

PN AA Q103

121-34790

POTENTIAL SERVICES OF THE
POSTHARVEST INSTITUTE FOR PERISHABLES (PIP)
to
USAID/GUATEMALA

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GTS Report No.
PIP/Guatemala/Apr. 84/No. 48

May, 1984

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Two days (April 16 and 17, 1984) were spent in Guatemala in discussions with Mr. Harry Wing, RDO; Mr. George Like and Mr. Cecil McFarland, USAID/Guatemala. Following the discussions, the remainder of the time was spent visiting cooperatives with Mr. Like. The purpose was to determine ways in which the Postharvest Institute for Perishables (PIP) might be of assistance to USAID/Guatemala.

As a prelude to the operation of cooperatives in Guatemala, the Union de Cuatro Pinos was visited at Santiago Sacatpeque. This is an example of a small, but very efficient cooperative that exports chinese peas, cauliflower, and brussels sprouts to the U.S. Also parsley is dried for local consumption, as well as onions. This is considered to be a classic of efficiency in Guatemala, largely because of good managers and good management policies. It is an excellent example of the fact that a cooperative need not be big and have ultramodern equipment in order to be efficient and profitable.

Another company, INEXA, was visited at Santo Tomás Milpas Altas. This company is financed by private Guatemalan capital and buys produce from local cooperatives. At the time of our visit the plant was processing and freezing honeydew melon balls for export. The company has a contract with General Foods.

The manager reported that the plant will no longer handle melon balls because the melons were shipped in from some distance away, and the plant wants to concentrate on local frozen broccoli for export. It appears that the way will be clear for a freezing plant in the vicinity of the melon-producing area. It further appears that the idea should be exploited soon in order to establish a market because the melon-producing area in Choluteca, Honduras will soon begin to plan the same way.

On the second day, the Cooperative Manzaneros was visited at Chichicastenango. This is a small cooperative of 43 members that is in need of considerable technical assistance to produce apples for domestic consumption. The crop is harvested in July and August, and the members would like to store the fruit until the Christmas holiday season when the demand is greatest.

During the brief visit, the following points were observed:

1. The principal popular varieties are Red Delicious, Jonathan and Wealthy (Juárez). Also some Golden Delicious and Ana (Israel) are grown.
2. Some of the trees, or perhaps all, are Malling Merton semidwarf trees that were poorly managed from the standpoint of proper pruning for optimum growth and yield.
3. Many of the trees were defoliating, even though the young fruit were only about 1 inch or less in diameter. This appeared to indicate water stress or zinc deficiency.
4. Sprays were being applied to the trees in a rapid and disorganized way. The effect would be poor pest control because of poor coverage.
5. The pesticide being applied was a mixture of fungicides and insecticides when the only current need was for the insecticide to control aphids (pulgón).
6. The trees were in various stages of fruit set from flowering to 1" fruit (diameter). This indicated inadequately low temperatures during the "winter" in order to induce dormancy. Therefore, a defoliant applied after harvest may produce the desired effect of a uniform fruit set.
7. Weed control under the trees was fair to none.
8. Fertilizer programs were not defined.
9. A very nice, modern cold storage room has been constructed nearby, but there appears to be some question about the design. It is not known whether the cooling units are adequate or overdesigned. The cooperative plans to build another similar cooling unit nearby.
10. The growers thin their apples to 2 or 3 per cluster, but it is done on a haphazard basis.
11. There are no varietal test plots of apples in the country.

It is recommended that a 3-member team be assembled to provide the following assistance to the Cooperative Manzaneros:

1. Production - addressing the various points listed above, plus others that might be identified. Conduct field and class workshops to demonstrate and teach the appropriate orchard management steps. This would include everything from planting to harvest.
2. Storage, including cold storage, and passive or evaporative cooling. Determine the adequacy of the new cold storage facility and make recommendations and designs for another. It seems likely that some apples could be stored under passive or evaporative cooling conditions from July to December. This should be investigated and some preliminary trials initiated.
3. Postharvest handling, storage and processing. Teach and demonstrate proper initial crop quality and storage techniques to maintain storage quality. Demonstrate storage and processing methods to enhance storage qualities and marketability. Assist in establishing local grading standards for fruit going into and coming out of storage.

The team should be able to be quite productive because it was evident that the cooperative members want assistance and would be very receptive. If they are doing things right, they want to know about it, and if they are doing some things wrong, they want the answers. Those were the words of the alcalde of Chicnicastenango who is a cooperative member and apple producer.

Another area where PIP could be of assistance to USAID/Guatemala is in on-farm storage of potatoes and other crops in the altiplano. This assistance would largely be provided to poor Indian farmers. The need is for low-cost appropriate storage technology, and it appears likely that the environmental temperature and humidity conditions, as well as the diurnal fluctuations should lend themselves very well to the adaptation of passive or evaporative cooling systems. Such systems could be applicable to potatoes and other crops in need of cool or dry storage conditions. Minimal expense would be involved. It is possible that the on-farm storage units would be similar to the root-cellar type storages that were common in the U.S. in past years, or variations or modifications of them. Within certain limits, the root cellars were very effective storage houses (cellars) and were very simple to construct.

An agricultural engineer or refrigeration engineer with the indicated area of specialization or storage expertise could provide the necessary assistance. In addition to the engineer, a crop specialist should be present to demonstrate and teach crop storage requirements and other factors that would lead to maximum crop quality coming out of storage.

PIP has the capability of assisting USAID/Guatemala in all of the areas discussed above.