Newsletter BERITA ISOPB

THE INTERNATIONAL SOCIETY FOR OIL PALM BREEDERS
PERSATUAN AHLI-AHLI PEMBIAK BAIK KELAPA SAWIT ANTARA BANGSA

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EDITORIAL

Wish you were here! This would seem the appropriate thing to say about the Workshop on Oil Palm Germplasm and Utilization, although this would seem like rubbing salt to injury for those who could not make it. "It was two good days of stimulating presentations, revelations, deliberations and discussions" would be the presumable general consensus of opinions among the participants. There were a total of about 68 participants, of which 14 were from overseas:

Brazil	- J.C. Nascimento
	Marcio de Miranda Santos
France	- J. Meunier
	M. Ollagnier
Holland	- J.J. Hardon
Italy	- Anisnetty
Indonesia	- Asnadi
	Kabul Pamin
	T.T. Kusnadi
	B. Taniputra
Nigeria	- C.O. Okwuagwu
Papua New Guinea	- J. Kanimor
U.K.	- C.J. Breure
	- M.J. Lawrence
	- G. Lockwood
	- E.A. Rosenquist

Some of these participants stayed back after the workshop to visit the oil palm breeding stations in the country.

The abstracts of the paper presented at the workshop are given in this Newletter, while the proceedings will undoubtedly be available in the not too distant future, probably at year end. The following is a personal review of some of the paper and question highlights of the workshop.

Session I

Lawrence outlined the sampling strategy and the appropriate analysis when no knowledge of the populations and their distribution is presumed. He also gave computations for determination of minimal sample sizes for the detection of differences between families, but as Hardon pointed out the sample size which captures maximum variability would be more important.

Rosenquist's paper on the pedigree of BPRO's (breeding populations of restricted origin) will undoubtedly be a prized possession of every oil palm breeder. He rightly stressed the need to conserve those BPRO's in their original state, as they could be the source of traits which have hitherto unselected for. Incidentally one of pedigrees illustrated looked like the circuitory in a microchip'!

Session II

Marcio Santos and Rajanaidu's and Rao's revelations on the existence of some promising traits eg. fruit size, mesocarp to fruit, fatty acid composition, in the Brazilian Oleiferas and the Nigerian prospections were heartening. As expected all the desirable traits did not occur on the same palm, which would be the plant breeder's dream but which would not give the plant breeder his job.

Meunier outlined the IRHO approach in introgressing the Yocoboue prospection into the L2T population, by testcrossing the selected palms to Deli duras of known combining abilities and simultaneously obtaining the selfs of selected palms in situ. This was in concordance with their central thesis of the importance of SCA and their desire not to disrupt the combining ability of the L2T population, the Yocoboue population being related to the L2T population. One wonders if he would still recommend such a method for the Nigerian prospection.

Session III

The Inter-Origin Trial was a multilocation experiment of commercial materials of different genetic origins (W. African and Indo-Malaysian) planted in 1974 in different parts of West Africa, Malaysia and Indonesia. The results of the trials in Malaysia reported by Rajanaidu et al. revealed the absence of GxE effects in oil palm. This was confirmed by Meunier from IRHO's experiments in various parts of the world. Mr. Rosenquist reported that interpretation of the results of the Inter Origin Trial experiments in W. Africa was difficult, being confounded with Fusarium wilt infestation.

The paper on the performance of new materials collected by the OPGL was cited as a example of good cooperation between private companies. Unfortunately the paper was short on details of the attributes of these acquisitions and on how they have to be exploited in breeding.

Session IV

Hardon deliberated on the various options of long term conservation in situ and ex situ and stressed that Malaysia, with most stake in and revenue derived from oil palm, should spearhead these efforts. Paranjothy et al. reviewed how in vitro culture can assist in material prospection exchange and conservation and revealed PORIM's progress in the ability to cryopreserve seeds and embryos. IRHO was supposed to present their work on the cryopreservation of embryoids, but time did not permit them to do so. A key issue, in such work is the stability and variability in the plantlets regenerated which was not discussed. Perhaps it may be a bit premature.

Meunier outlined electrophoretic studies made in oil palm and indicated how populations can be differentiated by their isozyme patterns which would also help in future prospections. The implications to breeding were not discussed.

In her presentation on the genetic base of the NIFOR breeding programme, Okwuagwu highlighted the Ufuma collections which have exceptionally good fruit and bunch composition and the Jamaican accesion which has characteristics very similar to Deli dura.

Rosenquist briefed the audience on the oil palm breeding populations in Papua New Guinea and proposed that selection for leaf magnesium status could indirectly improve oil yield in Papua New Guinea and other oil palm areas with magnesium deficiency problems.

Panel Discussions

The panel discussions were chaired by the vice-president of ISOPB, Halim Hj. Hassan with Rajanaidu, Meunier, Rosenquist and Hardon comprising the panel.

From the foregoing it is evident that the sessions were never lacking in interesting subject matter and issues for deliberation, the only limitation was time. A few less favourable comments about the workshop shared by a few participants and yours truly were firstly the lack of discussions on the utilization of the Nigerian prospected material. While some interesting attributes of the Nigerian prospected material were highlighted, no discussions were made as to how to introduce these into the breeding programmes. For example, shall we develop a separate breeding population by some mass selection or shall we introgress? If we introgress, shall we introgress before or after one generation of selection to stabilize the genotype, or shall we progeny-test with our advanced Deli dura and pisifera population before deciding, à la IRHO. When this question was posed to the panel, the onus was thrown back to the breeders in that the choice was theirs. While this is true, intelligent discussions on alternative approaches on utilization of the Nigerian prospection would have been very interesting and useful. Utilization was a major part of the title of the workshop but one went away with the feeling that more deliberations on germplasm utilization could have been made.

Secondly, after all the useful discussions, some resolutions would have been appropriate, being a workshop. With the oil palm breeders from the major oil palm research stations present, some commitment at least in principle, on certain courses of action by general consensus would have been very useful.

Despite these, it cannot be denied that the organisers have done a very good job in the short time available for preparation and should be congratulated for it. This is the start of workshops/symposia organised by ISOPB which I am sure will get even better in future and perhaps in another country? Brazil, Indonesia, West Africa?

The editor would like to make an urgent if not desperate appeal to members to help to contribute articles, news and short communications to this Newsletter, as he is running short of ideas and materials for the coming issues. As a guide to your contributions the following themes have been contemplated for future issues.

Tissue culture and biotechnology (genetic engineering)
Physiological aspects of oil palm breeding
Oleifera x Guineensis hybrids
Fertile pisiferas
Plant breeders rights and seed certification.

Editor

News

A plea

Eric Rosenquist who after his presentation in the oil palm germplasm workshop, can be considered the archivist of oil palm geneology would like to make a plea to anybody who has a copy of the guidebook to Federal Experimental Station (FES) Serdang published in the early 30's (or 50's?). From it, he can trace the origin of the pisiferas S27B and S29/36 and thus make his story book complete. Incidently, one of of these palms was chosen because of its ability to impart high carotene content to the fruits of their progenies. One of his first duties assigned just after the war was to produce high carotene oil to feed the undernourished ex-POW's in Malaysia (Malaya then)

Seed Sales

In the competitive oil palm seeds scene in Malaysia, Felda has launched a sales promotional effort by producing an elegant seeds brochure. In contrast to other seed companies, Felda offered the consumer the choice of two types of DxP materials; the Deli D x Yangambi P for excellent oil yields and the Deli D x La Me P for slower height increment.
OPRS Banting (HMPB) promoted their materials by publishing an article in the 1985 January issue of Planter, highlighting their breeding efforts and the superior oil yielding qualities of their Deli D x AVROS P materials. They also indicated that their next generation of improved material may be of Deli D x Dumpy -AVROS P origin, similar to those of HRU IV which was promoted earlier by HRU.

From the frenetic sellers market prevailing in Malaysia at the moment, these promotional effort may perhaps be construed as ill-timed (HRU was the "culprit" in starting off this spate of sales promotions), because every seed produced will be grabbed. All the seed suppliers are fully booked, if not overbooked for the next 3 years, despite their expanded production by at least twofold.

This fantastic high seeds demand is also giving rise to unhealthy practices such as speculatory orders for brokering, fraudulant sales and smuggling for export.

The high demand for oil palm seeds could be attributed to a number of factors: high and steady palm oil prices in a generally depressed market for other industries, poor rubber prices, and accelerated replanting of tall older palms

International Oil Palm Conference

Although it has yet to be officially announced, it looks as though the Conference will be on in September, 1986. The suggested theme would be "Progress & Outlook". Again the Conference will be cosponsored by ISP and PORIM and the venue of course, Kuala Lumpur. So get your papers ready!

Protoplast Culture Breakthrough

PORIM recently publicised their Biotechnology Unit's breakthrough in ability to obtain protoplast cultures directly from oil palm materials freshly obtained from the field. The need to initiate free cell culture as being done by Unilever was obviated. The success was the combined efforts of Ismail Hamzah, associate professor from the Agricultural University of Malaysia or UPM and Ali Sekak of PORIM.

Eat Figures of Interest

Below are some interesting figures on palm oil production presented by Siegfried Mielke, Editor of Oil World, at the Oil Palm Symposium organised by P.T.P. VI & VII & Marihat Research Station held in Medan recently.

A. World Palm Oil Production

Countries	1982	1985	1990
Malaysia	3.5 mt.	4.2 mt.	6.5 mt.
Indonesia	0.8 mt	1.0 mt	2.5 mt.
Nigeria	0.3 mt	0.3 mt	0.4 mt
Others	1.0 mt	1.1 mt	1.4 mt
Total	5.6 mt	6.6 mt	10.8 mt

B. Share of Palm & Palm Kernel Oil in World Total Oils & Flats Production

Period	1968-1972	1978-1982	1988-1992
Production	39.6 m.t.	56.4 m.t.	75.7
Palm Oil's Share	5.5%	9.1%	16.3%
Soya Oil's Share	14.9%	22.4%	22.2%
Other's Share	79.5%	68.4%	61.5%

In its 5 year plan, Indonesia plans to plant an average of 177,000 ha annually reaching a total acreage of 1.3 million ha by end 1988.

Minutes of first General Meeting of the International Society for Oil Palm Breeders

Date : 27/3/1985
Place : Porim Conference Hall, Bangi
Time : 3.00 p.m.

Members attended

1. Tan Swee Tian
2. Hardon, J.J.
3. Soh Aik Chin
4. Ong Eng Chuan
5. Chin Cheuk Weng
6. Marcio de Miranda Santos
7. Lim Loon Lui
8. Anishetty, N.M.
9. Abu Zarim Othman
10. Zakri, A.H.
11. Jalani Sukaimi
12. Yap Thoo Chai
13. Jose Carlos Nascimento
14. C.O. Okwuagwu
15. Kabul Pamin
16. Meunier, J.
17. Speldewinde, H.V.
18. Tan Yap Pau
19. Rao, V.
20. Elanjaran Mohan
21. Hj. Abdul Halim Bin Hassan
22. Rajanaidu N.
23. Lee Chong Hee

Agenda of General Meeting

1. Presidents Speech
2. Accounts
3. Amendments to the Constitution
4. Election of Office Bearers
5. Any other business

1. President's Speech

In his speech, the President traced the history of the Society and informed members that the Society was registered officially on 30th August 1983.

Since then the Society was very active. It had four Committee Meetings during the period with discussions mainly on membership drive, publicity and activities for 1983/84.

The Society with the assistance of Editorial Committee, was able to produce 2 ISOPB newsletters. The contents of the newsletters were of great interest to breeders and others.

The Society was able to organise a workshop on 'Oil Palm Germplasm and Utilization' on 26-27th March 1985 jointly with PORIM. There were 68 participants from 9 countries including Malaysia.

In fact, almost all the main oil palm breeders from various countries attended the meeting.

At the end of 1984, the Society had 55 members and it is envisaged that membership strength will be be improved with additional publicity.

2. Accounts

The treasurer briefed the members that at end of 1984, the Society's income was $1372.50 and the expenditure was $467.95. The balance $904.55 was kept in the bank.

3. Amendments to the Constitution

The executive committee proposed various amendments to the members at the meeting and they were approved unaminously.

4. Election of office bearers

The following were elected by the members:-

1. President - Tan Sri Datuk Dr.Anuwar bin Mahmud
2. V. President - Dr. Hj. Abdul Halim Hassan
3. Secretary - Dr. N. Rajanaidu
4. Treasurer - Mr. Tan Swee Tian
5. Editor - Dr. Soh Aik Chin
6. Comm. Members- Mr. Chin Cheuk Weng
   Dr. Lee Chong Hee
7. Auditors - Prof. Yap Yhoo Chai
   - Mr. V. Rao

Any other Business

Some members pointed out that at present all the office bearers are Malaysians and this does not reflect well on the international society. It was proposed that in future, members from other countries should be included in the Executive Committee. The following were identified as the regional representatives for the Society.

Africa	- Dr. C. Okwuagwu
S.E. Asia	- Dr. Kabul Pamin
Latin America	- Dr. Marcio Santos
Europe	- Mr. J. Meunier

N. Rajanaidu
Secretary

Summary of Papers Presented at the Workshop on Oil Palm Germplasm and Utilization

1)* Oil Palm Germplasm Conservation : The possible use of in vitro methods

K. Paranjothy, O. Rohani and Ahman Tarmizi Hashim

Oil Palm is amenable to clonal propagation by in vitro methods. Seed embryos can be cultured and developed into rooted plantlets with ease. Methods for cryopreservation of seed and somatic embryos have also been developed. The possible use of these methods in germplasm collection, transfer, conservation and utilization is discussed.

2. Long Term Conservation of Oil Palm (Elaeis guineensis)

J.J. Hardon

This paper discusses the in situ and ex situ methods of long term conservation of oil palm genetic resources. Joint industry efforts in surveying, financing studies and prospecting particularly peripheral areas of oil palm geograpnical distribution followed by ex-situ conservation were emphasised.

3. Genetic Resources of Elaeis Oleifera (H.B.K.) Corte's in the Brazilian Amazon

Marcio de Miranda Santos, Edson Barcelos, Jose Carlos Nascimento.

This paper outlines the E. oleifera collection by EMBRAPA, providing information on the distribution of the species, quality of the bunch and fruit characters and vegetative traits. The existence of promising materials in the Brazilian Amazon for commercial OxG hybrid development was highlighted.

4. Phenotypic Variation in Natural Populations of Caiaue (Elaeis Oleifera (H.B.K.) Cortes) in the Brazilian Amazon.

Edson Barcelos, Marcio de Miranda Santos, Maria Elizabeth C. Vasconcellos.

Natural populations of Elaeis oleifera occurring in the Brazilian Amazon present a phenotypic variation that permits to differentiate at least two groups i.e. material from the region of Manaus - Caracarai which is similar to material from Surinam, and material from the other regions similar to that of other regions of central South America. A multivariate technique discriminant analysis was used to obtain the above information.

5.* The Oil Palm (Elaeis guineensis) Collections in Africa

N. Rajanaidu

This paper outlines the oil palm genetic collections made by PORIM in Nigeria, Cameroon and Zaire. A total of 915 samples in Nigeria, 95 in Cameroon and 369 in Zaire were collected during the plant exploration expeditions to these countries.

The mean bunch and fruit wt. of Zaire material are higher than those of Ivory Coast, Nigeria and Cameroons but the duras and teneras of Nigerian genetic material have higher level of mesocarp (%).

It is a matter of some urgency to organise an expedition to Angola to collect oil palm genetic material in the natural palm groves under the auspices of IBPGR/FAO.

6.* Performance of Nigerian Oil Palm (Elaeis guineensis) Genetic Material.

N. Rajanaidu & V. Rao

This paper provides information on yield, vegetative characters, bunch analysis and fatty acid composition for the Nigerian genetic material collected in 1973.

7.* Elaeis Oleifera Collection in Central and South America.

N. Rajanaidu

PORIM team collected Elaeis oleifera genetic material in Suriname, Colombia, Panama, Costa Rica, Nicaragna, Honduras and Peru. A total of 36,854 seeds were sampled from 167 palms.

8.* The Performance of Inter-Origin Commerical DxP Planting Materials

N. Rajanaidu, Tan Yap Pau, Ong Eng Chuan and Lee Chong Hee.

The performance of inter-origin DxP commercial planting materials was given by Chemara, HMPB and United Plantations. The results show that the different origins have, in general, performed consistently over the years and sites. Neither origin x site nor origin x year interaction was significant.

9. The Performance of Oil Palm Genetics Laboratory (OPGL) Germplasm Materials

Chan Kook Weng, Ong Eng Chuan, Tan Kiap Seng, Lee Chong Hee, and Law Ing Hock.

The efforts by the four major plantation companies comprising Guthries, Harrisons, Dunlop and Pamol had resulted in the formation of the consortium of Oil Palm Genetics Laboratory (OPGL) in 1963 which was responsible for the country's first large-scale concerted acquisition (through exchange or purchase), evaluation, utilization and enrichment of the many diverse oil palm genetic material of E. guineensis and E. Oleifera used for planting on their estate. Through their cooperation, cost sharing and perseverence, the consortium was able to utilise freely the material planted in the various programmes on introduction, evaluation, selection, breeding and mainatenance of the diverse genetic base to meet the planting requirements of the four companies. With the advent of the weevils many of the breeding objectives related to the higher oil yield, improved oil quality, and increased protein of kernel meals are being pursued

or being re-evaluated in the parent-progeny trials. The awareness on the need to conserve the germplasm material to allow a more rapid attainment of the various breeding objectives is emphasized.

10. The Genetic Base of the NIFOR Oil Palm Programme

C.O. Okwuagwu

This paper provides information on the history of NIFOR breeding programme and the various introductions and prospections. The Ufuma collection was pointed out to be of most promise in breeding.

11. The Genetic Base of Oil Palm Breeding Populations

E.A. Rosenquist

Breeding populations of restricted origin (BPRO) such as Deli dura; Serdang avenue palms, Elmina selections, Chemara, Banting, Socfin, Dabou Deli duras; Ekona population at Lobe (Cameroon), Yangambi population at Binga, La Me, Pobe, Yocobone and Angola, and NIFOR populations were listed together with their historial development and their special characteristics.

12.* Plant Quarantine in the International Transfer of Oil Palm Genetic Materials

S.M. Kang

There is distinct variation in the type of pests and diseases affecting the oil palm in South East Asia, Africa and Latin America. These pests and diseases may be moved from one oil palm growing region to the other through the transfer of germplasm materials. Phytosanitary measures for minimising pests and disease transfer are suggested. The apparent ineffectiveness of the treatment method against pathogens that may be borne internally in the seed or present as contaminants in the pollen, calls for research to be carried out in the relevant fields. Basing on R.P. Kahn's proposals guide lines on approaches to be followed by both the plant breeder and the plant quarantine officer when planning germplasm introductions are presented.

13.* The Genetical Structure of Natural Populations and Sampling Strategy

M.J. Lawrence and N. Rajanaidu

This papers outlines the theoretical aspects of genetical structure of natural populations and sampling strategy. Data from the Nigerian Prospection suggest that 5 palms per population and 12 seedlings per family is sufficient to detect genetical differences between populations and families. Since there is a great variation between populations, it is worth sampling a large number of populations, covering various ecological niches.

14. Evaluation and Utilization of Yocoboue Population of Elaeis guineensis

J. Meunier and L. Baudouin

Nineteen teneras selected in the Yocoboue. population have been tested with Deli accordingly using incomplete factorial designs. On average Yocoboue's transmits less bunches than La Me.

15. Enzymatic Electrophoresis in Elaeis guineensis: Application to germplasm collections

M. Chesquiere and J. Meunier

Enzymatic electrophoretic technique was applied to pollen extracts of oil palm. This analysis was carried out on 220 individual palms originating from Ivory Coast, Benin, Nigeria, Cameroons, Angola, Zaire and Deli. It was found that Angolan population had maximum polymorphism with many rare alleles and Deli with minimum polymorphism and few rare alleles.

16. Plant Genetic Resources - An Overview of the International Board for Plant Genetic Resources (IBPGR) programme

N.M. Anishetty

This paper outlines the global activities of IBPGR in the field collection, conservation, documentation and training. IBPGR's contribution to oil palm, although accorded a second priority crop, in the form of grants for PORIM's prospections in

Central America and Africa, convening the Working group on the Genetic Resources' of Oil Palm and cosponsorship of this Workshop was pointed out.

17.* Sabah Breeding Programme (SBP)

N. Rajanaidu, Mary Ngui, Ong Eng Chuan and Lee Chong Hee.

The Sabah Breeding Programme shows that some of the Banting duras gave high yields. They also combined well with NIFOR teneras especially WT1 (32.3005). These Banting duras also had high yields when they were selfed and crossed with other palms.

* Original abstracts provided by author(s). The others were compiled by N. Rajanaidu.