



Nogales Distributors Handle Flood of Vegetable Imports

Funneled through Nogales, fresh winter vegetables and fruit from northwestern Mexico stock supermarkets and salad bars throughout the United States and Canada. The 7 million tons of fresh produce imported through Nogales last year made this border town the world's busiest port of entry for fresh food.

A five-day study tour organized by University of Arizona vegetables specialist Dr. Norm F. Oebker took growers, scientists and agricultural agents from eight states, Brazil and Saudi Arabia to Nogales and to vegetable growing areas in the state of Sinaloa this winter.

The importing season lasts from November to July. Each day at the peak of the season in March and April, about 500 trucks and railroad piggyback trailers arrive full of tomatoes, cucumbers, peppers, melons, zucchini, green beans, eggplants or other produce.

After passing border checks, the food is unloaded at the warehouses of 69

Top of page: At the Frank Echavarría packinghouse near Los Mochis, Sinaloa, Salvador Villareal unloads a tilted bin of freshly harvested green peppers bound for the United States via Nogales.

Above: Domingo Alberto Bon Ruiz, 10, carries a bucket of tomatoes he has just picked on the Echavarría farm. (Photos by Guy Webster.)

distributing companies on the Arizona side. The distributors sell it all over North America and as far off as Europe and Japan.

For 15 years, Mexico has supplied nearly half of the fresh winter vegetables eaten in the United States and Canada. The proportion is higher than usual this year because of a Christmas morning freeze in Florida and an increase in Mexican production. Most of the Mexican produce comes through Nogales.

Americans are eating more fresh vegetables than they used to, said Oebker, and consumers want their favorite varieties available year round. Mexican growers and Nogales distributors fill in a seasonal dip in U.S. production, despite opposition in recent years from Florida growers. Florida is the source for most U.S.-grown winter vegetables, except lettuce.

Vegetables have been imported through Nogales for more than 40 years, but the industry's big growth here began in the 1960s after the United States cut off its winter vegetable supply from Cuba to spite Fidel Castro. U.S. investments and Mexican irrigation projects boosted vegetable production around Culiacán and Los Mochis, 500 to 650 miles south of Nogales.

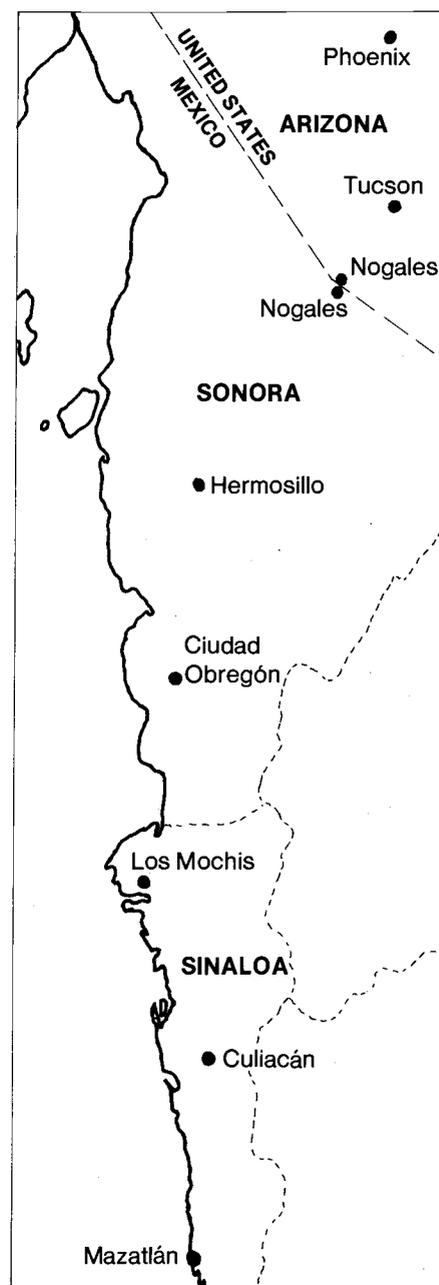
Farm Packed

Exporting high-value vegetables allows Mexico to offset part of its large trade deficit, said economist Dr. Jimmye Hillman, agricultural trade authority at the University of Arizona. Part of the deficit comes from Mexican purchases of U.S. wheat. Even with \$450 million worth of vegetables, the value of all Mexico's farm exports to the United States in 1983 was only a fourth the cost of U.S. farm exports purchased by Mexico.

Almost all produce shipped through Nogales is packed near the fields in Sinaloa. Big growers run their own packinghouses. Some other growers with small land-reform allotments have recently formed cooperatives to pack vegetables for export.

The truck trailers and railroad piggybacks each carry 32,000 to 45,000 pounds, depending on the type of produce. When they reach Nogales, they stop at the U.S. Department of Agriculture's Federal and State Inspection Service checkpoint on the Sonora side. Forty-four USDA inspectors check the loads for quality factors such as size, defects and deterioration, said Frank Morago, supervisor for the service.

U.S. restrictions on size apply to tomatoes, which are about half of the import volume. Tomatoes and other types of produce are also given a USDA grade and checked against export standards set by the Mexican vegetable growers' association, UNPH. Those standards are for controlling quality and quantity in order to keep prices profitable, said UNPH Executive Director Mario Robles in Culiacán. Rejected loads are sold in Mexico. The Mexican growers, through UNPH, pay for the USDA inspection service.



Trucks and trains carry fresh winter vegetables to Nogales from the production areas in Sinaloa. The cargoes are checked at the border and unloaded at distributors' warehouses in Arizona. (Map by Elizabeth Wolf.)



Top: Workers at the Echavarria packinghouse rake floating cucumbers toward a conveyor belt that will carry the vegetables past lines of sorters and packers.

Bottom: Gustavo Rosas (right) and a co-worker at Al Harrison Company in Nogales, Arizona, pack Mexican-grown watermelons for distribution throughout North America.

After that stop, trucks pass through customs and two more inspections at a border station that the United States opened in 1976 to handle the expanding volume of trade. This \$6 million facility, in the hills west of the downtown border crossing, also handles about 100 trucks per day of non-farm imports. The Nogales vegetable importers pay the U.S. government about \$35 million a year in duties. At the customs dock, the U.S. Animal and Plant Health Inspection Service checks cargoes for pests or diseases.

Also, the U.S. Food and Drug Administration pulls samples from 30 trucks per day for surveillance testing of pesticide residues. The samples travel overnight to a Los Angeles laboratory where they are analyzed the next day for about 95 pesticides. One to 3 percent of the surveillance samples violate federal tolerance limits, about the same rate as U.S. produce, said Dr. Milt Luke, FDA's supervisory chemist in Los Angeles.

Fast Distribution

Once past the border station, Mexican-registered trucks are allowed as far as the warehouses of Nogales distributors. After unloading, they return south, usually empty.

The distributors' main customers are chain stores and produce brokers. Nine-tenths of the imports leave Nogales by truck rather than train. "We can get vegetables to the East Coast by the fourth morning by truck," said Rudy Paredes, president of the West Mexico Vegetable Distributors Association.

"We'll get cherry tomatoes today that were picked yesterday morning and we can have them in a Seattle market by Wednesday," distributor Tom Harrison said on a Monday morning. He ships some melons to Japan and Finland. "We can get them to Helsinki in 13 days," he said. "A 15-pound melon that's worth about two dollars here is worth about nine-fifty there."

The Nogales distributors employ about 600 people. Paredes said that 10 to 15 more distributing companies are in Nogales now than five years ago. Morago of USDA expects the volume of fresh food through Nogales to keep increasing. Construction in 1983 added 20 percent to the total size of export packing houses in Sinaloa, he said. The season has been growing in length, too, with the addition of grape shipments in June and July. More than 16,000 tons of grapes, mostly from Sonora, came through Nogales last summer.

In Sinaloa, farmers planted tomatoes last year on about 40,000 acres, mostly in the Culiacán area. Many farms use greenhouse-grown transplants instead of seeding fields directly. This method means better survival rates for young plants, so fewer gaps in the rows. Farm consultant Dr. Ellsworth Shaw, a graduate of the University of Arizona College of Agriculture, introduced this technique to the area in the early 1970s. It is one of several ways that modern technology, natural resources and lots of labor combine to make this one of the world's most productive farming areas.

Tomato Capital

Culiacán calls itself the tomato capital of the world. The city's professional baseball team is the Tomateros or "tomato growers."

Besides tomatoes, Sinaloa farmers grew 18,000 acres of cucumbers, 14,000 of green peppers and 13,000 of other vegetables and melons this season. About two-thirds of the harvest is exported.

The farming area in Sinaloa is the southern tip of the Sonoran Desert. It gets less winter rain, but more summer rain, than Tucson. Dry weather while vegetables are growing helps limit plant diseases and means plenty of sunshine for photosynthesis. Winter days are warm and frosts are rare.

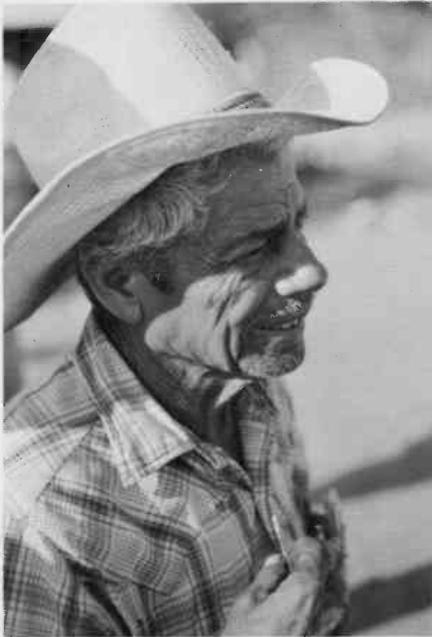
Most irrigation water for the area comes from rivers and canals running out of the Sierra Madre mountains. The government has built several dams and plans more. Over the ages, those rivers have laid down the rich soil of the coastal plain.

Another crucial ingredient in agriculture here is labor. Fresh winter vegetable production in this part of Mexico employs about 250,000 people, said a 1983 economic analysis of the industry by University of Arizona agricultural economists Maury Bredahl, Jimmye Hillman, Robert Rothenberg and Nicolas Gutierrez.



Above: Members of the University of Arizona study group in Sinaloa, (from left) Michael Konecky, Rick Gibson and Franklin Laemmlen inspect a discolored leaf from a Mexican field of bell peppers. Konecky, a UA extension assistant, helped organize the tour. Gibson is a UA extension agent for Pinal County. Laemmlen is an extension plant-disease advisor for Imperial County, California.

Left: Women sort tomatoes for export at Canelos Brothers packinghouse near Culiacán.



Top: Asuncion Rejes has farmed a land-reform allotment of 25 acres at Palo Blanco for 35 years. He started growing vegetables for export three years ago as part of his local cooperative.

Above: Craig and Lois Brown record a giant bell pepper encountered by the University of Arizona study group in Mexico. They are the son and wife of Mohave County farmer Don Brown.

Right: Carmela Topete, Olga Castro and Norma Castro (left to right) work during winter and spring in the fields of the Echavarría vegetable farm near their home town of Guasave. Wages are about \$4 per day.

The labor supply allows Sinaloa farmers to grow “vine ripe” tomatoes instead of the “mature green” ones grown in the United States. For the vine ripe ones, fields are picked every day during the height of the season, said Shaw. Mature green tomatoes can go days or weeks between pickings because the exact stage of ripeness is not critical. Gassing with ethylene reddens them after harvest.

More than 90 percent of the 3 million tons of tomatoes that Sinaloa exported through Nogales last year were vine ripes. Nearly all U.S.-grown winter tomatoes are mature greens from Florida.

Sinaloa growers have imported much technology and many hire U.S. consultants, but they also support local research. The North Pacific Center for Agricultural Research (CIAPAN) is funded by the government and growers’ associations. Most of the center’s research is on grain crops because Sinaloa produces much of Mexico’s rice and wheat. Vegetable research includes a breeding project for longer shelf life in vine ripe tomatoes and tests of plastic mulch for speeding growth.

Big Farm, Small Farm

The concentration of the vegetable industry here promotes rapid adoption of new technology when improved methods are identified. Sixty to 80 farms are the main producers of export vegetables, said Robles of UNPH. About 5,000 other UNPH members have at least some export sales, he said.

A three-year-old government program named DEPRODIT helps holders



of small land-reform allotments form cooperatives for better access to vegetable-growing expertise, credit from banks, volume discounts for supplies and equipment, and marketing channels for fresh produce.

In the village of Palo Blanco about 10 miles from Culiacán, 26 families, with irrigated allotments of about 25 acres each, decided three years ago to pool their land and grow vegetables for export. Through DEPRODIT, they formed a partnership with an experienced vegetable grower and also joined in a packinghouse operation with four other village cooperatives.

Before the Palo Blanco families began exporting vegetables, they raised mostly sorghum, beans and livestock. Asuncion Rejes has held a land-reform allotment at Palo Blanco for 35 years. In the third year of growing export vegetables, he said that life in the village has never been better. The land is providing livelihoods for more people than ever before, he said. The income from the exports buys more food than the land formerly produced. About 1,000 people have jobs in the fields during harvest months. The village has built a new school and a new irrigation system.

Ironically, the government program that has put village cooperatives in the export business developed while Mexico had a national goal of self-sufficiency in food. The question of whether export income or self-sufficiency is better for reducing hunger in poor countries cannot be answered with generalities, said economist Hillman. It depends on the structure of the agricultural economy in each case. The labor intensity of the Sinaloa vegetable industry helps spread the benefits in Mexico. Returns to U.S. investors decrease the industry's effect on Mexican incomes.

Floyd Robbs of Willcox, a member of Oebker's study group, offered a farmer's point of view. He has grown both vegetables and grain. "They have such excellent conditions here for growing vegetables," he said. However, "we can grow wheat in the United States for about half the cost that they have here. ... We are becoming a more unified world, and it seems to me we should grow each type (of crop) in the areas that are most efficient for it. It's really a waste of resources if we don't."

"This is the best place in North America to grow vegetables in my opinion," said Shaw, the consultant. "We have the soil, the water and the labor, and the business is already established here. ... We could grow enough tomatoes in Sinaloa for the whole world."



Field workers walk back to the village of Palo Blanco at five o'clock after a day of harvesting cucumbers in fields managed by the village cooperative.