



MINISTRY OF AGRICULTURE,
LANDS AND FORESTRY



INTER-AMERICAN INSTITUTE FOR
COOPERATION ON AGRICULTURE (IICA)



REPORT
ON
THE PINEAPPLE DEVELOPMENT PROJECT
OF THE MINISTRY OF AGRICULTURE
(GRENADA)

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MINISTRY OF AGRICULTURE - GRENADA
(AGRONOMICS DIVISION)

FINAL REPORT
ON THE
PINEAPPLE DEVELOPMENT PROJECT
(1986-1990)

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"The views expressed in signed articles are those of the authors
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1. BACKGROUND AND INTRODUCTION

As a fresh fruit, pineapple in Grenada is considered a specialty. However, limited pineapple production has left the housewives, restaurants and hotels with no other alternative but the imported processed (canned) pineapple. On average, there has been annual importation of processed pineapple equivalent to more than seventy (70) tonnes of the fresh fruit.

Prior to 1987, local pineapple production was characterized by very small scattered plots (less than 200 plants per plot) planted with the "local" type which bore relatively small fruits with large "eyes". Production was then very disorganized, and necessary cultural practices were neglected. Moreover, producers were unaware of the use of selective herbicides and flower induction practices.

In 1986, when the French Mission for Cooperation (FMC) decided to support the Ministry of Agriculture (MOA) in implementing its Pineapple Development Project, priority was given to importation of planting material, and training of farmers and extension agents. A strategy for effectively and rapidly transferring the pineapple production technology was also developed and effected.

The Pineapple Development Project of the MOA commenced in June, 1986, with the importation from Martinique of 10,000 pineapple plants of the Smooth Cayenne variety. These plants were used for multiplication purposes. Because of delayed progress in the multiplication process, caused by an unanticipated severe dry season (January-May, 1987), a further 8,000 pineapple plants were imported from Martinique in November, 1987 for distribution to farmers. Approximately 6,500 pineapple plants were distributed to eight (8) farmers in December, 1987. Since then, thousands of plants have been distributed to more than twenty farmers most of whom have established plots ranging between 500 and 2,000 pineapple plants. Plots of a few farmers are in excess of 2,000 plants.

In 1988, through a very rough survey, the FMC concluded that annual pineapple demand by hotels and supermarkets was approximately 200,000 pounds. The major market outlets for pineapple include five relatively large supermarkets, approximately thirty hotels/guest houses and as many restaurants throughout St. George's parish. Additionally, the Grenada Marketing and National Importing Board (GMNIB), through its sales depots, is capable of purchasing significant quantities of pineapples. Other less important market outlets include a number of small supermarkets, guest houses and restaurants in the towns of Grenville (St. Andrew's) and Gouyave (St. John's). Small quantities of pineapples are also marketed through the two major municipal markets at St. George's and Grenville, respectively.

Prior to 1989, locally produced pineapples were sold almost exclusively to the GMNIB and the Municipal markets. Total annual

pineapple purchases by GMNIB averaged 300 pounds from seven farmers. An estimated 200 pounds, on average, reached the Municipal markets annually. Negligible quantities reached other market outlets.

Until its termination in December, 1990, the pineapple project was jointly managed by the MOA and the FMC. Since then, pineapple production has become an ongoing activity within the MOA's Crop Diversification Programme.

This document highlights the Project's major activities. Special attention is given to the Pineapple Market Survey. Conclusions and recommendations are presented towards the end of the report which carries five annexes. It is hoped that the document may prove useful in guiding the future development of the local pineapple (fresh fruit) industry.

2. MAJOR ACTIVITIES

- 2.1 Training**
- 2.2 Selection of Farmers**
- 2.3 Production Support, Costs and Returns**
- 2.4 Market Survey**

2.1 Training

Training in pineapple propagation and production techniques was provided to forty-five (45) farmers and thirty-four (34) technicians. Most (about 80%) of the technicians trained came from the MOA. Selected technicians from the Model Farms Corporation (MFC) and the FMC were also trained.

Fifteen training sessions were conducted locally - three for technicians and twelve for farmers. (The first was held during the latter part of 1986.) Additionally, four technicians (two in 1987 and two in 1988) benefitted through participation in relevant training courses held in Martinique during October, 1987 and March, 1988.

The locally held training sessions were spread over a four year period (late 1986-1990): One was held in 1986; two in 1987; four in 1988; and six in 1990. Persons trained locally in each of the five years totalled 12,17,18,8, and 20, respectively, making a grand total of 75.

The local training sessions were subsequently complemented by a series of on-farm training engagements with individual farmers selected to participate in the project. Areas covered in these training engagements were determined on the basis of the type of activity being undertaken or contemplated by the farmer. In other words, the training was in the form of technical guidance to the farmer to ensure that production techniques previously learnt were correctly applied on the farm.

To strengthen the training activity and to provide farmers and technicians with reference material, the MOA and FMC collaboratively prepared a very informative booklet entitled "PINEAPPLE BASICS". A copy of the booklet was given to all technical officers and farmers involved in the project.

2.2 Farmer Selection

Participation in the training programme, willingness to adopt recommended cultural practices, and availability of suitable land to plant a minimum of five hundred (500) plants (0.0625 acre) were the main criteria on which farmers were selected to participate in the Pineapple Development Project. Twelve of the forty-five

farmers trained did not qualify for selection. Those who qualified were expected to sign a contract prior to receiving planting material. (A copy of the Contract Agreement is attached - Annex 1).

Most of the farmers initially selected came from the Western Agricultural District where the FMC was most active. Eventually, however, farmers participating in the project were distributed islandwide. Each year, new farmers joined the project which started with only five farmers in year 1 (1986-1987) but by year 4 had attracted a total of thirty-three farmers six of whom opted out within the first two years of the project. By the end of year 4, the selected farmers had received and planted a total of 31,538 pineapple plants (Annex 2).

2.3 Production Support, Costs and Returns

Project participants received pineapple plants at a highly subsidized price of EC\$0.10 per plant. (The price was subsequently raised to \$0.15 per plant.) All plants purchased were delivered (transported) free of charge, and trained technicians were made available to visit the farmers' holdings to give guidance relative to planting material preparation, land preparation and planting. Additionally, through the FMC, chemical inputs were imported in bulk and sold to farmers at cost price.

Pineapple nurseries were established and maintained in order to ensure constant supplies of planting materials. Demonstration plots were also established, and these provided farmers with visual evidence of results possible through adoption of recommended practices.

Farmers were provided with a format for recording production costs and returns relative to their pineapple activity. Attached (Annex 3) is a typical Production Cost/Returns statement computed using data provided by farmers participating in the project. This shows that farmers with a minimum of 500 pineapple plants (equivalent to 0.0625 acre) netted almost EC\$3,000 in profits.

Quantities of pineapples sold in 1988, 1989 and 1990 were estimated at 750 pounds, 19,500 pounds and 29,500 pounds, respectively. Approximately eighty per cent (80%) of the sales were made to hotels.

2.4 Market Survey

The market survey was conducted in response to concerns raised by the first group of farmers participating in the project. Towards the last quarter of 1989, ten farmers were at the stage of either harvesting or preparing to harvest their first set of pineapple fruits produced through the project. They expressed concern relating to the lack of information on local market demand and prices for pineapples. Consequently, the MOA and FMC collaborated towards planning and executing a Pineapple Market Survey.

2.4.1 Survey Methodology

The survey was conducted through interviews based on a number of relevant questions compiled in the form of a questionnaire (Annex 4). Questionnaires were prepared jointly by Mr. Ronan Saliou (FTM) and Ms. Indra Baldeo (MOA). They were designed to solicit responses relative to

- 1) the level of demand for fresh pineapple fruits by local supermarkets, hotels/guest houses and restaurants;
- 2) peak periods of demand, and prices offered for the commodity;
- 3) fruit quality expectations by major local market outlets; and
- 4) varietal preferences by major pineapple purchasers.

There was, however, no pre-testing of questionnaires to determine their effectiveness in extracting the necessary responses from respondents.

Selection of the target group for the survey was influenced by convenience of location as well as perceived present and potential capabilities for purchasing pineapple fruits. Thus, included in the survey were

- the five large supermarkets in St. George's parish
- ten of the most popular restaurants in St. George's
- fourteen hotels, located mainly in the major tourist area (Grand Anse, St. George's).

The Manager or Purchasing Officer of each selected supermarket, restaurant and hotel was interviewed by a team of two persons - one from the FTM (Mr. Ronan Saliou) and the other from the MOA (Ms.

Indra Baldeo or Mr. Steve Patrick). Each interview lasted approximately 30 minutes. The survey was conducted during the period October 10-26, 1989.

2.4.2 RESULTS OF THE SURVEY

1. Of the twenty-nine establishments surveyed, twenty-six (that is, 89.6 percent) purchased pineapples, but mainly in the processed form which is imported. Among the 26 were twelve (that is, 46 percent) which purchased locally produced pineapples. Three of the establishments (small hotels) never purchased or used pineapples. However, two of the three were relatively new (less than one year in operation) and did not rule out the likelihood of having pineapples included in their menu.

Some of the reasons given for the limited purchase of locally produced pineapples were as follows:

- 1) Inadequate and unreliable supplies. For example, one St. George's supermarket which required, on average, 150 pounds per week during the months of December to April, and half that quantity during the other months received only 48 pounds in 1989: 24 pounds, 8 pounds and 16 pounds in May, June and July, respectively; none during months of peak demand.
- 2) Poor quality
- 3) Unrealistically high prices demanded
- 4) Too much time involved in peeling and preparing pineapples. This comment was made specifically by one restaurant owner.

2. Approximately 92 per cent of establishments which purchased pineapples were aware of their peak periods of demand for the commodity; the remaining 8 per cent were relatively new in their operations and were therefore unable to indicate demand trends.

Among establishments with known peak demands, the majority (92 per cent) indicated peak demand for pineapple during December and January; 83 per cent experienced peak demand in February and March; 67 per cent and 63 per cent had peak demand in November and April, respectively; but only 20 per cent experienced peak demand in August, while 13 per cent experienced peak demand in July, September and October, and 17 per cent and 4 per cent, respectively, had peak demand in May and June. The number of surveyed establishments with peak demand for pineapples, by month, is shown in Annex 5a.

3. Of the twelve establishments which purchased locally produced

pineapples, five bought only from farmers: two bought from farmers and the GMNIB; two bought from farmers, GMNIB and the municipal market; one bought from the GMNIB and the supermarket; and two others bought exclusively from GMNIB and the St. George's municipal market, respectively. Approximately sixty-six per cent (66%) of the purchasers were unaware of the variety (or varieties) purchased. Smooth Cayenne and Sugar Load varieties were purchased by an equal proportion about (17%) of the establishments which purchased fresh pineapples.

4. During peak demand periods (November-April) locally produced pineapples fetched prices of up to EC\$3.50 per pound. Prices generally fell to EC\$1.50 per pound during the remainder of the year. However, pineapple purchasers interviewed expressed interest in purchasing pineapples at EC\$2.00 and \$3.00 per pound for small (less than 3 pounds) and large fruits, respectively, provided fruits were of high quality.

5. Fifty-nine per cent (that is, seventeen) of the pineapple purchasers interviewed considered as important the establishment of distinct fruit quality criteria. The majority (76 per cent) of the seventeen purchasers considered "colour" the most important quality criterion; 59 per cent and 47 per cent, respectively, considered "presentation" and "size" as most important. Only 35 per cent considered "taste" as most important; and even smaller percentages (12 per cent and 6 per cent, respectively) considered "weight" and "shape" as being most important. (Annex 5b)

Most purchasers preferred half-ripe fruits with "eyes" not deeply embedded in the fruit. One supermarket and one restaurant also indicated preference for fruits with crown attached.

6. The question "what quantities can you purchase weekly?" drew responses from only twenty of the twenty-six establishments which purchased pineapples. The number and percentage of respondents requiring different quantities of pineapples weekly were stated as follows:

<u>QUANTITY (POUNDS) REQUIRED</u>	<u>NO.</u>	<u>RESPONDENTS</u>	
		<u>PERCENTAGE</u>	
<20	6	30	
20-40	4	20	
40-60	3	15	
60-100	1	5	
100-200	2	10	
1500	1	5	
"No idea"	3	15	
TOTAL	20	100	

A graphical illustration of the percentage of establishments

requiring varying quantities of pineapples per week is provided (Annex 5 c).

7. Forty-six per cent (46%) of the establishments which purchased pineapples indicated interest in entering into supply contracts with local pineapple producers.

8. Accepting pineapples "on consignment" was favored by only twenty-three per cent (23%) of establishments purchasing pineapples. These establishments included three supermarkets, two hotels and one restaurant.

3. CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS AND RECOMMENDATIONS

1. There is no statistical basis to the survey. Consequently, the survey results cannot be meaningfully extrapolated. However, since it may be necessary to obtain a total picture of the pineapple demand situation, there may be need to identify and survey all existing and potential market outlets for pineapple islandwide. This could be easily undertaken with assistance from MOA's Extension Division.

2. Mainly because of inadequate and unreliable supply of locally produced pineapples, local hotels, restaurants and supermarkets have resorted to imported (canned) pineapples. Efforts should therefore be made to better organize and promote local pineapple production activities aimed at satisfying current and potential local demand. If economically feasible, and provided pineapple production could exceed fresh market demand, local processing of pineapple should be encouraged and facilitated. This will tend to minimize possible adverse effects of gluts likely to occur due to unregulated expanded production activities. It will also cater for consumers and restaurant/hotel caterers who have developed a prejudice in favour of processed pineapple. Additionally, however, locally produced pineapples should be vigorously promoted through the advertising media.

3. The major peak demand period for pineapple (November to April) almost coincides with the tourist season (December to April) when most hotels experience highest levels of occupancy. Some supermarkets and restaurants seem to have their peak periods of demand extended beyond the tourist season. There is therefore need to ensure year round production of pineapples if the demand of the various purchasing establishments is to be satisfied.

Since the natural peak production period for pineapple is June to July, all efforts should be made to chemically treat a pre-determined proportion of pineapple plants in each field at calculated intervals in order to induce flowering for off-season fruit production.

4. Most hotels, restaurants and supermarkets purchase pineapples directly from farmers. The variety of pineapple offered for sale seems to be of little or no concern to purchasers.

Pineapple producers should be encouraged and assisted to plan their production strategy and develop their marketing skills.

5. For any given time period, differences in pineapple prices are related to fruit quality - especially size. Farmers should therefore be given technical guidance towards implementing appropriate production and harvesting techniques to ensure production of top quality fruits.

6. Weekly demand for pineapples by the majority (more than 70 per cent) of pineapple purchasing establishments with known requirements is relatively small (less than 100 pounds per establishment). However, one large (more than 200 room) hotel requires approximately 1,500 pounds pineapples weekly. These requirements relate to peak demand periods, and can drop by about 50 to 70 per cent during periods of low demand (May to October). Proper planning and coordination of pineapple production activities should therefore be of paramount importance in ensuring that consumer demand is satisfied.

7. The project created a significant impact on local pineapple production. Annual production rose from an estimated 500 pounds (226.76 kilograms) in 1986 to approximately 29,500 pounds (13,378.68 kilograms) in 1990. However, there is still a big gap between the 1990 production and the estimated demand of 150,000 pounds (68,027.21 kilograms) to 200,000 pounds (90,702.95 kilograms) per annum. Increased planting material availability, coupled with a concerted promotional campaign by MOA's extension service, could result in significant increases in pineapple acreages and production levels sufficient to satisfy local demand. With average local yields being in the vicinity of 30,000 pounds per acre, approximately five (5) to seven (7) acres pineapple will be adequate to satisfy present local demand. However, the required acreage/demand could increase significantly, given the current and anticipated growth in the island's tourist industry which creates the largest outlet for locally produced pineapples.

8. Although the current acreage under pineapple cultivation is estimated to be about four (4) acres, based on the quantity of planting materials distributed, the actual existence of such acreage and the level of productivity of whatever acreage actually existing is doubtful. To erase any doubt regarding the pineapple supply/demand situation, and to facilitate effective planning of the local pineapple industry, MOA should institute a periodic (probably monthly) monitoring of the field situation and maintain an accurate record of relevant information necessary to forecast production levels within a certain degree of confidence.

9. The quantity of pineapple plants distributed between 1987 and 1990 (inclusive) totalled 31,538 which was less than double the quantity (18,000) imported during 1986 and 1987. Therefore, with specific reference to Planting Material Multiplication, the Project cannot be considered very successful. At the onset of the Project, an effective system should have been established to facilitate rapid multiplication of imported planting material. This would have resulted in larger quantities of plants being made available and, with the technical and material support provided, the Project could have made a more significant impact in terms of satisfying local demand for pineapples.

10. Hotels have been the major purchasers of pineapples. Special efforts should therefore be made to produce top quality fruits on a year round basis, but particularly during the peak tourist season, so as to ensure that hotels replace all (or most) of the imported canned pineapples with locally produced fruits.

11. There is an adequately trained core of pineapple producers and MOA technicians to ensure long term sustainability of pineapple production in Grenada. This core need to be expanded through continued training activities, and current and potential pineapple producers should be encouraged and assisted towards developing a viable pineapple industry locally. Grenada can easily become self-sufficient in both fresh and processed pineapples.

12. The booklet "Pineapple Basics", prepared and distributed through the Project, is a good reference source for farmers involved or interested in commercial pineapple production. It should however be updated and improved as new techniques and information become available.

13. The Project was well structured to ensure success: Training was tailored and scheduled to suit farmers' needs, and post-training technical and material inputs were made available on a timely basis. Overseas training of local technicians must be considered a worthwhile investment, and the MOA may wish to consider further overseas training (refresher courses) for these technicians. It may also be considered useful to arrange for about four (maybe five) key pineapple producers (one each from Agricultural Districts South, East, North and West - and maybe Carriacou) to visit pineapple farms in Martinique or another pineapple producing country.

ANNEXES

ANNEX 1

CONTRACT FOR PINEAPPLE GROWERS

In accordance with the Crop Diversification program, the French Agricultural Co-operation Team has agreed to provide planting material (a spineless variety) at a subsidized price to promote higher level of pineapple production all year round.

Farmers however, are to meet certain conditions to be selected as pineapple producers. They are as follows:

- 1 - have adequate field conditions as recommended by the extension officers,
- 2 - buy between 500 - 1000 plants at the cost of 10 cents per plant (subsidized price),
- 3 - attended a one-day training program at Mardigras on pineapple production,
- 4 - practise flower induction.

The farmers in turn will receive certain benefits from the field officers such as:

- 1 - pre-planting inspections to ensure that the land is suitably prepared,
- 2 - regular field visits after planting,
- 3 - a training session on pineapple production,
- 4 - availability of certain chemicals needed for pest control and flower induction not sold in Grenada, at a reasonable price.

I, the undersigned am willing to produce pineapple under the above-mentioned conditions.

Date:

Farmer:

Extension Officer:

ANNEX 2

**PINEAPPLE FARMERS, FARM LOCATION AND PLANTING
MATERIAL DISTRIBUTION (1987-1990)**

Farmers Name	Farm Location	No. of pine plants distributed				
		1987	1988	1989	1990	Total
Aubrey Arnold	Westerhall	1000	1000	500	500	3000
Augustine Henry	Concord	1000				
Frederick Thomas	Mt. Granby		500	500		1000
Glosten Williams	Belle Vue		500			500
Jessie Collins	Calivigny			2300		2300
Chester Agard	Belle Vue		500	200	500	1200
Cecil Winsborrow	Corinth		1000	500	500	2000
Ken Lycorish	Boulogne			1000	238	1238
Reggie Buddy	Plains			1000		
Paul Jeremiah	Mt. William			1700		1700
Egbert Edwards	La Poterie	500				500
Raphael Phillip	Plaisance		500			500
Dean Nelson	Granton			500		1000
Oscar Phillip	Fontenoy			500	500	1000
Pontzfield Coop.	Pontzfield			1000		1000
Franklyn Forrester	Chantilly				500	500
Samuel Joseph	Pomme Rose Mt.				500	500
Ronald Martin	Mt. Moritz				500	500
Siddiqui Sylvester	Belle Vue				1000	1000
Monica Cadore	Black Bay				500	500
Nathaniel Herry	River Salle				500	500
Crispin Hagley	Clozier			1100		1100
Kenrick Gabriel	Clozier				500	500
Sharon Paul	Bailes Bacolet				500	500
John Cadet	Belle Vue				500	500
Ken Rush	Westerhall				500	500
W. John	Syracuse				500	500
Lain Lewis	Bois Congo		500			500
Dennis Noel	Balthasar		1500			1500
John St. Bernard	Dougaldston					500
Grenville Vale Corp.	Grenville Vale	500				500
Alderick Hypolite	Mt. Agnes	1000				1000
Fleaton Hamilton	Concord Mt.		1000			1000
		4000	8000	9700	9838	31538
No. of new farmers in program		5	10	7	11	33
No. of farmers dropping out		2	4			6
No. of Active farmers = 27						

ANNEX 3

EXPENDITURE AND INCOME RE CULTIVATION OF
0.0625 ACRE PINEAPPLE

Crop : Pineapple
Variety : Smooth Cayenne
Area of the plot : 2700 sqft.

EXPENDITURE AND INCOME FOR 500 PINEAPPLE PLANTS

<u>OPERATION</u>	DATE	TYPE	MATERIAL		LABOR	
			QUANTITY	COST	MAN DAY	COST
<u>LAND PREPARATION</u>						
Land clearing	01/07/89				1	15
Forking	02/07/89				2	30
Refining	04/07/89				1	15
Draining	05/07/89				1	15
<u>SUB TOTAL</u>						75
Planting & digging holes	06/07/89				3	45
Planting material		Smooth Cayenne	500	75		
<u>CULTURAL PRACTICES</u>						
Fertilizing	03/07/89	12-8-24	11 lbs	3.10		
	03/10/89	12-8-24	22 lbs	6.20		
	03/12/89	12-8-24	22 lbs	6.20	2	30
	01/01/90	12-8-24	22 lbs	6.20		
	04/02/90	12-8-24	22 lbs	6.20		
Chemical Control	20/07/89	Gesatop	3 oz	3.00		
	15/09/89	Gesatop	3 oz	3.00		
	10/11/89	Gesatop	3 oz	3.00		
	30/01/90	Gesatop	3 oz	3.00	2	30
	30/04/90	Gesatop	3 oz	3.00		
	10/06/90	Gramoxone	8 oz	8.00		

<u>Hand weeding</u>	10/10/89				1	15
	15/03/90				1	15
	20/05/90				1	15
	20/08/90				1	15

SPRAY & DI-
SEASE CONTROL

Fungicide	10/09/89	Ridomil	4 oz	30.00		
	10/11/89	Aliette	4 oz	10.00	1/2	7.5
	02/03/90	Aliette	4 oz	10.00		

Insecticide	02/08/89	Basudin	2 oz	1.80		
	11/10/89	Sevin	2 oz	2.30	1/2	7.5
	05/02/90	Sevin	2 oz	2.30		

Flower Induction	15/03/90	Calcium Carbide	2 oz	2.00		
	19/03/90	Calcium Carbide	2 oz	2.00	1	15

Rodenticide	10/07/90	Racumin	1.25 oz	5.00	1/4	4
-------------	----------	---------	---------	------	-----	---

<u>HARVEST</u>	20/08/90		200 lbs			
	15/09/90		450 lbs			
	20/10/90		720 lbs		2	30
	30/10/90		450 lbs			

<u>TRANSPORT & SALE</u>	21/08/90		195 lbs			
	16/09/90		430 lbs			
	21/10/90		710 lbs		7	105
	31/10/90		440 lbs			

<u>TOTAL EXPENDITURE</u> (LABOR NOT INCLUDED)	191.30
<u>TOTAL LABOR</u>	401.25

<u>TOTAL EXPENDITURE</u>	592.55
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<u>INCOME</u> (EC\$2.00 per lb, except for the final sale which attracted a price of EC\$1.50 per lb.)	3330.00
--	---------

<u>NET PROFIT</u>	2737.45
-------------------	---------

ANNEX 4 : SURVEY QUESTIONNAIRE

**PINEAPPLE
SURVEY 89**

COMMENCED:

DATE:

ENDED:

HOTEL

RESTAURANT

BAR

NAME:

LOCATION:

SURVEYORS:

PINEAPPLE MARKET STUDY

Do you purchase Pineapples in your enterprise?

YES

NO

I Methods of Utilization in Enterprise:

1. Are Pineapples included in your menu?

YES

NO

2. If yes, in what form is it utilized?

(a) Fresh:

Segments

Cubes

Cooked and incorporated
into dishes

Slices

Crushed

Juices

Icecreams
and sherbets

Tarts and
Pies

(b) Processed:

Slices

Segments

Jams

Stew

Juices

Syrup

3. Do you serve any pineapple-based Specialty dishes?

YES

NO

4. If yes, what are they?

-
-
-
-

5. Would you like to contribute towards the compilation of a pineapple recipe book?

YES

NO

II Needs/Demand Assessment:

1. What quantity of fresh pineapples could you use annually?

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Lbs.												

2. When are your peak periods of the year?

Jan.	Feb.	Mar.	Apr	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
------	------	------	-----	-----	------	------	------	------	------	------	------

3. Where do you obtain your fresh fruit, and what varieties?

-
-
-

4. At what prices?

-
-
-

III Qualities to look for in Purchasing:

1. Do you use any criteria for selection when purchasing fresh fruits?

YES

NO

2. If yes, what are they?

Colour	Shape	Taste	Size	Weight	Small	Presentation	Other
--------	-------	-------	------	--------	-------	--------------	-------

3. If all these characteristics are present; at what price would you be prepared to purchase fresh fruit?

-
-

4. What quantities can you purchase weekly?

<20 lbs	20-40 lb	40-60 lbs	60-100 lbs	100 lbs>
---------	----------	-----------	------------	----------

IV Contracts with Farmers:

1. Are you willing to make contracts with farmers YES NO

2. If yes, under what conditions?

-
-
-
-

3. Are you willing to take pineapples on consignment? YES NO

4. If yes, at what price?

5. Are you interested in participating in a session on post-harvest handling, presentation and packaging?

YES	NO
-----	----

6. Would you like to participate in our pineaPle publicity drive?

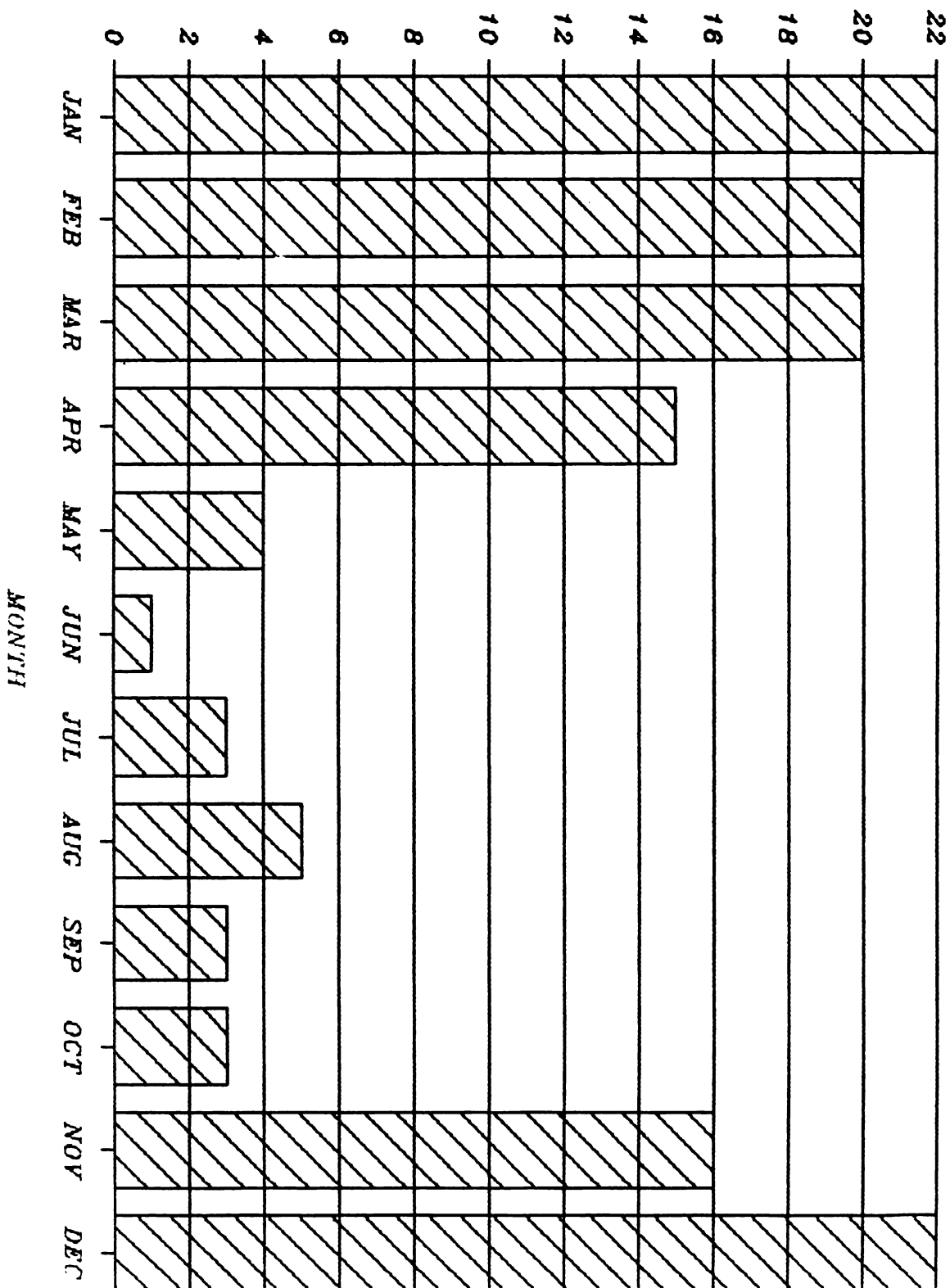
YES	NO
-----	----

7. What slogan would you suggest?

-
-
-

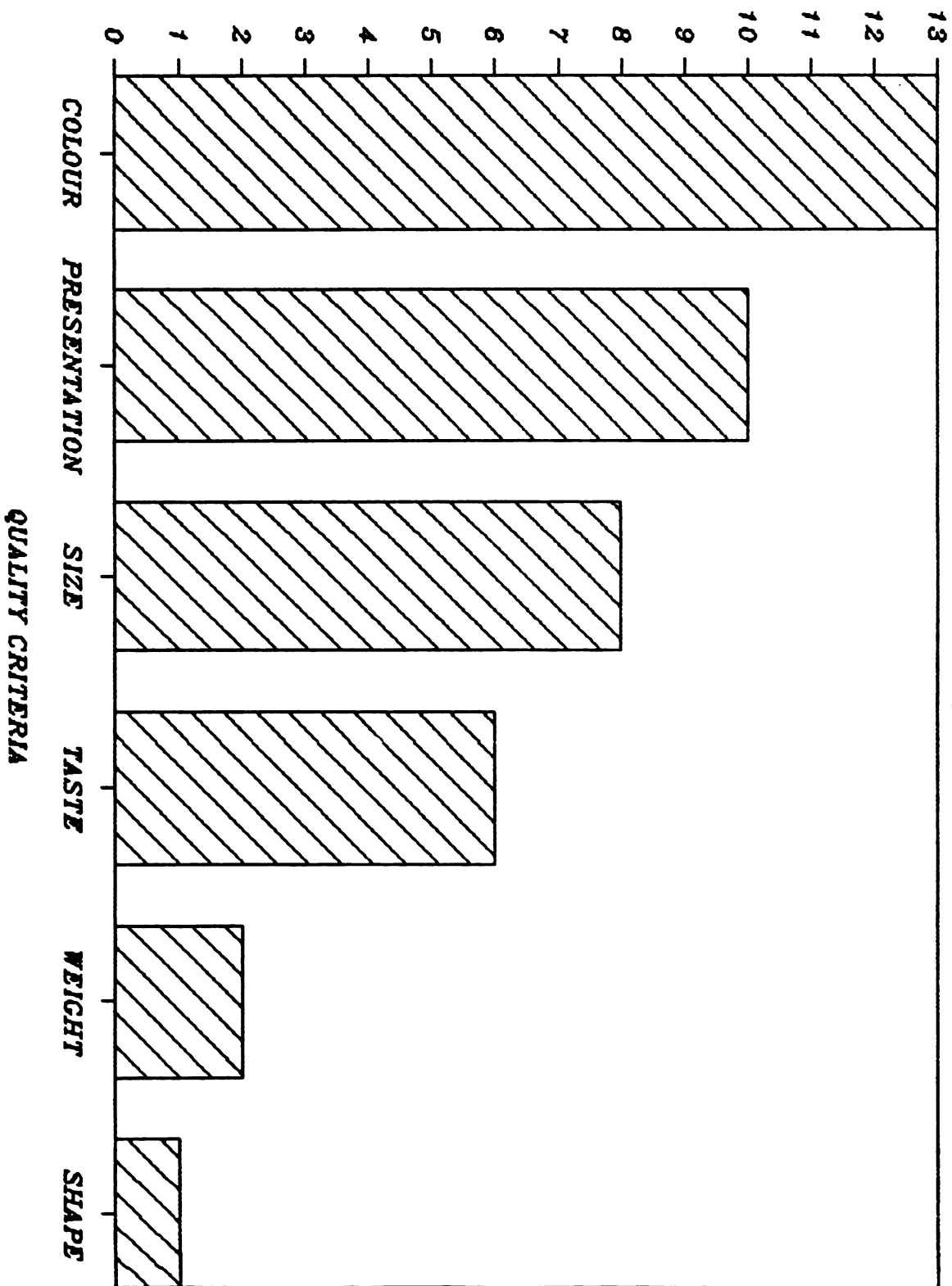
NUMBER OF ESTABLISHMENTS

**ANNEX 5a: NUMBER OF ESTABLISHMENTS WITH
PEAK DEMAND FOR PINEAPPLE, BY MONTH**

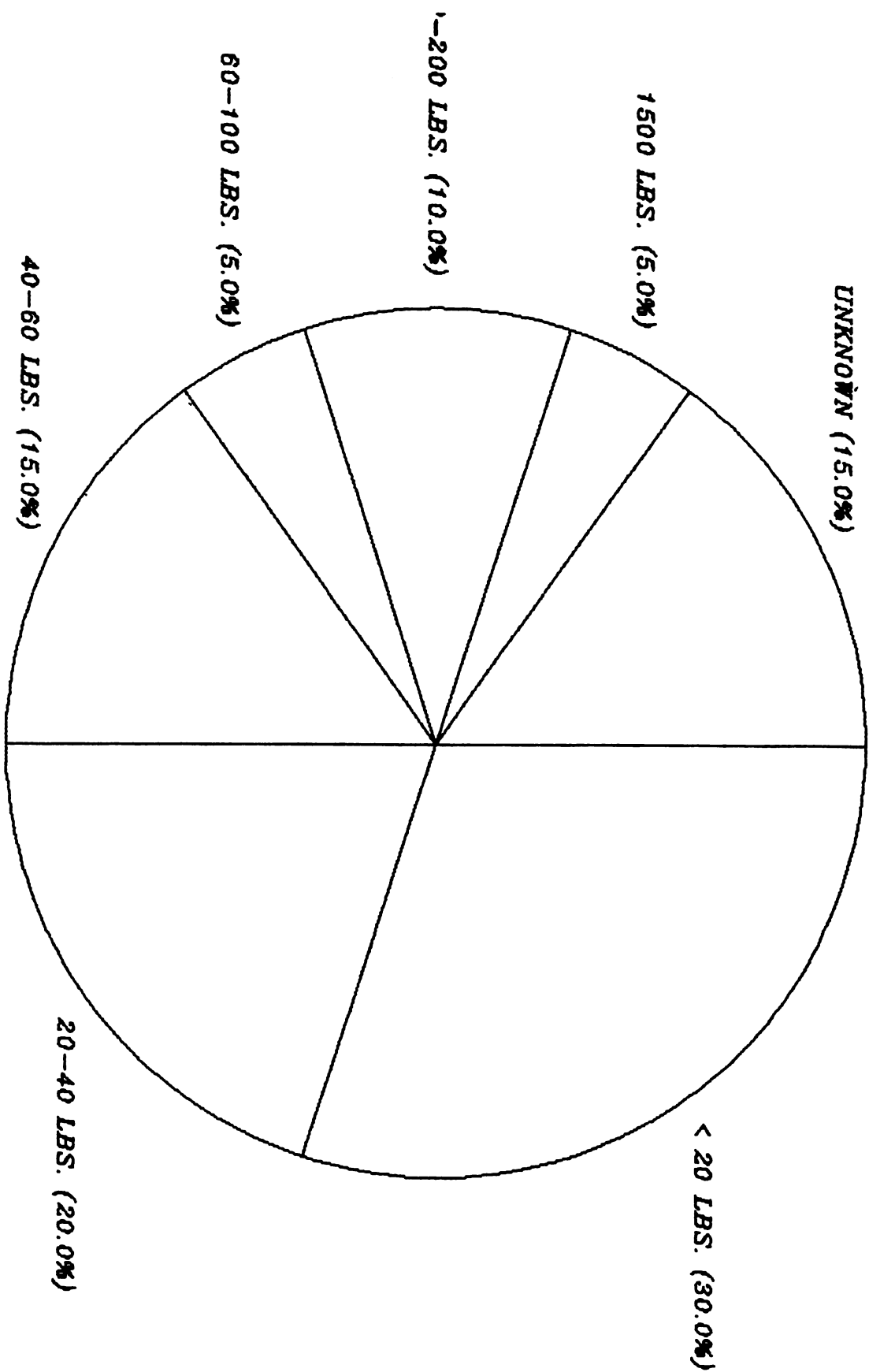



NUMBER OF ESTABLISHMENTS

**ANNEX 5b: NUMBER OF ESTABLISHMENTS
EMPHASIZING DIFFERENT QUALITY CRITERIA**



ANNEX 5c: QUANTITY OF PINEAPPLE
REQUIRED WEEKLY BY ESTABLISHMENTS





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