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PROCEEDINGS
OF THE
24th ANNUAL MEETING

August 15 to 20, 1988

Ocho Rios, Jamaica

Editor:
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PREFACE

"Low Input Farming Techniques: A Third World Alternative" was the theme of the 24th Annual Meeting of the Caribbean Food Crops Society (CFCS) hosted by the Jamaican Ministry of Agriculture at Mallards Beach Hotel, Ocho Ríos, on the north coast of Jamaica. Some 61 papers were presented, of which about 40 were submitted and accepted for publication in these proceedings. They are grouped into six sections:

* Harvesting, Storage, Processing and Marketing
* Soils, Soil Fertility and Fertilizers
* Animal Prodnction and Feeds
* Crop Production Systems
* Pest and Pesticide Management
* Agricultural Research and Development Agencies in the Caribbesn

The agricultural research and extension results reflected in these papers represent the kinds of home-grown technologies very appropriate to the region. One would hope, therefore, that these technologies are not affected in a lasting way by the kinds of damage wrought by the hurricanes which have been prominent in the past few years (especially Hurricane Gilbert, in 1988, and Hugo in 1989). This publication is dedicated to the food producers of the Caribbean, with the hope that they have rebounded with the re-greening of the earth.

In addition to an all-day mid-week field trip as part of the CFCS meeting, touring small-scale food crop produciton enterprises, 2 1/2 days (August 18-20, 1988) were devoted to a concurrent workshop on **"Alternative Agricultural Enterprises for the Caribbean and Pacific Basins"**, sponsored by a Special Grants program in tropical and subtropical agriculture of the U.S. Department of Agriculture. This grants program is administered by the Caribbean Basin Advisory Group (CBAG) and Pacific Basin Advisory Group (PBAG), representing cooperating U.S. Agricultural Experiment Stations of the region. The report on this workshop is available through the IFAS[1]:

Guidellnes to Authors, as well as the **Constitution of the CFCS** are provided in the Annex of the present Proceedings.

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ACKNOWLEDGEMENTS

Mr. Clarence Franklin, Permanent Secretary in the Ministry of Agriculture, and Chairman of the Organizing Committee, and President of the CFCS, Mr. Hugh Miller, Vice Chairman, and Mr. Joe Suah, Convenor and Secretary, with the entire organizing committee (listed on inside the back cover), are commended for hosting an excellent meeting. For their untiring interest in the welfare of the CFCS Proceedings, sincere thanks go to Drs. Miguel Lugo-López, Darshan S. Padda, Antonio Pinchinat and Mrs. Aurora Lugo-López.

Invaluable technical assistance in the assembly, review and editing of the Proceedings was provided by Dr. Jan Hurwitch-MacDonald, then of the IICA Jamaica Office, as well as by Dr. Rutty Mitchell, and Dr. and Mrs. Colin and Cynthia Weir. Especially appreciated was the competent, ready and patient assistance in word processing, typing and re-typing by Christene Henry, Anne Liautaud, and Cynthia Weir. Also, the task of editing was measurably eased by those authors (ca. 25%) who submitted their papers at least close in format to the guidelines provided for authors (reprinted in the Annex). Janice Knausenberger selflessly and generously provided sustenance, tangible and intangible in nature.

PROGRAM SUMMARY

	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
MORNING		8:30 - 9:00 a.m. Registration 9:00 - 9:45 a.m. Opening Ceremony 9:45 - 10:00 a.m. COFFEE BREAK 10:00 - 12:30 a.m. Harvesting Storage & Marketing	8:30 - 10:00 a.m. Physiology & Soils COFFEE BREAK 10:15 - 12:30 a.m. Pests & Pesticides	FIELD TRIP Depart from Hotel at 8:00 a.m.	8:30 - 10:00 a.m. Production/ Systems COFFEE BREAK (CBAG/PBAG) 10:15 a.m. - 12:30 p.m. Production/ Systems (CBAG/PBAG)	8:30 a.m. CBAG/PBAG Workshop GENERAL	8:30 a.m. CBAG/PBAG 10:00 a.m. CFCS Annual Meeting
		12:30 - 2:00 p.m. L U N C H	12:30 - 2:00 p.m. L U N C H		12:30 - 2:00 p.m. L U N C H		
AFTERNOON		2:00 - 3:30 p.m. Propagating & Planting COFFEE BREAK 3:45 - 5:30 p.m. Crop Improvement	2:00 - 3:00 p.m. Pests & Pesticides COFFEE BREAK 3:45 - 5:30 p.m. Production/Systems	6:30 p.m. Return to Hotel	2:00 - 3:00 p.m. Manuring & Fertilizing (CBAG/PABG) COFFEE BREAK		1:00 p.m. Post Conference Tour
EVENING	5:00-6:30 p.m. Registration 7:00-9:00 p.m. Cocktail Party (Minister of Agriculture)	7:00-9:00 p.m. Cocktail Party (Hotel Manager's)	7:00 p.m. Cultural Evening		To be announced		7:00 p.m. Banquet

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