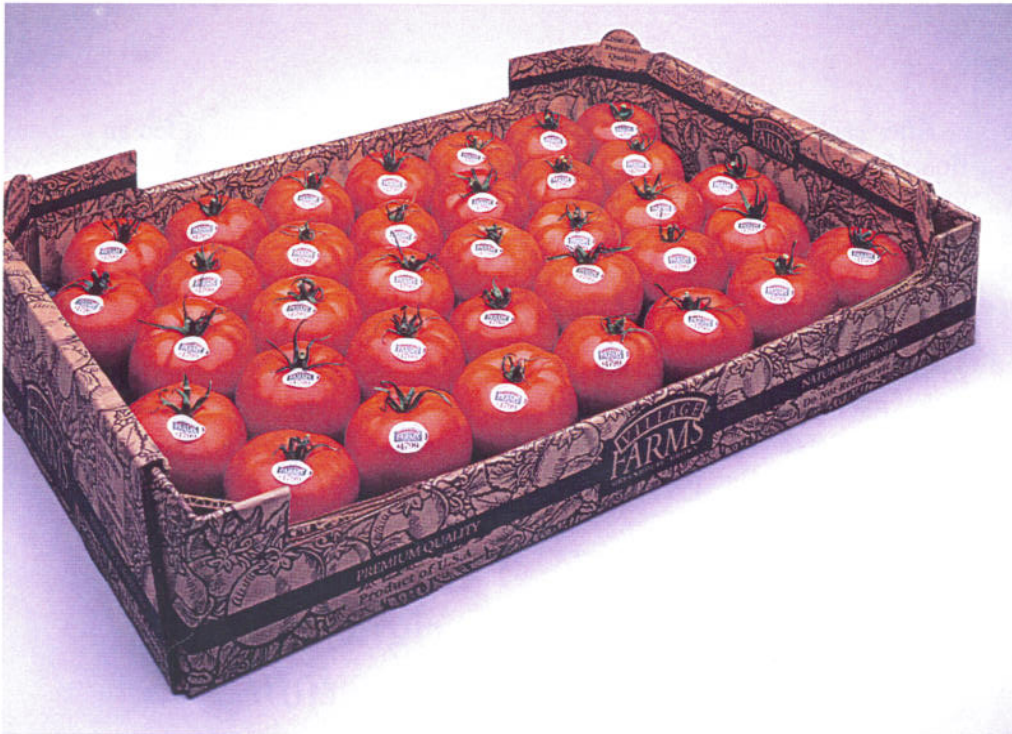
Worker bees are “hired” by APD to aid in pollination, since they can automatically sense when a flower is ready for pollination. According to Vanzeyst, humans have tried to artificially pollinate plants using equipment called electronic bees, which aren’t always as effective since they sometimes miss a flower and don’t instinctively know when the plants are ready.

APD’s tomatoes are marketed under the *Village Farms* brand name as fungicide-, herbicide- and pesticide-free. Their controlled growing environment helps prevent the typical soil, disease or weather-related problems faced by many traditional

quality and go to market as fresh produce,” he adds.

In choosing a 41-acre site on which to build the operation’s two 20-acre greenhouses, Fort Davis was chosen over four other locations being considered: Chino Valley, St. Johns and Wilcox, Az., and Santa Teresa, N.M. “Fort Davis had all the right elements for winter seasonal production, including a level piece of land, a beautiful year-round climate, the ideal elevation and a prime location in the arc of sunlight which spans across Arizona, New Mexico and Texas,” he says.

Also a factor in choosing to build in Fort Davis was a plentiful water source: an underground river with two aqueducts flowing from the Davis Mountains. “The greenhouse is an enclosed ecosystem. Its fertigation recirculation system,



Tomatoes like these will be produced by the “Southwest Greenhouse” in Fort Davis, Texas. As the nation’s largest hydroponic tomato operation, the greenhouse is expected to yield 18 million pounds of premium quality Beefsteak tomatoes annually.

which recirculates fertilized water after it has passed through the plants and drained out, virtually prevents any groundwater seepage,” Vanzeyst says.

Some locals have expressed concerns over the amount of water to be used by the greenhouse, but Vanzeyst says, “During a recent town meeting, a state hydrologist assured the community that three to four times the amount of rainfall — emptying from the mountains and into the area’s two underground aquaducts — is coming in than we will be pumping out.”

APD also has other measures in place to keep an eye on the area’s water levels. “We are located on a different aquifer than what the town of Fort Davis is on. In actuality, if anyone were to run out of water, *our* aquifer would empty first. Each week we will measure the level of the three 150-foot wells,” Vanzeyst says. Also according to the hydrologist, it would take four years for one aquifer to run out if there was no rainfall in the area. Rainfall for the region averages 14 inches per year.

With the help of the Texas Department of Agriculture (TDA) and West Texas Utilities, Cobb says APD searched for a lender which could meet their needs, and possibly finance future expansions. “TDA and West Texas Utilities helped us to identify possible sites, utility rates, abundant water supplies, etc. And they put us in touch with the Farm Credit Bank of Texas.”

In providing the \$23 million needed to finance the APD greenhouse project, Texas PCA worked in cooperation with several other Farm Credit entities to meet the customer’s financing needs.

“This loan was very unique in that hydroponic operations of such magnitude are relatively new to this area, and the loan itself required different types of financing to make it all come together. By working together with CoBank, the Farm Credit Bank of Texas and the Western FLBA of Marfa, we were able to pull from each other’s expertise to meet this borrower’s needs,” says Texas PCA President Terry Dane.