

EDITORIAL

In 1991, there was an exceptional number of conferences, including three major crop conferences and several other national conferences organised by professional societies in the country all aimed at participation and attendance from those of us concerned with the Plantation Industry - managers, scientists, policy makers, the pesticide industry, researchers and academicians as stated in one announcement. If attendance were the sole criterion of success, most were overwhelming so. As the leading country in plantation technology, the International Conferences drew interested participants to Kuala Lumpur from all over the world. In the surfeit of such Conferences after one year, however, it may be useful to reflect on the value and benefits of such large and even extravagant meetings. Are these Conferences what are needed by the Industry in Malaysia to raise itself from its current and future problems? Did the Conferences address the key issues? Did the Conferences allow adequate opportunities for participation and interaction amongst delegates? Were there any useful leads, ideas

and insights on problems? The types of answers may be as numerous as the participants. Not all the Conferences were of similar quality and usefulness and different participants have different objectives. Common complaints included the sheer size of some of the Conferences, inadequate time for discussions and interactions with speakers, poor presentations and slides and the many papers of little relevance to 'practising' planters. High costs especially for the Oil Palm Conference also precluded a large number of potential participants from attending. This included many managers, junior research personnel and also representatives from the Agriculture Chemicals Industry.

There is certainly a place for International Crop Conferences. Malaysia has gained immensely over the years from the exchanges and interactions with scientists and planters from other parts of the world but there are dangers from overdoing it, especially on the agricultural side. Development and results in plantation crops take years to fruition. If held at too close intervals, quality of papers drops and

focus on the 'social side' takes over as a result. Unfortunately within the crowded and five star hotel setting, the meeting and exchanges between peers is unlikely to exceed the quality of a planters' meeting at say the Kg. Kuantan Club or similar, if only because the beer is more affordable. Should there be another International Conference in 1993?

Chew, P.S.

HIGHLIGHTS

1991 INTERNATIONAL CONFERENCES :-

- OIL PALM
- COCOA
- RUBBER

- NEW PRODUCTS

PORIM INTERNATIONAL PALM OIL CONFERENCE,

(9 - 14 TH SEPT., '91)

The theme was 'Progress, Prospects and Challenges towards the 21st Century' and the very large Conference was divided into four modules: Agriculture, Nutrition & Health, Chemistry & Technology, Promotion & Marketing.

Eight AAR RO's attended the Agriculture module. 43 papers were listed for oral presentation and 23 posters put up. The programme was very packed, relieved by a few papers all from overseas which were no shows.

The main thrusts of the papers towards the objectives of the Conference

were to have been :

- Key-note address :
Tan Sri Ani Arope on 'Challenges for the oil palm industry towards the 21st century'.

- Guest lectures by :
Prof. R.L. Philips entitled 'Prospects of molecular biology/breeding interface in crop improvement'

Datuk Leslie Davidson entitled 'Management for cost effective oil palm plantations'

Dr. Tony Ludlow entitled 'Modelling as a tool for oil palm research'

Tan Sri Ani Arope listed a number of challenges faced by the Industry including:-

- 1) Marketing problems of palm oil in the international market
- 2) Reduction of protectionism in trade of vegetable oils
- 3) Improvement of palm oil extraction technique
- 4) Competition with other edible oils

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- 5) Expansion to meet world demand for vegetable oils
- 6) Overcome negative image of palm oil in health issues
- 7) New product development and further downstream activities

Prof. Phillips gave a clear overview of his subject using experience on maize to base his examples. One was particularly struck by his balanced approach and emphasis on need to continue breeding and exploitation of tissue culture techniques, including mutations induced as a result of the latter. Tagging genes of interest with new RFLP techniques would also be helpful in speeding up the selection and breeding improvement process especially in long breeding generation crops like oil palm.

Datuk L. Davidson in his swansong appearance before retirement gave his usual entertaining and interesting insight into management costs, profitability and labour productivity over the past 40 years at Pamol Plantations and other Unilever estates in the world. It will be useful to study his full paper thoroughly but the gist of his message appears to be that yield and other productivity indices have improved over the years to counter the steady 2.9% annual decrease in palm oil prices over the past 40 years.

The net results have been that prices have decreased 69% but production costs have also reduced by 66.5%. Yields increased from 7.9 t/ha in 1951 to 19.6 t/ha in 1991 at Pamol Plantations. His analyses with Corley's help of factors contributing to increases in productivity will be interesting to analyse in depth (Table 1).

For the future, he struck an optimistic stand that the Industry will improve to meet the future problems through:

- 1) improvement in yields through clones and better management practices including drought resistant palms
- 2) improvement in labour productivity
- 3) changing the oil palm to have desirable characteristics including no loose fruit, even ripening etc. from cloning
- 4) managers who are not afraid to change things.

Finally he emphasised the need for training of managers.

Dr. Tony Ludlow gave a useful introductory talk on modelling as a tool for research using examples in oil palm. He stressed that :

"Biological problems are more important and difficult than mathematical ones and that because modelling requires detailed step by step thought, it is useful for the development of ideas".

The rest of the papers were grouped into five subject areas.

1. Breeding, Genetics and Propagation - 7 papers.

There were not as much information, new developments as hoped for or required by the Industry. Unilever's progress in clonal propagation since encountering the abnormality problems was not convincingly put over.

2. Physiology, Biochemistry + Biotechnology - 6 papers. Probably only 2 papers were of note.

Foong S.F. (FELDA) in his paper 'Potential evapotranspiration, potential yield and leaching losses in oil palm' presented some new data on potential evapotranspiration rate. This was very high at 7 mm/day in dry weather which may explain why our responses to drip irrigation at Lapan Kabu were limited. He also extrapolated very high yields from single palm performance at 45-50 t/ha/yr with irrigation.

Wood and Corley (Unilever Plantations) in their paper entitled 'The energy equation in oil palm cultivation' reminded that we should perhaps look harder at the recycling of factory wastes especially in view of the high K in these materials and projected increases in muriate of potash prices in 1992.

3. Mechanisation, Management Practices and By-product utilisation - 10 papers.

Only the reviews and studies of in-field collection systems were of interest although largely not new:-

1. Ahmad et al. (PORIM/Golden Hope) on 'Performance of mini tractors'
2. Sarjit Singh and Loh A.M. (Sime Darby Plantations) on 'Mechanized in-field collection of ffb - an estate experience (1984-90)'
3. Teo Leng et al. (Eastern Plantations Agency) on 'EPA's experiences on the use of mechanical buffalo for in-field ffb collection and assisted manuring'

The rest were recycled papers or of no immediate interest.

4. Soils, Fertiliser, Nutrition - 9 papers.

This was a disappointing session and from an unbiased view, AAR's paper

Table 1 : PALM OIL YIELD IMPROVEMENTS 1951 - 91

(Davidson & Corley, '91)

		t/ha/yr
1. Starting Yield		1.3
2. Fertiliser Use	+ 93%	2.5
3. Deli dura selection	+ 40%	3.5
4. % O/B from Teneras	+ 32%	4.6
5. Improved Stand		
- Polybag nursery	+ 3%	4.8
6. Drainage + Water Conservation	+ 5%	5.0
7. E.kamerunicus	+ 1.2%	5.1
8. Loss on poor harvesting	- 1%	5.0
9. Increased factory efficiency (83% - 90%)	+ 8%	5.4
Actual average at Pamol Plantations.		4.04 t/ha
Best at Mamor Plantations. (26.4 t/ha at 20.5% O/B)		5.41 t/ha

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on "Responses to nitrogen and irrigation in Malaysia" by Kee and Chew entitled 'Oil palm responses to nitrogen and drip irrigation in a wet monsoonal climate in Peninsular Malaysia' probably stood out in terms of new information presented.

Chan et al. (Guthrie) promised a lot in their paper entitled 'Fertilizer efficiency studies in oil palm' but appeared to miss the key issues. The PORIM paper on urea efficiency by Ahmad Tarmizi et al. on

'Relative efficiency of ammonium sulphate in oil palm : Yield response and environmental factors' was not clearly presented and the full paper will need to be studied.

It was interesting to note the interest and number of papers on N nutrition including Orrell and Foster's (PNG OPRA) entitled 'The importance of nitrogen fertilizer application to oil palm in New Britain, Papua New Guinea and its effect on magnesium status' after the large number of papers on K nutrition in the 1987 Oil Palm Conference.

The mechanised liquid manuring paper by Teo et al. (EPA) entitled 'Mechanized liquid manuring of oil palm' was well presented but may be barking up the wrong tree. There are many disadvantages involved with no additional significant advantage except possibly killing of weeds in inter-rows.

5. Crop Protection and Biological Control

11 papers.

The three papers on rhinoceros beetles :

- 1) Samsudin et al. (AAR) on 'Rhinoceros beetle breeding pattern in the poisoned oil palm trunks of underplanted areas.
- 2) Chung et al. (SDP) on 'Chemical control of rhinoceros beetles in nursery and immature oil palms' and
- 3) Liau S.S. (Guthrie) on 'The control of *Oryctes rhinoceros* by clean clearing and its effect on early yield in palm-to-palm replants' were probably the best session.

AAR's paper came through well,

and with the massive field trial by Guthrie, effectively nailed Wood's hypothesis and ideas that rhinoceros beetle damage is of little consequence in yield and on the dangers of massive breeding sites in underplanting practices.

The use of biological control with nematodes for termites in Indonesia was of interest as a new approach ("Termites, a new problem on oil palm plantations in Indonesia" by Sudharto Ps et al.).

Khairuddin et al.'s results in 'Pathogenicity on *Ganoderma boninense* Pat. on oil palm seedlings' on inoculating oil palm seedlings with *G. boninense* were also of interest and could be an effective tool for screening materials against the disease.

Finally it was interesting to see ICI workers testing PORIM's model on rat population build-up and barn owl control in their paper entitled 'Barn owl (*Tyto alba*) prey selection and its impact on rat control in an oil palm plantation by Lim, J.L. et al.

Overall, there appeared to be few new developments or results that AAR needs to take into account or to change in its basic approach to oil palm breeding, agronomy, planting practices and from its research emphasis and directions, fortunately or unfortunately. It was an expensive conference in terms of time and money. The participation and contribution of the planters to liven things up and jolt some of the speakers at discussion was missed but our new ROs probably benefitted from attendance. Without greater planter participation, it will probably be the last time that AAR sends such a large delegation to a PORIM Oil Palm Conference.

Chew, P.S.

C O C O A

: Challenges in the 90's

1. INTRODUCTION

The Conference was held from 25th to 27th September '91 at KL Hilton.

For the oral presentation, a total of 38 papers were presented. They comprised the following:-

- 1) Breeding/selection = 8
- 2) Agronomy = 7
- 3) Pests and diseases = 6
- 4) Crop physiology/ biotechnology = 7

Apart from the oral presentation, a total of 49 papers were also listed for the poster sessions but not all were presented.

Highlights of the oral presentations which may be of interest to the Planters are summarised below:-

2. BREEDING & SELECTION

The following eight oral papers were presented:-

- 1) The international cocoa germplasm database

Michelle End, R.M. Wadsworth & P. Hadley. BCCCA/University of Reading.

2) Prospects of breeding cocoa cultivars for low-input management
G.Y.Tan.

3) Breeding values of upper Amazon cocoa clones.
G.Lockwood, Joe Pang Thau Yin & Ang Teng Leng.

4) Clonal cocoa trials and selection for superior clones
Joe Pang Thau Yin, David H.K. Lim & G.Lockwood.

5) Performances of PBC clones in Peninsular Malaysia and Sabah.
C.F.Chong & Manjit Sidhu.

6) Genetic analysis of a factorial crossing scheme with cacao hybrids tested in four locations in Ivory Coast.
D.Paulin, G.Mossu, P.Lachenaud & A.B.Eskes.

7) The performance of some cocoa

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	progenies under inland (Pahang) Malaysian conditions.	9)	PBC 211	4
	S.Palaniappan & Shuhaimi Shamsuddin.	10)	PBC 221	4
8)	General performance of some three-way cross progenies at Cocoa Research Station, Quoin Hill, Tawau.	11)	PBC 223	4
	P.K.Phua, K.Lamin & M.Lee.	12)	PBC 230	4
		13)	PBC 236	4
		14)	PBC 247	3

The international cocoa germplasm database compiled by Dr. End was a computerised catalogue of information on cocoa clones. A copy of the catalogue is available at AAR. Dr. End encouraged the audience to contribute to the database and make it more complete and useful.

Dr. G.Y.Tan put forward a method for selecting cocoa genotypes with high harvest index (HI) and resistance to Phytophthora black pod rot. This novel method was of great interest to the cocoa plant breeders.

Dr. Lockwood presented results of two progeny trials. SCA9 was rated as the most promising parent. The breeding value of SCA 9 had been reported previously by DOA Sabah.

Mr. Pang of BAL reported that BR25 was better than BAL 209 in their clonal trials. BAL has developed a new series of clones: BAL 244, 263, 284 and 300 which were better in yield than BAL 209 by 4%, 21%, 14% and 22% respectively. BAL 244 was said to be suitable for high density planting (HDP).

Mr. C.F.Chong presented results of six clonal trials and revised his list of clones recommended for commercial planting and expected that they would outyield the hybrids by 50-80%.

Clone VSD tolerance rating*

1)	PBC 113	3
2)	PBC 123	5
3)	PBC 130	2
4)	PBC 140	3
5)	PBC 159	3
6)	PBC 179	4
7)	PBC 207	3
8)	PBC 208	3

* 5 = most tolerant

Dr. Eskes presented results of progenies trials in Ivory Coast and reported that the best hybrids from the four progeny trials outyielded the control hybrid UPA 402 x UF 676 by 30 to 60%. UPA 402 x UF 676 was one of the hybrids distributed for commercial scale plantings in Ivory Coast.

Mr. Palaniappan presented results of five progeny trials and listed PA 138 x SCA9, PA 156 x SCA 9 and PA 76 x SCA 9 as very promising hybrids. He also reported that dry bean yield, bean size/uniformity, pod weight and butter fat content were strongly influenced by seasonal changes.

Mr. Lamin reported that it was possible to improve the bean size of the F1 hybrids by back-crossing them to Fo clones with big bean size.

2.2. Agronomy

A total of 7 papers were presented. They are:-

- 1) Agroecological considerations for cocoa cultivation in Peninsular Malaysia.
K.Ramadasan, G.Denamany, J.Mohd Yunus, N.C.Wong, A.G. MohZawawi & Z.A. Amiruddin.
- 2) Calculation of fertiliser requirement for cocoa.
J.Snoeck & P.Jadin.
- 3) The production potential of a cocoa orchard system
V.Mooleedhar, L.Tukey & J.Spence.
- 4) Early performance of high density cocoa plantings in different loca

tions in Peninsular Malaysia.
S.Ab.Kahar,O.Abdullah,
G.Denamany & B.Mohd Jelani.

- 5) Selection of cocoa genotypes for high density planting and guide lines to its management.
David H.K.Lim, Joe Pang Thau Yin, Stephen Yow & G.Lockwood.

- 6) Trials on the spacing of clonal cocoa on an inland soil in Peninsular Malaysia.
Lam Kee Seng & Lim Kim Huan.

- 7) The performance of hybrid cocoa under different Gliricidia densities and pruning intensities on sandy and clayey soils.
C.C.Yew & K.H.Chee.

Mr. Ramadasan et al. put forward a model for the agroecological requirements of cocoa. This model needed to be further refined.

Mr. Snoeck of IRCC presented a method for computing the fertiliser requirements of cocoa based mainly on soil nutrient data and nutrient uptake by plants.

Mr. Mooleedhar put forward his concept of managing cocoa using the orchard system with intensive inputs and estimated that yield of 4 to 5 t/ha could be achieved in Trinidad with such a system.

The three Malaysian papers on high density planting (HDP) confirmed that high yields could be achieved with such a system. However, the economic viability of HDP has yet to be proven.

Mr. C.C.Yew of IOI reported that no pruning (defined as only water-shoots pruning along the trunk and within 0.6 m of the first jorquette were pruned at 6-weekly intervals) was superior to light and heavy pruning where about 20% and 40% of the foliage were removed at 6-monthly intervals in addition to the "no-pruning" treatment. Pruning reduced yield by about 17 to 25%. He also reported that the optimum Gliricidia shade regime was 6m x 12m for sandy soil and 12m x 12m for clayey soil.

2.3 Pests and diseases

The following six papers on pests and diseases were presented:-

- 1) Comparing three methods of intro

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duction of the black cocoa ant Dolichoderus thoracicus (Smith) for control of mirid damage in cocoa in Peninsular Malaysia.

Ho Cheng Tuck & Khoo Khay Chong.

- 2) Chemical control of Phytophthora black pod and stem canker of cocoa.
C.C. Tey.
- 3) The future of cocoa swollen shoot virus control in Ghana.
L.A. Ollennu & J.d'A. Hughes.
- 4) Strategies towards effective rat control in cocoa.
C.H. Lee.
- 5) Cross infestation studies on Conopomorpha cramerella Snellen: Development of Johor rambutan train on cocoa.
W.H. Loke & C.L. Tan.
- 6) Evaluation of tractor mounted/drawn mistblowers and knapsack mistblowers for the application of insecticides in clonal cocoa.
Chung Gait Fee & Tan Man Wah.

Mr. Ho Cheng Tuck of Golden Hope reported that the cocoa black ant Dolichoderus thoracicus was able to suppress Helopeltis if present in sufficient numbers. This could be achieved by artificial means. The experimental cost was, however, prohibitive at \$855 to \$1719/ha.

Mr. Tey C.C. of MARDI reported that knapsack spraying of fosetyl-Al (Alliette) and Metalaxyl-cuprous oxide mixture (Ridomil Plus) were effective in controlling Phytophthora black pod rot but cupric hydroxide was not effective. Trunk injection of phosphorus acid (PA) was also effective.

Dr. Ollennu gave an account of the devastating effects of cocoa swollen shoot virus (CSSV) and the measures taken to minimise its adverse impact in Ghana. CSSV has been the main yield limiting disease in Ghana and Nigeria.

Mr. C.H. Lee of MARDI gave a presentation on rat control. An integrated approach encompassing monitoring, cost-benefit computation, sanitation and chemical baiting was advocated.

Dr. Loke and Mr. Tan of MARDI reported that rambutan Conopomorpha cramerella from Johore was able to complete its life cycle on cocoa pods. In a later study, it was, however, noted that C. cramerella from Perak/Kedah which were still free of CPB were unable to cross-infect cocoa pods. It appears that there was now little chance of eradicating the pest unless one was prepared to chop down all the rambutan plants and probably other host plants as well in the CPB infested areas. It was pointed out that apart from rambutan, there were at least another host.

Mr. Chung Gait Fee reported that the most promising knapsack mistblowers for application of insecticides in clonal cocoa for Helopeltis control was Solo 412 + Micronair spray head (nozzle 1) which required only 18.3 l/ha. For tractor-mounted/drawn mistblowers, Hardi Maxi O without spout provided effective control at the lowest spray volume of 85l/ha.

2.4 Crop physiology and biotechnology

Seven papers were presented, viz.:-

1. Environmental regulations of vegetative and reproductive growth in cocoa grown in controlled glass house conditions.
P. Hadley, Michele End, Sarah J. Taylor & G.L. Pettipher.
2. Inter-relationships between canopy architecture, light interception, vigour and yield in cocoa: Implications for improving production efficiency.
J.H.H. Yapp & P. Hadley.
3. Leaf water relations, net CO₂ assimilation, stomatal conductance and osmotic concentration as af

ected by water deficit in cacao seedlings.

G.S. Premachandra & R.J. Joly.

4. Elevated CO₂ facilities micro propagation of Theobroma cacao L.
A. Figuieria, Anna Whipkey & J. Janick.
5. Regeneration of Theobroma cacao L. plantlets from axillary buds culture in vitro.
Mohamed Senawi Mohamed Tamin.
6. Molecular and biochemical markers for genetic analysis of Theobroma cacao L.
P.J. Fritz, J.K. Osei, M.M. Goodin & D.B. Furtak.
7. Plant production of cocoa (Theobroma cacao L.) through micrografting of somatic embryos.
V.M. Villalobos & M.E. Aguilar.

Dr. Paul Hadley et al. of Reading University in their glasshouse study compared the performance of Amelonado cocoa under stimulated conditions of Teluk Intan, Tafo (Ghana) and Itabuna (Brazil). Their main findings were:

- 1) The duration of the flush cycle decreased with increasing temperature and lights.
- 2) Pod maturity was hastened with increasing temperature but was unaffected by changes in light environment.
- 3) Dry weight of beans at maturity declined with increasing temperature.
- 4) Higher temperature produced butter fat with a higher melting point.
- 5) Yield declined with increasing temperature as partitioning of assimilates favoured vegetative growth

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HIGHLIGHTS OF CONFERENCES

under such conditions.

Dr. Yapp made the following conclusions from his physiological study:-

- 1) For immature cocoa at 1096/ha, precocity and yield were directly related to the amount of light energy intercepted (f) as photosynthetically active radiation. They were, however inversely related to VSD susceptibility.
- 2) For mature cocoa at 3333/ha, yield was not related to f but to light distribution through the canopy quantified as light extinction coefficient (k). Canopies with lower k permitted greater light penetra

tion and hence were superior.

There was a considerable amount of work on tissue culture of cocoa but they are probably not very important at this stage.

Some progress had been made in the construction of a genetic linkage map for cocoa. The work was still preliminary and was unlikely to change anything in the foreseeable future.

2.5 Processing/economics/ marketing

There was some good news from Dr. Bateman of USA. He predicted a very sharp increase in the price of dry cocoa beans. According to him, the price of

cocoa beans was expected to increase by 11 to 28% in 1992 to 838/t or 959/t from the current price of 752/t depending on the weather conditions. The long term prospects were extremely good. Prices were expected to shoot through the 1000/t barrier fairly soon. It was expected to ascend to above 2000/t in 1996/7.

Mr. Guimberteau of Mercuria-Sucden who presented the paper on behalf of his colleague Martha of France was, however, less optimistic than Dr. Bateman. He pointed out that the current huge stock has a dampening effect on prices. Also, the current ICCO buffer stock scheme was full of weaknesses. It was more or less ineffective presently.

Ooi, L.H.

Rubber Growers Conference

(22-24 July, 1991 K.L.)

There were altogether 24 technical papers, which may be broadly grouped under the following topics:- exploitation technique, planting materials, crop protection, human resources management, processing and transfer of technology.

In addition, there was one keynote address by Dr. B. C. Sekhar entitled 'The Unused Muscles of NR sector'. He touched on recent developments towards market economy in Eastern Europe with prospects for increased NR demand. He also stressed on vital need for concerted, cooperative and quality-oriented effort and marketing philosophy amongst NR producing countries to bolster price.

A guest lecture given by speakers of INSAS dwelt on Malaysian Government's emphasis on industrialisation and increasing cost of labour for NR production. Use of cheaper foreign labour was proposed. Structural adjustments may be necessary to respond to trends and developments on the demand side.

The gist of the technical papers are summarised below:-

Exploitation

The highlight of the Conference was the paper by RRIM on the revolutionary exploitation technique, i.e., the closed system of puncture tapping now referred to as 'RRIMFLOW'. This involved stimulant application into an applicator fixed over a scraped area of bark. Single punctures were then made outside the stimulated area at weekly intervals. The latex was collected through 2 mm plastic straw fitted at one end into the puncture and the other end into a closed receptacle containing some ammonia solution. The crop was normally collected at 72 hours after tapping. Yields of 600 - 2000 ml latex per tree per tapping on virgin bark, to 1000 - 1400 ml on renewed bark were reported. The

main advantages of this system were lower requirement for labour and skill, lesser rain interference, increase yield and lower cost of production. However long term effects of stimulant has yet to be ascertained. Further work was required to facilitate fixing of applicators, overcome the need for frequent stimulation and ensure satisfactory quality of crop.

The other papers on stimulation mostly harped on old issues. Ebor Research reported better NPV, IRR and earlier pay-back period when trees were opened earlier (at 40-45 cm girth) coupled with stimulation. However the trial had only 8 years of yield record and in some cases high dryness incidence (13% - 21%) cast doubt on the actual benefit over the whole lifespan of the tree.

Guthrie Research's paper discussed the benefit of "open" puncture tapping (6 punctures on stimulated vertical strip) on maturing young rubber prior to conventional tapping. There was variable clonal response though.

RRIM researchers spoke on favourable response to low intensity tapping (d3, d4) or short cut (1/4 s) with appropriate ethephon stimulation.

A collaborative paper between Yule Cato Plantations and RRIM elaborated on high yield and high IRR upon early introduction of Controlled Upward Tapping after completion of panel BO -2.

A paper from Ivory Coast dwelt on the tapping systems recommended in West Africa. These were S2d4 for basal panels, with possible switch to S4d4/ after 10 years of tapping. Latex diagnosis was relied upon to draw up physiological balance of the trees, which are classified with 3 categories: clones with slow, intermediate and active metabolism. Stimulation regimes were then proposed accordingly.

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Planting Materials

The paper by Golden Hope Prang Besar breeder on performance of PB 300 series clone was probably the second noteworthy item of the Conference after RRIMFLOW. Amongst the eight PB300 clones discussed, four outstanding precocious yielders are PB359, PB366 (both having 12 years of Preliminary Proof record), PB350 and PB347 (both having 4 years of Further Proof record). Yield of these four clones exceeded that of control RRIM600 from 64% to 84%. Vigour and secondary characteristics of these clones were generally satisfactory.

The RRIM also reported the early results of Block Planting Trials stretching from 1970's to 1990's. Amongst the promising clones were RRIM937 (ex PC55), RRIM 936 (ex PC51), RRIM 938 (ex PC 57), RRIM 901, PC 96, PC 98, PC 110, PC 119, PC124, PC140, OS 27, PB 350, RRIM 921, PM 10 and RRIC 100. Yields exceeded that of control RRIM 600 from 41% to 195%.

Dr. P.K. Yoon and co-workers reported good performance of high budding on PBIG seedlings such as earlier maturity, more uniform growth, precocious and sustained high yield of above 2000 kg/ha/yr in second and third year and above 3000 kg/ha/yr in fourth year.

Crop Protection

The RRIM reported results of eight years soil drenching trials for control of white root disease. Field trials showed that propiconazole (Tilt), triadimefon (Bayleton), triadimenol (Bayfiden) and terbufenozole (Folicur) were more effective than tridemorph (Calixin) at 5 gm. a.i. in 2 litres of water per drench for control of white root disease in immature trees and when infection was mild. The effect was minimal on trees severe infection.

Another paper from the RRIM is on flower protection for improved fruit set. Prochloraz (Sportax) treatment was reported to increase fruit-set by 3-5 folds, and 2-fold for sulphur when compared against control. However Prochloraz was not available in the market and cost was likely to be prohibitive.

[The 24 technical papers presented were broadly grouped under the following topics: Exploitation technique, Planting material, Crop protection, Human resources management, Processing, Transfer of technology]

Human Resources Management

A collaborative paper from Padang Meiha Estate and RRIM stressed on harmonious working relation, incentive system and periodic performance evaluation for a highly motivated workforce as claimed by the Estate.

The next joint paper (FELDA-RRIM) highlighted the problems of transfer of technology to FELDA settlers, and called for re-examination of approaches and settlers - specific research and development.

Processing

There were four papers on processing. One of these dwelt on rubberised coir carrier reactor with matrix of micro-organism for pretreatment of rubber effluent. The second paper reported on a new preservation system referred to as LA - B2 systems. In the third paper, RRIM researchers spoke on borax treatment for SMR pallet preservation, and the fourth paper dealt with a new process for skim rubber production.

Transfer of Technology

There were five papers under this topic. A paper from smallholders representative lamented on slow and neglected technology transfer to the smallholders. According to him, there was over-emphasis on social development of the 'man behind the tree' at the expense of rubber tree itself. The RRIM assessed the performance of its own Transfer of Technology (TOT) Crop Committee and found lower adoption as smallholding rubber becomes mature and old. It recommended

more concerted and co-ordinated effort to formulate structured TOT programme, coupled with inbuilt monitoring and evaluation system.

A paper from Sabah Rubber Fund Board spoke well of its experience to produce young buddings since 1988 totalling over 0.5 million plants to date. To enhance sprouting SRFB opted for hot wax treatment instead of Atrinal.

In another paper on planting material, RRIM recounted its production of 1.5 million young budding for use by implementing agencies like Felda, Felcra and others. Speculative clones were promoted to the smallholders as well. On processing of smallholders rubber RISDA gave an account of its successful Centralised Processing Centre.

Ong, T.S.

Sports News



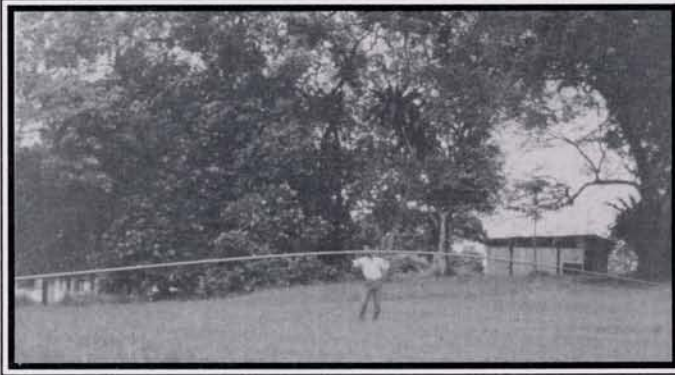
AARSC Annual Dinner '91

AARSC 1992 Committee

President	: Soh Aik Chin
Vice-President	: Mohd. Mat Min
Secretary	: Patma (Till May)
	Tey Seng Heng
Treasurer	: See Choon Mooi

NEW PRODUCTS

Extel FFB Harvesting Pole



The Extel pole is 16.3 m (53 ft) long and weighs only 6.5 kg excluding the harvesting sickle. The pole is actually made up of 3 lengths of 5.5 m poles connected together.

It is developed by Interface Services (Singapore) and manufactured from 'pultruded' hybrid of fibres and aerospace materials.

The main advantages of the pole are the extra length, the light weight and its easy length-adjustment collar while the disadvantages are the excessive flexibility of the pole and the cost. The pole is currently being evaluated by others.

VASPACT 125 SC

ICI Agrochemicals (M) Sdn. Bhd. recently launched a new triazole fungicide (Flutriafol) for the control of Vascular Streak Dieback (VSD) of cocoa.

The fungicide known as VASPACT is said to have systemic, eradicator and translaminar activity. ICI reported that it is effective against VSD of cocoa either as foliar spray or soil drench.

Label recommendations provided by ICI are as follows:-

Stage	Inoculum pressure	Rate/10L Water	Application method	Application frequency
Nursery	low-moderate	5 ml or 10 ml	Foliar spray	Weekly
			Foliar spray	Fortnightly
	moderate-high	20 ml	Soil drench 50ml solution/ seedling	monthly for first 3 months
			10 ml solution/ seedling	monthly from onwards
Immature Field planting	low-moderate	10-15 ml	Foliar spray	Fortnight
	low-moderate	20 ml	Collar drench 100 ml solution/ plant	Monthly for first 3 months
			200 ml solution/ plant	Monthly from 4th month onwards
	High	20 ml	Collar drench 200 ml solution/ plant	Monthly for first 3 months
			400 ml solution/ plant	Monthly from 4th month onwards