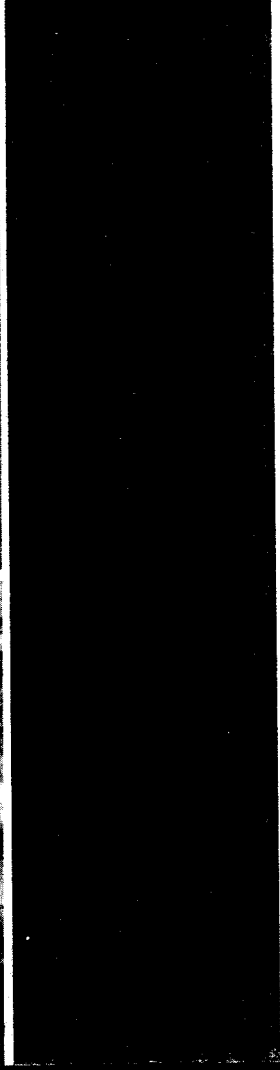
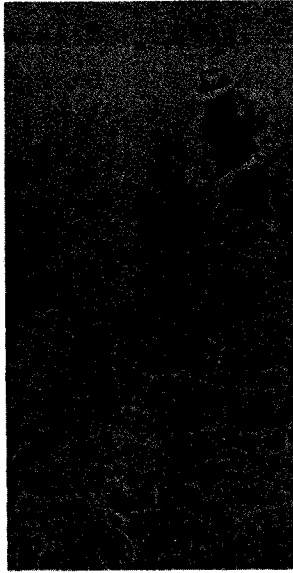


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LEUCAENA

Promising Forage and Tree Crop for the Tropics

NATIONAL ACADEMY OF SCIENCES



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Promising Forage and Tree Crop for the Tropics

Report of a study conducted jointly by
the Philippine Council for Agriculture and Resources Research
and the United States National Academy of Sciences

Avec Résumé en Français
Con Resumen en Español

NATIONAL ACADEMY OF SCIENCES
Washington, D.C. 1977

Preface

This report examines *Leucaena leucocephala*, a versatile legume whose full potential, thus far, is untapped. A "new" crop plant for tropical and subtropical countries, its possibilities are particularly important to marginal lands and low-income farmers. *Leucaena* was used 2,000 years ago by Mayans and Zapotecs of Central America, but only in the past two decades has a suggestion of its promise become apparent.

During that brief period several significant factors emerged: researchers in Hawaii and tropical Australia have found that cattle feeding on *leucaena* may show weight gains comparable to those of cattle feeding on the best pastures anywhere; private firms in the Philippines have developed a sizable trade in processed animal feeds containing *leucaena*; researchers in the Philippines demonstrated *leucaena*'s potential for reforesting eroded hillslopes, for use as firewood, for fueling industrial boilers, and for producing paper pulp; while in Mexico (*leucaena*'s native habitat) researchers have located over 100 varieties for future testing.

Since this information had not come to public attention, the U.S. National Academy of Sciences (NAS) and the Philippine Council for Agriculture and Resources Research (PCARR) jointly convened a meeting for a systematic review of the data in the hope that it might benefit nations throughout the tropics. The joint panel met at Los Baños, the Philippines, 2-4 September 1976. It assembled, from both sides of the Pacific, researchers specializing in a variety of areas including agronomy, plant breeding, tropical pastures, animal nutrition, forestry, and wood products research. (For a list of the study participants see Appendix B.)

This panel report is meant to introduce *leucaena* to agencies and institutions engaged in development assistance and agriculture in tropical countries and to research institutions with relevant interests. It is not a comprehensive technical review, but a document intended for the attention of decision makers and administrators as well as for research workers. By reaching this audience we hope to stimulate increased funds and facilities for *leucaena* development and exploitation.

In this report the plant is considered in light of its potential as a crop without specific regard for any particular country where it might flourish. Attempts to assess leucaena's merits or limitations for specific regions, countries, or localities would have unnecessarily complicated the panel's discussions. Accordingly, the report provides a general overview that leaves to the reader the task of weighing the technical prescriptions while bearing in mind his country's economics, needs, resources, and capabilities. The reader should also appreciate that, though treated separately in this report, many of leucaena's uses are interrelated and the plant can be used for several purposes simultaneously (e.g., for reforestation and for firewood production). Further, it is clear that many tests, trials, and development studies are needed to learn the extent of the plant's value. Chapter 8 outlines a program for research and action that will help determine leucaena's potential to alleviate major feed, wood, and fuel shortages, as well as deforestation problems in the tropics.

Those who would like to study leucaena in more depth may refer to the articles and general reviews cited in Appendix A; more specific advice may be obtained from scientists actively engaged in leucaena research (see Appendix C). Finally, a few institutions have offered to provide small quantities of leucaena seed and/or inoculum to bona fide researchers (see Appendix D).

A more detailed leucaena report is being published by PCARR. It, too, was drafted at the Los Baños meeting and contains the papers presented by individual panel members as well as the statements developed by working groups on the following topics:

- varietal introduction, hybridization, selection, and seed production technology
- farming systems
- management and utilization for forage and soil amelioration
- management and utilization for wood products.

Copies may be obtained without charge from Dr. Joseph Madamba, Director-General, Philippine Council for Agriculture and Resources Research, College, Laguna, the Philippines.

The panel is indebted to Dr. Madamba and his staff for hosting the meeting at Los Baños. The foreign visitors were much impressed with the organizational precision and attention to detail that characterized the meeting.

The Advisory Committee on Technology Innovation of the NAS Board on Science and Technology for International Development (see page 111), is assessing scientific and technological advances that might prove especially

applicable to problems of developing countries.* This report is one of a series that considers promising crop plant species that heretofore have been little known, neglected, or overlooked. Other titles include:

- *Underexploited Tropical Plants with Promising Economic Value* (1975)
- *Products from Jojoba: A Promising New Crop for Arid Lands* (1975)
- *The Winged Bean: A High-Protein Crop for the Tropics* (1975)
- *Making Aquatic Weeds Useful: Some Perspectives for Developing Countries* (1976)
- *Guayule: An Alternative Source of Natural Rubber* (1977)
- *Underexploited Tropical Legumes with Promising Economic Value* (In preparation)

For information on obtaining copies see page 113.

This report was prepared for publication by Noel Vietmeyer and Beverly Cottom and edited by F. R. Ruskin.

The Philippine Council for Agriculture and Resources Research (PCARR) has published *International Consultation on Ipil-Ipil Research*, containing the papers and proceedings of the September 2-4, 1976, meeting of the NAS-PCARR panel. Copies may be requested from

Philippine Council for Agriculture and Resources Research
Los Banos, Laguna
Republic of the Philippines

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