

Experiences of the Monterrubio Company in Production and Marketing Of Cactus Pears and Nopalitos

Rene Monterrubio
Los Monterrubio
Isidro Fabela #30
Teotihuacan, Edo de Mexico

INTRODUCTION

The company Los Monterrubio is located in the region of the pyramids of Teotihuacan in the northeastern portion of the state of Mexico, about 45 km from Mexico City. This is a rich region for cactus production with the six municipalities of this general area cultivating 13,000 ha of cactus pears and 300 ha of cactus for nopalitos. Los Monterrubio has 3 years experience marketing cactus pears and one year experience in the production of cactus pears and nopalitos.

Los Monterrubio currently has 1 ha of nopalitos of the variety Copena V1 in production and 19 ha of cactus pears under production. The nopalito production system uses beds that are 1.5 m wide and 30 to 50 m long. There is a 1.5 m walkway between the beds. In the width of the beds there are 7 cactus pads that have a 5 cm spacing between pads. These rows of 7 pads are spaced 30 cm apart, yielding a density of 15.6 pads per square meter. The planting took place in February and March 1997. The structures for placement of the plastic was scheduled for September 1997 and nopalito harvest was scheduled for October and November 1997. The plantation establishment costs are provided in Table 1 and illustrate the fact that the 3 largest production costs were (1) purchase of 25,000 pads for use as planting stock at \$0.128 each for \$4634/ha, (2) weeding and maintenance at \$1848/ha, and pruning at \$308/ha. Fortunately after the nopalito plantation is established, prunings can be used to establish new plantations with only the labor cost to prune the plants.

Los Monterrubio has a total of 19 ha of cactus pears with 10 ha of the white fruit "Alfajayucan variety" and 9 ha of different colors and varieties of cactus fruits. This plantation was established in March and April 1997 and full production is expected in the year 2000. The cactus pear plantation establishment costs listed in Table 2, illustrate that the greatest costs were (1) purchase of manure at \$2535/ha, (2) purchase of planting stock at 0.128 each for \$2022/ha and (3) weeding, pest and disease control at \$1714/ha.

MARKETING CACTUS PEAR FRUITS

For three years, Los Monterrubio has been buying cactus pears to sell in the local market as well as to McAllen, Texas. In 1997, the varieties sold were; the white fruit of variety Alfajayucan from the region of the Pyramids of Teotihuacan, red fruit from the region of the pyramids of Teotihuacan,

smooth red fruit from the state of Guanajuato, and red fruit of the variety Copena Torreoja from the state of Jalisco.

Our observations and conclusions regarding the production and marketing of cactus pears in the region of the pyramids of Teotihuacan are:

- Cultivation. The dominant variety, Alfajayucan, is white while the international market demands colored i.e. red fruits. The plant spacing is 4 m by 4 m which makes it difficult to tend the plants and harvest the fruits because they are so close thus leading to greater production costs.
- Fruit thinning. In 1997 there was excess numbers of fruit on the plants. As the number of fruits per cladode were not thinned, very large quantities of small fruits resulted that had a low market price.
- Harvesting. The preferred harvesting technique uses knives to cut the fruit. However in this region the fruits are merely twisted off by hand, causing damage to the base of the fruit which results in a shorter postharvest shelf life.
- Handling. Between harvest and spine removal, the fruit are handled in such a way that they receive 3 blows and are squeezed twice, thus causing damage.
- Despining. Most of the growers remove the glochids on the ground with brooms. Only a few machines are available to our growers for the despining and many of the machines have problems in their design.
- Packing. Generally, cactus pears are packed in 20-kg crates, which damage the fruit. Some buyers ask for crates that are heaped up with fruit, causing further damage to the fruit.
- Lack of refrigeration. Cold storage rooms are not available to store the harvested fruit. Fruit for the domestic market is shipped in trucks without refrigeration, while export fruit is shipped in large trucks with ThermoKingTM refrigeration.
- Shipping companies are new to the region. Marketing collectives formed by groups of growers have usually failed. We feel that marketing is a specialized process that is more difficult and expensive than production. For these reasons, cactus pear marketing should be done by specialists.
- Processed cactus pear products are not available. Our company has done tests in the processing of cactus pears for jams and liqueurs with success. We believe that this may be an alternative that should be promoted to use the third grade fruit.
- Harvesting and income from cactus pears is concentrated in 3 months of the year. We believe that the growers should produce nopalitos in the areas with irrigation. Milk and meat can be produced with feed from the cactus using the pads from the pruned fruit and nopalito plantings. Milk and meat production from cactus can also be enhanced by planting forage varieties in the areas where the soil is least fertile and has steep slopes.
- Markets should be developed for cactus pear products. Within the Pyramids of Teotihuacan, is the most important archaeological zone of Mexico that is visited by

thousands of tourists. This is a potential market for jams, liqueurs, and juice made from cactus pears as well as dairy products obtained from cattle fed with cactus.

Table 1. Establishment Costs for 1 ha of Intensively Farmed Nopalitos

Activity	Number of Operations	Days/Wages (\$US)	Machinery costs (\$US)	Inputs	Total
Subsoiling	1		38		38
Plowing	2		77		77
Harrowing	2		38		38
Manuring	-	15/77		16 loads manure @ 31 ea = 493	570
Disking	2		38		38
Planting	1 to obtain plants	80/410 15/77		13,000 pd CHP @0.128 ea + 38 hauling cost = 1706 12,000 pd SLP @ 0.160 ea + 513 hauling cost = 2438	4631
Fertilizers	1 ammonium sulfate sup. phosphate	4/21		100 kg = 12 100 kg = 11	44
Weeding and maintenance	3	360/1847			1847
Pruning	3	60/308			308
Irrigation	2	1/10			10
Gravel for walkways		12/62		6 truckloads @ 5 = 31	92
Totals		458/2812	192	4691	7696

This table directly converted and rounded pesos into US dollars (7.79 peso/dollar). Thus columns and rows may not add up due to rounding, but totals are correct. Pads came from both Chapingo and San Luis Potosi, resulting in different costs.

Table 2. Establishment Costs for Red and White Cactus Pears,
Zempoala lot, 9 ha. lot, 10 ha

Activity	Number of operations	Days/Wages (\$US)	Machinery costs (\$US)	Inputs	Total/9 ha (\$US)
Plowing	1		346		346
Harrowing	1		346		346
Ditching	1		194		194
Planting	1	1308/667		7,650 UACH pds @ \$0.128 + 128 freight = 1110	1,778
Manuring	1	248/1273		31 loads manure @ \$31=\$955	2,228
Fertilizers	1	43/221		Ammonium sulfate @ 85 g/pd =\$11/ha Sup. Phosphate @ 100g/pd = \$9/ha Total = \$180/9 ha	401
Weeding Pest control Disease Control	2 none none	174/782			782
Totals		2,943	887	2,246	6,076

Table 3. Establishment Costs for White Cactus Pears
of Variety Alfajayucan, San Felipe lot, 10 ha

Activity	Number of operations	Days/Wages (\$US)	Machinery costs (\$US)	Inputs	Total/9 ha (\$US)
Plowing	1		385		385
Harrowing	2		385		385
Ditching	1		216		216
Planting	1	144/\$739		9000 pds @ 0.128 + 128 hauling = 1284	2023
Manuring	1	278/\$1427		36 loads manure @ 31 = 1109	2536
Fertilizers	1	48/\$246		Ammonium sulfate @ 100 g/pl = \$106/10 ha Sup phosphate @ 100 g/pl = \$94/10 ha Total = \$200	446
Weeding Pest control Disease Control	1 none none	96/\$431 (\$4.5/day)			1715
Totals		2845	986	2593	6423