

# INTROPiCa

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INSTITUTE OF TROPICAL FORESTRY AND FOREST PRODUCTS

Centre of R&D in Tropical Biocomposite and Canopy Management



## Towards **GREEN ECONOMY**

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Bismillahirrahmanirrahim...

It gives me great pleasure to pen this message for INTROPica, a publication designed to give a thumbnail view of current activities at the Institute of Tropical Forestry and Forest Products (INTROP), Universiti Putra Malaysia. I would also like to take this opportunity to congratulate Associate Professor Dr. Jalaluddin Harun, former Director of INTROP, for his appointment as Director General of the Malaysian Timber Industry Board (MTIB). Our heartiest appreciation for his vision, enthusiasm and perseverance in promoting INTROP as the referral centre for Biocomposites, Natural Fibre and Canopy Management research, at both local and international. Indeed, his contributions in these areas are priceless.



We are now in the era of fast changing global environment that presents new opportunities and challenges to all nations. Without exception, INTROP inevitable facing many new challenges in her pursuit to become one of the leading research centres particularly in these three sacred areas: Biocomposite, Natural Fibres and Forest Canopy Management. To ensure that INTROP successfully responds to this formidable challenge of global climatic changes, we must be alert to new ideas and technologies that are not only innovative and efficient, but also eco-friendly and continuously available. Hence INTROP's theme "*Green Innovations for Sustainable Future*" is well placed to reflect the vision, mission and goal of INTROP. With teamwork, determination and professional expertise, plus supports from our collaborators in both the Government and industrial sectors, I deeply believe that INTROP can move forward towards the challenges ahead and achieve greater aspirations in the field of biocomposites, natural fibres and forest canopy management.

The conceptualization and genesis of INTROPica was based on the three pillars in INTROP's establishment; *sustainability, green innovation and globalization*. INTROPica links the academics to the world through activities that span from forest stand to technological advancement to market. With INTROP already on the way to becoming the national referral for tropical biocomposites, the role of INTROPica will be more significant in the near future. Lets pray to Allah SAW to lead us to the right direction in fulfilling this mission.

# Message From The Editor

Technoeconomy is an essential tool in the flow of innovative ideas from concept to experimentation, to products development, be it goods or services, and finally to commercialization. TE ensures the harmonious marriage between technology and products development so as to yield products optimal to market and consumer needs. The RU concept, aside from the primary objective of forging new knowledge, also aims at a minimum 10 percent commercialization. This essential role of TE is the focus of the current issue of INTROPICS where the approach is applies specifically to the wood-base industry.

The TE approach in this exciting time of the green revolution should also be sensitive to environmental needs which are the larger set to consumer-centrism of the new market. INTROP has coined the slogan whereby research activities focusing on Biocomposite and Forest Canopy management shall be governed and driven by environmental friendly technology through optimization of sustainable bioresource management for itself to articulate this reality which is forged through growing consumer sophistication over its market demand. The green revolution is a shared responsibility of all stakeholders and has collectively manifested itself in many guises or forms such as corporate social responsibility (CSR), demand on fair trade, ethical choice, sustainability and product certification. TE is destined to facilitate this process - the ascendance of the responsibility revolution in the market, including those for forest- and wood-based products. The moral factor shall loom large in this new endeavour to gradually eclipse the ills of the old order where predatory capitalism largely held sway over the destiny of the developing world.

We have to recognize that profit and moral principles should not be mutually exclusive and on this truism TE should define its role. In pursuit of the RU status, in its endeavour at commercialising its research products, UPM should thus heed this emerging perspective of the new market and hence contribute towards the responsibility revolution.

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## INTROP: Research Updates

### COST AND EARNING STRUCTURE OF KENAF CULTIVATION IN PENINSULAR MALAYSIA

Mohd Shahwahid H.O., Nur Afzan A. and Abdul Rahim A.S.

The financial analysis of kenaf cultivation is not widely understood owing to a lack of published information concerning its activities. This paper describes the cost and earning structure of kenaf cultivation in Peninsular Malaysia. In general, the variable cost component takes a large proportion of total production costs when smallholding cultivators rent the cultivation plot and machineries needed. There is a clear relationship between rising yields and kenaf prices with production returns. A break even income and yield levels were computed as a guide to monitoring feasibility of kenaf cultivation at the smallholding level.



### ECONOMICS AND MARKETING OF KENAF BASED PRODUCTS

Mohd Shahwahid H.O., Norfaryanti K., Nurul Ain M.R, Siti Nurhidayah M.R

In the current situation, naturally renewable materials are attracting more and more attentions gradually from both developed and developing countries. In Malaysia, Kenaf seems to stand out prominently in the eyes of the Government where some funding has been allocated under the Ninth Malaysia Plan for Kenaf planting. In fact, Government has been heavily promoting Kenaf planting as an alternative crop for the less competitive local tobacco farmers to consider in the advent of the AFTA which effecting in 2010, is believed to result in lower prices and a reduction in import duties for tobacco. However, even as Kenaf development gains momentum, there are still uncertainties about the economic and actual market demand for Kenaf. Thus, this paper seeks to address the void in the current literature by discussing the economic and market demand of Kenaf plantation industry in Malaysia. This research is part of a more comprehensive study that focuses on the adoption of Kenaf as an alternative crop to tobacco in order to provide local producers with more sustainable plantation. This paper is perform by using an integrating approach with a combination of methods and both foresight and traditional market research. The process of this study is consisted of three distinct stages: the preparatory stage, industry consultation through surveys and interviews performed based on SWOT, and workshops. Thus, a mix of primary and secondary research had been carried out in parallel during the study. Investigation will be done at two levels both upstream and downstream. At the upstream level, an economic analysis of Kenaf cultivation as a source of fibre and alternative to tobacco crops will be undertaken. In line with interests of Kenaf cultivation as an a forestation activity, opportunities of Kenaf crop plantation qualifying as Environmental Services Products for Clean Development Mechanism (CDM) incentive would also be investigated. At the downstream level, research efforts will be focused on the national and international competencies and market analysis. Finally, critical issues and key success factors are identified and assessed realistically in order to enable the Government to come out with one complete strategy for the commercialization of Kenaf industry in Malaysia

# INTROP: Research Updates



**Award  
Gold**

**Researcher**  
**P.M Dr. Ahmad Ainuddin Nuruddin**

**Project Title**  
**Temporal Analysis of the Keetch-Byram Drought Index in Malaysia: Implications for Forest Fire Management**



**Award  
Gold**

**Researcher**  
**Prof. Dr. Nor Aini Ab. Shukor**

**Project Title**  
**Over Expression of Gibberellin 20 Oxidase gene Increase of Cellulose Fiber Length in Kenaf (*Hibiscus cannabinus* L.)**



**Award  
Gold**

**Researcher**  
**Dr. Luqman Chuah Abdullah**

**Project Title**  
**Polyolefin Films Modified with Crude Palm Oil (Cpo) for Improved Mechanical Properties**



**Award  
Gold**

**Researcher**  
**Dr. Luqman Chuah Abdullah**

**Project Title**  
**Development of Parallel-Functioned Multiple Crystallizer in Uses of Habit and Morphology Study on the Palm-based 9,10-Dihydroxystearic Acid (DHSA) Crystals**



**Award  
Silver**

**Researcher**  
**Prof. Madya Dr. Paridah Md Tahir**

**Project Title**  
**MALDI – TOF Mass Spectrometry of *Acacia mangium* Polyflavonoid Tannins**



**Award  
Silver**

**Researcher**  
**Prof. Dr. Nor Aini Ab. Shukor**

**Project Title**  
**Effects of Fertilizer on Growth and Physiology of *Hibiscus cannabinus* L. (Kenaf) Planted in Bris Soil**



**Award  
Bronze**

**Researcher**  
**Prof. Madya Dr. Paridah Md Tahir**

**Project Title**  
**Suitability of Kenaf as Raw Material for Particleboard**



**Award  
Bronze**

**Researcher**  
**Dr. Hazandy Abdul Hamid**

**Project Title**  
**Impacts of Recreation Activities on Growth and Physiological Characteristics of Upper Mountain Vegetation**

# Forest Fire Management in Tropical Peat Swamp Forest

Ahmad Ainuddin Nuruddin<sup>2</sup> and Lailan Syaufina<sup>3</sup>

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Forest fire occurring in the tropical peat swamp forest has been a major concern and has been on the increase at an alarming rate during the past decades. This problem is further compounded by the fact that some of the affected areas have burned more than once. If left unabated, peat areas that will be at risk to frequent fire and more areas will be burnt. The burning of peat swamp forest has also caused regional haze occurring annually leading to numerous problems and uneasiness among neighbouring countries. This paper aims to review factors that lead to peat forest fire and discuss its impact on the ecosystem. Possible recommendations and suggestions will be presented on ways to reduce the problems.

## INTRODUCTION

Tropical peatland covers 400 Mha (Maltby, 1997) of land area mainly in South east Asia. Peatlands especially tropical peat swamp forest can provide a wide range of goods and services such flood control, wildlife habitat and biological biodiversity (Maltby, 1997). One of its services that has gain a lot of attention is its role as a vast storehouse for carbon, estimated to be 70 Gt or up to 20 % of total soil carbon (Maltby, 1997). The widespread conversion of peatlands for agriculture and forestry activities has raised concern on the ability of the peatlands to plays its role as the storehouse for carbon.

One of the prerequisite to agriculture and forestry activities is to drain the peatlands which causes lowering of the water levels that lead to subsidence and also oxidation of the peat. The lowering of the water level also led to the drying of the peat making it easier to be ignited causing peat fires.

This paper aims to review factors that lead to peat forest fire and discuss its impact on the ecosystem. Possible recommendations and suggestions will be presented on ways to reduce the problems.

### ➤ Peat Fire

Peat fire is classified as ground fire with a constant tendency of self-penetration (Artsybashev 1983). It occurs in subsurface organic fuels, such as duff layers under forest stands, arctic tundra/taiga and organic soils of swamps/bogs and peat (Brown and Davis 1973). They burn underneath the surface by smouldering combustion with no flame and little smoke and most often ignited by surface fire, depending on the moisture content of the organic layers (Pyne et al. 1996).

With further combustion, the fire penetrates (Artsybashev 1983) into the peat horizon of the soil, burning out funnel-shaped pits and then spreads in a horizontal manner. Since the root-holding layer of soil burns in a peat fire, trees are deprived of root support, and are uprooted with the tree crowns usually toppling in the burnt area.

Peat fire is dominated by smouldering combustion, the fire is self-sustaining at very low rates from a few decimetres to tens of metres per day (Artsybashev 1983) or for weeks at rates of less than 1.5 g per square meter per hour or 0.025 cm depth reduction per hour (Chandler and others 1983).

The factors that may affect the rate of peat burning are the moisture and inorganic content of the duff and its organic bulk density (Frandsen 1991). Both the moisture and the inorganic content hinder the smouldering process and therefore are viewed as slowing down the rate of burning. Increasing the bulk density may slow down the supply of oxygen to the combustion interface and also slow the rate of burning.

A 50 cm layer of peat in an area of 1 m<sup>2</sup> can produce 165000 kcal of heat in combustion even with a humidity of up to 500% (Artsybashev 1983). Smouldering ground fires can raise mineral soil temperature above 300°C for several hours with peak temperature near 600°C (Frandsen 1991), which can result in the decomposition of organic material and kill important soil organisms. At 120°C, peat will decompose and form CO<sub>2</sub>, at 250 – 500°C intensive decomposition occur and form tar and gas. More than 850°C, it forms volatiles (hydrogen and methane gases).



## INTROP: Highlight

### ➤ Factors Causing Peat Forest Fire

Fire has been traditionally used as a tool for clearing the area for agriculture for agriculture activities. It is very popular since it is low cost and very efficient in removing woody debris. However, the fire may get out of controlled and spread to the adjacent forest areas. This is one of the main factors causing forest fires in Peninsular Malaysia.

Other factors causing forest fires are fires from campers who were hunting and fishing. High voltage electricity cable can also be a source for forest fires. The high voltage wire may produce spark and ignite the bush underneath the right of way of the electricity cable and this fire will spread to the adjoining swamp forest.

### ➤ Impacts of Peat Swamp Forest Fire

*In situ* impacts of peat fire (Hadisuparto 1999) are significant included the loss of biomass and its species diversity, loss of peat resources, negative process of subsidence and lose of carbon sink function (Page et al 2002). Besides, the burning peat also contributed to smoke and haze dispersal that caused a serious health problem and transportation disturbances. The dense haze of 1997' fire episodes in Indonesia (Takahashi and Shimada 1998) has affected peat swamp forest in Central Kalimantan with decreasing ground water level remarkably to 98 cm below the ground surface, decreasing the evapotranspiration of the forest to 50% of the normal year and decreasing solar radiation to about 40% of normal condition.

The presence of high concentration of total suspended particulate cause light scattering and reduction in visibility. The low visibility has led to closures of airports and cancellations of flights. River visibility in Borneo and marine traffic in the Strait of Malacca were disrupted (ADB, 2001). Study by Shahwahid and Jamal (1998) estimated that flight cancellations in the 1997 haze resulted in sales loss of US2.6 million to the Malaysian Airline System.

### ➤ Fire Prevention Programme

As mentioned earlier in this paper, the main causes of peat swamp forest fires are from human activities. Therefore to reduce the incidences of fire occurrences is to create awareness among the local community around the forest on the importance of the peat swamp forest and the interdependence of the local community on the peat swamp forest. The local community should also be educated on the ecosystem services provided by the swamp forest such as storage for water, flood buffering effects and the carbon storage. These activities will raised the level of awareness among the community on the important roles played by the peat swamp forest and the ecosystem services provided by the peat swamp forest. This awareness will also motivate them to protect the peat swamp forest from fire.

The local community also needs to be educated on the nature of peat swamp forest fire and the damaging impacts of the forest fire towards the peat swamp forest ecosystem and also the regional impact of the fires such as haze.

In order to discourage uncontrolled forest fires, patrolling the area during dry months should be undertaken around the peat swamp forest area. The presence of forestry personnel will discourage illegal cutting of the forest for agriculture activities and also burning of debris. The National Forestry Act 1984, Amended 1993 has legal provisions on prosecuting offenders indicted of setting fires in the peat swamp forest areas under the permanent forest reserve. For the areas outside the jurisdiction of Forestry Department, Fire Services Act 1988, Section 62 can be used to prosecute person who commits offence of burning the forest areas.

In peat swamp forest under category of production forest where harvesting of trees are being carried out, canal are built to bring out the timber from the peat swamp forest. These canals also cause water to drain out of the peat swamp forest leading to the drying up of the peat (Ainuddin and others 2006). Unused canal after harvesting has stopped should be blocked to prevent the draining out of the water from the peat. This will ensure the water level of the peat swamp forest will be maintained at optimal level.

### ➤ Control and Suppression Measures of Peat Swamp Forest Fire

Peat swamp forest fire spreads from surface fire to ground fire. In ground fire, the fire spreads slowly below the surface of the peat making it difficult to detect and extinguish. The only way to know the existence of the fire below the surface is by observing smoke coming up to the surface and by spraying water on top of the peat surface. The presence of fire will be indicated by the presence of steam formed from the sprayed water.

For a small surface fire occurring in the peat swamp forest fire with high water level, direct attack using handtools and water pump can be used to control and suppressed the fire. Small fireline can be constructed to prevent the fire from spreading into the unburned areas.

Once the fire has increase in its intensity and goes below the surface of the peat, the only effective way to control and suppressed peat swamp forest fire is by total flooding. In this technique, the burning peat swamp forest area will be compartmentalised into small area by opening and closing network of canals. The area will be flooded using high powered and high capacity water pumps and causing the water level in the peat swamp areas. As the water level increases, the peat moisture level increases, extinguishing the underground peat swamp forest fire.



### Post Fire Activities

In the burnt peat swamp forest areas, grasses such as *Imperata cylindrica* and ferns such as *Glychenia spp.* will be rapidly colonised the area and suppressed the regeneration of trees. This condition will encourage recurrent fires since the burnt areas are open and become flammable during the dry period. Rehabilitation of the burnt areas with fast growing indigenous species must be undertaken to ensure the area is suitable for natural regeneration of the forest.

Rehabilitation of degraded burnt peat swamp forest can be done through planting of indigenous species. Species which has the best growth potential as recommended by Nuyim (2003) to be used for rehabilitation are, *Eugenia oblata*, *Melaleuca cajuputi*, *Alostonia sphathulata* and *Calophyllum sclerophyllum*. These species can grow up to 60 cm/year in height.

### CONCLUSION

The recurrent fires in peat swamp forest have degraded the area and limit the function of the ecosystem. In order to protect the area from further degradation, more efforts should be taken to put in place fire prevention programmes. The fire prevention programmes will help to educate the local community on the importance of peat swamp forest ecosystem and also understand the impact of forest fire to the ecosystem. Post fire activities such as rehabilitation should be undertaken to improve and regenerate the degraded peat swamp forest. Prevention is better than cure

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## INTROP: Highlight



## PEOPLE HAVE DIFFERENT VIEWS ON WHAT CONSTITUTE R&D COMMERCIALISATION

Prof Dr Mohd Shahwahid Haji Othman  
Economic Valuation & Resource Accounting  
(Institute of Tropical Forestry and Forest Products (INTROP))

In its traditional form, R&D commercialisation can be defined as the ability for research to introduce a new product into the market (ITAC, 2004). But with time, R&D commercialisation is treated as *"the process through which research discoveries are brought to the marketplace and new ideas or discoveries are developed into products, services or technologies that are sold"*. No longer is it the domain of engineers and hard scientists that relate commercialisation to tangible marketable products only.

R&D commercialisation is linked to the sale of products and processes, transfer of technology and provision of professional services. Sale of products and processes include outright sale and licensing of intellectual property rights, royalty collections and profit sharing arrangement from the use of the products and processes. Transfer of technology is seen as the dissemination of knowledge and new technology including the provision of advisory services and adoption by end users including farming and business communities. Professional services involves the provision of consultancies based on knowledge generated from R&D projects.

Nowadays the most common form of commercialisation that prevails in many institute of higher learnings (IHLs) and research institutes (RIs) around the world is the demand for professional services, normally referred to as consultancies. The professional services are normally in the form of expert assessment, problem solving ideas and also direct earnings from the use of special testing methods/processes developed in the research project. These forms of commercialisation are much welcome by Government agencies and the private sector as these stakeholders could obtain up to date and direct services from the IHLs and RIs at a more reasonable rate than from domestic private and international consultancy firms. Further, the offering of consultancies and other professional services gives the opportunity to researchers to convert the findings from their projects for application in the real world and for them to be in touch with the needs of stakeholders including from government agencies, the private sector and the public. This

has been able to shed away the conventional 'ivory tower' image given to the IHLs and RIs.

### STATE OF R&D COMMERCIALISATION IS STILL LOW

R&D commercialisation takes time to develop. At least 5 to 10 years after research projects completion. In this context, to gauge R&D performance in the country one can assess the performance of research grants of the Seventh Malaysia Plan intensification of research in priority areas (7<sup>th</sup>MP IRPA) given during the period 1996-2000. Despite the Government call for greater R&D commercialisation, the performance is still inadequate in the country. A basic requirement is that an initial research project should proceed towards applications that could lead into an end product or a service capability. However, some 46.7% of completed projects ended there and did not proceed into any further development or applications (Mohd Shahwahid et al. 2005). Several reasons have been identified to contributing this situation. Among them are;

- their projects are fundamental in nature
- inability to obtain further funding
- believed that research completion is a fulfillment in itself and need not continue further
- contented with generating some publications (journals or conference papers) or for graduating PhD and MS students in the universities and
- researchers moved on to other research project, which were submitted under the Eighth and Ninth Malaysia Plans.

The other completed projects (53.3%) attempted to make further development and proceeded to the next level. A large proportion were able to continue their research endeavour towards applications (26.6%) while others were more successful and able to generate tangible products (19.8%), processes (4.8%) and





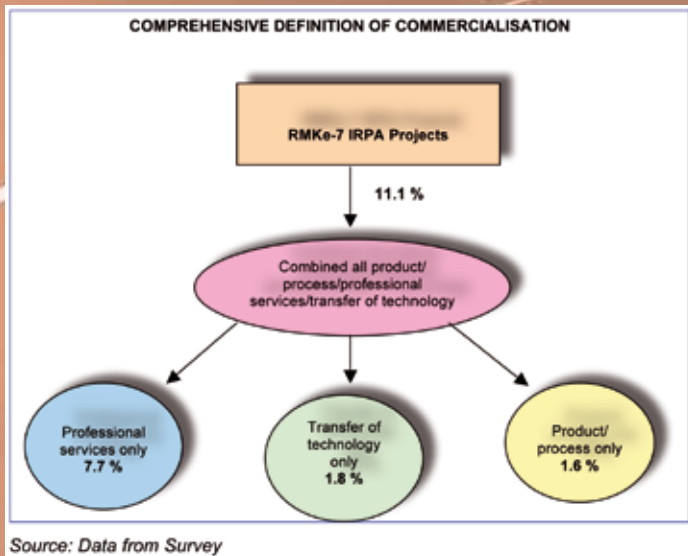


Figure 1: Commercialisation of all Projects in the 7<sup>th</sup> MP IRPA.

software development (2.1%). Yet not all of these projects were able to penetrate into the commercial world. Depending on which definition is adopted, R&D commercialisation involved only 1.6% of the research projects if the traditional definition is used and 11.1% if the broader view is used (Figure 1).

The pathways to the commercialisation of products and processes involved obtaining royalties from licensing of technology emanating of the research findings, outright sales of products generated and profit sharing of joint venture activities. This pathway is very rewarding but may take time involving lengthy negotiations. With the broader definition, R&D commercialisation that includes professional services was generated mainly in the form of consultancies and transfer of technologies by way of extension activities to the industries. Many researchers favoured these latter options since their research findings could be utilised immediately and that significant income and revenue could be contributed into the coffers of the IHLs and RIs.

### MANY FACTORS ARE IMPEDING R&D COMMERCIALISATION

The relatively low rates of R&D commercialisation in the country may be due to several factors, namely:

- Lack of involvement of private sector in the research projects.
- Most of the research projects are not market driven instead are knowledge driven. This implies that research projects are not geared towards commercialisation.
- Past attitude of most researchers were not considering commercialisation as an important output expected from their research.
- Past administration did not place commercialisation high in the agenda.

In addition to the above factors, a review paper by Hii (2003) highlighted several other reasons why commercialisation rate in Malaysia was low. Four key issues were raised and they are related to the root cause of the problems, namely:

#### i. Weak innovation infrastructure

There was a lack of industrial linkages that could bring innovation to the marketplace. IHL and RI were not having adequate commercialisation infrastructure whereby skilled and competent technology transfer or commercialisation officers are recruited. Commercialisation was not fully understood by many researchers and IPR protection was facing financial difficulties in many institutions.

#### ii. Paucity in diffusion of new S&T knowledge

There has been shortage of diffusion mechanism that could accelerate adoption of technologies across different sectors. Many research projects were carried out without the involvement of other experts from other disciplines.

#### iii. Man power issues

There is lack of researchers that possess commercialisation skills and expertise needed to drive successful technology transfer and commercialisation to the industrial market place. Many researchers during 7<sup>th</sup>MP were not driven by commercial interest and only a small percentage was interested to proceed with commercialisation activities. Poor reward system for researchers also contributed to low drive for commercialisation.

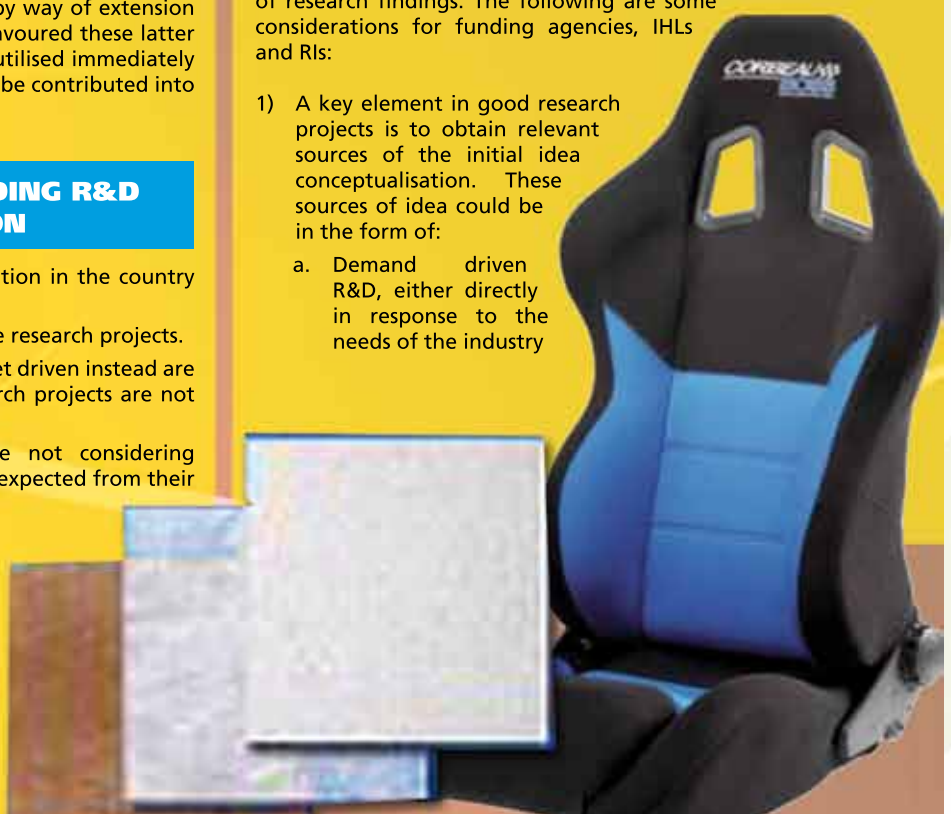
#### iv. Linkages

Networking with the industries for better input in research undertaking was not realised. Early involvement of industries in product development research at Universities or RIs is extremely important for enhancing the quality of research and improves its chances to successful commercialisation. There is a need for stronger linkages between academic, IHL, RI, industry and government agencies.

### WAY FORWARD & LESSONS THAT COULD BE LEARNT

Management of R&D has to be improved to raise commercialisation of research findings. The following are some considerations for funding agencies, IHLs and RIs:

- 1) A key element in good research projects is to obtain relevant sources of the initial idea conceptualisation. These sources of idea could be in the form of:
  - a. Demand driven R&D, either directly in response to the needs of the industry



## INTROP: Highlight



- b. Indirectly through market analysis or from felt needs of society to overcome a recurring problem or from international academic and industry interactions.
- 2) An important factor is to obtain early involvement of industry partners in the R&D project. Early involvement of industry partners has the advantage of the R&D efforts being demand-driven with potentials of greater market acceptance of the R&D outputs. Industry is used in the wide context of end-users of the R&D efforts.
  - 3) High networking and collaboration enables sharing of resources that included expertise, financial, facilities and marketing channel.
  - 4) A conducive commercialisation of R&D support within the institution is central in ensuring that the outputs reach the market. The support pathway obtained vary between case studies. Supports came in two categories: a) Reducing constraints on researchers to allow private parties to refine the outputs and eventually commercialised the products, b) Direct commercialising services offered by an administrative centre to facilitate the licensing or sale of the technology developed.

Several strategies could be adopted by R&D funding agencies, IHLs and RIs to raise R&D commercialisation. These include:

- Bridging fund is required to enable researcher to perform up-scaling & prototyping
- Reward system should be made more attractive
- Mechanism of funding for up-scaling and pre-commercialisation (pilot scale) need to be clearly formulated
- Well-defined role of industrial partner in R&D. The Partner should bring in the industry earlier during proposal stage itself
- Establish a more effective commercialisation centre at Universities/RIs in order to strengthen its effectiveness

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## INTROP: Activities

### SIRIM's audit : Quality of Management System for Research Development and Innovation Scope



Date : 23<sup>rd</sup> - 25<sup>th</sup> February 2009  
Venue : INTROP's Meeting Room, UPM

INTROP has been chosen as one of the institutes of UPM to be audited by SIRIM for compliance in her Quality of Management System for Research Development and Innovation Scope took place in March 2009 which involved staffs and students of INTROP.

### UPM's Post Graduate Promotion Day

Date : 13<sup>th</sup> March 2009  
Venue : Engineering Building, UPM

INTROP participated in UPM's Post Graduate Promotion Day and won the prize for being the most Informative Booth. Well done and congratulations. Keep it up!



## INTROP: Activities

### INTROP Writing Workshop

Date : 19<sup>th</sup> – 21<sup>st</sup> March 2009  
 Venue : Tiara Beach Resort,  
 Port Dickson,  
 Negeri Sembilan

This writing workshop was held at Tiara Beach Resort on 23<sup>rd</sup> - 26<sup>th</sup> March 2009. This workshop consists of 30 participants including Heads of Laboratory. The main objective of this workshop inculcates the writing culture and promotes scientific publication among researchers to meet their KPI's.



### The Launching of Kenaf UNIDO Project

Date : 26<sup>th</sup> – 27<sup>th</sup> March 2009  
 Venue : KPPK Multipurpose Hall, Putrajaya

One of INTROP's impressive receptions of research grants this year was the UNIDO project entitled "Increased Production Efficiency in Small-holder Kenaf Production Systems for Specific Industrial Applications".

The launching of this project was held in MPIC Multipurpose Hall, with the participation of all collaborators including Common Fund for Commodities (CFC), International Jute Study Group (IJSG), Bangladesh Jute Research Institute (BJRI), Institute of Bast Fiber Crops (IBFC), United Nations Industrial Development Organization (UNIDO), Institute of Tropical Forestry and Forest Products (INTROP), Universiti Putra Malaysia (UPM), and eight other agencies from different industries. Datuk Peter Chin Kah Fui, the former Minister of MPIC was the honorable guest who launched the project, to mark for the beginning of a 4-year research endeavor.



### Public Talk : Prof. Dr. Daniel Epron

Date : 30<sup>th</sup> March 2009  
 Venue : Briefing Hall, Administration Building, UPM

A public talk entitled "Carbon budget of forest and peatland soils: some case studies" was presented by a renowned ecophysiologicalist, Prof. Dr. Daniel Epron. The aim of this case studies were (1) to detail the classical method used to estimate soil carbon budget and respiration; (2) to present results from recent and ongoing research projects in Nancy, France for both temperate and tropical forest, tropical tree plantations and Alpine peatlands; (3) to discuss the impact of land use changes on these processes.

## INTROP: Activities

### A New Challenge ahead for Assoc. Prof. Dr. Jalaluddin Harun

Date : 31<sup>st</sup> March 2009  
 Venue : INTROP's Meeting Room, UPM

31st March 2009 marked a memorable day for our Director, Assoc. Prof. Dr. Jalaluddin Harun. He is being seconded to the Malaysian Timber Industry Board (MTIB) as the Director General. Congratulations and we wish him all the best.



### INTROP's Post Graduate Promotion Day

Date : 22<sup>nd</sup> April 2009  
 Venue : INTROP's Meeting Room, UPM

The purpose of the Postgraduate Promotion Day is to create awareness on the core functions of INTROP and to attract students and researchers to its programmes, which mainly comprise fast-track research in the field of forestry and forest products.

### Public Talk Adj. Professor Floreana Coman

Date : 3<sup>rd</sup> June 2009  
 Venue : Briefing Hall, Administration Building, UPM

"It's very helpful for me in there" exclaimed one of the participants after the lecture given by Adjunct Profesor Floreana Coman CST Pty Ltd and RMIT University Australia. She was really energetic on the day she would be delivering a lecture entitled "From Natural Fibres to high Technology Materials through Innovation" arriving light on the dot together with the master of ceremony. She went ahead and delivered an impressive lecture, forcing participants to ponder on the future of usage of new materials in research and development around the world.



## Public Talk by Dr. Jonathon Adam: TROPICAL FOREST AND GLOBAL WARMING

Date : 30<sup>th</sup> June 2009  
 Venue : Academy Science Malaysia, Kuala Lumpur

Jonathan's lecture examined some of the observations and ecological models we have on the role of tropical forests in the uptake and release of carbon, and on possible climatic changes over the next centuries as temperature and atmospheric CO<sub>2</sub> increases of such changes on the vast biological diversity of tropical rainforest was also discussed.



## Public Talk by Dr. Jonathon Adam: Ecology and Global Change Workshop

Date : 11<sup>th</sup> August 2009  
 Venue : Tongkat Ali Room, IBS Building, UPM

The carbon cycle is a key to life on earth, and in an important influence on the global climate. The intensive one-day course began with explanation on how ecosystem work, moving on to present-day global carbon cycle and finally to issues on global climatic change. The course was aimed at graduates and advanced undergraduates with interest in ecology, conservation, earth system science, global change and carbon stock management.



## TIPS CORNER

By : Mohd Ridzuan Rosli

*Aquilaria malaccensis* is one of the 15 tree species in the Indomalaysian genus *Aquilaria*, family Thymelaceae and is one of at least four *Aquilaria* species found in Malaysia. The others include *A. hirta*, *A. beccariana* and *A. rostrata*.

The tree is valued for its resin which could fetch a price of between RM250 – RM10,000 per kilogram depending on its quality. Its resin is highly sought after for religious, ceremonial and domestic activities. Demand of this product also expanded from users in Europe and North America for perfumery and medicinal uses.



(1) Infected wood (resin) of *Aquilaria* tree



(2) Perfume made from agarwood.



(3) Incense for ceremonial purposes



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## QUOTES

### THE IMPORTANCE OF PARTNERSHIP

*"While at Medina we were struck with famine. Ibn Az-Zubair used to provide us with dates as our food. Ibn 'Umar used to pass by us and say, "Don't eat two dates together at a time as the Prophet has forbidden eating two dates together at a time (in a gathering) unless one takes the permission of one's companion brother."*

TRANSLATION OF SAHIH BUKHARI

## LINK TO THE CONFERENCES:

**Second International Conference on Polymer Processing and Characterization (ICPPC [UTF-8?]â€” 2010)** on January 15, 16 and 17, 2010, Kottayam, Kerala, India.

Conference Website:  
[www.processing.macromol.in](http://www.processing.macromol.in)

**IUFRO Kuala Lumpur 2010**, sponsorship opportunities. Conference theme: Sustainable Utilization and conservation of forests in Genomics Era.

For more information please find at:  
<http://www.fao.org/docrep/003/X9818E/x9818e0c.htm>

**11th International Conference on Biocomposites: Transition to Green Materials**, May 2, 2010 - May 4, 2010 Toronto, Ontario Canada. It will be held at the Marriot Toronto Downtown Eaton Centre Hotel.

For more information please find at:  
<http://www.biocomposites-toronto.com>  
([contact@biocomposites.com](mailto:contact@biocomposites.com)).

**The 2010 IEEE International Conference On Informatics and Biomedical technology (ICBBT 2010)**, 16 -18 April 2010, Chengdu, Sichuan China. This conference covers the most dynamic areas in the Bioinformatics and Biomedical Technology. The uptake of Bioinformatics and Biomedical Technology in industrial area and its use results in many key points for discussion and debate.

For more information please find at:  
<http://www.icbbt.org>

**The Second Biennial Global Conference of the Society of International Economic Law (SIEL)**, to be hosted by the University of Barcelona and its IELP Program, will be held July 8-10, 2010.

For more information please find at:  
<http://www.ielpo.org/>

**5th Annual International Symposium on Economic Theory, Policy and Applications** will be held, 26 to 29 July 2010 at Athens, Greece.

Website:  
<http://www.atiner.gr/docs/Economics.htm>  
Contact name: Dr. John Roufagalas

**AAPS National Biotechnology Conference** 16-19 May 2010, USA, CA, San Francisco.

For more information please find at:  
<http://www.aapspharmaceutica.com/index.asp>