

PROEXAG II



EXPORT INDUSTRY TECHNOLOGY SUPPORT PROJECT (AGRICULTURAL COMPONENT)

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ASSESSMENT OF FRESH GINGER PRODUCTION FOR EXPORT FROM BELIZE

Assignment Number: ST-035

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THROUGH

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Export Industry Technology Support Project - Proyecto de Apoyo Técnico a las Industrias de Exportación (EXITOS)¹

September 1, 1992

TRIP REPORT

I. Destination and Dates

Belize, August 3 to 6, 1992

II. Persons Contacted

Jose Novelo, BABCO
Enrique Carballo, BABCO
Martha Marin, BEIPU
Anil Sinha, CARDI
Neville C. McAndrew, CARDI
Santiago Gomez, BEIPU
Bruce Brower, PROEXAG
various growers

III. Purpose of the Travel

This assignment was to advise BABCO, CARDI, BEIPU, and growers of aspects of ginger production for export.

IV. Accomplishments

August 03, 1992.

REF: VISIT TO BELIZE AGRIBUSINESS COMPANY (BABCO).

PERSONS CONTACTED:

Jose Novelo
Managing Director, P.O. Box 92, Orange Walk Town, Belize, C.A.

Prior to visiting BABCO planting sites Mr. Novelo provided a history of the BABCO ginger program including information about prior technical assistance from Hawaii. BABCO major focus seems at present to be on Solo Papayas.

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Farm at San Andres site in the Corozal district does not have ginger planted at present. Farm dedicated to Papaya. Soil very heavy and not suitable for ginger.

Ginger planted at Consejo site was not harvested in early 1992, and present growth mostly foliage with little rhizome production. Second year growth on unharvested ginger is generally not commercial. Plantation appears to have been abandoned. I made a recommendation to harvest crop immediately, clean mature rhizomes removing the second year growth suckers. These rhizomes can be replanted in Feb. or March, 1993. Seed stock should be stored in a cool dark well-ventilated place. Consejo site has heavy soil which is difficult to remove during postharvest and adds undue post harvest expense. This area is not suitable for continued ginger production.

The Paraiso area farm has second year growth ginger the same as the Consejo area farm. Samples were taken from a number of rows and each sample showed severe bacterial rot, mold and extreme nematode infestation. Ginger should be harvested immediately and destroyed. This area should not to be used for replanting ginger as harmful bacteria can remain in the soil for a number of years. The San Antonio area planting also has unharvested ginger from the 1991-92 crop. The area was overgrown by weeds. Seed stock can still be recovered if recommendations for Consejo site are followed.

My overall impression is that ginger production is being given very little attention. If ginger is to be continued in this area, lighter soil must be located, with irrigation readily available. Plots should be small with emphasis on learning how ginger responds in each area. Growers must be willing to dedicate time and effort necessary to produce a commercially acceptable crop.

August 4th, 1992.

REF: VISIT TO CARIBBEAN AGRICULTURAL RESEARCH & DEVELOPMENT INSTITUTE (CARDI), P. O. Box 2, Forest Drive, Belmopan, Belize.

Anil Sinha, CARDI Representative
Neville C. McAndrew, Agronomist

Due to heavy rains it was not possible to visit CARDI remote planting sites. I was able to observe the trial plot at the rear of the research station. Mr. Sinha and Mr. McAndrew were very helpful detailing the experiences and problems they have had growing ginger at various sites since 1990.

CARDI received some Hawaiian technical assistance at the beginning and discovered some of the recommendations were not applicable to their growing conditions as recommendations were based on soil, climate and growing conditions of Hawaii. I believe most of the changes they have made have been in the right

directions. I suggested they reduce the seed piece size from 4 oz. to 2 oz. CARDI can reduce fertilizer cost by adopting a program using less fertilizer with better spacing of applications during growing cycle. The importance of seed selection and the treatment of the seed pieces with a growth stimulator and fungicide was discussed in detail, and noted by Mr. McAndrew. I explained the advantages of seed pre-germination. Mr. McAndrew agreed that pre-germination would help early growth, reduce seed rotting in the field, and provide better growth uniformity. We discussed in detail the point at which the rhizomes are ready for harvest and postharvest procedures. Harvest and postharvest information will be attached to this report.

Numerous small rhizome points and under-developed rhizomes I believe has been due to stress which may have been caused by lack of sufficient irrigation and uneven fertilizer application during the growth cycle.

Furrow diking and partial living shade were explained and noted. Spacing of partial shade, bed size and furrow diking are noted on a separate attachment.

On the 5th of August, 1992 CARDI was again visited and I had the opportunity to visit the Stann Creeck (Dangriga) area. The visit to the Dangriga area was made to try to identify better soil conditions and visit sites planted with ginger.

Due to low lying areas the effects of the heavy rains I was only able to see one planting in the Hopkins area. Ginger was planted in very sandy soil with little organic material. Germination rate was under 5% and in poor condition. Soil registered temperatures well over 100F and irrigation was not available. I did not see adequate growing conditions in this area for ginger.

Overall I believe CARDI's attention to detail, accumulated experience and cautious approach, and the decision to continue small test plots in a number of areas has them on the right track.

HARVEST & POSTHARVEST

Harvest of ginger rhizomes can be made at any time 8 months after planting. Ginger may still have foliage which is green. If ginger is left in the ground until all foliage dries, re-sprouting may begin due to soil moisture content. Re-sprouting of export ginger lowers its commercial value and may not be acceptable to the importer.

Harvesting requires carefully loosening soil around each plant to avoid cutting or damaging the rhizomes. Remove all roots and any remaining foliage, cutting them off at the surface of the rhizome. Keep rhizomes moist and wash with high pressure water as quickly as possible after harvest.

In heavy soils it may be necessary to use a soft brush to facilitate cleaning. A small cylindrical brush may be used to clean between the fingers of the rhizomes.

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Care must be taken to remove all soil. A stiff brush may remove the natural shiny finish which will lower quality.

After cleaning, rhizomes should be spread out in the shade on raised screens or racks. At this point a fan, to increase air movement, may be used. Surface moisture drying and curing of the ginger will generally take 24-36 hours.

The normal export box contains 30 pounds of rhizomes. Multi-layered rhizomes should be divided into 10 to 16 oz. hands. After packing, export material should be kept at 53F to 55 F with humidity of 65-75%. Ventilation and staggered stacking of boxes in the storage and shipping containers is essential.

V. Recommendations

1. Apart from the specific recommendations made above, Belize will have to do additional planting trials, perhaps best done by CARDI, to determine if export quality ginger can be grown at low elevations.
2. Identify lighter soils for production areas.
3. Use living shade, particularly in the lower, hotter regions.
4. Perhaps some individuals could visit Guatemala to see commercial ginger plantations.

GINGER

planting and fertilizing

TOP VIEW



Seed piece oriented to row direction

Row

Direction

Fertilization at planting 18-46-0 12-24-12 or other high phosphate fertilizer

30 days after planting 15-15-15 or other complete fertilizer

60-90-150 days after planting use a fertilizer high in potash. 6 to 8 grams each application

Note: 60 days after planting, the most important fertilizer element is potassium

Living shade such Pidgeon Pea or other tall legume may be planted 1 month prior to ginger planting.

Alternate rows 48" between shade plants.

At the generally low altitudes of Belize, partial shade recommended to help prevent yellowing of foliage.

Foliage fertilizers with minor elements start 45 days after planting and every 15 days thereafter.

END VIEW



6 to 8 grams per seed hole

At planting, a high phosphate fertilizer should be applied at the bottom of each seed hole covered lightly with soil to avoid direct contact with seed stock

12" spacing between plants

32-40" center of raised bed to next bed

