

PA. ABR-370
128

UNITED STATES DEPARTMENT OF AGRICULTURE
ECONOMIC RESEARCH SERVICE
WASHINGTON, D.C. 20250

March 4, 1975

B7
634
C374
C.2

SUBJECT: Report on Potential Development of Tropical Fruits and
Vegetables in the Bahamas by John Causey, Florida
Extension Specialist

TO: Quentin West/Lyle Schertz, ERS
W. A. Faught/J. B. Davis/P. Wetmore, ERS
W. H. Conkle/L. E. McGary, ES
Michael Galli, TA/AGR, AID
~~Memory Bank, AID~~

Attached is a copy of subject report prepared by
John Causey, Extension Fruit and Vegetable Specialist at
Palm Beach, Florida, following a 1 week TDY to the
Bahamas February 2-7, 1975. This work was performed
under the USDA PASA with TAB/AID.

Note summary and objectives of the TDY on the first
page followed by general observations and recommendations.
He has outlined specific procedures for establishing
research trials for both fruits and vegetables. Also
note special equipment which he recommends on pages 3
and 4 for establishing a successful research program.

Marshal D. Fox
MARSHAL D. FOX
Program Leader
Latin America Programs

Attachment

BF
634 Economic Research Service, Washington, D.C.
C374 Bahamas Agricultural Research Training and
Development Project: Establishment of a
Horticultural Project in Fruits and Vegetables.
John H. Causey. Feb. 1975.
4 p.
PASA.

OFF-SITE

1. Horticulture - Bahamas. 2. Fruit - BF. 3. Vegeta-
bles - BF. 4. Tropical crops - BF. I. Causey,
John H. II. Title. III. Establishment of a Horti-
cultural Project in...

1

BAHAMAS AGRICULTURAL RESEARCH TRAINING AND
DEVELOPMENT PROJECT

ESTABLISHMENT OF A HORTICULTURAL PROJECT IN
FRUITS AND VEGETABLES

John H. Causey
County Extension Agent
Palm Beach County, Florida, U.S.A.

Summary.

I recommend the establishment of a research project and plantings in order to obtain basic research information of the best cultivars of subtropical fruits and vegetables by establishing:

1. Variety trials
2. Fertilizer requirements
3. Insect and disease control
4. Water requirements

Purpose and Objectives.

To advise in the establishment of a subtropical fruit and vegetable industry in the Bahama Islands and to recommend the necessary research to determine the best production practices for the high yields of fruits and vegetables for local consumption and export to other islands within the Bahamas.

General Observations and Conditions.

The Island of Andros has mainly a high calcareous, rocky soil which presents many problems in fertility and crop adaptability. Little research information as regards to the production of fruits and vegetables on this type of soil is available. Therefore, I feel that a project needs to be established to obtain basic research information in all phases of production of fruits and vegetables that may be grown and have this information prepared in proper form for the use of the local farmers of the island.

Recommendations.

Due to the limited amount of research that is available in the Bahama Islands, research projects should be established in the fields of tropical fruits and vegetables in order to determine the varieties that are best adapted to the growing conditions of the islands, to determine fertilizer and cultural practices, to obtain insect and disease control, and to establish water requirements.

FRUITS:

With this project being new, considerable site preparation will be necessary to get the land in a condition suitable for planting tropical fruit trees.

Listed below, not necessarily in order of priority, are things that should be completed before planting any of the fruit trees.

1. Layout of the planting sites with center road and area fenced.
2. Digging wells for irrigation to conform to the type of irrigation to be established whether it be drip irrigation or overhead.
3. Have wells tested so proper filters can be determined for the removal of the suspended solids, iron or dissolved solids that will stop up the emitters in the drip system.
4. Staking of tree location using uniform distances for all varieties of trees (25' x 25') with the exception of limes and lemons (15' x 25').
5. Prepare holes for trees using a backhoe, making a shallow but wide circle for each tree (504 trees).
6. Order trees in cans and have on hand for planting in June or July 1975 or as soon after as planting site is ready.
7. Order and have on hand necessary equipment to establish drip irrigation system as soon as trees are planted.
8. Use pine bark from post production as mulch material covering the area around the tree to at least a 6' circle.
9. As soon as the trees are planted, establish research projects on fertility rates, insect and disease control, herbicide studies for comparison of chemical weed control vs. mechanical cultivation, irrigation studies and studies on growth, yield and quality of fruit.
10. If space, resources and manpower are available, an arboretum be established with a number of additional tropical fruits as specimen trees for observation and evaluation.

Varieties of fruits in the research planting should be:

Oranges - Parson Brown, Pineapple Orange, Valencia,
and Murcott
Grapefruit - March seedless, Thompson Pink seedless,
Duncan, and Ruby Red
Tangerine - Dancy and Robinson
Limes & Lemons - Persian Lime, Key Lime, Myers Lemon,
Villa Franca Lemon
Mangoes - Floragon, Tommy Atkins, Keith, and Kent
Avocados - Pollock, Tonnage, Choquette, and Lula
Banana - Dwarf Cavendish, Lacatan, and Sugar Banana
Plantain - Orenico, Raja Puri, Haa

VEGETABLES:

With some history of commercial vegetable plantings on the island for both export and domestic use, certain varieties are known to be productive in the area. However, there are some varieties of vegetables with little or no history of production. Research is needed to supply

information on vegetable varieties, planting dates, fertilizer requirements (particularly with reference to minor elements), irrigation needs, insect and disease control, as well as harvesting and marketing information when the crops have matured. Vegetables, as a rule, mature in 60 to 100 days, and it is very possible to produce two or more crops within a given crop year.

Since this also is a new project, certain things must be done before the crops can be planted, and like the fruit project, land preparation must be completed. This, I feel, can be accomplished a little easier since the land selected for the vegetable plantings has a better texture. The area should be cleaned of large rocks that would impede cultivation. Also, the irrigation wells should be dug and tested as outlined for the fruit crop area. Testing of the water to determine proper filters is much more important for the vegetable crops because it is planned to use bi-wall plastic tubing which will be buried under the rows to supply irrigation. Once this tubing is in place, it cannot be disturbed.

This type of irrigation can be expensive due to the short life and high cost of the plastic tubing. For this reason I feel it is most important to have both types, trickle irrigation as well as overhead sprinklers. Therefore, I suggest that the vegetable research area be divided in half to study both types from the economic side as well as the efficient use of water. This comparative study will be very beneficial to the satellite farms and their operators.

Land preparation should be completed in time for a fall planting to be made starting in August or September. Successive plantings can be made to determine the best planting dates. I would suggest that variety trials be started to determine the most productive varieties, having in mind crops for local consumption, crops for export and crops for creating new consumer tastes.

For crops like tomatoes, cabbage, peppers, okra and others which are readily accepted by the local consumer, research in the areas of insect control, disease control, and fertilizer requirements should be initiated this fall so that production recommendations can be obtained for use by the satellite farmers. These may be long range studies, but they are very necessary for the establishment of this industry.

Suggested vegetables for the variety trials are as follows:

Irish potatoes, sweet pepper, hot pepper, onions, strawberries, cucumbers, okra, cabbage, cauliflower, broccoli, head lettuce, leaf lettuce, romaine, green beans, lima beans, pole beans, southern peas, tomatoes, cantelope, sweet corn, parsley and squash.

EQUIPMENT:

It will be necessary to obtain certain types of equipment since it will be designed for a particular purpose. For most of the land

preparation there is sufficient equipment on hand to take care of this work, but a high clearance tractor for the vegetable area with row cultivators will be needed. The changing of the wheel size of tractors already on hand may accomplish this, giving higher clearance for cultivation of row crops. Also needed are tractor mounted cultivators and a fertilizer distributor for row crops. A small hand-operated planter for direct seeding should be adequate for the present. A small sprayer, 50-100 gallon capacity, with power take-off or a gasoline motor-driven pump which can deliver 200 to 250 pounds pressure PSI will also be needed. This sprayer should be equipped with a fixed spray boom for use in vegetable crops as well as a hand operated spray gun with pressure hose for fruit trees. Since all the cultivation is not possible with mechanical equipment, necessary hand tools (hoes, rakes, shovels, etc.) will be needed. A pump with filter and motor for the operation of irrigation equipment for sprinkle and drip irrigation will be needed.

PERSONNEL:

I feel that it is very fortunate to have Mr. Robert Pinder, horticulturist with the Bahama Ministry of Agriculture, to be in charge of this project. He is well founded in the field of tropical horticulture and with his experience, he will be able to head this project very capably. Unfortunately, he will not be able to devote full time to this project as his duties with the Ministry of Agriculture require him to be gone some of the time. Therefore, it will be necessary to have someone working under his direction to take the responsibility of this project while he is gone.

February 21, 1975