

**Opening Remarks**  
**David C. Tandy**  
**1984 World Conference on Processing of Palm,**  
**Palm Kernel and Coconut Oils**  
**November 12, 1984**

The AOCS and our friends at the Palm Oil Research Institute of Malaysia are sponsoring this conference in recognition of the importance of Malaysia and other countries in this part of the world to the world vegetable oil industry. The organizing committees have been working for the past few years to make this conference both interesting and informative, and we hope for the next five days you will take advantage of all the activities and events that have been scheduled.

The American Oil Chemists' Society was formed 75 years ago in Memphis, TN, by nine men who shared a common bond as chemists in the young, developing cottonseed oil industry. At that time chemistry, particularly oil and fat chemistry, was in its infancy. The methods of analysis used were those preferred by each individual chemist, so comparison of the work among different laboratories was meaningless. While some industrial laboratories were doing research, most had to do with plant operations and, therefore, little fundamental work into the composition or structure of fats and oils was being done. These nine men saw a need to form an organization which would operate within the fats and oils industry and would pursue two basic goals, first to provide a forum for meetings of all chemists and engineers interested in the chemistry and production technology of fats and oils, and second to promote an interchange of ideas among these chemists and engineers so as to bring about a reasonable standardization of equipment, materials and methods for laboratory analyses and commercial operations. In the last 75 years there have been many changes in our industry, resulting in many changes in the AOCS. Today AOCS is concerned not only with edible oils and fats, but also with industrial fatty acids, soap, detergents and other products. There are now more than 4,000 members with one-third from outside the United States in 70 different countries. The Society's publications have grown to include a complete range of periodicals, books, monographs and methods of analysis. Yet, despite all the changes, the objectives of the society remain the same—to bring together scientists and engineers for an interchange of ideas and develop reasonable standards for equipment, materials and methods of analysis.

In the 1970s it became evident to the members of the AOCS that to continue to pursue these objectives the regularly scheduled technical conferences could no longer be held only in the U.S. Thus, in 1976, the AOCS began to cosponsor World Conferences with similar organizations outside the U.S., so scientists and engineers from all nations, interested in our industry, could be brought together. The first three were held in Europe in recognition of its expanding oilseed industry and its importance in the world market as both a producer and consumer. The 1980 conference was held in Mexico, because Latin American countries such as Mexico, Argentina and Brazil had become important suppliers of raw materials, particularly soybeans.

We are meeting here in Kuala Lumpur in recognition of the importance of palm, palm kernel and coconut oils to the world supply of edible oils. Since about 1960 palm and palm kernel have been an expanding force in the vegetable oil industry. Government financed research here in Malaysia, coupled with a rapid growth of private investment, has

developed palm and palm kernel oil as a principle export and a major source of edible oil in the world market. This remarkable joint effort between industry and government has resulted in an increase in production of from about 1.3 million tons in 1961 to a projected four million tons this year. Long range estimates indicate this production will continue to increase for the rest of this century. Palm and palm kernel oil also have increased their share of the total edible oil market, from about 7.5% in 1974 to a projected 13% this year.

No conference about vegetable oils in this part of the world would be complete without including coconut oil as part of the discussion. Coconut oil and palm kernel oil are the two principle members of a group called lauric oils. Coconut oil traditionally has been a commodity important to this region in world trade. Today, coconut oil retains approximately a 5% share of the edible oil market, with a projected production of approximately 2.6 million tons in 1984. The Philippines produce two-thirds of that total. Indonesia and Malaysia are also major producers. Coconut oil normally is valued at a higher price than palm because, in part, of its non-edible uses such as in soap and cosmetics.

Thus, our conference will discuss these three important components of the fats and oils industry. The dictionary defines a conference as "a formal meeting of a number of people for discussion or consultation," and further defines discussion as "talking about something in a deliberative fashion with varying opinions offered constructively and usually amicably, so as to settle an issue or decide on a course of action." No two definitions could better describe the primary purpose of this conference. We ask you, as participants in this conference, to do more than just listen. Each session will be followed by a discussion group which will be led by a panel consisting of the session co-chairmen and speakers to answer your questions. Questions and comments relating to the topic of the session are encouraged. These groups are perhaps the most important part of this conference, as they are meant to be an open forum where varying opinions can be presented. In keeping with the dictionary definition, we trust these opinions will be expressed in a friendly manner. When the discussion is complete we hope not only to have answered your specific questions but also to have developed new directions where additional research and/or development is needed. Some of these discussions may even end in an agreement to disagree.

At the closing session, Dr. A.R. Baldwin, editor of the AOCS journal, will present a summary of the technical papers that have been presented during the week.

There are many people who have worked for the past four years to make this conference a success. To name all of them individually is impossible, but I would like to acknowledge some of those without whose active and continuous participation this conference could not have been held. The program and steering committee members are listed in the conference program. These people have been working long hours on the planning of this conference, and the knowledge you gain from the technical sessions, discussion groups and field trips and the enjoyment from the social events and spouses' program all are a result of their hard work. Not

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listed in the program are other PORIM staff members who have handled the many details necessary to hold a conference such as this. I know I speak for the entire AOCS in thanking the PORIM organization for sharing our enthusiasm for this conference. This is a World Conference with speakers from many nations. It would have been impossible to put together our technical program without the active participation of the 18 session co-chairmen to plan their sessions and contact potential speakers. To all the speakers, and their employers, thanks for giving of your time and money to prepare and present the technical papers.

My personal thanks go to Jim Lyon, Executive Secretary of the AOCS, and his staff for their help to me. Also to co-chairman Kurt Berger, my thanks not only for his work on the program but also for his hospitality during my visits to Kuala Lumpur during the planning of this conference.

Ladies and gentlemen, again welcome to this World Conference. Please participate in all the activities, attend the technical sessions and discussion groups, visit the exhibit area frequently and participate in the social events and field trips. Ask questions—express your opinions; you are the only ones who can make this conference a success.

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**Speech of the Honorary President  
of the  
AOCS/PORIM World Conference  
Y.B. Tan Sri Datuk Dr. Anuwar Bin Mahmud  
on  
Processing of Palm, Palm Kernel and Coconut Oils  
12 November, 1984, Hilton, K.L.**

I am indeed greatly privileged and honored to have an opportunity to address this distinguished gathering of guests and participants at such a memorable occasion. We are grateful that the Minister of Primary Industries is able to take time from his busy schedule to represent the Prime Minister of Malaysia for this opening ceremony. For his kind assent and acceptance, allow me to express our profound gratitude and sincere thanks. To those of you who have overwhelmingly responded to our invitation and are present as guests and participants, we extend our appreciation and a big "Thank You."

I also express my appreciation to the American Oil Chemists' Society for having accorded the honor to the Palm Oil Research Institute of Malaysia (PORIM) to be Co-Sponsor of this conference, the primary objective of which is to examine technical, marketing and economic aspects of the industries relating to palm, palm kernel and coconut oils. The papers and discussions to be held will focus, among other things, on the most recent advances in the state-of-the-art processing and utilization of these oils. The areas to be covered will include the oils' properties, processing and their modifications, edible and industrial applications, quality control and the technologies of transportation and storage of these commodities.

It is my belief that the discussions and deliberations during the next five days will generate new and useful ideas. No doubt these exchanges of ideas will benefit the relevant industries. Further, it is hoped that this conference also could assist participants to highlight some of the problems that are being confronted by the vegetable oil industries and perhaps identify remedial action that needs to be taken in the short and long term. However, all of us will appreciate that in a gathering such as this, no panacea can be offered; neither can we expect a blueprint nor a magic key for solutions to provide answers to all the problems. Nevertheless, areas connected with increasing efficiency of production, quality improvement and disposal of products might invoke considerable interest or even demand urgent attention of participants. As for the other areas, though of no less importance, we could map out the trail or at least reconnoiter the ground for them in this conference. If this were met, then I can say that we have achieved a good part of our aim in holding this international gathering.

We in PORIM are conscious of the fact that the technology of oils and fats, and in particular palm oil and palm kernel oil, cannot effectively be transferred without exhaustive experimentation and progressive technical promotion efforts to meet the specific conditions and requirements of the countries where these commodities are going to be consumed. The ever-increasing production of these oils in the future would require us to adopt a carefully planned strategy for our research efforts so that results obtained could be useful to the industry. This requires us to be more efficient and creative in our efforts to strengthen the industry in the 1980s and the 1990s.

Efficiency in this context is the attainment of maximum productivity with minimum losses of the oil during processing, coupled with the efficient utilization of by-products and waste resources. We have, therefore, embarked on projects to identify the nature of oil losses from palm oil sludge and other wastes in relation to the milling processes. In addition, methods to predict optimum ripeness for maximum oil yield in the fresh fruit bunches have been developed. Computerization and automation also will be featured in our studies on mill operation, process and quality control, in the not too distant a future.

Indeed it would be futile if in the pursuit of efficiency and greater productivity aspects of quality were neglected. Quality problems in oils and fats, as everyone is aware, can be summarized broadly under hydrolysis, oxidation and contamination. While a high acidity leads to higher refining losses, oxidation of the unsaturated components in the oil leads to products that cause difficulties in refining and result in poor keepability. I would like to emphasize here that all these problems are conscientiously being tackled and kept to the minimum by the palm oil and coconut oil industries. Also, a number of projects are being implemented by PORIM with the aim of enhancing the quality of Malaysian palm oil. These include correlation of moisture levels with oxidation and hydrolysis, definition of sludge palm oil, bleachability, preservation of oil quality through the use of antioxidants and other additives and the adoption of several novel methods of refining crude palm oil. Basic understanding of the quality deterioration together with the development of suitable methods to prevent and minimize such deterioration are being pursued by PORIM and the industry.

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Equal emphasis also has been given to standardizing methods of analysis for palm oil and its products. These methods are undertaken collaboratively with the industry and, accordingly, optimized for adoption. Participation in international collaborative trials is also undertaken by PORIM. These include the Smalley Cross-check Program organized by the American Oil Chemists' Society and trials organized by the International Union of Pure and Applied Chemistry.

To motivate quality consciousness within the palm oil industry, a voluntary system of evaluation refineries and mills for competence in the operation and maintenance of their facilities has been instituted recently by PORIM. This permissive scheme aims to evaluate the capability of a refinery or mill to do a good job in order to produce products of adequate quality. It is aimed primarily at getting a form of quality assurance and improvement in the palm oil industry. The response to the scheme has been very gratifying, and the initial achievement can be seen in the improvements made to some refineries and mills with regard to facilities and operation.

We have among us here today several distinguished participants who have spent a considerable portion of their lifetime in the pursuit and buildup of excellence in the various disciplines of oils and fats. Their presence and indeed their contributions certainly would be most beneficial to all of us, specifically to those in research in palm oil, palm kernel oil and coconut oil and in general to the other fats and oils.

It is my hope that participants will find time to take part in the various visits that have been arranged, including the one to PORIM headquarters and laboratories at Bangi. While in this country, and while visiting the laboratories, you could see for yourself the status of the Malaysian palm oil industry and perhaps you could appreciate the reasons why we in Malaysia are giving a lot of attention and effort to making it one of the most modern and advanced vegetable oil industries in this region within a short span of approximately two decades. This has been made possible due to foresight, persistence, determination and above all, hard work of all those involved, while at the same time receiving continuous encouragement from the authorities to foster further development and expansion right from milling to downstream activities.

Last and not least, I would like to thank the various committees of this conference for their support and untiring efforts in trying to make this conference an occasion to remember and to be proud of. Special thanks are also due to participating organizations, both local and overseas, which have assisted in planning and promoting this world conference to further encourage the advancement of technology and research and to improve professional communication in the international fats and oils industry.

Without further ado, I now have great pleasure in inviting the Honorable Minister of Primary Industries, Malaysia, Dato' Leong Khee Seong, to deliver his speech and to officially declare this conference open.

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**Opening Speech by the Prime Minister  
Dato Seri Dr. Mahathir Bin Mohamad  
at the AOCS/PORIM World Conference  
on Processing of Palm, Palm Kernel  
and Coconut Oils,  
Delivered by Y.B. Dato' Paul Leong  
Minister of Primary Industries**

I would like to extend a very warm welcome to all of you present here this morning, especially to participants who have come from overseas. This year, I understand, also marks the 75th anniversary of the American Oil Chemists' Society, and I am therefore pleased that you have chosen Malaysia as a venue for this conference together with PORIM, in your anniversary year. To the president and members of the AOCS, I would like to extend my congratulations on your anniversary and hope that the society would continue its good work in the context of the dynamic changes in the use of oils and fats.

The development that Malaysia has achieved in the past three decades as reflected in the expanding scale of resources, both natural and man-made, and in particular oil palm, is certainly one worth studying. Although the oil palm was brought to Malaysia about a century ago as an ornamental tree, oil palm cultivation started on a small scale only after World War II. However, in the 1960s, arising from the need for agricultural diversification, large tracts of land were cleared for oil palm cultivation. Now, the oil palm has come to be known as the "Golden Crop" for Malaysia.

It is therefore not surprising that more than 13% of Malaysia's population of 15 million are now directly or indirectly dependent on oil palm cultivation and related industries. This is one of those industries where the public and private sectors have combined well to achieve progress.

This twin and complementary role of the public and the private sector is in line with the newly enunciated concept of Malaysia Incorporated. The private sector is regarded as an essential partner in development, and every encouragement is being given to the private sector to play its due role in this partnership.

We in Malaysia take pride that we have, within less than two decades, emerged in the international oils and fats community as the world's largest producer and exporter of palm oil. The global output of Malaysia's oil palm production is expected to increase steadily and reach 5.6 million tons in 1990. Palm oil has been projected by the FAO to show the fastest growth in the oils and fats sector, with total world production estimated at over six million tons in 1985. Clearly, Malaysia will play a major role in the oils and fats sector in the future as it has done in the past.

It is partly because of this role that we established the Kuala Lumpur Commodity Exchange or KLCE. Apart from developing Kuala Lumpur into an international commodity center, the KLCE is seen as making an important contribution to the process of price discovery, which is so crucial in international commodity trade and commerce. Until the recent defaults in palm oil contracts, the KLCE had served that function magnificently. Since its inception in 1980, the daily average turnover increased from 122 lots in 1980 to 132 lots in 1981, 220 lots in 1982 and 776 lots in 1983.

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As a young exchange, the good support that the KLCE has received from the industry suffered a setback due to the recent defaults. However, steps are being taken not only to restore the palm oil futures market to normalcy, but also to strengthen its structure of operation. To this end various short-term and long-term measures, such as amendments to the Commodities Trading Act of 1980 and the Rules of the Exchange and the Regulations of the KLCCH will be undertaken. I am hopeful that these will bring about an improved exchange beneficial to all sectors of the trade and industry.

Despite the setback, the government absolutely has no intention of abandoning the idea of making Kuala Lumpur an international commodity center nor the concept of self-regulation which is vital in the operations of commodity exchanges. At the same time the government is concerned that those who participate in the exchange fully appreciate and understand that discipline and a proper code of conduct and ethics are ingredients which are vital if the exchange truly is to reflect demand and supply in the process of price determination. Equally vital is support of the international trading community in participating and in giving recognition to the KLCE. The trading community's long years of experience in commodity futures markets constitutes an important component in making the KLCE a viable and robust exchange that should benefit all. I am hopeful that this recognition is mutually acceptable, especially on the part of the international community, and that we in Malaysia will see more and more participants from overseas in the KLCE.

I am happy to note that palm oil has speedily outpaced other vegetable oils to rank second only to soybean in production of fats and oils for both edible and industrial uses. As an agricultural crop produced in a developing country like Malaysia, its track record as one of the major contributors to national development is most impressive. We are fully aware that growth, to be effectively sustained, must be matched by an equally vigorous program of research and development. In this connection PORIM constitutes the spearhead of the palm oil industry in advancing and broadening the base of the industry both in the upstream and downstream activities. This is in line with the government's policy of putting greater emphasis on R & D. In the face of price volatility in the world market that can create havoc with the export earnings of primary commodity producers, we look to R & D to help stabilize the industry and to enable it to be more cost-effective and more resilient.

In its national research efforts in the palm oil industry PORIM, although established only in May 1979, already has achieved a number of breakthroughs. PORIM's research programs are directed toward improving oil quality by selective breeding, development of mechanical means of harvesting, evaluation of by-product utilization, definition of product standards and improvement of the oil mill and refining processes. With the advent of vegetative propagation through tissue culture, large scale clonal planting and replanting is envisaged in the future. The recovery of vitamin E from the by-products of palm oil refinery, production of diesel fuel from the methyl esters of palm oil, recovery and use of the biogas from the oil mill waste for the generation of electricity are some of the highlights in PORIM's result-oriented research programs. The mounting evidence favoring  $\beta$ -carotene as an anti-cancer agent and the role of excess polyunsaturated fats in enhancing cancer progression has triggered the potential of using palm oil in anti-cancer studies. It also has been confirmed that palm oil does contain a substance that is able to "neutralize" or overrule the prothrombotic and atherogenetic effect of the saturated fatty acids it contains. The nutritional significance of palm oil cannot therefore be assumed on the basis of its fatty acid composition alone. Hence, not only is palm oil gener-

ating its own interest in the world of medical research, but its oil mill and refinery by-products also offer productive uses which should add to the dynamism of the oil palm sector.

With developments and advancement in oil palm technologies, I would like to call upon world traders and users of oils and fats to give palm oil due consideration. The outstanding features of palm oil are its high oil yield per hectare, high quality that is suitable for cooking as well as for margarine manufacture, almost total lack of cholesterol, easy digestibility and predictable production. We hope that free markets will attain and protectionist policies will not inhibit the continued growth of the palm industry.

An important feature of the Malaysian industry is that it is especially aimed at supplying world markets. Domestic consumption takes up only about 300,000 tons of palm oil products per year. This fact, coupled with the relatively more predictable output of a tree crop, makes Malaysian palm oil a very reliable source of supply. As expressed in our National Agricultural Policy, we will continue to expand oil palm acreage. We recognize that success in the oil palm industry depends on a high degree of organization and management and it is, therefore, intended that future developments will be made mainly by government agencies and estates and by organized smallholders. It should be noted that Malaysia still has large undeveloped land areas suitable for oil palm. Within the past 10 years, Malaysia has built up a refining capacity to match the crude oil output, so that diversified products have been offered to meet a variety of market needs.

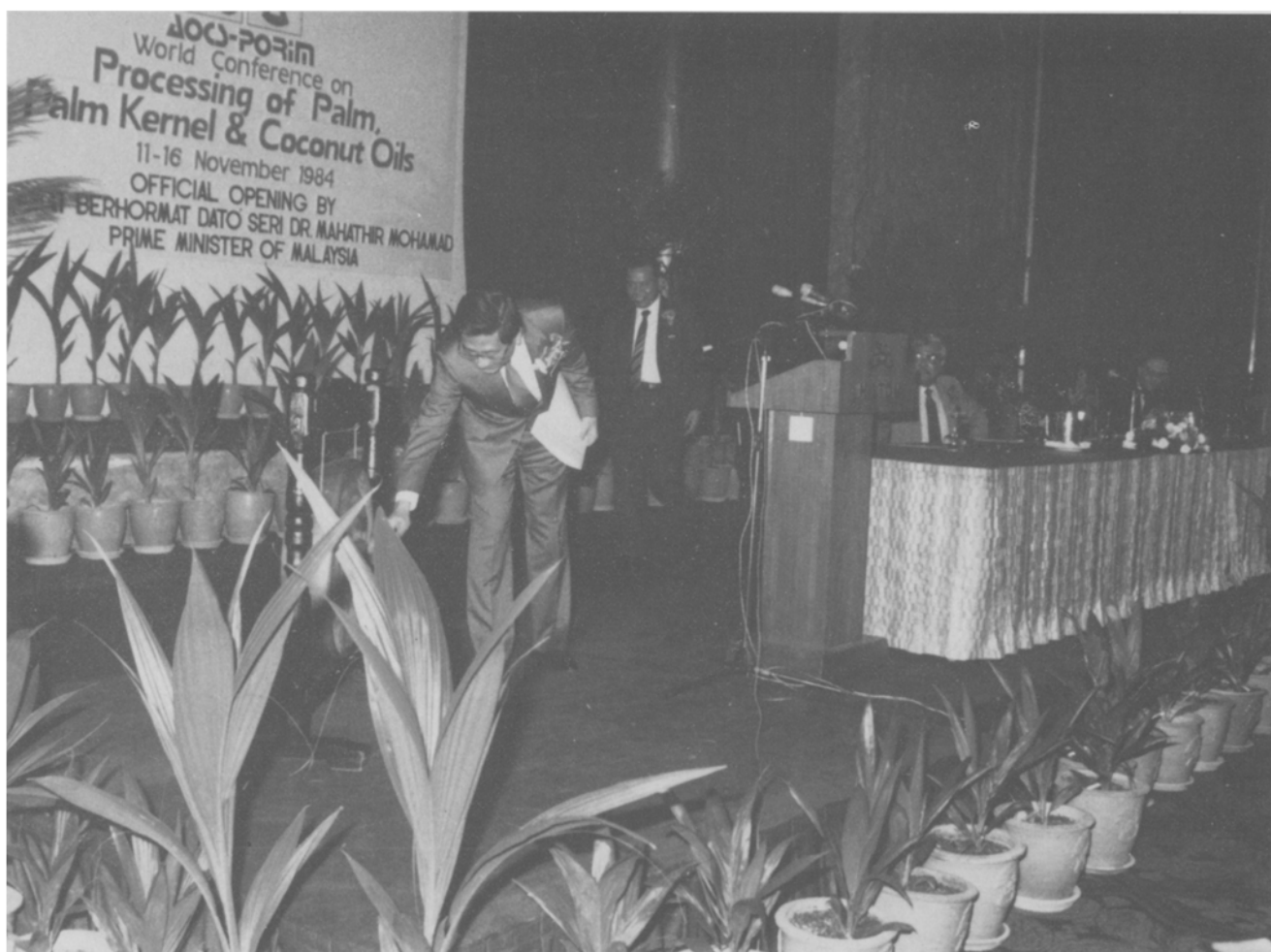
I note with interest that coconut oil also will be discussed at this conference. Malaysia is also a coconut producer and coconut oil exporter, but on a modest scale, and we have contributed in no small way to development of high yielding coconut hybrids. From an agricultural point of view, coconut has proved its value in recent years as a shade crop for cocoa. The interplanting of these two crops is proving very successful and profitable.

I am told that an attractive feature of coconut oil is its content of short chain fatty acids, which makes it particularly valuable as a raw material for the oleochemical industry. The only other significant source of these acids is, in fact, palm kernel oil. Recent industrial development in Malaysia has included capacity for the processing of the fatty acids both of palm oil and of the lauric oils. The latest of these developments is the growth of the oleochemicals industry in Malaysia, representing yet another area for downstream processing.

Processing of palm kernels is of special interest to Malaysia. Being basically a spin-off from the palm oil industry, it offers ample prospects for development, especially in the context of the launching of an industrial master-plan for Malaysia. The development of industries arising from the incidental production of palm kernels can contribute markedly to investments in enterprises as part of the continued expansion of resource-based industries and the growth of export oriented industries.

Ladies and gentlemen, this conference represents a very major effort from an international focus to examine the technical, marketing and economic aspects of the increasingly important segments of the fats and oils industry. From your program, I note that discussions will deal with recent advances in the state-of-the-art processing as well as utilization of the important oils in question. I am pleased to wish all of you success in your deliberations. I now have great pleasure to declare that this AOCS/PORIM World Conference on Processing of Palm, Palm Kernel and Coconut Oils is open.

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Malaysia's Minister of Primary Industries, Y.B. Dato' Paul Leong, sounds Malaysian gong to formally open international conference in Kuala Lumpur with oil palm, coconut seedlings as stage decorations