

AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

DATE: 9/11/87

MEMORANDUM

TO: AID/PPC/CDIE/DI, room 209 SA-18
FROM: AID/SCI, Victoria Ose
SUBJECT: Transmittal of AID/SCI Progress Report(s)

Attached for permanent retention/proper disposition is the following:

AID/SCI Progress Report No.	<u>4. 555</u>
<u>Rec'd 7/28/87 - Interim.</u>	
<u>2d half of 1986 - rec'd 3/9/87</u>	
<u>1st half of 1986 - rec'd 10/20/86</u>	
<u>2d half of 1985 - rec'd 3/14/86</u>	
<u>1st half of 1985 - rec'd 8/13/85</u>	
<u>2d half of 1984 - rec'd 3/25/85</u>	

~~Attachment~~

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PROGRESS REPORT

4. 555

- 1) Report for the 1st half of 1985
- 2) Grantees : Dr. S. G. Ilangantileke
Mr. S. Seneviratne
Mr. J. B. Rajeswaran
- 3) Grant No : RG/AID/5
- 4) Title : Promoting Jatropha Curcas (Rata Endaru)
oil as a fuel substitute for diesel engine
fuel in Sri Lanka
- 5) Date of award : 2nd October, 1984
- 6) Administrative Changes :
Mr. S. Seneviratne has taken over as the
chief co-ordinator for the project from May
1985. Dr. S.G. Ilangantileke is at present
on sabbatical leave.
- 7) Progress to date : i. A network has been established for the
collection of Jatropha seed.
ii. Contacts have been established for the
leasing of land, for the purpose of
intensively cultivating Jatropha
iii. A study tour to the U.S. of America
was undertaken by one of the grantees,
Mr. S. Seneviratne
iv. Efforts are being made to establish
sources for preliminary extraction of
oil

7.1 Collection of seed material

Field trips were made to the districts of
Pollonaruwa and Kurunegala and contacts
were established for the collection of
Jatropha.

The trips were made during April, and it
was observed that Jatropha plants were just
beginning to flower then. By late June, it
was learned that the seeds were just
beginning to mature, turning a ripe yellow
in colour. Accordingly, another field trip
was made in early July, and a quantum of
1224 Kilos of seed were collected and
transported to stores. A sum of Rs. 4284.00
were paid out to agents as payment for
seed, at a rate of Rs. 3/50 per Kilo. This
rate is below the approved rate of Rs. 5/00
per Kilo. Additional payments were made for
sacks.

Rec'd in SCI: AUG 13 1985

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7.2 Leasing of land

During the field trips preliminary discussions were held with land owners in the Nikewaratiya area, with the intention of leasing land for intensive cultivation of Jatropha. This would enable researchers to carry out an Agronomy study, as well as have access to a firm supply of adequate seed material for extraction of oil. It is now established that land, complete with irrigation facilities are available for lease at nominal rates.

7.3 Study tour to the United States

A study tour to the United States was undertaken in March by Mr. S. Seneviratne, a co-grantee for this project. The object of this tour was to gain first-hand information on Engine Testing using vegetable oils. A comprehensive report of the results of this study tour is attached.

How ever it may be briefly summarized that, as a direct result of the experience of Mr. Seneviratne in the U.S., the project here can now be more objectively programmed. It is clear now that two distinct approaches exist. viz:

- i) Using straight vegetable oils with an indirect injection type of engine or,
- ii) Converting the oil to an ester or a micro emulsion and using it on a standard diesel engine.

It is intended to explore both approaches in the use of Jatropha oil for diesel engines in Sri lanka.

7.4 Preliminary extraction and analyses of oil

Since it is necessary to initially extract a quantity of oil for chemical analyses, inquiries have been made from various organizations. While negative responses have been received from Oils and Fats Div. of the CISIR, Colombo, and Lever Bros. Colombo, there is a strong possibility that coconut oil producers in the Kurunegala district may undertake the extraction. Negotiations are being held at the moment with regard to payment for such extraction, and the possibility of extracting Jatropha oil during the months of July - August, 1985

Laboratory tests will be jointly carried out by the Ceylon Petroleum Corp., and the Chemistry Dept. of the University of Peradeniya. The Refinery Manager of CPC has already agreed to carry out AS'IM tests on Jatropha oil.

8.0 Plan of work for the next half year

- i) Undertake study tours to Bangkok and the U.S.A.
- ii) Make arrangements to cultivate Jatropha.
- iii) Continue to analyze samples of oil extracted.
- iv) Initiate preliminary design of a suitable extracting machine.

8.1 Bangkok and U.S study tours

Inquiries have been made from Dr.Y. Takeda, JICA expert working in the Dept. of Agric., Bangkok, about the possibility of two research assistants being trained on the extraction and use of Jatropha oil. Inquiries have also being made from experts in the U.S. about the training of one research assitant, Mr. Harendra D. Fernando. It was established from Mr. Seneviratne's tour that the three establishments that closely relate to this project are at Illinois and San Antonio, Texas. It was therefore decided that Mr. Fernando would only visit these institutions. The 26th of August, 1985 has tentatively been fixed for these study tours to begin.

8.2 Cultivation of Jatropha

It is envisaged that information and expertise gained from the Bangkok study tour would enable researchers to grow Jatropha scientifically. It is intended that the proposed cultivation would be in the Nikewaratiya area, where land is available on lease.

8.3 Analyses of oil samples

It is the intention of the researchers to continue to pursue the extraction of oil by already established organizations. Oil thus extracted will be subjected to both ASTM and AOCs tests.

8.4 Preliminary design

It is also intended that, together with the intensive cultivation of Jatropha and the testing of oil samples, that steps would be taken to design and fabricate an extraction machine suitable to this country and this particular seed material.

9.0 Signature of Research Asst.

Sreerathna Fernando
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10.0 Signature of Grantee

[Signature]
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11.0 Signature of Head/Dept.

[Signature]
.....
HEAD/DEPT. OF ELECTRICAL & ENGINEERING
UNIVERSITY OF PERADENIYA
SRI LANKA

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