

AAR NEWS

EDITORIAL

To all our valued readers, we wish you Happy New Year, Kong Hee Fatt Choy and Selamat Hari Raya. 1996 is a special year for us at AAR for we will be ten years old on 1st July. Employees of former Highlands Research Unit and KLK Agronomy Research Unit joined forces in 1986 to form AAR and worked to make AAR one of the foremost plantation research companies in Malaysia today. The success is due to the tremendous support from our Principals and clients and the dedicated research officers and subordinates, in essence, team spirit and dedication. We are now ready to meet the challenges in the 21st Century

As promised in our previous issue, we now publish the balance of the topics discussed during the Balau Estate Field Day held on 10-10-95, ie. **Runoff and Erosion studies, Geographic Information system and Global Positioning System for Plantations, Herbicide Pytotoxicity in Oil Palm and Clonal Propagation Programme at AAR.**

A concise summary of 1995 Rubber Growers' Conference is provided by Ong, T.S. For technical papers, we have for you abstracts of two papers presented by AAR officers. Please do not hesitate to write to us for full papers if you require them.

Ooi, L.H.

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RUNOFF AND EROSION STUDIES - PM75 BALAU ESTATE

Trial NB3-89 : Runoff and Erosion Studies

Objective : To quantify losses in runoff water and eroded sediments under mature oil palms

Slope : 6.8 - 7.10

Palm age : 20 years (PM75)

Plot size : 3 palms per plot (7.6 mx 26 in), (200 m²)

Ground cover : a) blanket sprayed to remove all vegetation
b) Pruned fronds stacked against gradient on the lower slope of each palm
c) Frond heaps removed in July 1994 for 6 of the 12 plots

1. Annual results

1.a) Annual runoff losses :

Over the 6 years from 1989-1994, runoff losses ranged from ~ 12% in 1990 to nearly 33% in 1994. 1993 was a very wet year with >3025 mm of rainfall and runoff was correspondingly higher at 29%. However 1994 was unusual with very

high runoff at 32.9% but annual rainfall was only 2310 mm. This may be attributed to the more frequent intensive rainfalls in 1994. For example, there were >22 days where daily rainfall exceeded 40 mm and total rainfall over the 22 days accounted for nearly 50% of the annual rainfall for 1994. Higher runoff losses were also recorded for consecutive wet months eg. Oct.-Dec. 1993. Over the 6 years, mean runoff was ~ 21%.

1.b) Annual soil losses

Losses over the 6 years ranged from 3728 to 9266 kg/ha. The high soil loss in 1993 of 9266 kg/ha coincided with high rainfall and runoff. 1994 was also a relatively high soil loss year with 7255 kg/ha and the reasons were as explained in (a) above. Overall, mean soil loss over the 6 years was 6140 kg/ha. This is still a relatively low figure.

2. Effects of Frond Removal

Pruned fronds were removed from 6 plots in July 1994 while the other 6 plots remained unchanged (control plots). The results of frond removal on runoff and soil losses are discussed.



2.a) Runoff losses (Fig. 1)

Runoff losses (% of annual rainfall) for 1993 (pretreatment) were similar in both sets of plots. In fact, for Jan-Jul. 1994, runoff losses for control plots were higher (28.6% compared to 23.6%). When pruned fronds were removed a marked increase in runoff losses were noted (from Aug. - Dec. 1994). The same pattern was observed in 1995 especially over the wetter months of Mar, Apr, May and June 1995.

In 1993 runoff losses of > 30% were noted whenever monthly rainfall exceeded 300 mm and was nearly 45% in Nov. '93 with a rainfall of 483.9 mm. However for 1994 despite lower annual rainfall of 2310 mm, overall runoff for the year was 33%. Very high monthly runoff of >40% were observed in April; Oct., Nov. and Dec. 1994. Even on relatively drier months (eg. May '94) runoff exceeded 30%. This was probably due to more frequent spells of intensive rainfall (sudden heavy downpour). This same pattern continued in 1995. From Jan.-July '95, runoff accounts for nearly 42% of the rainfall to date in the control plots. When fronds were removed the corresponding figure was 45%. For consecutive wet months (eg. Mar. - Jul. '95) runoff exceeded 40% and may be as high as 62% in plots without fronds (eg. April '95). Results to date therefore suggests that removal of pruned fronds will result in significantly higher runoff losses on gently undulating terrain under mature oil palms.

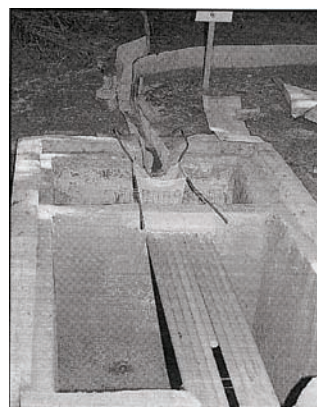
2.b) Soil losses (Fig. 2)

Soil losses in 1993 and Jan-July 1994 (pretreatment) were relatively lower in the control plots. However after frond removal, differences appeared to be more pronounced. Although the trend of higher soil loss was evident when fronds were removed, longer term data will be needed to confirm this finding.

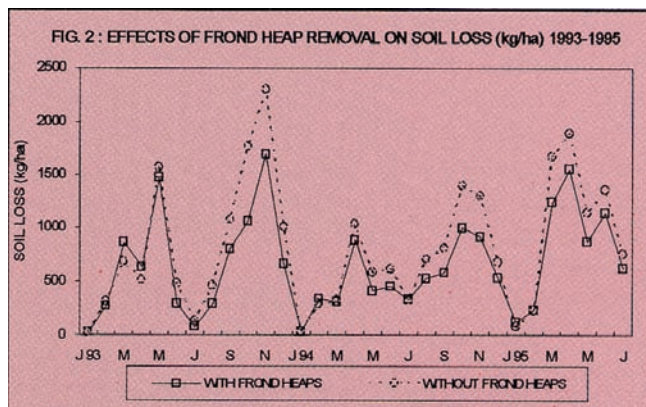
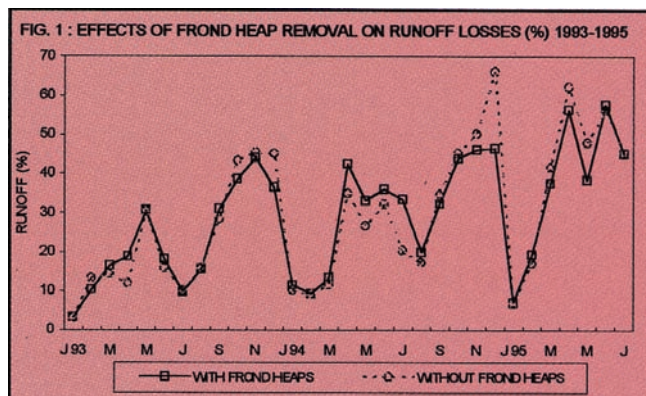
Kee, K.K.



Runoff Trial Plot



Runoff trial collection tank



HERBICIDE PHYTOTOXICITY ON OIL PALM

1. Common herbicides

There has been a shift toward the use of highly potent and systemic herbicides in the plantations over the last decade. New herbicides like metsulfuron-methyl (Ally 20DF), flurozypyr (Starane) and cinosulfuron (Setoff) have gained wide acceptance. Old herbicides with only limited specific uses previously e.g. glyphosate, dicamba and triclopyr are now being widely used in cocktails for general weed control.

These herbicides have the following common attributes:

- High potency i.e. effective at very low dosages.
- Highly systemic and hence suitable for application at very low spray volumes of concentrated spray solutions for both thin and thick weeds.
- Slow kill through their action on the plant.
- Hormonal.

These attributes contribute to their high bio-efficacies and cost-effectiveness but also increase the risk of phytotoxicities on oil palm.

2. Phytotoxicity symptoms

To date the symptoms have been recognised only on nursery seedlings, immature palms and young mature palms.

The main symptoms on immature palms are as follows:

Herbicides	Symptoms
Glyphosate	a) Spear-rachis necrosis
	b) Spear collapse
	c) Frond-twisting
	d) Crown-disease-like symptoms
Flurozypyr	a) Frond-twisting
Dicamba	a) Frond twisting
	b) Bending at base
	c) Parthenocarpy

Triclopyr	a) Frond twisting
	b) Bending at base
	c) Parthenocarpy
Metsulfuron-methyl	a) No apparent symptoms recognised yet.

3. Effects on oil palm

Parthenocarpy results in direct loss of FFB and oil yields.

Effects of morphological deformations on oil palm growth, yield and mesocarp oil content have not been quantified. The presence of such phototoxicity on immature oil palms is probably highly unfavourable. They depress early yields and probably also, yield potentials.



Necrosis of spear-rachis caused by glyphosate



Spear collapse and frond-twisting Caused by glyphosate/flurozypyr/dicamba/triclopyr



Bending of seedling at base caused by dicamba/triclopyr

4. Precautionary measures

The following general measures should minimise the herbicide phytotoxicities on oil palm:

- Know your herbicides and their trade-names. Correct comprehension of herbicide labels and herbicide dilution. Correct use of the herbicide applicators.
- High degree of awareness of the potential damages of herbicides on crops.
- Correct choice of herbicides.
- Training of spraying supervisors and workers. Damage by herbicides is as bad as or if normal, worse than equivalent loss of leaves to pests. In young plantings and replantings it is too commonly seen nowadays. This is directly under management control and the spraying results seen reflects well the standard of management and labour control in the estate.

Mohd, M.M.

CLONAL PROPAGATION PROGRAMME AT AAR

Clonal trial results to date e.g. BCT4-89, BCT5-89 indicate that it is possible to obtain superior oil yielding clones.

Selection of superior ortets or parent palms for cloning based on high FFB has not been as reliable as selection for high oil to bunch or short stature. As such clonal field trials are mandatory to pick out the few outstanding clones.

Results of semi-commercial test plantings of clonal palms indicate that AAR's tissue-culture laboratory can mass produce clonal palms or ramets with very low levels of abnormality (mantling).

This has been achieved by cloning a large number of selected palms and limiting ramet production per palm.

However, to fully exploit clonal palms commercially, one must be able to reproduce clonally the few outstanding clones identified from the clonal trials.

Production of large numbers of ramets per ortet requires prolonged extensive multiplication of the cultures. This increases the risk of abnormality which is unpredictable and uncontrollable currently. Hence to be able to fully exploit clones commercially, we must

- Have a large base of proven outstanding ortets to resample (redone) from. This means a very large clonal testing programme is required; or
- To improve the efficiency of cloning i.e. to be able to clone more palms and obtain more embryoid lines per clone. This will reduce intensity of multiplication per culture and thus risk of abnormality, or
- Develop a technique to control or avoid abnormality or develop an early detection technique; or
- Be able to redone from the field tested clones (ramets), which may have higher risk of abnormality.

Current AAR strategy is to test more clones to pick and build up the base

pool of outstanding proven ortets while awaiting for breakthroughs in research efforts on the above approaches which will then allow mass production of the outstanding clones.

AAR is also undertaking alternative strategies such as cloning proven dura and pisifera parents for clonal seed production and cloning a package of ortets/clones with limited production per clone; but these do not fully exploit the potential of clones.

Discussion

Q. With such obviously outstanding clones, why aren't we commercially propagating them?

A. By the time we get these trial results, the original propagating cultures, if they have not deteriorated in prolificacy or visual quality, would be unsafe to use because of increased risk of abnormality having been in culture for such an extended period.

We can (and will) resample/redone the proven ortets; but from general experience, we cannot produce more than 5,000 - 10,000 per clone without increasing risk of encountering abnormality.

Q. Why can't we redone from the field tested ramets as one other commercial laboratory is doing?

A. This is a logical and attractive approach. However, from general theory and experiences from other crops, recloning from atissue-culturedplant is riskier because of habituated tissues. Nevertheless we are recloning ramets from these proven clones and are field testing them. If it works, we can immediately commercialise the process. Meanwhile we will continue to build up our base pool of proven ortets.

Soh, A.C.



SAC offering the planters improved planting material

GEOGRAPHIC INFORMATION SYSTEM (GIS) AND GLOBAL POSITIONING SYSTEM (GPS) FOR PLANTATIONS

1. Introduction

Good estate maps are always useful. With the Information Technology (IT) available today, estate maps can now be easily digitised and saved in computers. The advantages of having good digitized estate maps are numerous. For example, the maps of an estate can be updated and reproduced easily and quickly into any scale that we like with a computer. For a decision maker, the precise location of a property or field can also be identified quickly with a computer and any available information for that particular location can then be quickly retrieved for decision making. For a researcher, the spatial information of a given trial site can be stored in the computer and be displayed for experimental analyses.

2. GIS for Plantations

2.1 MapInfo GIS

- o Development of a successful GIS takes time and can be costly. With some of the more urgent requirements in mind, we have chosen a desktop mapping software, namely MapInfo, for the development of GIS in the plantations.
- o MapInfo was chosen because it is in modules that can be added on from time to time as required to create a powerful GIS package for plantation research and management in the future.

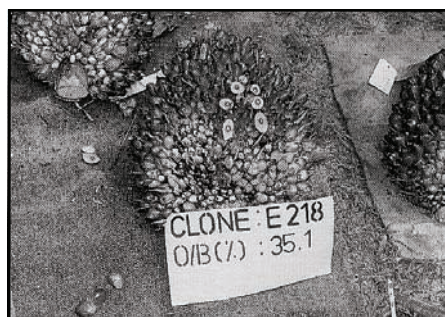
2.2 Work Progress

- o Basic maps of all the estates under AAR advisory in Peninsular Malaysia will be completed by the end of 1995.
- o To begin digitising Sabali/Sarawak estates maps in late 1995 and complete all the basic maps by the end of 1996.
- o Maps for estates in Indonesia are also being digitised from time to time as necessary.

2.3 Types of map that can be provided

The following types of maps can now be produced for the estates:-

- o Estate location map that displays the precise estate location so that more supplementary data that are available can be utilised for decision making.
- o Detailed manuring block map of various scales for display and use in the fields.
- o Topo map for terrain analysis and terrace construction planning.
- o Soil map of manuring blocks for yield prediction and identification of area for specific agronomic and management inputs.
- o Detailed block map displaying different crops with different colours.
- o Zoomed in detailed block map for various detailed studies such as detailed soil survey and terrain analysis. This map may be useful for land clearing and replanting, construction of roads, drains and terraces



A high oil to bunch clone from AAR

as well as dividing blocks for different agronomic and management inputs.

- o Thematic map to display block records such as yield performance, palm growth, maintenance or manuring costs etc.

3. GPS for land survey

3.1 What is GPS

- o Global Positioning System or GPS is a device that display your position - latitude, longitude, altitude and direction no matter where you are on the earth.
- o It is now being used in many navigational and military applications besides yachting, fishing, trekking, mountaineering, canoeing, bicycling and many other leisure activities.

3.2 GPS error

- o Most GPS equipment will give an error of about 30 to 100 meters. With averaging technique or differential correction software, some of the more advanced portable GPSs are able to provide position readings to sub-meter accuracy.
- o Our preliminary surveys with a low range portable Sony Pyxis GPS showed that with a single reading, an error of about 30 meters can be expected.
- o With averaging technique, the error can be reduced. Mean of 5 minutes' readings at 30 seconds interval for each point reduced the error to within

25 m while mean for 60 minutes' readings at the same interval for each reading reduced the error to less than 5 meters.

3.3 Can GPS be used for land survey?

- o GPS has proven to be useful in displaying positions in our jungle and estate soil surveys and soil inspections.
- o Using the Sony Pyxis GPS, with mean of 5 minutes' readings at 30 seconds interval for each point, we surveyed 3 young OP fields in 3 different estates in 3 different locations. The readings were plotted with Map-Info and maps of the surveyed fields were drawn. Errors in terms of area calculated from the plotted map were found to be less than 2 % (0.6 ha, 1.2 ha and 0.7 ha for the 110 ha, 62.1 ha and 43 ha blocks surveyed respectively).
- o With more powerful GPS devices that come with a differential correction software (DGPS), position error can be easily reduced to well below 5 meters
- o GPS is a simple and quick alternative for the conventional land survey. It may be used to draw and redraw

field boundaries of a property or to locate! redraw the boundary between 2 fields. However, it cannot be used to replace the conventional land survey method to produce a licensed map.

- o Your inputs and suggestions on possible further applications for these high-tech tools now available for use on the plantations in your work will be most welcome.

Tey,S.H.



TSH demonstrating the high-tech GPS for use in plantations

CURRENT STATUS OF TRIALS ON AAR JACKET SYSTEM OF EXPLOITATION IN RUBBER

BY CHAN WENG HOONG AND ONG TEE SAN

Paper presented at RRIM Rubber Growers' Conference, Kuala Lumpur, 17-19th July, 1995

Abstract

Twenty two to thirty eight months results from nine experiments on the AAR Jacket System are reported.

Most jacket treatments in the nine experiments exceeded their controls in yield per tapper, ranging from 3% to 43% higher.

Response in yield per hectare of jacket treatments was more variable than yield per tapper. In the experiments on panel BO-1, all jacketed treatments yielded below their controls. In the experiments on other panels, jacket treatments tapped on lower frequency than their controls, mainly yielded below their controls while those tapped on the same frequency yielded above their controls.

Except for the highest stimulation rate of 400 mg.a.i. ethephon applied on panel BO-2 which raised tree dryness to 20% compared with 10% for the control, incidence of dryness of jacket treatments was more or less similar to their controls.

Interim jacket systems for various panels are proposed based on the trial results obtained and also on the current exploitation needs of estates.

RUBBER GROWERS' CONFERENCE (17-19 JULY, 1995)

The Conference was held under the theme "Ensuring sustainability and competitiveness of the NR industry". There were three guest lectures and seventeen technical papers. Highlights of the guest lectures and relevant papers of interest are as follows:

A. Guest lectures

Guest lecture 1: Dr. Salleh Mohd Nor of PRIM in his paper on Reforestation of the Rubber Sector stated that information on a wide range of forest species is now available. Thus he called for major initiatives to start forestry plantations for timber or even industrial/pharmaceutical products.

Guest lecture 2: Dr. Radzuan Abdul Rahman of Golden Hope Plantations talked on Economic Viability and Competitiveness of the Malaysian NR industries. According to his study there has been substantial growth of the domestic rubber-based and rubber wood industries. As such there is a need for paradigm shift to treat the NR industry as an integrated commodity system rather than an NR production entity per se. In this context, the revenue/profit per land unit is competitive to oil palm.

Guest lecture 3: Mr. Thong, deputy DG of MTIB gave an overview of the rubber wood industry. He pointed out that the export value of rubberwood finished products had exceeded 1 billion ringgit. Based on the data available, there appears to be adequate rubberwood to cater for future expansion of the industries. The problems are inadequate milling capacities and logistical difficulties in certain locations as well as seasonal nature of supply. At present, only about 60% of the logs available and suitable for conversion into sawn-timber and plywood is being utilised.

B. Papers on Exploitation

1. RRIMFlow : RRIM reported RRIMFlow results from small scale and task size trials on panel HO-1 for periods ranging from 12-34 months, with weekly gassing on 1/8 S or 1/4S cuts (d3).

Yield per tapper obtained ranged from 40-96 kg from task sizes of 350-750 trees. Yield per hectare increased by 12% to 138%.

Cost of material, fixing, maintenance totalled up to RM2.70 per tree per year. There was no adverse effect on d.r.c. and dryness.

Commercial task size trials showed the increase in ex-estate profit over control to range from 20% in GT1 to 190% for RRIM600. Breakeven yield for RRIMFlow (d3, d4 frequency) against control under d2 frequency was 20% at price zone RM2.50/kg to RM3.50/kg and 10% for price zone RM4.00/kg to RM4.50/kg.

2. REACTORRIM. This method required continuous release of Ethylene gas from a canister to the tree via a button applicator affixed to the bark. Puncture tapping was done along a rain-guarded vertical groove made above the applicator, with 2P2 d/3 found to be the best system in trials at FELDA schemes where crop was collected in the form of cup lump in view of long latex flow Results after 2 years of trials on mixed RRIM600 and GT1 fields showed average yield of 80 gram/tree/tapping (or about 45 kg/task/tapping). Cost of the system was said to be over RM4.00/tree.

3. AAR jacket system. Abstract of this paper may be found on page 5 of this Newsletter.

4. Periodic tapping (Sime Darby/RRIM trials). Results after 6 years of 1/2 S d3 (9m/12) + 1.5% ET 9 rounds/yr, (groove) on panel BO-1 of PB260 showed higher yield! ha/yr (1%-17%) and yield per tapper (32%-52%) compared to 1/2 Sd3 control. Dryness incidence and girth increment was comparable to control. Another trial on PB235 (2 1/2 years) showed poor yield/ha for periodic tapping under 1/2S d4 (9m/12). However non-periodic tapping 1/2 Sd4 (12 m/12) + 1.5% E x 6 rd/year gave comparable yield/ha as 1/2 Sd3 unstimulated.

C. Papers on Planting material/rubberwood

1. Potential timber clone and latex-timber clone (LTC)

Among the 24-year-old clones from six *Hevea* species evaluated, *Hevea guianensis* has the highest clear bole volume at 1.77 m³/tree (existing clone has 0.15 -0.20 m³/tree). Many 13-year old *Hevea* seedlings from the 1981 germ-plasm collection have clear bole volume exceeding 1 m³/tree. Promising LTC are available from RRIM 900 series clones (g.t.t. 80-100, clear bole volume of 0.5-0.8 m³/tree at 22 years old), 2000 series (g.t.t 70-100, clear bole volume 0.33 m³-0.53 m³/tree at 14-17 years old) and PB300 series (clear bole volume 0.33 m³ to 0.93 m³, 19-26 years old). These recommended clones include: RRIM (908, 910, 912, 913, 918, 921, 922,928,929,931, 932, 936, 2001, 2002, 2008, 2009, 2014, 2015, 2016, 2020) and PB (235, 260, 350, 355, 359).

2. Economic assessment of plantations for rubberwood production (RIMM)

Financial analyses of various options including planting cycles, planting densities, latex exploitation period and silviculture were made. Highest net return was derived from option involving both latex and wood extraction because latex contributes to 80% of total 'revenue. The most promising option is that of 15 years planting cycle, with initial density of 700 trees, 8 years untapped and 7 years exploitation followed by timber harvesting. This option has an IRR of 16.6%.

D. Papers on Agronomy

1. Slow release fertilisers. Trial results from planting to maturity showed LBDU woodace and Kokei Field King had comparable growth and cost as conventional compound fertiliser. There was however no absolute control.

2. Zero burning. The techniques for implementing zero burning were shown. Given proper eradication of root disease inoculum prior to replanting, preliminary results indicated negligible root disease incidence after 3 years of planting. There was also better plant growth in zero burning area, along with cost saving of about RM250/-per hectare.

Overview

The introduction of latex-timber clones (LTC) is probably the most important highlight, as these would improve the economic prospects of the rubber plantations. The LTC is capable of producing 2-3 times more timber than the existing clones at about half the age. Besides trunk logs, branch timber is likely to be sourced by increasing number of medium density fibre board (MDF) factories.

Economic analyses by the RRIM economists found that 15-year planting cycle for latex followed by timber extraction to be most profitable. This is in agreement with the finding by Can et. al (1994 ISP International Planters' Conference) in a separate exercise. However there are significant differences in the proposed planting densities and exploitation period. The BRIM team called for higher planting density (700 trees/ha) against Gan's 500-550 trees/ha. In view of higher initial stand, the growth: tapping periods under the RRIM system are 8 years: 7 years, as opposed to Gan's proposal of 4 years: 11 years. The latter is probably a better system in view of lesser number of tappers required and earlier return on investment.

RRIMFLOW and REACTORRIM systems involving Ethylene gas stimulation are technically sound in terms of higher yield achieved (per tapper and per hectare) from short cuts or puncture tapping without deleterious effects on d.r.c and tree dryness. However the high cost and/or high labour requirement in materials and fixing/maintenance have to be reduced before they can be adopted on commercial scale. Periodic tapping experiments offer scope for achieving satisfactory yield in young rubber through stimulation and less intensive tapping, without increasing tree dryness. AAR jacket system, which has an improved version, appears to be most promising in terms of yield response, costs and practicality.

Ong, T.S.

**DIRECT APPLICATION OF PHOSPHATE
ROCKS TO PLANTATION TREE CROPS
IN MALAYSIA**

Goh Kah Joo and Chew Poh Soon

Paper presented at Int. Workshop on Direct Application of Phosphate Rock and Appropriate Technology Fertiisers in Asia: What Hinders Acceptance and Growth, IFDC, Sri Lanka, 20 to 24 February 1995.

Abstract

Plantation tree crops, mainly oil palm, rubber and co-coa, occupy 4.37 million hectares, representing 76% of cultivated land in Malaysia. These crops are cultivated on soils with poor P status usually. Hence, widespread P responses have been obtained from trials since the twenties.

From 1987 to 1992, Malaysia imported an average of 0.46 million tonnes of phosphatic fertilizers to meet the P demand. Phosphate rocks accounted for 85% of the imports and they were mainly directly applied to plantation tree crops.

The decision to use phosphate rocks is based on re-

search conducted mainly on rubber, nursery trials, experiences and factors favouring phosphate rocks over soluble Pin Malaysia. These factors include rapid P dissolution, high P sorption capacity, high rainfall and temperature, low P demand, high surface root density, present management practices and relative cost efficiencies.

The relative economic effectiveness of CIRP over triple superphosphate in rubber planting was found to be 2.54 to 4.23 times based on availability coefficient and relative fertiliser cost method.

Phosphate rocks also improved soil pH and are effective sources of Ca²⁺. They reduce Al³⁺ and AlSO₄⁺ in soil solution, which should enhance root development. However, they can also reduce K⁺ and NO₃⁻ in soil solution and these nutrients must be considered in the fertilizer programmes for plantation tree crops.

This review shows that there is still a lack of data on the agronomic efficiency of phosphate rocks for oil palms which have higher P demand compared to rubber and co-coa. This task is now entrusted to our Palm Oil Research Institute of Malaysia (PORIM) and further results should be available in due course.

SOCIAL AND PERSONAL

Highlights of 1995 AAR Sports Club Activities

Despite a late start for the new committee, AAR Sports Club had quite an eventful year.

Following Chinese New Year and Hari Raya Lunches in the first quarter of 1995, a Tele-match for AAR Sports Club members and their families was held on 9/9/95. More than 100 members attended the event at AAR complex. Apart from the usual prizes, three main prizes, compliments from HAR, were awarded to the three most sporting participants of the day

A trip to Penang coinciding with the Pesta Pulau Pinang was organised for the members between 9th and 11th Nov.'95. Two bus-loads of our members enjoyed themselves, trying out Penang specialties like Assam laksa, fried keuh teow, ice-kacang etc. and shopping for souvenirs. They spent part of the Saturday night at Sg. Nibong where the Pesta was held.

This year, our Sports Club Dinner & Dance function took us to the prestigious Kelab Shah Alam. It was held on 9/12/95 from 7.00 p.m. to 12.00 midnight, with the theme "A Night of Floral Charm". Colorful flowers were seen all over the places, on the tables, stage, clothing and hats. The highlights of the night were the Long Service Award (from 10 years to 25 years) and Innovative/Initiative/Performance awards. Among the other programmes were two sketches (which had the



AAR Sports Club Annual Dinner & Dance at Shah Alam Club

Julie, Y.

Staff promotion:

Name	From	To	w.e.f.
Aspalila bt. Abdullah	Computer Operator	Computer Technician	1/1/96

New Employee:

Name	Designation	w.e.f.
Fadzilah bt. Jasman	Clerk	9/1/96

Chen, K.C.

CONGRATULATIONS

LONG SERVICE AWARDS FOR 1995

25 YEARS AND ABOVE

1. Sulimah Osman
2. Gopal Kulandai

20 YEARS AND ABOVE

1. Nor Fazilah Abd. Latif
2. Lily Loo Ah Lay
3. Tan Lei Hong
4. Periasamy Arunasalam
5. Alice Thomas
6. Nadisan Anggalan

15 YEARS AND ABOVE

1. See Choon Mooi
2. Yee Kiat Cheng
3. Rukumany Vengedasamy
4. Noraini Mohd Noor
5. Yee Kiat Ng
6. Anbarasu K.
7. Munisamy Sokan

10 YEARS AND ABOVE

1. Krishnan Kuppusamy
2. Lim Lee Hua
3. Barry Kiragory
4. Chong Siew Peng
5. T. Supramaniam
6. V. Sandrasegaran
7. V. Subramaniam
8. Denney Kasim
9. Mohd Apandi Husin
10. Rosita Mohd Akhir
11. Mohd Kamal Othman
12. Nor Aini Abd. Latif

OTHER AWARDS

Mr Chin Tong Lai (Best Invention Award)

Mr. Chin Tang Lai helped to design a portable rainfall simulator which is capable of simulating different rainfall intensities. This is quite unlike the commercial rainfall simulator which can give only one rainfall intensity and costs more than \$10,000.

En Lokman Ismail (Initiative Award)

Getting good quality drinking water is a continuous problem in Balau. Suitable commercial filters/purifiers were not available. Using very simple and readily available material i.e. plastic mineral water bottles, Lokman has improvised a filtration device to overcome the above problem. Lokman's initiative is recognised as a significant contribution to the workers' welfare in AAR Balau Office.

Mdm. Yee Kiat Ng (Initiative award)

Out of Julie's personal interest, she attended computer classes to equip herself with computer knowledge and skills to cope with her work. In view of her newly acquired skills in this area, she has been deployed to assist in AAR's Computer System Support and has been put in charge of the Internet. In addition, she has helped to draw up a simple computer program to replace manual calculation of leaf nutrient levels for rubber which has resulted in speedier and more accurate calculation of leaf analysis data.

Puan Siti Norasikin Moksen (Best Training Results Award)

Siti "mastered" Microsoft Office software within a short time span. She also knows Freelance, Statistica, Lotus WordPerfect, WordStar and Internet. Apart from the above, she does her OP advisory and agronomic work, and maintains our maps. Siti is among the few clerks here who not only helps in typing but also formats our reports (especially scientific reports) for good and professional presentation. Her excellent work beyond her job functions and keenness to help without complaint are exemplary and should be recognised and rewarded.

Cik Noraini Mohd Noor (Best Training Results Award)

In the "old days", AAR News had to go through an outside art/graphic house to be published. The process was very tedious and costed more in both time and money. The results were not always as desired. Now, AAR News is produced 100% inhouse except the printing part. Most of the credits are due to Noraini's hard work and interest in making use of facilities available at AAR. The result is less hassle for authors and editors and better quality News which help to project AAR's image.

Mdm. See Choon Mooi and Miss Geetha (Perseverance and Dedication Award)

Mdm. See Choon Mooi & Ms. Geetha handled the mountainous volume of work and paper daily and by overtime as necessary to sort out the accounts and distribute them properly. Despite the non-stop work and increasing paper going their way, they have stood like a rock for us to ensure that the accounts were properly completed in reasonable time.

Mr. K Gopal (Humanity Award)

Mr. K Gopal was awarded the Humanity Award for looking after the welfare of the Bangladeshi workers. K. Gopal, is a field supervisor of the field staff and workers (totalling about 50) in AAR Balau Office and responsible for looking after their work and welfare. Gopal has always demonstrated his concern for the welfare of his subordinates, sacrificing much of his own time and effort to look after their needs. It is largely due to these efforts that we have managed to retain most of the Bangladeshi workers, who are now comfortable and conscientious in their work. We recognised Gopal contribution by presenting him with this Humanity Award.

Best Attendance Award

Puan Alatipah (Canteen)
Miss Saradey (SP Lab.)
Encik Dzulkifli (Paloh Sub-station)

Cik Jariah Kasmat (TC Lab.)
Miss Jalathumary Rajoo (Plant Breeding)

