



INTERNATIONAL WORKSHOP ON

FEASIBILITY OF NON-EDIBLE OIL SEED CROPS FOR BIOFUEL PRODUCTION

Celebration on the Auspicious Occasion of His Majesty the King's 80th Birthday Anniversary

May 25 -27, 2007, Mae Fah Luang University, Chiang Rai, Thailand

Sponsored by the Commission on Higher Education, Ministry of Education; Mae Fah Luang University;
and the Agricultural Research Development Agency, Ministry of Agriculture

Organized by Mae Fah Luang University, Chiang Rai, Thailand, and Institute for Research on
Environment and Sustainability, University of Newcastle United Kingdom

Background and Justification

At the present time, the main limitation on the expansion of biodiesel production is competition for feedstock which are also the raw materials for the food industry. This causes fluctuation in supply and unpredictable prices, with direct impact on the potential supplies of biodiesel. Research on non-edible oil seed crops, such as Jatropha and/or castor bean, as the alternative biodiesel feedstock could help to solve this problem. Jatropha oil has been used successfully as an alternative fuel at the community scale in India and several countries in Africa. However, certain agronomic and biological issues currently limit the widespread use of Jatropha seed oil as a biofuel, and limited R&D has been done on Jatropha making it not ready for commercial production.

With concern for these issues, Mae Fah Luang University decided to arrange this workshop to share information and knowledge among those countries making progress with Jatropha R&D, with its socio-economic uses and impacts, and to establish clear research directions and goals for efficient use of research resources. This will benefit researchers, farmers, and industrial and community sectors in Thailand and elsewhere.

Purposes of the Workshop

- 1) Develop an R&D strategy for biofuels based on non-edible oil seed crops, with the initial focus on Jatropha
- 2) Establish technical and economic targets for biofuels based on non-edible oil seed crops
- 3) Develop a crop improvement R&D program to achieve the above targets
- 4) Estimate the resources and timing required to carry out the above R&D programme

Target Participants

30 invitation-only participants (15 overseas and 15 local) consisting of specialist researchers and industrial and community representatives.

Topics & Format of the Workshop

Topics

1. Industrial dimensions (market, scale, production and production scenarios)
2. Socio-economics (community livelihoods, health, etc.)
3. Oil chemistry (target oil quality properties, fatty acid profiles, esterification techniques)
4. Crop/Plant sciences (seed and oil yield and quality, crop management, toxic compounds, etc.)
5. Genetic manipulation through conventional breeding and biotechnology

Workshop Structure

Two days of presentations and discussion (six keynote speakers, nine invited papers) and a one-half day field trip

Workshop Language: English

List of Invited Speakers

International

1. Dr. Jan Poulisse. FAO, Rome (Economic considerations and competing uses)
2. Dr. G. Francis. University of Hohenheim, Germany (Jatropha cultivation and uses, toxicity)
3. Dr. M. Sujatha. Indian Council of Agricultural Research (Jatropha breeding)
4. Dr. Liu Qing. CSIRO Plant Industry, Australia. (Genetic manipulation of oil composition)
5. Dr. Ajay Kohli. University of Newcastle upon Tyne, U.K. (Plant molecular biology)
6. UNIDO Representative (Community-based systems)
7. Mr. David Wood. Oil/Energy Consultant, MFU, Thailand (Target oil properties, economic potential)
8. Dr. Werner Siemers. CUTEC-Institut GmbH, Germany & JGSEE, Thailand (Potential for biodiesel)

National

1. Dr. Panich Pongpirodom. Ministry of Energy, Thailand (Perspectives on energy policy)
2. Prof. Dr. Naksitte Coovattanachai. Thailand Research Fund and Mae Fah Luang University Council (Research and HRD needs and opportunities)
3. Colonel Dr. Samai Jai-in. Biodiesel Specialist, MTEC, Thailand (Jatropha-based biodiesel)

Expected Outputs

1. International proceedings prepared
2. Socio-economic potentials of non-edible oil seed crops as alternative energy sources identified
3. An R&D roadmap for alternative energy from non-edible seed crops produced as the basis for further international research collaboration

PROGRAMME
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Friday 25 May, 2007

08.00-08.30 Registration

08.40-08.50 Opening Ceremony

- **Associate Professor Dr. Vanchai Sirichana, President of Mae Fah Luang University**
- **Secretary-General, Commission on Higher Education**
- **Director, Agricultural Research Development Agency**

08.50-09.20 Keynote Address I: ***Overall Perspectives on Energy Policy in Thailand***

Dr. Panich Pongpirodorn (Director of Department of Energy Development and Promotion, Ministry of Energy, Thailand)

09.20-09.50 Keynote Address II: ***Is Biodiesel a Logical Choice for the Biofuel Industry?***

Mr. Werner Siemers (CUTEC-Institut GmbH, Germany and Joint International Graduate School for Energy and Environment, Thailand)

09.50-10.05 Coffee Break

10.05-10.35 Keynote Address III: ***Research and Human Resources: Needs and Opportunities for Biofuels***

Prof. Dr. Naksitte Coovattanachai (Director, Royal Golden Jubilee Program, Thailand Research Fund)

10.35-11.05 Keynote Lecture I: ***Non-edible Oil Seeds Crops for Biofuel Production: Prospects and Challenges***

Dr. M. Sujatha (Director of Oilseeds Research, Indian Council of Agricultural Research)

11.05-11.35 Keynote Lecture II: ***Jatropha as a Biofuel Crop: Potential and Issues***

Dr. George Francis (Hohenheim University, Germany)

11.35-12.05 Special Presentation: ***Future Prospects for Biofuels: An FAO Perspective***

Dr. Jan Poulisse (FAO, Rome)

12.05-12.20 ***Discussion***

12.20-13.00 Lunch

COMMERCIAL FEASIBILITY OF BIODIESEL

13.00-13.30 ***Target Oil Properties for Biodiesel***

Mr. David Wood (Oil and Energy Consultant, Mae Fah Luang University)

13.30-14.00 ***Jatropha-based Biodiesel: Current Status and Prospects***

Colonel Dr. Samai Jai-in (Biodiesel Specialist, MTEC, Thailand)

14.00-14.30 ***Community Production of Jatropha for Biofuels in Africa***

Mr. Nguyen Khac Tiep (Energy Expert, UNIDO Thailand)

14.30-14.45 Coffee Break

14.45-15.15 ***Economic Potential of Jatropha for Biofuels in Thailand***

Mr. David Wood (Oil and Energy Consultant, Mae Fah Luang University)

15.15-17.00 ***Group Discussion on Commercial Needs***

Convener: Prof. Dr. J. Keith Syers, Dean, School of Science, Mae Fah Luang University

18.00-20.00 Reception Dinner

Saturday 26 May, 2007

IMPROVING OILSEED CROPS TO MEET INDUSTRIAL NEEDS FOR BIOFUELS

08.30-09.00 ***Prospects for Varietal Improvement***

Dr. M. Sujatha (Director of Oilseeds Research, Indian Council of Agricultural Research)

09.00-09.30 ***Prospects for Crop Management***

Dr. George Francis (Hohenheim University, Germany)

09.30-10.00 ***Oilseed Crop Improvement through Biotechnology***

Dr. Liu Qing (CSIRO Plant Industry, Australia)

10.00-10.30 ***Future Research Needs to Make Jatropha a Viable Alternate Oilseed Crop***

Dr. Ajay Kohli (University of Newcastle upon Tyne, United Kingdom)

10.30-10.45 Coffee Break

10.45-12.00 ***Discussion on Improving Oilseed Crops to Meet Industrial Needs for Biofuels***

Convener: Prof. Dr. J. Keith Syers (Dean, School of Science, Mae Fah Luang University)

12.00-13.00 Lunch

13.00-14.45 ***Visit Community Biofuel Industry in Nang Lae, Chiang Rai***

14.45-15.00 Coffee Break

15.00-17.00 ***Discussion on Research Needs and Collaboration***

17.00-17.50 Leader, Mr. David Wood (Oil and Energy Consultant, Mae Fah Luang University)

17.50-18.00 Closing Ceremony

18.15-20.00 Farewell Dinner

Sunday 27 May, 2007

08.00-12.00 Cultural Tour (optional)