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POSTHARVEST INSTITUTE FOR PERISHABLES

GRENADA SPICE MARKET RESEARCH PROJECT

Dr. Wayne Henry

Postharvest Institute for Perishables

Cooperative Agreement AID/DAN-1323-A-00-5093-00

USAID Science & Technology Agriculture

PIP GTS Research Report No. 10

July, 1988

Contract No. DAN-1323-B-02-6017-00

Delivery Order 02

Funded by USAID/Barbados



University of Idaho

College of Agriculture

in cooperation with

United States Agency for
International Development

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INTRODUCTION

The Postharvest Institute for Perishables (PIP) was requested by AID Grenada to assist the Grenada Cooperative Nutmeg Association (GCNA) and to a lesser extent, the Minor Spices Association (MSA) in improving marketing of spices to the U.S.

USAID Barbados agreed to fund a project, Delivery Order No. 2, under contract No. DAN-1323-B-020-6017-00.

The scope of work was as follows:

1. Information Collection on Grinding Processes

PIP will set up a program, in cooperation with McCormick, to collect information on nutmeg grinding, sizing and screening techniques and offer ways to improve these processes to other U.S. spice firms. A PIP spice specialist will observe the nutmeg grinding operations and recommend ways to better handle the product based on these observations.

2. Combining the Minor Spices Association with the GCNA

PIP will work with the GCNA and the MSA to combine their operations to facilitate improved, efficient marketing of minor spices. Most, if not all, of the GCNA members are also members of the MSA so that this administrative transition would not be difficult. An important aspect of the proposed joint operations would allow the marketing of smaller shipments of minor spices to be combined with container loads of nutmeg.

3. Spice Promotional Program

A spice promotional program will be organized and representatives from various U.S. spice firms will be invited to Grenada by the GCNA and Ministry of Agriculture. Tours will be set up for U.S. spice firm representatives to observe the handling, processing and quality control of Grenada nutmeg, cloves and cinnamon. Spice firms will be expected to pay for expenses of representatives sent to Grenada. GCNA staff will visit nutmeg grinding operations in various U.S. spice processing firms.

The project was approved by the GCNA (see Annex I). A request was made by the MSA to PIP for assistance (see Annex II) and a reply sent by the PIP Director (see Annex III).

There was a change in the Board of Directors of the GCNA either slightly before or at the beginning of this project, which showed early signs of problems in cooperation. There did not seem to be an earnest desire by the Board to cooperate in this project. Procrastination in approvals and providing information was the norm. Because of this "foot dragging" throughout the project by some members of the Board of Directors of the GCNA, the project was not completed, and less than 50 percent of the allotted funds were spent.

This report will attempt to document how the project progressed and the inconclusive results in cooperation with several U.S. spice firms.

Dr. Wayne Henry, Spice Marketing consultant for PIP agreed to continue some efforts to develop a U.S. market for Grenada nutmeg and other spices even after funding was terminated on December 1, 1987.

BACKGROUND

The Grenada Cooperative Nutmeg Association has traditionally been a major foreign exchange earner for Grenada. The export of nutmeg has amounted to 35-40 percent of total annual foreign exchange earned. In addition, 750 workers have been employed by the GCNA, and it has been estimated that 30,000 people in Grenada are financially affected by the nutmeg industry.

In 1984 the GCNA was heavily in debt; nutmeg prices were low and growers were not harvesting their crops or maintaining their trees properly. In addition, the government had been extracting an 18 percent tax on the export value of nutmeg, a major contributing factor in putting Grenada's nutmeg production costs higher than the one large producer, Indonesia. Increasing numbers of growers were not willing to harvest their nutmeg for the prevailing world market price paid when the high export tax was added.

The U.S. Agency for International Development (USAID) and the Postharvest Institute for Perishables began assistance to the Grenada Cooperative Nutmeg Association in 1984. One of the first recommendations of PIP was for the Government of Grenada to remove the export tax from nutmeg. After a period of time, the government responded by reducing the tax in the first stage and then completely removing it. This enabled the GCNA to better compete in the world market with its product and allowed member growers to receive acceptable

prices that were sufficiently profitable. In the recent past, the GCNA sold 95 percent of its nutmeg to non-U.S. markets. In the 1950's, however, a much higher percent of Grenada nutmeg was marketed in the U.S. U.S. spice firms had been concerned about rumors that Grenadian nutmeg was a lower quality product than Indonesian nutmeg (the world's leading exporter country). U.S. spice firms had been unanimous in their opposition to purchasing Grenadian nutmeg directly from Grenada because of purportedly high oil/fat content, causing difficulties in sizing and screening after grinding.

Through various chemical and physical analyses in an adaptive research project initiated by the Postharvest Institute for Perishables and the dissemination of the research results, major U.S. spice firms began to show more interest in Grenada's product. Several firms cooperated with PIP in conducting laboratory tests of Grenadian nutmeg and met with PIP personnel to discuss additional information they would need to consider future purchases. One U.S. firm (Baltimore Spice) purchased 30,000 pounds. However, because of the development of the price fixing cartel between Indonesia and Grenada, Baltimore Spice decided not to cooperate with PIP on this project (see Annex IV).

PROBLEMS ENCOUNTERED

In 1987, Grenada and Indonesia, the two largest producers of nutmeg in the world, instituted a price fixing arrangement for the commodity (see Annex V). Subsequently, prices rose to over U.S. \$3.00 per pound in 1987 from a low of U.S. \$0.68 per pound in 1984.

The new Board of Directors of the GCNA proved not to be as cooperative as the former Board as this project began. Requests for the GCNA to provide information or approval of various aspects of the work scope were routinely ignored. At one point a cable was sent to the GCNA (see Annex VI) by PIP suggesting that the project be terminated immediately if there was no longer interest in its results.

In an earlier telephone conversation, it was learned that several of the components in a revised scope of work would be cancelled. A cable was sent to the general manager of the GCNA confirming these cancellations (see Annex VII). It can be readily seen that desired assistance in the marketing of Grenada nutmeg in the U.S. declined as the Board of Directors changed and the new body guided the GCNA. The cartel agreement gave the GCNA a new tool which to this body was sufficient to obtain the price that was established.

Minor Spices Association personnel had met informally with an official or officers of the GCNA about the possibility of joining into one association to market nutmeg and other minor spices. Because of the small volume of sales at the MSA, this organization could not employ a marketing staff although the GCNA presumably had an adequate marketing program to handle minor spice sales. In addition, transportation costs for minor spices could be reduced if shipments could be jointly sent with larger lots of nutmeg.

At one point, according to the general manager, the GCNA appeared to be open to a joint operation with the MSA. For whatever reasons, there was no positive movement in this direction. Several visits to Grenada by PIP personnel could not generate sufficient interest for the two organizations to

join forces. Since PIP did not feel it a productive use of project funds to go beyond the forming of a single association, further assistance to the MSA was not pursued.

PROJECT DEVELOPMENT

Wayne Henry, PIP spice marketing consultant, was associated with the project from the beginning. He interacted closely with the general manager of the GCNA and met several times with the manager of the MSA.

Several spice firms had an interest in exploring the possibility of importing nutmeg directly from Grenada to the U.S. However, one large U.S. spice firm refused to continue discussions after the cartel was formed (see Annex IV).

The spice consultant spent considerable time attempting to find a way for interested U.S. spice firms to utilize the different chemical make-up of Grenada nutmeg in their formulations. It appeared that there might be a correlation between elevation and volatile oil levels. These tests proved to be inconclusive for samples run by McCormick and Griffith laboratories (see Annex VIII). However, PIP could not verify the authentication of the areas where the nutmeg samples were purportedly collected in Grenada. Since there were such differences in percentages between tests 1 and 2 (Annex VIII), especially for non-volatile oils, the testing process on the product was suspect.

Although these tests and project results were inconclusive, some recommendations can be made to improve the quality and the potential of marketing Grenada nutmeg in the U.S.

RECOMMENDATIONS AND CONCLUSIONS

The following recommendations and conclusions are taken from Dr. Wayne Henry, PIP consultant and a report by Dr. David Drown, Composition and Processing of Grenadian Nutmeg (PIP/Grenada/Aug. 86/No 53.3).

Dr. Drown's report, although technically funded under another project, was closely correlated with this project. The possible connection between elevation and composition of Grenada nutmeg was first noticed by Dr. Drown.

Below are given recommendations by Dr.'s Drown and Henry for improving Grenada nutmeg quality and with the potential to increase sales to the U.S. Despite the problems encountered in cooperation, and the limited project funds utilized, there was some knowledge gained and opportunities initiated in marketing Grenada nutmeg directly to the U.S.

Dr. Wayne Henry

1. Set up a controlled project designed to determine the composition and processing characteristics of Grenada nutmeg produced at various elevations and grown on the east and west sides of the island. From this study, it can be determined if there is a significant difference in composition and if selection could provide the chemical composition desired by spice firms.
2. That the GCNA consider setting up its own processing facilities. This would include investigating the use of the US/FDA approved irradiation for sterilization control of aflatoxin (a problem in shipments to Europe).

Dr. David Drown's recommendations taken from the report Composition Processing of Grenadian Nutmeg, PIP/Grenada/August 86/No. 53.3.

Many of the difficulties arising in this study are the result of the analyses being performed in a lab far removed from the collection site. Handling and shipping of the samples increase the possibility that the samples will be damaged or lost. In this study, mold and mildew formation during shipping was, at times, a rather severe problem. Also, the collection and labeling methods could not be monitored as closely as the researcher would have liked for reliable analyses. Lastly, researchers in Idaho are just not familiar enough with local climatic and agricultural conditions on Grenada to see other correlations that might be occurring with the data. Factors such as local topography, microclimates, soil conditions, differences in harvesting practices, seasonal variations, and other nuances as yet unconsidered, may account for many of the observed variabilities. Therefore, it is recommended that a Grenadian laboratory staffed with local technicians be set up to perform the analyses. In addition to eliminating the shipping and handling problems, it would also afford year round and more in-depth studies.

It seems likely that climate is playing an important role in the composition of nutmeg on the island. In the initial samples, the differences in composition appeared to be due to the locations on either the east or west side of the island. However, with the inclusion of the August data, it became apparent that seasonal factors are probably more significant than geographic factors. It is recommended that a study concentrating on climate related to variations in composition be

conducted. To emphasize, a laboratory on Grenada is necessary for this kind of endeavor.

In the interim, it may be assumed that the volatile-oil content of nutmeg will be higher at higher elevations during the drier months. The volatile-oil content is less predictable during rainy months. The current drying practices are adequate as long as moisture content is reduced to approximately six to eight percent. Fat content seems to be independent of all the factors looked at in this study. Further conclusions are difficult to make with the limited data available thus far.

United States spice-processing firms desire a consistent composition nutmeg as their raw material. In order for the Grenada Cooperative Nutmeg Association to market directly to the United States, they must provide a consistent product of lower volatile-oil content. The observations of this limited study indicate that differences in seasonal and agricultural practices contribute to the variability in composition. It is recommended that the GCNA develop a management system to encourage uniform agricultural practices. Price incentives to the farmer based on oil-content specifications would be one method to encourage improved cultivation and harvesting methods. A laboratory in Grenada, capable of analyzing fresh samples the day they are collected, is necessary to determine true cause and effect relationships between seasonal, geographic, and cultivation parameters.

ANNEX I

UI CID MOCW

UI CID MOCW

RCA MAY 13 1522

COMMAND

UI CID MOCW

UI CID MOCW

W3454 GSPICE GA
13 MAY 87 RSR/AT

TO POSTHARVEST INSTITUTE FOR PERISHABLES

FOR MR. HARVEY NEESE

FROM GRENADA CO-OPERATIVE NUTMEG ASSOCIATION

FURTHER OUR TELEPHONE CONVERSATION TODAY. I NOW CONFIRM AT MEETING YESTERDAY NUTMEG BOARD FULLY APPROVED PROPOSAL DATED 25 NOVEMBER 1986 FOR USAID FUNDED UNITED STATES MARKET RESEARCH AND PROMOTION PROGRAMME FOR GRENADA SPICES AS SUBSEQUENTLY REVIEWED AND ELABORATED BY DR. WAYNE HENRY ON VISIT TO GRENADA LAST MONTH. INCLUDING AGREEMENT TO OFFER SMALL REDUCTION IN SELLING PRICE OF GRENADA NUTMEGS FOR SALE BY GCNA TO U.S. FIRMS OF 5 PERCENT BELOW RULING MARKET PRICE. AS INDUCEMENT.

HOWEVER. REGARDING TECHNICAL DATA OBTAINED FROM PRODUCTION RUNS AND RESEARCH. THIS TO BE REFERRED TO GCNA FOR APPROVAL BEFORE DISSEMINATING TO OTHER PROSPECTIVE BUYERS OR TO THE TRADE.

RE YR TLX 30 APRIL. GCNA EXPRESS REGRETS AND APOLOGISE FOR UNAVOIDABLE DELAY IN FORMAL ACCEPTANCE OF PROPOSAL. BUT HOPES YOU CAN NOW PROCEED AT FULL SPEED WITH MARKET DEVELOPMENT PROCESS AND WE OFFER OUR FULLEST CO-OPERATION AND ASSISTANCE.

WE LOOK FORWARD TO YOUR FURTHER NEWS AND REPORTS AND WITH VERY BEST REGARDS.

ROBIN RENWICK
GENERAL MANAGER+

UI CID MOCW

3454 GSPICE GA

TO REPLY FROM TELEX I OR II (TWX) DIAL 100 FROM EASYLINK USE /WUW.
EST 1431 MAY/13/1987

COMMAND

MINOR SPICES

CO-OPERATIVE MARKETING SOCIETY LTD.
GRENVILLE STREET ST. GEORGE'S GRENADA W.I.

PHONE: (809) 440-3458
CABLE: COPMINTY

TELEX: 3454 GSPICE GA

7th August, 1986

Mr. Harvey Neese - Field Director
Postharvest Institute
for Perishables
University of Idaho
College of Agriculture
Moscow, Idaho 83843
U.S.A.

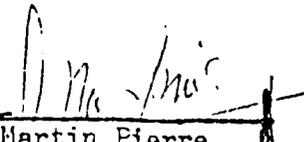


Dear Sir,

I was today in contact with your associate Mr. David C. Drown, Chemical Engineer, who advised me that you may be in a position to give us some assistance in our endeavour to enter the spice market in a more realistic approach for the distribution of our products.

I am enclosing a copy of a letter to the Canadian High Commission in Barbados which would give the basic idea of our immediate requirements. Whatever further information you may require would be supplied on request.

Yours faithfully


Martin Pierre
Secretary/ Manager.

Copy

6th August 1986

Mr. Tim Martin
3rd Secretary Development
C.I.D.A.
Canadian High Commission
Pine Gardens
Barbados

Dear Mr. Martin,

Earlier this year I had been advised by Mr. Kenton Eggleston of the Co-operative Union of Canada who is Program Manager, Caribbean International Development Department, to contact you in connection with some assistance with our establishment of the packaging of our finished products for our local markets and for our Caribbean markets as well. At present we are the marketing agents for producers of Minor Spices such as Cinnamon, Cloves and Stevia, Pimento, Turmeric and others.

The Government of Grenada has agreed to the release of a portion of a building at Tanteen, close to the Produce Laboratory, where our operations can be carried on and an estimation of the cost to renovate has already been presented for the works for \$24,000.00. The mill for grinding the products has also been handed over to the Minor Spices Co-op and a small grinding operation has commenced.

I write to enquire whether our dilemma can be overcome any assistance we can be given in this connection by your agency. All pertinent information will be supplied to you on request.

I thank you in advanced for a favourable consideration of this letter and an early reply please.

Yours faithfully



Martin Pierre
Secretary/Manager.

TELEX

300 24-4

Budget: 051-K101
Project: 53.4

TO: Martin Pierre
Manager, Minor Spices
3454 GSPICE GA

FROM: Harvey C. Neese
Postharvest Institute for Perishables
510 776 0923 UI CID MOCW

1. Received your letter of Aug 7 in regards to Minor Spices Assoc. request to C.I.D.A.
2. PIP presently working with GCNA in improving quality control of nutmeg and marketing opportunities in U.S.
3. In past, we proposed advantages of Minor Spices & GCNA combining under one organization. Adminis. & mkt costs would be greatly reduced. Minor Spices also could gain access to U.S. markets with relative small volumes of minor spices by "piggy backing" nutmeg container shipments.
4. PIP with assistance from AID could also work with Minor Spices Assoc. but we feel a single association would be strategically advantageous for Minor Spice producers who are also nutmeg producers.
5. Suggest you earnestly & expediently explore possibility of Minor Spices joining together with the GCNA so PIP can better serve the total interests of Grenada spice producers.



July 27, 1987

Harvey Neese
Post Harvest Institute
103 Morrill Hall
University of Idaho
Moscow, Idaho 83843

Dear Harvey:

Since my return from the east coast, I have contacted Robin Renwich and arranged to have low and high elevation nutmeg samples sent to you. Griffith Laboratories and McCormick, Griffith and McCormick have agreed to work with us on the processing of Grenada Nutmeg, however, they wanted small samples to do some lab tests before we scheduled a major run.

Baltimore Spice turned us down, even though at one time they had indicated extreme interest in pursuing the project with us. As I indicated to you over the phone, both Baltimore and McCormick did not like the marketing arrangement made between Grenada and Indonisia. They could not see a real incentive to work on the project. Baltimore buys in excess of 150 tons per year, so they would be a very good customer. I am to keep them posted and they may change their minds, however, they voice their dissatisfaction with the "marketing arrangement" often, so I would guess that they will not change their minds.

I am still talking with Durkee and I told you they had given us the green light to work with them until the shake-up in management that came with Durkee being purchased by R.T. French.

I doubt very much, if we can complete this project by December 1st. The logistics of getting products from Grenada and fitting the test in with the various participating companies production schedule will more than likely extend the project into January and February. I hope this will not be a problem.

(con't)

A&H

SECRET

Let me know if you have any questions and I will keep you posted on my progress with Durkee.

Sincerely,



Wayne Henry

ENCLOSURE: I itemized expenses for the trip to Maryland.

Spicy New Cartel Sets Nutmeg Prices

By Alan J. Wax
Newsday

Move over, OPEC. There's a new global cartel for consumers to reckon with. This one, however, has pungence as well as punch.

That's because the commodity whose price and production have come under regulation is nutmeg, the aromatic spice used to flavor such foods as doughnuts, pumpkin pie, custard and eggnog.

The cartel was formalized early this month by an agreement between producer organizations in Indonesia and Grenada, which together account for 98 percent of the world's nutmeg production.

Nutmeg is Grenada's main foreign-exchange wage earner and is an important export for Indonesia.

Under the marketing agreement, which is to run until 1990, the two countries will set prices and production levels for the aromatic spice.

Nutmeg prices were depressed in the early 1980s by bumper crops and the United States' invasion of Grenada, which ended Soviet purchases of the spice. But prices have more than doubled in the past two

years, according to the U.S. Department of Agriculture. The cartel's agreement calls for prices to stay at about the same level they've been lately.

"This is an opportune time for Indonesia and Grenada to institute a controlled marketing pact," said Rex Dull, a tropical products analyst at the USDA. "Any action these countries would take certainly would be significant for prices."

Recently, importers paid \$3.10 a pound for Grenadian nutmegs; Indonesian nutmegs cost them \$3.18 a pound. In 1988, American importers paid an average of \$1.72 a pound, and in 1984 they paid 68¢ a pound. (Indonesian nutmegs cost more because they contain more fat and are easier to grind, Dull said.)

Spice buyer Hank Kaestner of McCormick & Co. in Baltimore said the agreement won't have much impact on prices since Grenada has been operating informally under an Indonesian guideline put into effect about 15 months ago.

Thomas Burns, executive vice president of the American Spice Trade Association in Englewood Cliffs, N.J., said the cartel will have little impact on demand. "It's an inelastic market," he said, noting

that commercial bakers who use the spice cannot switch to something else for the same distinctive taste. "You wouldn't expect a baker to change his recipe appreciably," Burns said.

Under the agreement, Indonesia will sell its high-quality nutmegs for between \$6,800 and \$7,000 a metric ton this year (\$3.09 and \$3.18 a pound), while low-quality nutmegs will go for between \$1,000 and \$1,200 a metric ton (45¢ and 55¢ a pound). A metric ton is the equivalent

of 2,200 pounds. The best Grenadian nutmegs will not be sold for less than \$6,650 a metric ton (\$3.02 a pound), while lower-quality nutmegs will fetch at least \$5,574 (\$2.53 a pound).

The cartel set a production ceiling of 8,500 metric tons for this year. Indonesia will supply 6,300 metric tons and Grenada the balance. Current production figures were not available. Last year, the United States imported 1,819 metric tons of nutmegs.

ANNEX VI

LINE # OR
1001
1001 2027 MOSCOW IDAHO 11/2/87
1002
1003 ROBIN RENWICK
1004 3454 GSPICE
1005
1006 SUBJECT: GRENADA NUTMEG MKT IN U.S.
1007
1008 I CAN'T SEEM TO MAKE CONTACT WITH YOU ALTHOUGH I
1009 HAVE TRIED THREE TIMES IN PAST FEW DAYS.
1010
1011 I NEED TO KNOW TODAY. LATEST TOMORROW. WHETHER
1012 YOU ARE SENDING NUTMEG TO TEST RUN TO SPICE FIRMS
1013 REF YOUR CONVERSATION WITH WAYNE HENRY.
1014
1015 IF YOUR ASSOC. FEELS MKT WORK WITH U.S. IS NOT
1016 NEEDED CONSIDERING PRICING ARRANGEMENT WITH
1017 INDONESIA. THEN PLSE ADVISE ME SOONEST. I WOULD
1018 LIKE TO TRY TO UTILIZE SOME OF REMAINING PROJECT
1019 FUNDS TO TAKE A LOOK AT BIO-TECH SOLUTION TO MOKO
1020 DISEASE IN BANANAS.
1021
1022 CAN YOU SEND ME TELEX OR PHONT TODAY AND TELL ME SOMETHING
1023 OF YOUR THOUGHTS ON THE MKT ASPECTS. IF I DON'T
1024 HEAR FROM YOU. I WILL ASSUME THERE IS NO LONGER
1025 INTEREST AND WILL RECOMMEND TERMINATION OF PROJECT
1026 IMMEDIATELY.
1027
1028 H.C. NEESE/PIF
1029 510 776 0923 UI CID MOCW
1030

P
LINE # OR M
#001
#001 2015 MOSCOW IDAHO 10/14/87
#002
#003 ROBIN RENWICK/GCNA
#004 3454 GSPICE GA
#005
#006 USAID FUNDED WORK ORDER NO'S 1 & 2 ON NUTMEG
#007 MARKETING AND ANALYSIS WILL TERMINATE AS OF DEC
#008 1. 1987.
#009
#010 WORK ORDER NO. 2 WILL HAVE ONE-HALF TO TWO-THIRDS
#011 OF THE FUNDS REMAINING AT TERMINATION DATE BASED
#012 ON CURRENT EXPENDITURES.
#013
#014 ACCORDING TO OUR CONVERSATIONS. THE GCNA DOES NOT
#015 WISH TO CARRY THRU WITH THE FOLLOWING CATEGORES
#016 IN THE BUDGET:
#017 A. SEND A LAB ASSISTANT FOR TRAININT TO U/IDAHO
#018 FOR OIL/MOISTURE CONTENT CALCULATIONS.
#019 B. SEND BOARD MEMBERS TO VISIT U.S. SPICE FIRMS.
#020 C. ORGANIZE A SPICE "TRADE" SHOW IN GRENADA AND
#021 INVITE U.S. SPICE FIRM REPS TO INTERACT WITH GCNA.
#022
#023 THERE ARE ABOUT SIX WEEKS REMAINING IN THE WORK
#024 ORDERS. I REQUEST THAT YOU RECONSIDER THE ABOVE
#025 POINTS OR OTHER AREAS WHERE THE MARKETING FUNDS
#026 MIGHT BE UTILIZED PRODUCTIVELY AND LET ME KNOW
#027 ASAP.
#028
#029 IN THE ABSENCE OF ANY RECONSIDERATION OF THE ABOVE
#030 POINTS OR OTHER SUGGESTIONS. I WILL SUGGEST THAT
#031 REMAINING FUNDS MIGHT BE UTILIZED - UNTIL TERMINATION
#032 DATE - OR INITIATION OF BIOTECH WORK ON MOKO DISEASE
#033 OF BANANAS IN GRENADA. PIP HAS BEEN REQUESTED BY WINBAN
#034 TO UTILIZE SERVICES OF U/IDAHO SCIENTIST WITH
#035 EXPERIENCE IN BIOTECHNOLOGY AND MOKO DISEASE. USAID
#036 WILL HAVE TO APPROVE OF USE OF FUNDS. IT IS NOT KNOWN
#037 IF USAID CAN OR WILL APPROVE THIS CHANGE IN USE OF
#038 REMAINING NUTMEG FUNDS.
#039
#040 WAYNE HENRY. DAVE BROWN AND PIP STAFF WILL BE
#041 SPENDING AS MUCH TIME AS NECESSARY TO FINISH THE
#042 OTHER TASKS IN NUTMEG WORK ORDERS PRIOR TO DEC 1.
#043 WAYNE HENRY AND I EXPECT TO MAKE A TRIP TO GRENADA IN
#044 NOVEMBER AS A WRAP-UP OF PROJECT. I URGE YOU TO SEND
#045 NUTMEG LOTS TO FOUR SPICE FIRMS ASAP SO WE CAN COMPLETE
#046 THIS PHASE PRIOR TO TERMINATION.
#047
#048 HARVEY NEESE/PIF
#049 510 776 0923 UI CID MOCW
#050
#051 CC: JACK SLEEPER/USAID BARBADOS
#052 ^S
COMMAND

CANDOR, INC.

Wayne Henry, Ph.D.
Brokerage and Consulting

May 3, 1988 1

Harvey Neese, Director
Post Harvest Institute for Perishables
University of Idaho
College of Agriculture
Moscow, ID 83843



Dear Harvey:

I have visited with Griffith Laboratories and McCormick about the analytical results of Grenada Nutmeg harvested at low elevations versus standard Grenada Nutmeg. We also discussed their continual interest in working with Grenada as a viable direct supplier of nutmeg and mace.

In a nutshell, both companies are interested and willing to continue efforts to find the avenue to provide the Grenada Nutmeg Cooperative an opportunity to become a viable and reliable supplier. For this to happen, the nutmeg must be processed with no more difficulty than Indonesian nutmeg, it must meet their specifications and they must offer a price incentive of approximately 5% reduction from the world spot price. The primary reason for the price reduction is to aid them in reformulating their blends and developing a market for the West Indies ground nutmeg that will vary somewhat from what is currently on the market.

Dr. Dave Brown reported: "In the spring of 1986 nine small samples of nutmeg collected from specific locations on the island of Grenada were obtained from the Grenadian Cooperative Nutmeg Association. Each sample was analyzed for steam volatile oil, moisture, fat and inert solids. These results suggested that composition was a function of elevation and geography. Due to the small number and size of the samples, and the uncertain history of the samples, a more exhaustive test plan was recommended to verify the correlations observed, as well as to track composition as a function of drying history."

The results of Dr. Brown's analysis showed that volatile oil content tends to increase with increasing elevation, however, there was significant variations

19

within all elevations. Dr. Brown's report pointed out that on the east side of the island, the moisture content varied with elevation and moisture was unaffected with elevations on the west side of the island.

Because of these findings, we set out to have the Grenada Nutmeg Cooperative collect samples harvested from low and high elevations. As you know this became a major effort in trying to get the samples and as it turned out we received samples from only low elevations, along with their normal mixed production.

We finally sent samples to McCormick Griffith and Baltimore Spice to run an analysis. Griffith and McCormick ran the analysis; Baltimore Spice decided they didn't have the time. Baltimore also told me that they had bought Grenada Nutmeg in the past and would do so in the future - as long as their requirements were met.

We received the analytical results from Griffith and McCormick and questioned the results. We sent additional samples and I have just received the results. Table I summarizes the composition results and Table II represents Nutmeg specifications:

Table I Nutmeg Composition Results

	<u>Standard</u>	<u>Low Elevation</u>
Oils, Steam Volatile		
Griffith - 1st Test	9.50 %	7.50 %
2nd Test	7.50 %	6.50 %
McCormick - 1st Test	7.25 %	6.70 %
2nd Test	8.60 %	7.95 %
Oils, Nonvolatile		
Griffith - 1st Test	54.20 %	60.0 %
2nd Test	43.03 %	40.65 %
McCormick - 1st Test	25.95 %	26.96 %
2nd Test	37.99 %	32.27 %
Moisture		
Griffith - 1st Test	-	-
2nd Test	4.57 %	4.94 %
McCormick - 1st Test	6.80 %	8.60 %
2nd Test	4.76 %	5.60 %

Table II - Nutmeg Specifications

	Volatile Oil		Nonvolatile		Moisture
	Min / Max		Min / Max		Max
Griffith	6.5%	-	25.0%	35.0%	8.0%
McCormick	7.5%	-	25.0%	-	8.0%

We cannot draw any real conclusions from the results in Table I. Previous results indicated that at lower elevations, volatile oil increased with increasing elevation. The analysis in Table I tends to support the initial findings, however, additional (accurate) sampling and testing would have to be done in order to draw any significant conclusions. Overall, there is a significant difference in the analytical results between the two companies. It is very difficult to believe that the percentage of nonvolatile oil could be 54% to 60% as was reported by Griffith with the first test. I discussed this with Griffith and was told that it was very difficult for them to grind the whole nutmeg and be guaranteed a homogeneous sample. They volunteered to re-run the analysis if the University of Idaho would grind a sample and send it to them.

It would be my recommendation to put together a controlled project designed to determine the composition and processing characteristics of Grenada nutmeg produce at various elevations and nutmeg grown on the East and West side of the island. From this study we could determine if there was a significant difference in composition and if by selective harvesting we could produce a West Indies nutmeg that would provide similar processing characteristics as Indonesian nutmeg. Griffith, McCormick and Baltimore Spice agreed that they will continue to work with us.

It is also my recommendation that the Grenada Nutmeg Cooperative set up their own processing facilities. Including taking a very serious look at using (the recently F.D.A. approved) Irradiation for sterilization and control of aflatoxin.

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Harvey, we have learned a great deal about the marketing of Grenada Nutmeg in the United States. However, it is not enough to convince the U.S. spice companies to make a change. Hopefully you can acquire additional funds and the full cooperation of Grenada. Please give me a call if you have any questions.

Sincerely,


Wayne E. Henry