

AAR NEWS

EDITORIAL

Once again, we are celebrating the Chinese New Year and Hari Raya Aidilfitri together this year. Gong Xi Raya! May the year of the Ox brings you happiness, good health and prosperity.

One of the important event this year is the 1997 International Planters Conference on Plantation Management for the 21st Century to be held between the 21st and 22nd May 1997 at the Shangri-La Hotel, Kuala Lumpur. A wide range of topics covering management and technological needs, management systems, use of by-products, quality management, computer aided management, mechanisation and labour productivity and improvements in plantation practices and production efficiencies will be presented by prominent authors from Indonesia, Papua New Guinea, Sri Lanka, Singapore, Japan, United Kingdom and Malaysia.

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AAR has offered four papers for the Conference. Abstracts of the papers are on pages 3, 6 and 7. Please do not hesitate to write to us if you require the full papers.

Ooi, L.H.

1996 AARSB SPORTS CLUB ANNUAL DINNER AND ROLL OF HONOUR

A) LONG SERVICE AWARDS

33 years: Chen Kok Chin

Chen, as we all call him in the office, started working with Barlow Plantations in October, 1963 at a supposedly sweet young age of 18. He was based in Muar River Estate, Segamat as an Accounts Clerk for 5 years.

Shortly after Highlands Research Unit or HRU was formed by Mr. Gordon McCulloch in 1968, Chen was asked to come over as an Accounts Supervisor. Chen remained at HRU, Klang until 1986 when Guthries took control of HRU. He then joined the mass exodus of HRU staff



Chen Kok Chen, a real "tahan lama" man receiving 33 years service award from Chew Poh Soon

and Research Officers to the newly formed Applied Agricultural Research Sdn. Bhd. in Sg. Buloh.

Chen was made an Assistant Administrative Officer in

1985 and Administrative Officer in 1992. Through the years, the company has changed names, owners and what not, but Chen has remained loyal.

Besides his expertise in figures, one of Chen's greatest achievement was to complete the AAR 4 km cross country run recently, putting to shame some of the younger colleagues. Never mind the fact that we have to revive him with some 100 Plus isotonic drink afterwards.

10 years and above:

<u>Recipient</u>	<u>Position</u>	<u>Operating Centre</u>
Bacho Ambo Sappe	Research Assistant	KDC Sub-station, Sabah
Kanagasabai a/l Masilamam	Research Assistant	T.C. Lab, Sg. Buloh
Hatina Mohd.	T.C.Lab Assistant	T.C. Lab, Sg. Buloh
Norimah Mohd Amin	T.C.Lab Assistant	T.C. Lab, Sg. Buloh
Patimah Sarip	Research Worker	PB/SP Lab, Sg. Buloh

B) BEST ATTENDANCE AWARDS

Alatipah bt Husin	Thanaletchumy a/p Sinnavelu	Mohd. Fairuz Mohamad
Mohd. Faizul Ibrahim	Sujatha a/p Knishnan	Noraimi Minka
Sahara Mat Husin	Marimmah Muthu	Olivia Robert
Dzulkefle Ismail	P. Rajalachimi	

C) OTHER AWARDS

Initiative Award: En. Samsuddin Saleh

Encik Samsuddin Saleh has always demonstrated his willingness to learn and acquire new skills to perform outstandingly and get things done, often better than expected. His contributions in leaf and soil sampling programme, soil survey work and more recently the new GPS and GIS services through his hardwork, dedication, suggestion of new useful ideas and alternatives and effort in taking very good care of the important equipment are recognised to be outstanding. He is always keen to learn and showed his capability and initiative when he needed only two weeks to pick up the skills in computer and GPS. He was able to train new staff after conducting two field surveys on his own.

Dedication Award: Md. See Choon Mooi

Despite a very heavy workload in the Accounts Section and inadequate supporting staff, she always managed to complete the monthly accounts satisfactorily and in reasonable time. Her dedication and hard work deserve emulation by all.

Innovative Award: Mr. K. Anbarasu

The improved AAR Jacket System for rubber stimulation overcomes the problems of jacket damage by monkeys, tree bark damage and stimulant leakage, and good rubber yield responses have been gained from its use. Significant improvements in the AAR jacket system, from the

first system to the current system, have been made over the last five years. The improvements, to a large extent, have been contributed by Anbarasu's keen observations in the field and his suggestions for improvement. He has also suggested a better technique for evaluating the effectiveness of the AAR rainguard.

D) TOP STUDENTS AWARD

- UPSR:** Kalpana Devi A/P Leelatharan (5 As), daughter of Radha Atchutah Singh, Balau Sub-Station.
- PMR:** Yogeswari A/P Krishnan (8 As) daughter of K. Krishnan, Field Setion
- PMR:** Pauline Chang Sui Chin (6 As) daughter of Joyce Chong, T.C.Lab

E) TRADITIONAL DANCES/SKETCHES

- First : Tissue culture group : Sumazau Dance
- Second : Balau sub-station : Malaysian Dance Medley
- Third : Main Office staff : Joget Kelantan

F) KARAOKE COMPETITION

- First : Heniansyah
- Second : Shalam Norhasan
- Third : Sulimah Osman

CONGRATULATIONS TO ALL!

Tan,C.C.

ABSTRACTS OF PAPERS SUBMITTED FOR 1997 INTERNATIONAL PLANTERS CONFERENCE

AGRONOMIC PRACTICES TO MAXIMISE GROWTH OF YOUNG RUBBER

ONG TEE SAN, CHAN WENG HOONG &
HEH WUN YEE*

*Manager, Sg. Gapi Estate

A major drawback of investment in rubber is its long gestation period. Chan (1989) reported mean immature periods ranging from 61 months to 82 months in a survey of 15 clones. Numerous attempts have been made to shorten the immature period to enhance profitability of the crop. Agro-management practices adopted included the use of advanced planting material (Strivens, 1967), establishment of thick leguminous cover crops (Pushparajah *et al.* 1989), mulching (Sivanadyan *et al.* 1975) increased manuring (Sivanadyan *et al.* 1987) and controlled pruning (Leong *et al.* 1987).

Shepherd *et al.* (1974) and Leong *et al.* (1986) reported shorter period of immaturity by 11-12 months with stumped buddings compared with 2-whorl polybag buddings. The commercial adoption of stumped buddings was however poor due to variable transplanting success and logistical problems encountered (Gan *et al.* 1985, Leong *et al.* 1987). The introduction of young buddings (Leong *et al.* 1985) and core stumps from a single stage polybag nursery raised the prospect of large scale establishment with improved uniformity and growth.

Three trials are reported in this paper. The first trial was a split plot design to evaluate young buddings and core stumps, three levels of fertilisers (F0, F1, F2) and two levels of mulching (M0, M1). F0 and M0 were controls with nil application, F1 involved application of N, P₂O₅, K₂O and MgO at 642, 662, 414 and 84 gm/tree respectively over 4 years, and M1 plots received 15 kg and 30 kg/tree of fresh EFB in the first and second year respectively. F2 treatment doubled F1 fertiliser application.

The second trial evaluated the logistics and other aspects of commercial scale planting of core stumps. The third trial evaluated refinements from the earlier two trials such as smaller core stump, improved pruning practice and planting over more favourable rainy period for further evaluation of planting materials, fertiliser and mulching. Thick legumes were established in all the three trials. All young buddings were also subjected to controlled pruning to enhance girthing.

There was little difference in final girth between young budding and core stump in the first two trials, despite the initial large difference in size of material at planting. The minimal transplanting shock in the young buddings resulted in peak girthing rate of 14 cm in the second year of growth to overcome the initial girth advantage of core stump. The main disadvantage of core stump was the slow rate of girthing during the first 12 months when growth was possibly mainly directed to initial canopy enlargement.

Application of fertiliser significantly improved the cumulative girth by 5% and percentage tappable by 17.6%. There was no difference in girth between fertiliser levels. Mulching had minimal effect on growth.

Under the above intensive agro-management inputs, trees in the first and second trials attained maturity in 48 months. The young budding in the third trial even outgrew the core stumps by three months to mature at 45 months. Young budding was more advantageous than core stumps. They were much easier to handle logistically, cheaper and more resilient to weather changes. Young budding should therefore be adopted as a practical planting material especially for areas on difficult terrain where rubber is currently planted mainly.

Overall results indicate that by using adequate fertilisers, mulching, controlled pruning and thick legumes and superimposed on the vigorous PB260, the period of immaturity achieved

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An all new Committee was elected for 1996 after the Gong Xi Raya luncheon in early March 1996. The new Committee drew up a full programme for the year to keep the members busy and happy.

The first event of the year was a two nights' trip to FELDA's Tekam Resort, Sg. Tekam, Pahang, in August. Two coaches of enthusiastic members set out for the semi-wilderness of Pahang on a Friday night unsure of what they were in for. They ended up enjoying themselves thoroughly, caving, bicycling, boating, swimming and plucking fruits. At night, a sumptuous B.B.Q and Karaoke session was held. Small wonder, a number of them lost their voices the next morning!

In order to loosen up the bones in our members, a cross country run was successful held at Tuan Mee Estate in October, 1996. This was followed by a Deepavali luncheon in November to replenish the exhausted bodies.

The best was kept to the last. AAR's annual dinner and dance was held on 7/12/96 at the



*10 years service awards recipients with Chew Poh Soon
Left to right : Patimah, Kana and Hatina*

Rahman Putra Golf Club, Sg. Buloh.

This was a night of celebration, tradition and good cheer. Celebration because AAR is 10 years old. The dances and sketches were all traditionally based and good cheer because almost every department of AAR was involved in the performances presented.

Traditional dances from our country's varied community were presented. The best performance went to the Tissue Culture team of Sabahans who performed the Sumazau Dance like professionals complete with costumes flown in from Tawau.

Our Sabahans are a really talented lot. They produced another group calling themselves Sot-Sit-Sot 3 playing guitars and singing beautifully. Their rendition of the Eagle's 'Hotel California' was a hit with the audience.

AAR's new ARO from Indonesia, Heriansyah together with his charming wife, Rika, gave a pre-dinner medley of songs which soothed the hungry stomachs of the audience. Heriansyah also won the Karaoke prize but credit goes to our own 'Saloma', Puan Sulimah who charmed the audience with a hit from the sixties "Bunyi Guitar" complete with a rock & roll, twist, joget, etc performance.

Apart from the performances, an award presentation ceremony was also held to honour workers with perfect attendances, top students from the children of staff and workers, innovative, dedicated and initiative personnel and those who have served the company loyally for more than 10 years. This year, a rare award for 33 years of service was



*Hmm ! Food looks good.
When are they going to let us eat?*

NEWS : 1996 ACTIVITIES

presented to our Administrative Officer, Mr. Chen Kok Chin who started out as a young lad of 18 with the then Barlow Plantations in 1963 at Muar River Estate. Chen was one of the pioneers with Mr. Chew Poh Soon at HRU during its formation in 1968. The company has changed names, owners, partners on numerous occasions but Chen stuck on and faithfully dedicated his best years to the company.

The grand finale at the evening was the cutting of a 10-kilogram cake to celebrate AAR's 10 years of achievements by Mr. Chew Poh Soon and staff who were with AAR right from 1st July, 1986. It was indeed a fitting end to an enjoyable night that would surely be pleasantly remembered by all present.

Tan,C.C.



Husband & wife duet of Heri and Rika, AAR's latest addition from Indonesia



Feeding time ! A sumptuous buffet dinner Was thoroughly enjoyed by everyone



Our Main Office belles doing the Joget Kelantan



AAR's Saloma and her "back-up" dancers

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was 45-48 months, which is a marked improvement over the mean immaturity period of 62 months and the shortest of 49 months for commercial fields of PB260 reported by Chan (1989). The best period to maturity reported in earlier trials was 48 months for clone PB260 (Sivanadyan 1987) and over 50 months for less vigorous clones like GT1, PR261 and RRIM600 (Leong *et. al.* 1986). It would appear unlikely that immature period can be further reduced given the current known technologies. Planters should therefore implement the proven agronomic practices to attain the target of 45 months to maturity and not waste excessive inputs and increase cost for further improvement of growth with PB260 or less vigorous clones. For the future, breeding programs must be stepped up to produce clone of strong vigour besides high yield. Preliminary reports of the RRIM2000 series Latex Timber Clones purportedly more vigorous than PB260 give hope of reducing the immature period to significantly less than 45 months.

IMPACT OF TWO IMPROVED OIL PALM ESTATE PRACTICES ON LABOUR REQUIREMENTS AND PRODUCTION COSTS

OOI LING HOAK and SIM BECK SIAN*

*Manager, Tuan Mee Estate, Sg. Buloh

SUMMARY

The impacts of introducing the mini-tractor fitted with grabber and highlift trailer for in-field fFb evacuation and direct loading and fertilizer application using tractor mounted fertilizer spreader and crane to handle the fertilizers in half ton bags on a 2578-hectare mature oil palm estate were evaluated in a paper exercise.

With the mechanised system and reorgan-

sation of job function, the labour requirements for harvesting and fib evacuation could be reduced by 54%. This was accompanied by a 22% reduction in cost.

A ten-fold improvement in the productivity of the workers and 52% reduction in cost were achieved with the mechanised system of fertilizer application.

QUANTITATIVE LAND EVALUATION FOR SUSTAINABILITY OF OIL PALM PLANTATIONS

Goh, K.J, Chew, PS. and Gan, H.H.

ABSTRACT

AAR has developed a quantitative land evaluation technique by combining traditional soil survey information with a crop yield prediction model and an economic model to assess the impact of changes made on the sustainability of oil palm plantations based on the FAO/IBSRAM criteria of productivity, economics, stability and environment friendliness. Five fields were selected and each of them was divided into areas with lateritic and non-lateritic soils. Site-specific management was implemented in 1987 and separate yield, leaf soil and vegetative growth parameters were recorded for each area.

Land evaluation assessment showed that the major yield limitations were poor palm nutritional status in both soil groups, and poor rooting activity and moisture stress in areas with lateritic soils. Alleviation of these constraints increased fFb yields from 18.4 t to 25.1 t ha⁻¹ yr⁻¹. Production stability also improved as indicated by the reduction in the coefficient of variations of fib yields from 21% to 6.6%. The additional costs required to implement the agromanagement practices varied from RM 71 to RM 379 ha⁻¹ yr⁻¹.

However, cost per tonne ffb declined from RM91.92 to RM 83.50 with corresponding increases in profit. The average break-even price of palm oil was reduced to RM 572 per tonne. Nutrient balance computation demonstrated that the high rates of nutrients applied were mainly retained in the soils, immobilised by palm growth and removed by ffb production. This study illustrated the usefulness of quantitative land evaluation in assessing the yield potentials and constraints for site-specific management and the impact of agromanagement inputs on the sustainability of the plantation.

Keywords land evaluation; oil palm; sustainability

**GIS AND GPS
TECHNOLOGIES FOR
MANAGEMENT AND
RESEARCH IN
PLANTATION CROPS**

Tey Seng Heng and Chew Poh Soon

ABSTRACT

Good accurate maps are essential as we move towards site specific agronomic and management inputs for maximum sustainable yields and profits. The availability of Geographic Information System (GIS) and Global Positioning System (GPS) technologies has enabled accurate maps to be produced for use quickly and large amounts of spatial and non-spatial data from many sources to be captured, managed and manipulated, analysed and displayed graphically for problem solving and decision making in our plantations.

In early 1994, a Desktop Mapping Section was set up at AAR to prepare essential digital maps of client estates, explore and incorporate the use of GIS for site specific agronomic recommendations and

decision making by management in plantations. The GPS was introduced in early 1996 to generate and update our estate maps. The accuracy and speed of the GPS mapping services has created great demand for them. Preparation of the essential digital maps for our 155 client estates in Malaysia is expected to be completed by early 1998. The maps and reports produced for these estates currently are i) Precise location map of estates; ii) Basic estate map with detailed information on crop, hectares, road density, block boundaries, estate permanent features etc. ; iii) Detailed soil map; iv) Contour map; v) Accurate map of drainage system; vi) Yield map and oil palm site yield potential map.

Production of an updated basic map of a 2000 ha oil palm estate with GPS will involve 8 man-days from AAR and 15 man-days from the estate. Staff, labour and transportation costs of the survey and production of the basic estate map were about RM 1.20 / ha while the capital costs of the system at AAR was about RM 148,000. However, problems with inadequate or weak signals in some thick canopy areas still need to be overcome before large scale GPS mapping for estates with both oil palms and rubber trees can be successfully done.

The computer-based mapping and GIS technologies will enable us to visualise our existing fields and estates better and utilise the spatial information in redefining our fields more efficiently for best results in management and yield performance. There is also potential for combined use with aerial photographs and satellites images for assessments on palm growth, palm nutrient status, weed infestation, pest and disease losses etc. Further development of the uses of these new technologies will need the combined effort of managers, agronomists, planting advisers/visiting agents to utilise the additional information in ways that have not been possible before. GPS and GIS are vital tools for the plantations in the 21st Century.

Keywords: GIS, GPS, Plantation, Management, Research.

SOCIAL AND PERSONAL

Congratulations to:

Teo Chor Boo - birth of 3rd child, Teo Shen Ling (daughter) on 11/10/96.

Fadzillah Jasman - birth of 2nd child, Qisti Irfan Bin Md. Kasrin (son) on 19/10/96.

Desiyarani a/l Srinivasan - birth of 1st child, K. Yogaanaathan a/l Krishnan (son) on 19/10/96.

Tey Seng Heng - birth of 2nd child, Tey Yen Zhen (son) on 21/10/96.

Staff promotion/recruitment

Name	Date joined/promoted	Designation
Mohd Taib B. Hussan	21/10/96	R.A. III
Roslan B. Husin	1/11/96 (Promoted)	R.A. III
Ahmad B. Ranji	1/12/96 (Promoted)	R.A. IV
Saruddin B. Selamat	1/12/96 (Promoted)	R.A. IV
Mahadi B. Pordi	1/12/96	R.A. IV

Chen, K.C.



*The Champs:
Sumazau Dance by Tissue Culture Section*



*Traditional Indian Dance from
Balau Sub-Station*



***Hurray !
AAR is
10 Years Old!***