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منظمة الأغذية والزراعة للأمم المتحدة | 联合国粮食及农业组织 | Food and Agriculture Organization of the United Nations | Organisation des Nations Unies pour l'alimentation et l'agriculture | Organización de las Naciones Unidas para la Agricultura y la Alimentación

COMMITTEE ON COMMODITY PROBLEMS

JOINT MEETING OF THE THIRTY-SECOND SESSION OF THE INTERGOVERNMENTAL GROUP ON HARD FIBRES AND THE THIRTY-FOURTH SESSION OF THE INTERGOVERNMENTAL GROUP ON JUTE, KENAF AND ALLIED FIBRES

Salvador, Brazil, 8 – 11 July 2003

EVALUATION OF FIQUE AND ABACA FIBERS AS AN ALTERNATIVE TO NON-LEGAL CROPS

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1. Team Involved:

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- Professor Holmer Savastano Júnior – USP – Brazil
- Professor Ruby Mejía de Gutiérrez – Universidade del Valle – Colombia
- Professor Silvio Delvasto Arjona – Universidade del Valle – Colombia
- Empaques del Cauco – Popayan – Colombia
- Pematec Traingel do Brasil – Brasil
- Volkswagen do Brasil – Brasil
- Ecuador – Research team to be proposed by the Government

2. Introduction

Fique fibers (Fulcra spp) are currently produced in a very traditional way and are limited to local market. The crop is very important, since its grown site is located in the area with several problems of illicit crops and guerilla. The revitalization of this crop under a new technology approach will enhance the possibility to open new markets for the fibers in applications that would require larger quantities as well use residues from bags production.

Nowadays the only commercial product in large using fique fibers is the bags utilized in coffee and rice bags. There are traditional application that use a very small quantity of fibers, such as handcraft, cords, etc…The short fibers are even no brought to the industry due to the lack of market. An application which utilizes large quantities of the fibers (long and short) would allow the replacement of illicit crops by the fique, also called *cabulla*.. The present study will include the fiber characterization, in vitro replication of the seedlings, nutrition experiments, plague and disease control, treatment of by products and waste materials, and development of new applications in the composite industry for both matrix, cement and polymeric, aiming the civil construction and automotive industry.

✪ The current situation can be described as a stable market, but the future is full of uncertantities in relation to supply of raw material. The production costs are rising, due manly to salaries (inflation) and lack of raw material. The competition against polypropylene have resulted in reduction in the market. Due to the lower market in the past, the companies are under a critical situation such as financial costs, high debts, few

number of customers (FEDECAFÉ bought 35% of the production of Empaques in 1995 and in 1996 bought zero bags.

Coffe and rice bags made of fique fibers are natural and biodegradable used for storage, transportation and export of cereals in genral.

3. Justification

Fique have been cultivated in Colombia from centuries ago by the native people. In the last decades the crop have been devaluated and lost much of its market to polypropylene bags.

4. Methodology

The methodology used in the project will consist of several steps toward the full knowledge of the crop needs to modern practices as well the development of new applications.

- Field study of soil, water and nutrition requirement for the plants;
- Survey of plagues and diseases common to the crops;
- In vitro replication of fique seedlings, aiming to obtain high quantities and disease free plants;
- Test of new decortication machines that reduces the risks of accidents and gives better quality fibers;
- Production of composites using polymeric matrix (non-woven and injection molding technology mainly for the auto industry) and cement matrix (water tank and roof tiles); and
- Evaluation of the waste material – mucilage and juice – for possible medicine application and energy generation, reducing its impact over the environment, since this material are currently discarded in the soil of rivers.

5. Budget

The required budget will include the non financial counterparts from the universities and the private companies involved in the project, including salaries, equipments, facilities, etc…

The financial budget will be requested from the CFC and is described bellow.

ITEM	*UNIT COST*	*TOTAL COSTS*
Crop survey and soil and plant analysis		4,000
Plaque and disease survey		4,000
Adaptation of existing decortication machine		3,000
Analysis of waste materials (effluents)		6,000
In vitro replication		12,000
Polymeric matrix		12,000
Cement matrix		12,000
Field Trips		6,000
TOTAL BUDGET		59,000

6. Chronogram

The project will take one year for development, as described bellow, and at the end will permit a fully understanding of the fique potential Based upon these results it will be proposed to the government a large program of fique revitalization in Colombia. The crop fique is cultivated mainly by the native Americans Guambianos and Paeces. These people developed the utilization of the fiber and until today are the main producers. About 12,000 families depending on fique in the region of Cauca, which assolated by the drug crops and the guerrilla. The local production correspond to 40 t/day with 13% moisture. The region is the grower of the best coffee of Colombia, totally organic and packed in **fique bags**, processes with vegetable oil (oleín of African palm tree). These production represents a daily income of USD15,000 to the rural local communities of