



UNIVERSITI SAINS ISLAM MALAYSIA

جَامِعَةُ الْعُلُومِ الْإِسْلَامِيَّةِ الْمَالِيزِيَّةِ
ISLAMIC SCIENCE UNIVERSITY OF MALAYSIA

USIM

Research Innovation

2007



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Message from

The Vice Chancellor

Assalamualaikum warahmatullahi wabarakatuh,

In the name of Allah, the Most Merciful and the Most Gracious; All my prayers go to our beloved Prophet Muhammad S.A.W. (may peace be upon him)



Let us thank Allah and His grace and blessings that have made it possible for Islamic University Science Islam of Malaysia (USIM) and USIM's researchers to participate in PECIPTA 2007.

I hope that PECIPTA 2007 will provide a platform for USIM's researchers to support the aims and aspirations of the Malaysian government in spearheading national development through the emphasize research and development in the area of science and technology. I also hope that the participation of USIM in PECIPTA 2007 will make it possible for USIM's researchers to display the various research outcomes, inventions and innovative processes which have been successfully attained from the research and development activities at USIM.

Finally, I wish to congratulate USIM and all the researchers that take part in PECIPTA 2007 for having the courage to participate in this meaningful event.

Thank you.

Yours Sincerely,

PROF. DATO' DR. ABDUL SHUKOR HJ. HUSIN

Vice Chancellor

Islamic Science University of Malaysia

Message from

The Vice Chancellor

(Academic & International Affairs)



I would like to take this opportunity to congratulate Universiti Sains Islam Malaysia (USIM) and all the researchers for participating in PECIPTA 2007.

This PECIPTA2007 provides a platform for USIM's researchers to showcase the outcome and inventions of USIM's innovative research. Besides, it also serves as a platform for USIM researchers to network with each other with the intention towards venturing into joint development of prototypes and onwards into product commercialization.

At USIM, the academic staff are not only involved in teaching and learning activities, but they also carry out research in their respective fields. This will certainly help USIM to contribute to the generation and dissemination of new knowledge and solving the problems facing Islam and the ummah.

Finally, I hope that USIM's researchers will enhance research collaborations and therefore develop and promote research excellence.

PROF. DR. MUHAMAD MUDA

Deputy Vice Chancellor (Academic & International Affairs)

Message from Acting Director

Centre for Research and Conference Management

UNIVERSITI SAINS ISLAM MALAYSIA



On behalf of the Centre, I would like to congratulate my fellow researchers for their enormous response to participate in the PECIPTA 2007. Their cooperativeness has made USIM's participation possible.

This event should not only be the platform for USIM's researchers to present their findings, but also to make acquaintances with other researchers from other academic institutions. Thus, future inter-institutional research would be possible.

Presenting their findings may also give the chance for interested parties, especially the industries, to adopt these findings for commercial purposes.

Last but not least, I would like to wish my fellow researchers: 'good luck'. And I hope they will put across their explanation convincingly.

Regards,

ASSOC. PROF. DR. AHMED MAHIR MOKHTAR BAKRI

Acting Director

Centre for Research and Conference Management

Message from
The Editor

USIM Research Innovation 2007 is a compilation of abstracts and research posters from Universiti Sains Islam Malaysia in the PECIPTA07.

DR. SAPORA SIPON
Editor



UNIVERSITI SAINS ISLAM MALAYSIA
جامعة العلوم الإسلامية الماليزية
ISLAMIC SCIENCE UNIVERSITY OF MALAYSIA

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Research Innovation

RESEARCH ABSTRACTS

IS RELIGIOUS OBLIGATION THE MAIN FACTOR TO PAY ZAKAT

Muhamad Muda, Ainulashikin Marzuki, Amir Saharudin

ABSTRACT

Zakat is one of the sources of funds available within the Islamic economic and financial system. Although it is obligatory for Muslims to contribute to zakat, however the amount collected is relatively small compared to the income tax collections. One of the reasons could be lack of motivation among Muslims. The study aims to investigate the factors affecting individual decisions in zakat contribution and hence provide understanding of their motivation. The research aims to investigate the factors contributing individual active participation in zakat and to determine which factors contribute more in influencing individual participation in zakat either it is mainly due to religious duty or other factors. A survey questionnaire was designed based on past studies from both conventional as well as Islamic literature. The main dimensions were characterized by religious, utilitarian, self satisfaction and organizational factors. Factor analysis was used to provide some insights into the underlying structure of motivating factors of individuals participating in zakat. Based on the sample surveyed, findings indicate that participation in zakat is not only motivated by religious factor but also self satisfaction (for oneself and for others) and organizational factor. The implication is that the efforts to raise the level of zakat activities should emphasize not only on the religious aspect but also the individual's and organizational dimensions. Islamic Institutions particularly zakat collection centre should recognize the role of religious as well as individual's factor in motivating individual Muslim to pay zakat specifically to zakat institutions. This is important in order to increase the amount of zakat collection as a small amount does not play a significant role in Muslim's economic development.

MULTIMEDIA APPLICATION OF A SCIENCE-BASED TEXT FOR BETTER RETENTION BASED ON THE DUAL CODING THEORY

Haliza Harun, Siti Salhah Othman, Waidah Ismail, Hanim Karmila

ABSTRACT

The paper investigates the use of multimedia annotations specifically (text+animation) versus (narration+animation) in enhancing the students understanding of the global text as well as the vocabulary learnt. The study is of experimental approach and involves the use of scientific theme text "the Transgenesis Method". Based on the experiment, it can be concluded that the use of multimedia in enhancing students understanding has been positive in relation to (text+animation). This is in line with Paivio's Dual Coding model, which was used as the basis of the theoretical framework of the experiment, in which learners learnt best when they are exposed to more than one mode of presentation.

FPGA DESIGN OF POLYMORPHIC WORM DETECTOR USING K- DIFFERENCES ALGORITHM IMPLEMENTATION

Madiah Mohd Saudi, Emran Mohd Tamil, Siti Aisyah Md Nor,
Nur Azizan@Nur Azyan Yusof.

ABSTRACT

Internet worms such as Code-Red II, Nimda, Slammer and SoBig cause billions of dollars in damage each year. Worms are self-replicating malicious programs that represent a major security threat for the Internet, as they can infect and damage a large number of vulnerable hosts by exploiting security or policy flaws in widely-used services. Polymorphic worm represent a new class of threat. Polymorphic worm protect itself by constantly changes itself to avoid recognition and signature making. Such characteristic would make worm detection harder than before as the exploit load could change (mutate) on every infection. This paper proposes a (Field Programmable Gate Array) FPGA based implementation of approximate string matching algorithm (K-difference) to detect polymorphic or mutated worm

EVALUATION OF AMANAH IKHTIAR MALAYSIA FOR POVERTY ALLEVIATION: A CASE OF RURAL AREAS IN TERENGGANU

Norhaziah Nawal, Mohamed Sharif Bashir, Mohamed Elsharif

ABSTRACT

The research is to analyze the role of Amanah Iktiar Malaysia (AIM), the largest Microfinance Institutions in Malaysia, in eradicating poverty. The research is a contribution to the ongoing debate on the effectiveness of poverty eradication programs and their impact on the poor. This paper analyzes the role played by AIM in poverty eradication and evaluates the AIM micro credit programs in selected rural areas in Malaysia. Empirical investigation has been based on survey question covered selected rural areas in Malaysia. The effectiveness of AIM program's performance is influenced largely by three main groups of factors namely are outreach, financial sustainability and the impact on the client. The research tries to see whether AIM small loans on reasonable terms provided to poor households for financing additional income-generating activities could be an effective way of reducing extreme rural poverty. Moreover, by providing working capital to small sized project households how much that credit could bring about a significant increase in project size and hence absorbing surplus labor in small projects leading to the increase in household income and consequently reducing extreme rural poverty. The study provides strong evidence that microfinance is indeed an effective tool for poverty eradication. The study will highlight a number of policy implications to improve the overall AIM performance.

POCKET NUMERIAL SOLVER (POCKET SOLVER)

Bachok A. Taib

ABSTRACT

PDA's are "personal digital assistants," usually designed to fit in one's pocket, which can store documents, spreadsheets, calendar entries, games, databases, and lots of other resources normally associated with a laptop or desktop computer. The difference is that PDA's are relatively inexpensive and highly portable. The most striking feature of PDA's is their portability. Using PDAs, students can easily bring their computer to the project, instead of having to bring their project to the computer. Students can truly have "anytime, anywhere" access to technology, improving the quality and effectiveness of the learning task. Portability can make a difference in a wide variety of settings, such as the lecture room, tutorial room or a field trip. A software package was developed for assisting in the teaching of the Numerical Methods. The "Pocket NSolver" is designed to run on Pocket PC under Mobile Window 2005 operating system. "Pocket NSolver" contains seven modules, Expression Evaluator, Solution of System of Linear Equations, Solution of Non linear Equations, Interpolations, Differentiations, Integrations and Solution of Ordinary Differential Equations.

READING ACADEMIC TEXTS AMONG FIRST YEAR BACHELOR OF FOOD TECHNOLOGY STUDENTS OF USIM

Nor Aini Abdul Rahman & Haliza Harun

ABSTRACT

Reading is indeed the road to literacy and knowledge. Reading at tertiary level, however, requires reading skills that include students monitoring and adjusting reading strategies according to their purpose for reading and the type of text they are reading. Using technology in the reading classroom is gaining popularity. The Internet has opened up many possibilities for improving reading in English language classroom. Thus, this paper explains how internet is used in the reading class by looking at the research methodology involved; experimental-control study. Forty first-year ESL food technology respondents participated in the study. They underwent a compulsory English proficiency course at Islamic Sciences University of Malaysia. They were grouped into experimental and control groups. Each group were given 5 reading tests. Each test comprised five comprehension and five vocabulary questions. The experimental group, however, was given treatment in the form of website while the control group received no treatment. Results showed that websites did improve the experimental group's test scores.

IMPACTS OF TOURISTS EXPENDITURE PATTERN IN MALAYSIA WITH SPECIAL REFERENCE TO MUSLIM COUNTRIES

Mohamed Sharif Bashir and Nursilah Ahmad

ABSTRACT

The main objective of this research is to examine the profile and expenditure patterns of tourists from West Asia and its impacts on the Malaysian economy. The research analyses the expenditure patterns of West Asia tourists by using secondary data and survey questionnaire. An input-output technique of tourist impact analysis was adopted to determine the multiplier effects of each Ringgit spent on output, income and employment. The results highlighted a number of effects on each of the sectoral output, income and employment and explain which sector can benefit from tourist expenditure through direct, indirect and induced income and employment generations. The findings indicated that hotel and restaurants sector has the highest total output multiplier followed by the entertainment sector. In conclusion, this research proves that differences in expenditure profile among classes of tourists and the changing composition of tourist's arrivals in Malaysia have important policy recommendations on the economy. The research suggested some possible policy responses to promote Malaysia as an ideal destination for tourist from Islamic countries.

SYSTEMATIC STUDIES ON THE LEVEL OF FORMALDEHYDE IN IMPORTED FRUITS

A.Tajudin.S.M.J, C.W.Ngah.C.W.Z and M.Radzi.S.

ABSTRACT

Formaldehyde is usually used as fumigant in food to prolong shelf-life by preventing the growth of mould during shipment of imported fruits. Literature on property of formaldehyde stated that the formaldehyde is water soluble, so it is possible to measure the formaldehyde concentration in water of washing of the imported fruits (longan, lychee, and lai) by various techniques. Therefore systematic studies on the concentrations of formaldehyde in imported fruits such as longan, lychee, and lai (Chinese pear) will conduct by employing two type of washing techniques using the design of experiment method. The full factorial design method was used to identify the effect of washing the fruits in determining the concentration of formaldehyde in such imported fruits. The concentrations of formaldehyde will analyze by using Formaldehyde Kit HI3838 and the confirmation by Cary 50 UV-Vis spectrophotometer equipped with spectral reflectance accessories.

THE DEVELOPMENT OF RISK ASSESSMENT FOR IPTA IN KLANG VALLEY

Waidah Ismail, Bachok M. Taib, Najwa Hayaati Mohd Alwi, Azlan Mohd Ghazali,
Zulhakim Ismail.

ABSTRACT

Information is the lifeblood of all organizations and can exist in many forms. It can be printed or written on paper, stored electronically, transmitted by mail or by electronic means, shown in films, or spoken in conversation. In today's competitive business environment, such information is constantly under threat from many sources. These can be internal, external, accidental, or malicious. With the increased use of new technology to store, transmit, and retrieve information, we have all opened ourselves up to increased numbers and types of threats. ISO27001:2005 is a standard setting out the requirements for an Information Security Management System. It helps identify, manage and minimize the range of threats to which information is regularly subjected. In the ISO27001:2005 is organized into 11 sections as stated as Security Policy, Organization Information Security, Asset Management, Human Resources Security, Physical and Environmental Security, Communications and Operations Management, Access Control, Information Systems Acquisition, Development and Maintenance, Information Security Incident Management, Business Continuity Management and Compliance. Risk assessment is a procedure used to estimate potential losses that may result from system vulnerabilities and to qualify the damage that may result if certain threats occur. The risk assessment will involve looking at tangible assets for example building, computers, and equipment and figuring how to protect them. In the most organization's nowadays, the most valuable asset is the information processed by the computer. The goal of risk assessment is to help select cost-effective safeguard that will reduce risks to an acceptable level.

EFFICIENT DETECTION OF WORM ATTACK (EDOWA)

Madihah Mohd Saudi, Emran Mohd Tamil, Siti Aisyah Mohd Nor, Nur Azizan@Nur Azyan

ABSTRACT

Internet worms cause billions of dollars in damage each year. Worms are self-replicating malicious programs that represent a major security threat for the Internet, as they can infect and damage a large number of vulnerable hosts. Worm has started to invade the internet world since 1989. After many Internet-scale worm incidents in recent years, it is clear that a simple self-propagating worm can quickly spread across the Internet and cause severe damage to our society. A fast worm monitoring and early warning systems are very essential to combat the fast spreading nature of worm.

One of the techniques researched is passively listen for network traffic and looking for anomalous increases in network traffic as most worm attack would generate anomalous

network pattern. When a worm outbreak occur, it often produce anomalous network traffic pattern which among of it are caused by enormous increase of probing signals, network scanning, and attack packets. These characteristic make it possible to detect an early outbreak by monitoring the network and look out for any anomalous increase of certain type of network packet. This paper describe a project that detect and provide early warning to system administrator by constantly monitor network traffic looking for anomalous increase of certain kind of packet. Fuzzy engine is applied to provide human like analysis within the anomalous decision phase. The threshold of the anomalous frequency detector will be decided by the fuzzy engine.

THE NEW PRC AD-DIN STRESS COUNSELLING TOOL

Sapora Sipon

ABSTRACT

The new PRC Ad-Din Stress counselling consists of three different theoretical counselling modules that include a set of assessment and counselling interventions that target the needs of highly stressed clients during treatments. This study was carried out to assess the effectiveness of the new PRC Ad-Din Stress Counseling Tool on job stress, job satisfaction, coping strategies and social support of a group of teachers. The study also investigated whether the effects of the new PRC Ad-Din Stress Counselling tool were maintained a month after the treatment. The researcher hypothesized a decrease in job stress, an increase in job satisfaction, an increase in coping strategies and an increase in social support as indicator of the effectiveness of the new PRC Ad-Din Stress Counselling tool. The Occupational Stress Indicator (OSI) was administered to assess job stress, job satisfaction, coping strategies and social support. The reliability of the OSI was measured using the Alpha Cronbach coefficient method. The item-whole and construct validity were used to measure the validity of the questionnaire. The control pre, post and follow-up design was used for this study. The questionnaire was administered at the pre, post and a month after the treatment. The subjects were 46 highly stressed teachers aged between 21 to 48 years old. They were randomly divided into four groups; (1) person-centered counselling group (n=12) (ii) rational-emotive behaviour counselling group (n=12) (iii) cognitive psychology Ad-Din counselling (n=12) and (iv) a waiting list control group (n=10). Data were analyzed using one-way ANOVA, ANCOVA and ANOVA repeated measure. The significant level was set up at 0.05. Trend analysis and qualitative method were also used to support the findings of the study. All treatment groups received group counselling sessions for six consecutive weeks, once in each week. The result of the study can be summed up as follow (1). All the three groups showed significant reduction (pre-test to post-test) on job stress, significant increment in job satisfaction, significant increment in coping strategies and significant increment in social support. (II). All the three counselling treatment groups showed significant longer reduction (post-test to follow-up) on job stress, significant longer increment in job satisfaction, significant longer increment in coping strategies and significant longer increment in social support.

THE NEW SPIRITUAL STRESS COUNSELLING MODULE: PSYCHOLOGY COGNITIVE AD-DIN

Sapora Sipon

ABSTRACT

This invention is in a form of a module that includes a set of assessment and counselling intervention that aim to reduce clients' stress. The module has been designed from the spiritual orientations and is highly focused and practical in order to meet the therapeutic needs of the clients. Evidence based on this new counselling module proves the improvement of clients' progress with significant reduction of job stress and increment of job satisfaction coping skills and social support. The objective of this study is to determine the effectiveness of the new spiritual stress counseling module on stress, job satisfaction, coping skills and social support of teachers. The objective is also to investigate whether the effect of the new spiritual stress counseling module was maintained a month after the treatment. The design used in this study is a control pre, post and follow-up experimental design. The Occupational Stress Indicator (OSI) is used to measure stress, job satisfaction, strategies skills and social skills. The subjects for this study were 24 highly stressed teachers aged between 21 to 48 years old, randomly divided into 2 groups (i) the new spiritual stress counseling (treatment) (2) waiting list. The treatment group received the new spiritual stress counseling for six consecutive weeks, once in each week. The findings of this study were that the new spiritual stress group counselling showed significant reduction (pretest to post-test) on job stress, significant increment in job satisfaction, coping skills and social support of subjects. The new spiritual stress counselling group also showed longer reduction (post-test to follow-up) on job stress, significant longer increment in job satisfaction, coping skills and social support of subjects.

REBT JOB SATISFACTION MODULE

Sapora Sipon

ABSTRACT

This module is designed to counsel employees to maximize worker efficiency and job satisfaction. It also addresses employee's concerns and problems through effective coaching, counselling and appraising. The objective of this study is to determine the REBT job satisfaction module to increase job satisfaction and coping skills. This study is also to verify that REBT job satisfaction module can contribute to sustainable development. A control pre, post and follow-up experimental design was used. The Occupational Stress Indicator was used to measure stress, job satisfaction, coping skills and social skills. Subject were 24 highly stressed teachers aged between 21 to 48 years old, randomly divided into 2 groups (i) REBT (2) waiting list. The treatment group received REBT counselling sessions for six consecutive weeks, once in each week. The findings suggest that (i) REBT counselling group showed an increase in job satisfaction and coping skills (ii) REBT counselling group showed longer reduction (post-test to follow-up) on job job satisfaction and coping skills.

PC COUNSELLING TOOL

Sapora Sipon

ABSTRACT

The goal of this module is to help clients to have a better awareness and understanding of coping skills and job satisfaction. It is designed to help clients develop their abilities for avoiding distress. Evidence based on this research shows the module improves treatment engagement and client progress with significant increment of coping skills and job satisfaction. This study was to ascertain the effectiveness of PC coping skills on coping skills and job satisfaction. The study also investigated whether the effects of treatment were maintained at follow-up after a month. The researcher hypothesized an increase in job satisfaction, coping strategy and social support as indicator of the effectiveness of the PC coping skills counselling module. The Occupational stress Indicator Stress was administered to assess job stress, job satisfaction, coping strategies and social support. The reliability of the OSI was measured using the Alpha Cronbach coefficient method. The item-whole and construct validity were used to measure the validity of the questionnaire. The control pre, post and follow-up design was used. Subjects were 24 highly stressed teachers between 21 to 46 years old. They were randomly divided into two groups (i) person-centered (ii) control group. Data were analyzed using one-way ANOVA, ANCOVA and ANOVA repeated measure significant level was set up at 0.05. Trend analysis and qualitative method were used to support the findings of the study. The results of the research showed significant reduction (pretest to posttest) on job satisfaction and coping strategy. The treatment group also showed significant longer reduction (pretest to follow-up) on coping strategy and job satisfaction.

METHODOLOGY OF STUDIES ON HADITH IN PUBLIC INSTITUTIONS OF HIGHER LEARNING: A COMPARATIVE STUDY

Zohdi, M. M., Norzulaili, M. G., Fauzi, M. M., Ihsan. M,

ABSTRACT

The history and its chronology showed the preservation of the sacred teaching of Islam has been the main factor of the spreading of the Prophetic Hadis Studies. It is noted that when the studies has first been offered to the IPTA since 46 years ago, no particular research has been done to analyze its effectiveness towards facing this challenging era. The aims of this paper are first: to do comparative research on four chosen old and new IPTA which offer Sciences of Hadis studies. Perhaps various experience and new concepts could be suggested in such studies and its methodology. Secondly, to identify the strength and weakness of the educational system implemented at the IPTA. It is hoped that such identification could contribute new ideas in order to improve the way of teaching of such studies in the future. Competition in job opportunities nowadays has become one of the educational agenda being discussed. Furthermore, the Sciences of Hadis Studies is also included as to identify its capability of offering job opportunities. As a result, issues such as time limitation, restriction of duration of studies and less Hadis courses being offered have emerged. Moreover, inner self-weakness found in a graduate could also contribute to the failure of Prophetic Hadis Studies teaching style. It is hoped that by merging the ICT with the Sciences of Hadis Studies teaching, it could help upgrading the quality of such studies today and in the future.

FATWA DATABASE MANAGEMENT (FDM)

Najwa Hayaati Mohd Alwi, Abdul Samat Musa, Idris Takyen, Adel M. Abdul Aziz,
Ali Ya'kub Matondang, Hersi Mohamed Hilole, Md Yunus Abd. Aziz,
Mohd Saiful Abd. Samad

ABSTRACT

Fatwa Database Management (FDM) is a database of fatwa collections and information related from all over the world. FDM collects all fatwa from Malaysia and abroad countries for people and the researchers' guidance and references. This database system is a beginner step for USIM and INFAD in equipping the knowledge based research and systematic fatwa management. The development objectives purposely for serving the information related to fatwa comprehensively and updated/current through information sharing, globally accessible, conservation, synergistic collaboration. Services provided by FDM includes online repository of fatwa, login based user, fatwa categorization, search engine, global content, continuous development. The FDM web based system was developed as a reference source in solving the issues and problem related to Islam law which it targeted the whole level of people globally.

GREEN SYNTHESIS OF NOVEL LIQUID WAX ESTERS VIA ENZYMATIC REACTION

Salina Mat Radzi, Siti Salhah Othman, Syamsul Kamar Muhamad@Wahab,
Azwani Sofia Ahmad Khair, Madihah Mohamad Saudi, Mahiran Basri and
Mohamad Basyaruddin Abdul Rahman

ABSTRACT

Green synthesis of organic fine chemicals is becoming more interesting nowadays due to the high demand of high purity product with environmentally friendly characteristics. Due to these reasons, we have developed a wide range of wax esters of different chain-length, exhibiting varied chemical and physical properties. The reactions were optimized based on one variable at-a-time approach to produce a high percentage conversion of wax esters (>90 %). The optimum condition for wax ester syntheses was reaction time of 30 min, reaction temperature of 45-50 °C, amount of enzyme of 0.2-0.4 g, molar ratio of substrate of 2:1 and organic solvents of log P>2.5. Analysis by spectroscopy such as FTIR have shown that our synthesized wax esters are pure and do not contain any undesirable side product.

FORMULATIONS FOR GOLD ALLOY PLATING TO PRODUCE DIFFERENT SHADES OF ELECTRODEPOSITS

C.W.Ngah. CW.Z and Mohamed, N,

ABSTRACT

The systematic studies on formulations for gold alloy platings were conducted by employing design of experiment method. The fractional factorial design method was used to identify the effect of silver and palladium additions in the electroplating solutions to the shades of the electrodeposited gold films produced. The color of the electrodeposited Hull cell panels were analyzed using a spectrophotometer UV equipped with spectral reflectance accessories. Color quantification for the electrodeposited gold films produced was conducted by employing a uniform color scale known as CIELAB.

HIGH PERFORMANCE ENZYMATIC SYNTHESIS OF LIQUID WAX ESTER

Salina Mat Radzi, Siti Salhah Othman, Noor Mona Mad Yunus,
Mahiran Basri and Mohamad Basyaruddin Abdul Rahman

ABSTRACT

Oleyl oleate, known as the principle component of a whale oil and a high-value specialty ester, was synthesized via enzymatic reaction between oleic acid and oleyl alcohol. An optimisation study in large-scale production was performed in a 2L Stirred tank reactor using a Response surface methodology (RSM) based on 5-level, 3-variable, CCRD. The optimum conditions derived via RSM at a fix reaction time of 1 h were amount of enzyme (A) of 104 g, agitation speed (B) of 388 rpm and temperature (C) of 49.7 °C. The actual experimental yield was 96.7 % under the optimum conditions. This compared well with the maximum predicted value of 97.6 %.

EFFICIENT CONTROL OF VIRUS PROPAGATION (ECOV P)

Madihah Mohd Saudi, Nazeam Jomhari, Salina Mat Radzi,
Azwani Sofia Ahmad Khair, Siti Aishah Md Nor.

ABSTRACT

Computer viruses have become a real threat for computer users in the past few years. However, few researchers have tried to map out how large the problem actually is. Indeed, very few studies have been reported that deal with computer viruses in Malaysia. Currently, few systems are capable of providing users step by step procedures in handling computer virus incidents. The main aims of this project are to study and analyze the level of end user awareness in regards to computer viruses, the level of prevention taken by organizations and the impact of computer viruses in Malaysia, as well as to produce a system with proper virus incident handling procedure built in. The results of a questionnaire analysis show that users have a good knowledge of computer viruses, the prevention level for organization was very good but users are not satisfied with the virus protection available and computer viruses have caused a great impact to users. The ECOVP (Efficient Control of Virus Propagation) system that was developed is capable of educating users in handling computer virus incidents and at the same time helps to control computer virus propagation. To ensure the system is working efficiently and effectively, this system uses an artificial intelligence technique called case based reasoning.

DEVELOPMENT OF POLYMER ELECTROLYTES BASED ON NATURAL POLYMERS

Azwani Sofia Ahmad Khair, Ariffin Muda, Abdul Kariem Arof, Salina Mat Radzi,
Siti Salhah Othman, and Madihah Mohd Saudi

ABSTRACT

Polymer electrolytes based on starch and ammonium salt was prepared using solution casting techniques. The preliminary result show promising conductivity of 10^{-5} Scm^{-1} . It is hope that the conductivity of the samples could be increased by addition of plasticizer and fillers.

**THE USE OF RECOTAC IN ADDICTION COUNSELING:
EVIDENCE FROM A STUDY READING TO RECOVER:
EXPLORING BIBLIOTHERAPY AS A MOTIVATIONAL TOOL FOR
RECOVERING ADDICTS**

Abd Halim Husin
Mardziah Hayati Abdullah

ABSTRACT

By definition, bibliotherapy is a technique for structuring interaction between the client and the therapist based on mutual sharing of literature in fulfilling the client's therapeutic needs. It is also a form of supportive psychotherapy in which carefully selected reading materials are used. A study was conducted to explore the use of bibliotherapy with addicts undergoing treatment and rehabilitation in a government-aided rehabilitation center in Malaysia. The center employs psychosocial modality in its approach to treatment and rehabilitation, in which counseling is one of the components. The respondents in the study consisted of ten inmates from the center, who were selected based on their readiness to change using the URICA Stage of Change instrument screening process, which placed them at the stage of Contemplation before the study began. A series of six group counseling sessions were conducted with these ten respondents. At the first session, each inmate was assigned one narrative for reading. The narratives were selected from a collection of stories on the real-life experiences of successfully rehabilitated Malaysian addicts, compiled earlier by a group of counselors. Over the next five sessions, the respondents were encouraged to discuss their feelings and thoughts about the rehabilitated addicts in the stories and to reflect on their own recovery process. After the last session, the URICA was used again to determine the respondents' stage of change. The findings show that reading the narratives had a positive motivational impact on the respondents' beliefs about their potential to change and helped them move from the Contemplation stage to the Action stage. The sessions also reshaped their beliefs about the recovery process and helped them feel less alone. The results suggest that bibliotherapy is worth exploring further as tools for motivating recovering addicts. However, careful planning and the selection of suitable materials is an issue to be considered, as are exposure and training in the application of the technique.

ENHANCED LIPASE CATALYTIC ACTIVITY THROUGH IMMOBILIZATION ON NATURAL FELDSPAR

Siti Salhah Othman, Salina Mat Radzi, Mahiran Basri,
Mohd. Basyaruddin Abdul Rahman² and Azwani Sofia Ahmad Khair¹

ABSTRACT

Enzymatic techniques were proven particularly useful in the areas where conventional synthetic approaches have to confront the numerous problems in control of regio- and stereoselectivity. This is due to the mild reaction conditions they require. However, the use of enzyme has been limited due to the low operational activity and stability of enzyme in their native form. Therefore many attempts have been made to increase the activity and stability of native enzyme. Among the various methods, immobilization of enzyme has proven to be a useful technique for improving enzymatic activity and stability with its major aim of promoting easy enzyme-support separation besides allowing repeated use of enzyme. General focus of the study is the use of natural feldspar from Tanah Putih, Kelantan with various polarities, pore sizes, content of minerals and active groups and adsorption capacities for immobilization of enzyme. The enzyme were then be characterized for their stability to adverse heat and damaging solvents and reusability, tested in the formation of various esters. On the other hand, the ester group of compounds had been chosen as a model reaction for the determination of lipase stability and activity because it is often most preferred amongst the numerous important organic compounds due to their diversified range of applications in biomedical research, biotechnological, pharmaceutical industry and many other high-tech fields. To ensure quality and purity of the esters produced, they were analyzed using Thin layer chromatography (TLC), Gas chromatography (GC) and characterized using modern spectroscopic method such as Fourier transform infrared (FTIR) and Mass Spectroscopy (MS).

NATURAL FLAVOUR ESTERS SYNTHESIZED USING COMMERCIALS HYDROLYTIC ENZYMES

Siti Salhah Othman,, Salina Mat Radzi, Mahiran Basri,
Mohd. Basyaruddin Abdul Rahman and Azwani Sofia Ahmad Khiair

ABSTRACT

Enzyme catalysis is most attractive for the synthesis and modification of biologically relevant classes of organic compounds which are difficult to prepare and to handle by conventional means. In this study, commercial hydrolytic enzymes were used in the preparation of two novel organic compounds with excellent properties and application as fragrance and flavour - isoamyl acetate, a substance with peculiar banana fragrance and (-)-menthyl butyrate, a substance with cooling and refreshing minty effects.

In the synthesis of isoamyl acetate, reaction consisting of acetic acid and isoamyl alcohol were catalysed using lipase from *Rhizomucor miehei*, based on the method by Karanth et al., (2001). Yields above 80 % were achieved using enzyme concentration of 3 g L⁻¹ for a substrate concentration of 0.06 M, in solvents with partition coefficient $\log P > 3.0$. Biological activity assay of the compound was done for their cytotoxic effect against HL60 (human promyelocytic leukemia) and breast cancer (MCF7) cell lines. In the antimicrobial activity assay, microbes tested were MRSA (Methicillin resistant *Staphylococcus aureus*), *Bacillus subtilis* and *Pseudomonas aeruginosa*. Isoamyl acetate was found biologically inactive towards targeted microbes and both cancer cell lines. In this synthesis of (-)-menthyl butyrate, among seven lipases tested, *Candida rugosa* lipase exhibited the best ability to catalyze the resolution of (\pm)-menthol in organic solvent. Experiment was carried out in different organic solvents and at different water activities (a_w). High yield (60 %) and optical purity (> 90 %) of the product was obtained in hexane with butyric anhydride as the acyl donor at 30 °C. Yield of (-)-menthyl butyrate were found to be dependant on the water activity ($a_w = 0.33 - 0.53$). To ensure purity of the compound, it was characterized using Fourier-transform infra-red (FT-IR) spectrophotometer, gas chromatography (GC), thin layer chromatography (TLC) and gas chromatography-mass spectrometer (GC-M).

**THE FIRST LONGITUDINAL STUDY ON
ORANG ASLI KINTAK GROUP OF
BUKIT ASU, GRIK PERAK**

Naim Haji Ahmad

ABSTRACT

Video *Revisit Nomads of the Jungle* (RNOTJ, 1987) is a visual documentation based on the “comparative study of lifestyle portrays in the film *Nomads of the Jungle* (NOTJ, 1948) and lifestyle as observed in the present (1986).” This study was conducted in 1986. Based on the visual and written report of 1986 study, another comparative study was conducted in 2005 on the same group of *Orang Asli Kintak* of Kampung Bukit Asu, Grik Perak. This was a restudy or longitudinal study. Among the objectives of the study are : To compare the group’s life style as recorded and observed in 1986 with the present group’s lifestyle; to assess the change of group’s lifestyle after 18 years since the first visit in 1986, and to assess the effectiveness of *Dakwah* Program. ‘A check list’ of behaviour culture or lifestyle that was developed during 1986 study was employed in this study. This check list was considered as the ‘baseline’ for the comparative study. Observation participation were also employed. Among the findings: The changes in the basic group’ lifestyle are very minimal and the changes are not rapid. In the 1986 survey the number of the population was 114. In 2005 the number was increased to 152 – an additional of 36 persons after 18 years since the 1986 study. In 1986 most of the people were animism, but in 2005 about 75% were converted to Islam, yet most of them did not follow the practice of Islam. In 1986 most of the children did not go to school. In 2005 only 12 out of 42 children age 6-12 were in primary school. Most of the government projects contribute to the changes in ‘physical environment’ only, very little change in term of group’s attitudes, view toward development and development of the group.

SIRAH RASUL SUBJECT AT RELIGIOUS PRIMARY SCHOOLS (SRA): PILOT STUDY ON THE SYLLABUS AND ITS EFFECTIVENESS IN SEPANG, SELANGOR DARUL EHSAN

Nidzamuddin Zakaria, Dr. Adel M. Abdulaziz & Ahmad Kamel Mohamed

ABSTRACT

This study focuses on the Sirah Rasul subject which is organised in Religious Primary Schools in Sepang, Selangor (SRA). This subject is aimed to support and strengthen the Islamic Education in the National Educational System of Malaysia. The main aspects of this study involve the curriculum, methods of teaching and learning and activities carried out by Education Department, Jabatan Agama Islam Selangor (JAIS) and Sepang Islamic Religion District Office. The main concern of the research is to find out how far is the objective of these Sirah Rasul subjects have been achieved. Apart from that, it analyzes the Sirah Rasul curriculum and the effectiveness of that subject specifically in the research location. Thus, method of documentation, interviews, observation and questionnaires are used to gather the relevant data for this study. When all the data is analysed, this research finds out that the Sirah Rasul subject has given many positive effects to most of the SRA students in Sepang, Selangor in the understanding of the Sirah Rasul and the practising the Sunnah Rasul in the daily life. The findings of the study also show that the curriculum of the Sirah Rasul subject are not free from weaknesses and errors involving the textbooks of year three to year six a part of the lack of teaching aids and sources of references for the teachers involved. However, this research proves the Sirah Rasul subject should be continued for Sepang SRAs students and also in Selangor generally. It is suggested that the curriculum should be improved eventually in order to ensure the noble objective will be achieved in the future.

A NEW UPRIGHT FRUIT MATURITY CHILLI FOR MECHANICAL HARVESTING

Ahmed Mahir Mokhtar Bakri, Herman Syahdan & Bakhendri Solfan

ABSTRACT

A new genetically stable chilli variety was successfully developed after 8 generations of selection breeding. The exclusive feature of this chilli is not only synchronized fruit maturity but also upright fruit maturity. Upright matured chilli fruits are easily visible without being hidden by leaves. Production of chilli fruits with both synchronized and upright fruit maturity, if done in a large-scale planting, will help to reduce production cost because chilli harvester can be used effectively. The fruits are medium size and extremely hot.

NEW ROSELLE MUTANTS WITH VARIOUS FRUIT SHAPES AND COLOURS

Ahmed Mahir Mokhtar Bakri, Herman Syahdan & Bakhendri Solfan

ABSTRACT

Several new roselle mutants were successfully developed through induced mutation breeding using gamma rays. These mutants, with elevated and reduced levels of anthocyanin accumulation and distribution, changed their leaf shape, leaf colour, flower colour, fruit shape, fruit colour and growth habit. They have individual plants producing fruits with distinctive shapes and striking colours. The possible uses of these mutants are enormous, which include ornamentals, food decoration, fruit juice and most importantly HCA (hydro citric acid - a slimming compound) production.

A NEW APPROACH OF COMPARATIVE STUDY OF ORANG ASLI KINTAK GROUP'S LIFESTYLE

Naim Haji Ahmad

ABSTRACT

Film is a time machine and a window on the past that can be forwarded or reversed for several purposes. It provides data which can be used as a source for study. The film *Nomads of the Jungles* (NOTJ) was produced in 1948 by Louis de Rochemont Associated, an American Film Company for educational teaching aids. The film was widely used in American schools in 1950's - 1980's in Geography and Social Studies. It portrays the lifestyle of Orang Asli in Malay Peninsular headed by Penghulu Ehring.. NOTJ was discovered by the researcher in 1980. From early reviews, none of the Malaysian authorities or individuals had any knowledge or informations regarding the film. In 1984, based on the literature reviews and several information, the researcher managed to locate the filming location of NOTJ (Grik, Perak) and traced the descend of Penghulu Ehring who have settled down at Kampung Bukit Asu, about 32 km north of Gerik. Original title of this study is "The film *Nomads of the Jungle* (NOTJ)- Malaya, 1948) : A review and a comparative study of the nomadic group's lifestyle as portrayed in the film and as observed in the present (1986)." The study is not only looking at the change of the group's lifestyle after 38 years since the production of NOTJ, but also focused on the historical background and rational behind the film production.

A NEW HEALTH DRINK FROM SWEET POTATO

Salmah Yusof, Zaiton Hassan, Ahmed Mahir Mokhtar Bakri and Suzila Ismail

ABSTRACT

Fermented sweet potatoes juice is a new beverage that was successfully produced at our laboratory. It was made from purple sweet potato using a controlled fermentation process. Sweet potatoes belong to Convolvulaceae, the morning glory family which had never been developed into a fermented beverage product in Malaysia. A mixture of culture was used for this fermentation process. The unique features of this product are its exotic purple colour and mild sweet fermented flavour. Purple colored foods are attracting attention these days because of the beneficial effects on health the natural purple pigments have. Purple sweet potato contains a high level of anthocyanins and soluble fibers which are all beneficial to human health and would fulfill today's consumer food choice. The anthocyanins contribute towards antioxidative activity and antimutagenicity and they were found to be more stable at cold temperature. The pH range of these products is 3.8 - 4.0 and total soluble solid is about 12°Brix. Preliminary consumer testing of product indicated that it was acceptable and had potential for further development.

THE DEVELOPMENT OF REDUCED-ADDITIVE YELLOW MEE USING OZONE

Alina Abdul Rahim, Juriani Jalil, Zaiton Hassan, Salmah Yusof

ABSTRACT

Chlorine dioxide, benzoic acid are among some of the food additives added in processed food to prolong the shelf life of the products. However, these chemicals may be harmful and leave unacceptable odor on food. Therefore, research is conducted to replace these additives with other methods by using ozone. The highly unstable ozone molecule O_3 is formed when high energy from UV split one oxygen molecule (O_2) into two reactive oxygen atoms ($O\cdot$) which later interact with other oxygen molecules. As little has been published about the required ozone concentrations and treatment procedures to improve the storage life of the local asian yellow mee, this study was conducted to determine the effects of ozone on the shelf life quality of the yellow mee during 5 days of storage at ambient temperature (28°C). The results shown that by exposing the yellow mee with 0.2 ppm of ozone gas in a 45 cm³ stainless steel chamber for 10 minutes, the growth of coliform, yeast and mold were delayed. No *E.coli* growth was detected in all samples throughout the shelf life study. After Day 5, the control sample indicated more coliform and yeast and mold growth compared to the ozonated sample. Moisture content of samples were in the range of 55 -60 % throughout the storage. In conclusion, ozone may be effective in extending the shelf life of yellow mee by suppressing the growth of yeast and molds but thorough study on this should be explored further.

STABILIZATION OF RED COLOUR OF ROSELLE MUTANT EXTRACT USING LOCAL HERBS

Zaiton Hassan, Ahmed Mahir Mohamed Mokhtar Bakri, Salmah Ahmad

THE MANAGEMENT OF FATWA IN ISLAMIC COUNTRIES

Md Yunus Abd Aziz

BIODATA OF RESEARCHERS

Madiah Mohd Saudi

A lecturer at the Faculty of Science and Technology at the Universiti Sains Islam Malaysia (USIM). She earned her Bachelor Degree in Computer Science from the National University of Malaysia (UKM) and her Master's Degree in Software Engineering from University of Malaya (UM). She is certified in GIAC Security Essentials (GSEC) from the SANS Institute, USA (2001) and Certified Ethical Hacker from Ec-Council, USA (2003).

Salina Mat Radzi (PhD)

A lecturer at the Faculty of Science and Technology at the Universiti Sains Islam Malaysia (USIM). She obtained her Bachelor of Science Degree in Industrial Chemistry (1997-2001) from Universiti Putra Malaysia (UPM). Upon completion, she joined Malaysian Agriculture Research and Development Institute (MARDI) as a research assistant for eight months. In 2002, she was awarded with the UPM Fellowship Scheme Scholarship for her Master of Science (MSc) program. She graduated with a Doctor of Philosophy (PhD) from the same university in 2006 and her PhD thesis in on the "Enzymatic Synthesis of Oleyl Oleate a Liquid Wax Ester, In a Stirred Tank Reactor". During her stay at the Chemistry Department, Faculty of Science, UPM, Salina has published a number of academic papers in local and international journals, a chapter in a book as well as participated in exhibitions that have won medals for her research group. Now, in USIM she hopes to become a good academician and reach her goal as a renowned enzymatic chemist.

Sapora Sipon (PhD)

A senior lecturer at the Faculty of Leadership and Management. She was previously with Universiti Sabah Malaysia (UMS) and Universiti Pendidikan Sultan Idris (UPSI). Her current interest is in the field of spiritual counseling and group counseling

Norhaziah Binti Nawai

A lecturer at the Faculty of Economics and Muamalat. Her area of expertise is finance.

Mohd Zohdi Bin Mohd Amin:

Currently a lecturer in Quranic and Sunnah Studies of Faculty of Quranic and Sunnah Studies, Islamic Science University Malaysia. Obtaining his first degree (BSc. Hons) with specialization in Usuluddin from al-Bayt University, Jordan, he had later on completed his master degree at Universiti Kebangsaan Malaysia in the specialization of Quranic and Sunnah Studies. He started his carrier as a tutor at Islamic University College of Malaysia from year 2000-2003, before being appointed to the lecturer post in the year 2003. His own field of interests can be seen in the field of Quran, Tafsir, Hadith, Family Matters, Islamic Alternative Treatment and Islamic Entrepreneurship.

Haliza bt Harun

Obtained her Master's degree in TESL (2000-2003) from Universiti Kebangsaan Malaysia She graduated in B.ED TESL (HONS) in 1991 from the same university.

Azwani Sofia Ahmad Khair (PhD)

A lecturer at the Faculty of Science and Technology at the Universiti Sains Islam Malaysia (USIM). She obtained her Bachelor of Science Degree in Computational Physics and Electronics from University of Malaya (UM). Upon completion, she obtained the PASCA Scheme Scholarship and registered her Master of Science (MSc) program. She graduated with a Doctor of Philosophy (PhD) from the same university in 2006 and her PhD thesis in on the "Plasticized and Filler Doped Chitosan-Ammonium Triflate Ionic Conducting Membranes for Electrochemical Systems". During her stay at the Physics Department, Faculty of Science, UM, she has published a number of academic papers in local and international journals and become committee member for an international conference. Now, in USIM she hopes to become a good academician and reach her goal as a renowned material physicist.

Mohamed Sharif Bashir (PhD)

A senior lecturer of Economics at the Islamic Science University of Malaysia (USIM). He obtained his Bachelor in Economics and Master's Degree in Economics from Omdurman Islamic University, Sudan. He received a Doctorate of Philosophy (PhD) in Economics from Universiti Putra Malaysia. He has served in several reputable institutions during the last 14 years, such as the Islamic University of Science and Technology, Institute of Policy Studies in Islamabad and Universiti Putra Malaysia. He also held the post of an Economics Expert at the Embassy of the Syrian Arab Republic in Kuala Lumpur. Dr. Bashir's research and writings covers a variety of topics ranging from international trade, development economics and input-output economics which encompasses trade structure, labour skills, tourism industry, environment impacts, economic multipliers and comparative advantages of manufacturing industries. In addition, he has published numerous articles and technical reports in several renowned journals as well as educational features in mass media. He has contributed a number of pertinent chapters in several academic publications. He has also presented many papers at national and international conferences. He is currently the Deputy Director of World Fatwa Management and Research Institute (INFAD); He is the editor of the Journal of Fatwa Research and Management, and Associate Editor of the Journal of Muamalat and Islamic Finance Research (JMIFR).

Abd. Halim bin Mohd Hussin (PhD)

A senior lecturer at the Faculty of Leadership and Management. He received his Bachelor in Education in Guidance and Counseling from Universiti Putra Malaysia and Master of Science in Educational Psychology & Counseling from Indiana Univ. USA. He is a Doctoral Candidate in Addiction Counseling Competency at UiTM. He was a primary school teacher for 8 years. He also served as secondary school teacher for two years before joining the counseling service as a school counselor. He was appointed as a lecturer at the Faculty of Education, UiTM for 4 years. He is now a lecturer at USIM since 2005

Mardziah Hayati Abdullah (PhD)

Associate professor at Universiti Putra Malaysia. Her academic qualification includes Dip. TESOL, Wellington, NZ, Bac. Edu. (TESOL) UPM, MSc & PhD - Indiana University, USA. Language Studies Computer Mediated Communication). She has worked as a school primary teacher for seven years and secondary school teacher for 3 years before joining Universiti Putra Malaysia

Siti Salhah bt. Othman (PhD)

She received her Bachelor of Science degree in Chemistry from Universiti Putra Malaysia, in 2000. In 2004, she obtained her Doctor of Philosophy degree in Enzyme Technology from the same university. She is currently a lecturer at the Faculty of Science and Technology, USIM. Her research interests concern the design of biocatalysts for bioorganic synthesis.

BIODATA OF RESEARCHERS

Salmah Yusof (PhD)

Is currently a contract lecturer at the Faculty of Science and Technology, Islamic Science University of Malaysia (USIM). She obtained her Masters degree from Ohio State university, USA in 1980 and her Ph.D from Universiti Pertanian Malaysia in 1989. Prior to this she was attached to the Faculty of Food Science and Technology, UPM. Her passion was in fruit and vegetable processing. She had spent some time working on roselle, sugarcane, bananas, mangoes, pitaya and carambola. At USIM, her interest is in utilization of biotechnological techniques towards enhancing food processing and food quality, development of new food products, bioremediation of toxicants in foods, etc. She is also currently involved in HALAL research along with UPM, and potential partners JAKIM and HDC

Ahmed Mahir Mokhtar Bakri (PhD)

Associate Prof. Dr. Ahmed Mahir Mokhtar Bakri has graduated with BS (Crop Science) from Louisiana State University and MS (Crop Breeding) and PhD (Genetics and Breeding for Plant Resistance) from University of Missouri, USA. He was a lecturer at Universiti Kebangsaan Malaysia, where he successfully developed and released six varieties of Cilibangi and two varieties of tomato Ehsan. The unique features of Cilibangi varieties include virus resistance, high yielding, hot, synchronized fruit maturity and machine harvestable. A prototype Cilibangi machine harvester was also successfully fabricated. Tomato Ehsan varieties are bacterial wilt resistance, virus resistance, heat tolerance, high yielding and synchronized fruit maturity. Currently, he is a lecturer at Universiti Sains Islam Malaysia and holds the Acting Directorship of the Centre for Research and Conference Management. He is still actively doing his chilli research. Another unique feature, i.e., upright fruit maturity, was successfully added to new chilli varieties. Both synchronized and upright fruit maturity will further facilitate machine harvesting. He has also started to do mutation breeding on roselle and lemongrass. About 21 roselle mutants were successfully developed, out of which two are very potentials to be released. Hydroxyl citric acid (slimming compound) was also extracted from one of the mutants. Few lemongrass mutants were also developed. One lemongrass mutant was found to develop stem above the ground and below the stalk which is potential for machine harvesting.

Naim Haji Ahmad (PhD)

Academic : Ed.D; Ed.S.; MS ; and B.A (Hons.)

Major Field of Study : Instructional System Technology

Minor Field of study : AV Communication; Ethnographic and Educational Film, and Film Studies

Working and Teaching Experiences

Professor and Head of Communication Program, USAIM

Lecture, Faculty of Education, UPM (1982-2003)

Director of Uniputra Production, UPM (1995-2003)

Director of Cultural Center, UPM (2001-2003)

Principal, Kolej Tun Perak, UPM (1996-2000)

TV Producer, RTM (1971-1981)

Part Time and Guest Lecture in several universities in the field of Instructional System Technology, Film and Drama in Education, Creative writing, Script writing and Video Production.

External Examiner for Master and Ph.D : UKM, UPSI, USM and UM

Author of several books and articles in area of Instructional Technology and film studies

Attended nearly 500 seminars and presented nearly 350 papers since 1982.

Panel of Judge for Skrin TV3, RTM Seri Angkasa, Media Islam (Anugerah AMIN) and Malaysian Film Festival.

Waidah Ismail

Waidah Ismail is with the Faculty of Science and Technology, USIM. She has been involved in the teaching field for the past 2 years. Previously, she has been involved in the industrial sector for the past 8 years in the IT environment mostly in the IT Security Area. Among the courses taught in her teaching career include Database and software engineering.

Azlan M. Ghazali

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Zulhakim Ismail

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Bachok M. Taib (PhD)

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Najwa Hayaati Binti Mohd Alwi

a lecturer and a coordinator of Fatwa Management System and ICT Division World Fatwa Management and Research Institute

Muhamad Muda (PhD)

a professor and deputy Vice Chancellor (Academic and International Affairs) of USIM. He received his PhD in Business Administration - Finance and Banking from the Manchester Business School (MBS) University of Manchester, United Kingdom. He was the founding president of Malaysian Finance Association (MFA) and Executive Committee, Asian Academy of Management (AAM). He is also the member of Asia Pacific Finance Association (APFA). He is a prolific writer and has written many books and gained widely academic recognitions in his area.

Alina Abdul Rahim (PhD)

is a lecturer at the Faculty of Science and Technology at the Universiti Sains Islam Malaysia (USIM). In 1996, She obtained her Bachelor of Science Degree in Life Science and Management from Universiti Kebangsaan Malaysia (UKM). She then obtained her Master of Science (MSc) in Food Science and Nutrition program in 2000. She graduated with a Doctor of Philosophy (PhD) from the same university in 2004. She has published a number of academic papers in local and international journals. Her area of interests are utilization of palm fats in processed meats, improvement of nutritive values of food and product development of shelf stable products.

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ISLAMIC SCIENCE UNIVERSITY OF MALAYSIA

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RESEARCH POSTERS



THE DEVELOPMENT OF RISK ASSESSMENT FOR IPTA IN KLANG VALLEY

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Introduction

Information is the lifeblood of all organizations and can exist in many forms. It can be printed or written on paper, stored electronically, transmitted by mail or by electronic means, shown in films, or spoken in conversation. In today's competitive business environment, such information is constantly under threat from many sources. These can be internal, external, accidental, or malicious. With the increased use of new technology to store, transmit, and retrieve information, we have all opened ourselves up to increased numbers and types of threats. ISO27001:2005 is a standard setting out the requirements for an Information Security Management System. It helps identify, manage and minimize the range of threats to which information is regularly subjected. In the ISO27001:2005 is organized into 11 sections as stated as Security Policy, Organization Information Security, Asset Management, Human Resources Security, Physical and Environmental Security, Communications and Operations Management, Access Control, Information Systems Acquisition, Development and Maintenance, Information Security Incident Management, Business Continuity Management and Compliance. Risk assessment is a procedure used to estimate potential losses that may result from system vulnerabilities and to qualify the damage that may result if certain threats occur. The risk assessment will involve in looking at tangible assets for example building, computers, and equipment and figuring how to protect them. In the most organization's nowadays, the most valuable asset is the information processed by the computer. The goal of risk assessment is to help select cost-effective safeguards that will reduce risks to an acceptable level.

Objectives

- To calculate the current risk analysis in the public universities involved.
- To know whether it is good to get the certified ISO27001 and make it compulsory to the public universities.
- To identify if the public universities in Klang Valley has implemented the concepts of ISO27001:2005

Methodology

- Questionnaire**
To be distributed to the system administrators in the IT Department of the Universities involved. In the risk analysis template and questionnaire are based on the ISO27001:2005
- Interview**
To be carried out to identify more information on the risk analysis application and questionnaire based on the ISO 27001:2005 in their organization.
- Framework**
The Framework was done based on the ISO27001:2005 according to the PDCA Model

Method of Data Analysis. The Formula:

$$\text{Calculation Risk Rating} = \text{Value} * \text{Severity of Threat} * \text{Frequency of Incidence} * \text{Probability of Occurrence}$$

Novelty

The current risk analysis will determined the risk of the application in the Data Centre. By merging all the application in the public universities, a standardization risk analysis of the generic application in the public universities can be renowned.

Usefulness research

The valuation of an organization's assets is an essential step in the overall risk assessments process. The value assigned to each asset should be expressed in terms which are relevant to the asset and to the business entity involved. To perform the asset valuation, an organization first needs to identify all of its assets. To assure that all assets are accounted for, it is often helpful to group them by type such as information assets, software assets, physical assets, and services. This is also valuable to assign an asset owner who will be responsible for determining the asset's value.

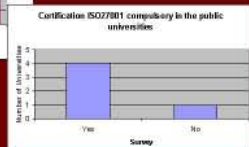
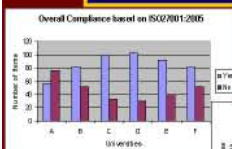
Commercial Potential

From the risk analysis conducted the suitable control selection will be determined and this will be based on the ISO 27001:2005 and threat given by the universities involved.

Contribution on sustainable development

Based on the result from the questionnaire that explains that certification of ISO 27001 compulsory in the public universities and the risk assessment template can require as guideline to implement in the Public Universities.

Results



About 19.96% of University D has complied with the ISO27001:2005 and 10.68% did not comply. Trailing by University C which is 19.37% complying and 11.74% did not comply. University E stated as 18% comply with the standard and 14.23% stated did not comply. University B and University F are equivalent which the result is 15.85% compliance and 18.15% did not comply. And University A submit only 10.97% comply and 27.05% did not comply.

About 80% of the system administrators agree that Malaysian government should enforce the public universities get the certified ISO27001 but only 20% disagree

Conclusion

- All public universities have implemented ISMS based on the Security Procedure except for one. Some of the Universities are using MYMIS as a guideline and some of the universities did not aware of the existence of MYMIS. Although MAMPU has developed the policy on the MYMIS but they do not perform any audit or visit the University to check when they are follow the guidelines. Also all universities' System Administrators agreed that the university must get certified ISO27001. But majority of the System Administrators agreed that guideline ISO27001:2005 can lead to the certified ISO27001 and also the security breaches can be prevented. Lastly, most of the Universities agreed that Malaysia government should make compulsory for the public universities to get the accreditation of the ISO27001.
- Before approved Prior an approval of the selection of control, the universities need to select form the ISMS Steering Committee from the Management level. The selection of control will be proposed by the IT Security Specialist based on the ISO 27001:2005 standard. The selection of control will be discussed and approved by the ISMS Steering Committee. The report will be produced and shall be endorsed by the management.

Academic Recognition

Ismail, W, Taib, M. B, Alwi M. N. Y, Ghazali M. A, Ismail, Z "The Perceptions IPTA in Klang Valley towards Information Security Management System" has been publishing in the proceeding in "International Conference on ICT For The Muslim World ICT4M 2006, "Achieving Unity Within Diversity Through ICT" - 21 st - 23rd November 2006. Kuala Lumpur, Malaysia.

References

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- ISO/IEC TR 13335-3:1998(E) "Information Technology - Guidelines for the management of IT Security - Part 3: Techniques for the management of IT Security" ISO/IEC.





REBT JOB SATISFACTION MODULE

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INTRODUCTION

This module is designed to counsel employees to maximize worker efficiency and job satisfaction. It also addresses employee's concerns and problems through effective coaching, counseling and appraising

OBJECTIVE

To determine the REBT job satisfaction module in increase job satisfaction and coping skills

- To verify that REBT job satisfaction module can contribute to sustainable development

METHODOLOGY

Design : A control pre, post and follow-up experimental design was used

- Instrument: Occupational Stress Indicator.

-Subject : 24 highly stressed teachers aged between 21 to 48

- years old, randomly divided into 2 groups (i) REBT (2) waiting list
Treatment: The treatment group received REBT counselling sessions for six consecutive weeks, once in each week.

FINDINGS

- REBT counselling group showed an increase in job satisfaction and coping skills
- REBT counselling group showed longer reduction (post-test to follow-up) on job job satisfaction and coping skills.

TABLE 1: MEAN SCORE OF JOB SATISFACTION AND COPING SKILLS AT THE PRE AND POST LEVEL

	PRE	POST
JS	78.08	115.30
CS	103.83	141.33

TABLE 2: MEAN SCORE OF JOB SATISFACTION AND COPING SKILLS AT THE PRE AND POST LEVEL

	PRE	PSOT
JS	115.30	103.08
CS	141.33	133.83

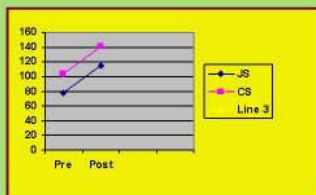


Figure 1: trend analysis of mean of stress, job satisfaction, coping skills and social support of subject at the pre and post level

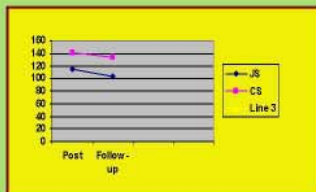


Figure 2: Trend analysis of mean of stress, job satisfaction, coping skills and social support of subjects at the post and follow-up level

ACADEMIC RECOGNITION (RELATED PUBLICATION)

Sapora Sipon (2006). The effectiveness of a person-centered and rational-emotive behaviour therapy on stress and job satisfaction of teachers: Key papers of the European Academy



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The Development of Reduced-additive Yellow Mee Using Ozone

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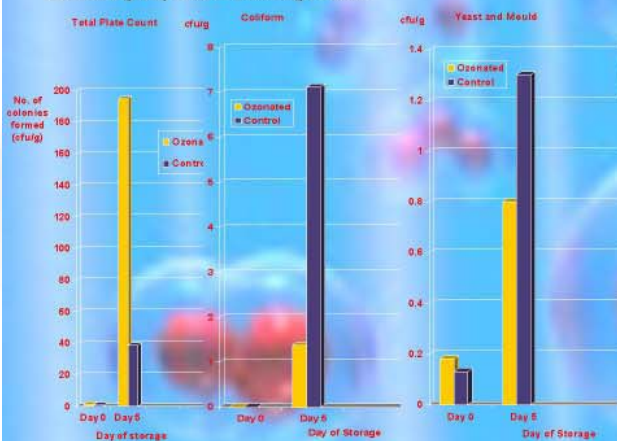
INTRODUCTION

Chlorine dioxide, benzoic acid are among some of the food additives added in processed food to prolong the shelf life of the products. However, these chemicals may be harmful and leave unacceptable odor on food. The highly unstable ozone molecule O_3 is formed when high energy from UV split one oxygen molecule (O_2) into two reactive oxygen atoms (O) which later interact with other oxygen molecules.

Ozone is a strong oxidant. When applied, ozone decomposes, returning to the oxygen from which it was made, leaving no chemical residue or known harmful by-products, and acts over a wide spectrum of organisms. The most common use of ozone for food treatment are: preservation to extend market-quality storage life, control of pathogens (disinfection), and prolonged ripening time of fruits and vegetables. As little has been published about the required ozone concentrations and treatment procedures to improve the storage life of the food, asial yellow mee, this study was conducted to determine the effects of ozone on the shelf life quality of the yellow mee during 5 days of storage at ambient temperature ($25^\circ C$).

METHODOLOGY

OZONE TREATMENT In this study, 500 gm of yellow mee was treated with 0.2 ppm of ozone gas in a 45 cm³ stainless steel chamber for 10 minutes, loosely packed in plastic, then kept under room temperature ($25^\circ C$) to simulate the exact storage conditions of the product when distributed in grocery stores/market/night markets.



FINDINGS

- ❖ Ozone treatment delayed the growth of coliform, yeast and mold as indicated at the above histogram.
- ❖ No *E. coli* was detected in all samples throughout the shelf life study.
- ❖ After Day 5, the control sample indicated more coliform and yeast and mold growth compared to the ozonated sample.
- ❖ Moisture content of samples were in the range of 55 - 60 % throughout the storage.

ACKNOWLEDGEMENTS

Special thanks to :

1. USIM
2. IMB Sdn Bhd
3. Arachem Sdn Bhd
4. Pn Shazamawati UNIPEQ UKM

For the kind support and technical assistance provided during this study.

NOVELTY

Ozone is not classified as a pestically chemical (it is unstable, and cannot be packaged, stored and shipped), its usage on food helps control microorganism without chemical pesticides. Ozone, being unstable, quickly reverts to the molecular oxygen from which it was made. Being a very strong oxidizing agent, ozone oxidizes cell membranes microorganisms, rupturing the cell walls through oxidation, exposing the interiors of the cells and killing them. Viruses are also inactivated by ozone, through disruption of key chemical bonds in their DNA structures.

COMMERCIAL POTENTIAL

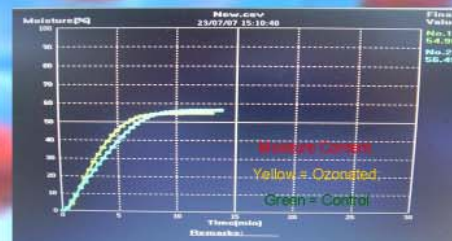
When applied in the gas phase, ozone are used in odor and mold control and the storage and packaging of farmed agricultural products and processed foods. Ozone can be applied either as a gas or in aqueous solution. When packaging is to be in air-tight sealed plastic bags, ozone treatment can be followed by carbon dioxide and/or nitrogen. Ozone disinfect surface microorganisms, then the inert gas flushes away any remaining oxygen that may allow growth of detrimental organisms.

CONTRIBUTION OF SUSTAINABLE DEVELOPMENT

Chlorinated water is commonly used for microorganism control when washing foods like agricultural products. The use of ozone may reduce or eliminate chlorine usage, which means lower amounts of chemical residues passed into the ecosystem, less chloramines in processing plant air for workers to breathe, when chlorine chemicals are used.

USEFULNESS OF RESEARCH

The shelf-life of yellow mee may be increased. However, as this research is still on the preliminary stage, the effectiveness of ozone as a gas, or in aqueous solution at this particular food product, has yet to be ascertained. Ozone use may cause oxidative damage to the food products. Ozone gas is slightly heavier than air, in aqueous form, reaction rates of ozone are rapid, and being unstable, quickly change back to the molecular oxygen.



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3. Alina, A.R., Zailfeh, M.K., Willys, J., Teoh, S.W., Babji, A.S. and Norraikiah, A.S. (2005) Effect of Ozone Treatment on Fatty Acids Profile, Oxidative Level and Instrumental Colour in Chicken Bologna. *Book of Abstracts, International Science Congress (ISC) 2005, August 2-6, 2005, PWTC, Kuala Lumpur, Malaysian Scientific Association*, pp. 167-169.
4. Alina, A.R., Zailfeh, M.K., Chan, S.S., Teoh, S.W., Babji, A.S. and Norraikiah, A.S. (2005) Off-Flavour Components, Oxidative Quality and Sensory Acceptance of Ozone Treated Chicken Bologna. *Book of Abstracts, International Science Congress (ISC) 2005, August 2-6, 2005, PWTC, Kuala Lumpur, Malaysian Scientific Association*, pp. 168-169.



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DEVELOPMENT OF SOLID ELECTROLYTES BASED ON NATURAL POLYMERS

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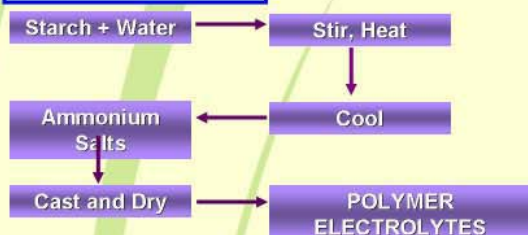
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INTRODUCTION

The science of polymer electrolytes is an extremely focused multidisciplinary field which include the disciplines of electrochemistry, polymer science, organic chemistry, inorganic chemistry as well as physics. This field is receiving great attention due to its potential application in electrochemical devices such as batteries, supercapacitors, electrochromic windows and sensors. Polymer electrolytes have advantages over liquid electrolytes due to its good mechanical properties, ease of fabrication in thin film form and ability to form proper electrode-electrolyte contacts. The choice of polymer in this present work is starch which is an inexpensive biopolymer that are frequently encountered in nature. Starch are easy to extract from fast growing plants and makes it interesting for industrial applications. Until now they have been successfully used in the food and textile industry, although the research on new materials has shown that they can be also used as a substitution for synthetic polymers.

METHODOLOGY



OBJECTIVES

- ♦ To develop electrolyte system using starch and ammonium salts
- ♦ To increase the conductivity of the system using additives

ACADEMIC RECOGNITIONS

- A.S.A Khiair, R. Puteh, A.K. Arof, Characterizations of Chitosan-Ammonium Triflate ($\text{NH}_4\text{CF}_3\text{SO}_3$) Complexes by FTIR and Impedance Spectroscopy, *Physica Status Solidi A* 203 (2006) 534-543
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- A.S.A. Khiair, S.R. Majid, N.H. Idris, M.F. Hassan, R. Puteh, A.K. Arof, Ionic Hopping Transport in Chitosan-based Polymer Electrolytes, In *Functional Materials and Devices*, (Eds.) A.K. Arof and S.A. Hashim Ali, *Materials Science Forum* Vols. 517 (2006) 237-241
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Pecipta 07.

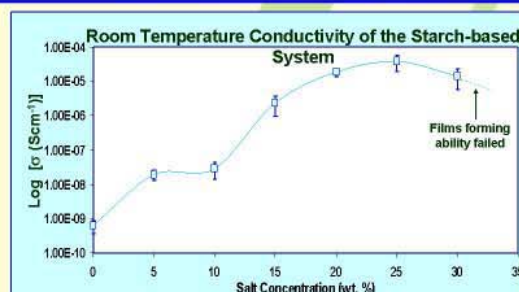
Research Potential

- ♦ Development of improved polymer electrolytes from starch.

Potential Application



PRELIMINARY RESULT



REFERENCES

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- Maarit Tarvalainen, Riitta Sutinen, Soili Peltonen, Hannu Mikkonen, Jaana Maunus, Kalle Va'ha'-Heikkila', Vesa-Pekka Lehto, Petteri Paronen, *European Journal of Pharmaceutical Sciences* 19 (2003) 363-371



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FORMULATIONS FOR GOLD ALLOY PLATING TO PRODUCE DIFFERENT SHADES OF ELECTRODEPOSITS



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INTRODUCTION

A great advantage of electrolytically obtained gold deposits is that their hue can be varied greatly by adding other metals to the solution or to the anodes, which are then codeposited with gold. Although gold electroplating processes have been in operation for a very long time but the available information related to the electrodeposition of Au-alloys are virtually confined to the patent literature. One of the challenges was to prepare a basic gold flash plating solution with the least number of chemicals involved as well as easy to operate at room temperature. Gold can be colored to various colors and this can be achieved metallurgically by alloying gold with two, three, four or even more elements. The same can be achieved electrochemically. However, the difficulties in controlling the composition and inclusion can multiply almost exponentially as the number of alloy constituents increase.

Objectives

- To formulate gold plating solutions to produce different shades of electrodeposited gold alloy film by metal addition such as silver and palladium, and mixture thereof using the experimental design method.
- To investigate the effect of silver and palladium additions to the surface appearance and morphology of the electrodeposited gold film.

MATERIALS AND METHODS

Figure 1 shows a photograph of the experimental set-up.

By making a permutation of all possible variables, a design matrix consisting of the following variables was developed, a) concentrations of gold, b) concentrations of metal additions (Ag, and Pd), c) concentrations of KCN, and d) concentrations of K_2HPO_4 .

The low levels and high levels of gold concentrations were set at 0.5 g L^{-1} and 2.0 g L^{-1} as Au respectively, while the low levels and high levels of all the metal additives were set at 0.1 g L^{-1} and 1.0 g L^{-1} (as chemical weight) respectively. The low levels and high levels of KCN concentrations were set at 5 g L^{-1} and 15 g L^{-1} respectively while the low levels and high levels of K_2HPO_4 were set at 5 g L^{-1} and 20 g L^{-1} respectively.

Novelty

•Different shades of gold deposits can be produced with minimal amount of chemicals and simple operating parameters

•Electrodeposition techniques and parameters used in this study has produced nanostructured materials

Potential Applications

For Electroplated items in electronics applications

References

- Morrissey, R. J. (2000). Some studies on distribution in precious metal electrodeposits. *Plat. Surf. Finish.* 1033-1047.
- Normandaeau, G. (1992). White Golds: A review of commercial material characteristics and alloy design alternatives. *Gold Bull.* 2 (3), 94-103.
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Figure 1. experimental set-up

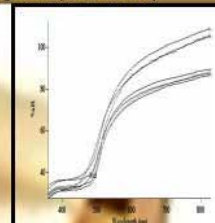


Figure 4. Reflectance curves for electrodeposited gold film having gold-like appearance

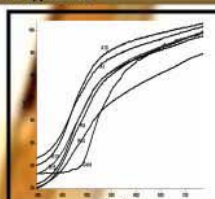


Figure 5. Reflectance curves for the electrodeposited gold film having brass-like appearance

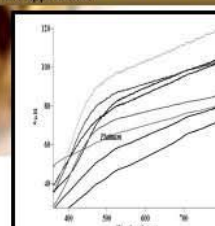
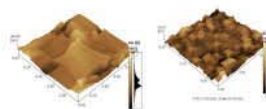


Figure 6. Reflectance curves for the electrodeposited gold film having platinum-like appearance



Images of the electrodeposited gold film with silver and palladium inclusions as mapped by AFM in contact mode (scan area: 1 μm and 5 μm).



Images of electrodeposited gold film with silver inclusion as mapped by AFM in contact mode (scan area: 1 μm and 5 μm).

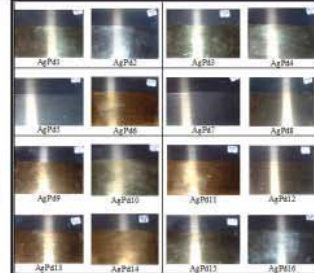


Figure 2. Hull cell panels electroplated with gold bath containing Ag and Pd addition (screening experiment)



Figure 3. Hull cell panels electroplated with gold bath containing Ag and Pd addition (optimization experiment)

Table 1. Deposit compositions of the electroplated Hull cell panels

Sample code	Deposit composition (precious metal & metal inclusion)		
	% Au	% Ag	% Pd
Gold-like color			
RAgPd 10	90.07	9.3	0.63
RAgPd 6	93.96	3.68	2.36
AgPd 6	99.01	0.46	0.53
AgPd 9	99.60	0.40	0.00
AgPd 14	100.00	0.00	0.00
AgPd 11	100.00	0.00	0.00
Brass-like color			
RAgPd 15	78.29	19.46	2.25
RAgPd 13	78.59	21.41	0
RAgPd 4	77.53	22.23	0.23
RAgPd 14	77.23	19.58	3.19
AgPd 10	84.81	15.16	0.03
AgPd 1	84.10	15.26	0.64
Pt-like color			
RAgPd 3	46	50.78	3.22
AgPd 2	48.17	48.67	3.15
AgPd 7	45.34	47.72	6.94
RAgPd 7	45.47	47.4	7.14
AgPd 16	52.15	43.93	3.92
AgPd 5	50.90	40.81	8.29
RAgPd 12	61.39	34.73	3.89

Pecipta07.



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A NEW UPRIGHT FRUIT MATURITY CHILLI FOR MECHANICAL HARVESTING

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¹ Faculty of Science and Technology, USIM

² Faculty of Science and Technology, UKM

INTRODUCTION

All chilli cultivars (developed by Department of Agriculture, Malaysia) and varieties (developed by MARDI) are **indeterminate** type i.e., non-synchronized and **downward** fruit maturity. While Universiti Kebangsaan Malaysia (UKM) had successfully developed **determinate** chilli varieties that are disease resistant and high yielding. The uniqueness of Cilibangi-1, Cilibangi-2, Cilibangi-3, Cilibangi-4, Cilibangi-5 and Cilibangi-6 developed by UKM is the **synchronized fruit maturity** that enables a planned large-scale planting (Mahir & Ahmad 1996), but are **not upright** fruit maturity. Another trait of importance is the **upright fruit maturity** which further facilitates mechanical harvesting.

OBJECTIVE

- To select chilli lines that produce upright medium fruit maturity.

MATERIALS AND METHODS



Selection for 7 generations



8th Generation – Upright Fruit Maturity

RESULTS AND DISCUSSION



Red and Green Fruits



Medium Size Fruits

CONCLUSION

This study has successfully developed chilli line with upright fruit maturity by selection through eight generations.

ACKNOWLEDGEMENT

This study was conducted under the research fund PPPP (M) 2005 Universiti Sains Islam Malaysia (USIM), Universiti Kebangsaan Malaysia (UKM) and Al-Ummah Food, Sdn. Bhd



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ABSTRACT

A new genetically stable chilli variety was successfully developed after 8 generations of selection breeding. The exclusive feature of this chilli is not only synchronized fruit maturity but also upright fruit maturity. Upright matured chilli fruits are easily visible without being hidden by leaves. Production of chilli fruits with both synchronized and upright fruit maturity, if done in a large-scale planting, will help to reduce production cost because chilli harvester can be used effectively. The fruits are medium size and extremely hot.

NOVELTY AND INVENTIVENESS

1. New upright fruit maturity chilli
2. Fruits not hidden by the leaves – visible fruits
3. Synchronized fruit maturity
4. Machine harvestable chilli
5. High fruit yield
6. Extremely hot and medium size

COMMERCIAL POTENTIALS

1. Large scale planting can be planned
2. Prototype harvesting machine is fabricated
3. High commercial returns



CONTRIBUTION TO SUSTAINABLE DEVELOPMENT

1. Continuous fruiting after harvesting
2. More than 7 harvestings per plant
3. Less land cultivation
4. Less opening of new areas

ACADEMIC RECOGNITION

1. Oral presentation in the Symposium of Microbiology, Indonesia at Solo, Indonesia 24-27 August 2006. Topic: "Penanaman Dua Titisan Cili (*Capsicum annum*) Terpilih di Bekas Tanah Pamah Ladang Getah."
2. Poster presentation at KUIM. Topic: "Gorak Pewarisan Cili Matang Menegak."
3. Poster presentation in the NATIONAL CONFERENCE ON AGROBIODIVERSITY CONSERVATION AND SUSTAINABLE UTILIZATION 6-8 November 2006 at Kuching, Sarawak. Topic: "Kesan dos kompos SKS terhadap Cilibangi"
4. Oral presentation in NATIONAL HORTICULTURE CONFERENCE 2007 13 - 15 March 2007 at Johor Bharu. Topic: "Upright matured chilli fruit (*Capsicum annum*) facilitate mechanical harvesting"
5. Poster presentation in the 9th MALAYSIAN APPLIED BIOLOGY SYMPOSIUM 30 - 31 May 2007 at Penang. Topic: "Morphoagronomy of upright maturity chilli (*Capsicum annum* L.)".

Pecipta 07.



NEW ROSELLE MUTANTS WITH VARIOUS FRUIT SHAPES AND COLOURS

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² Faculty of Science and Technology, UKM

INTRODUCTION

Since conventional out-crossing of roselle is difficult, induced mutation would be the ideal and attractive method which allows development of new and valuable alterations in plant characters. New mutants are important for plant breeders in their selection work to increase the roselle productivity.

OBJECTIVE

- To induce variations in roselle by gamma rays.
- To determine the possible uses of the roselle mutants

MATERIALS AND METHODS



RESULTS AND DISCUSSION



ABSTRACT

Several new roselle mutants were successfully developed through induced mutation breeding using gamma rays. These mutants, with elevated and reduced levels of anthocyanin accumulation and distribution, changed their leaf shape, leaf colour, flower colour, fruit shape, fruit colour and growth habit. They have individual plants producing fruits with distinctive shapes and striking colours. The possible uses of these mutants are enormous, which include ornamentals, food decoration, fruit juice and most importantly HCA (hydro citric acid – a slimming compound) production.

NOVELTY AND INVENTIVENESS

1. New decorative roselle fruit colours
2. New distinctive roselle fruit shapes

COMMERCIAL POTENTIALS

1. Ornamentals
2. Food decoration
3. HCA production

CONTRIBUTION TO SUSTAINABLE DEVELOPMENT

1. More choice for ornamentals
2. More choice for food decorative materials

ACADEMIC RECOGNITION

1. Oral presentation in the 4th UKM-UNRI Seminar 1-3 August 2006 at UKM, Bangi. Topic: "Penanaman Titisan Roselle (*Hibiscus sabdariffa* L) Terpilih di Tanah Bekas Tanaman Getah".
2. Oral presentation in the 4th UKM-UNRI Seminar 1-3 August 2006 at UKM, Bangi. Topic: "Mutation Breeding of Roselle in Malaysia".
3. Poster presentation in the Seminar Agrobiodiversity Conservation and Sustainable Utilization 6-8 November 2006 at Kuching, Sarawak. Topic: "Corak Pewarisan Warna Roselle (*Hibiscus sabdariffa* L)".
4. Poster presentation at ITEX '07 (18th International Invention, Innovation and Technology Exhibition) 18 – 20 May 2007 at KLCC, Kuala Lumpur. Topic: "Roselle HS03100-29-7-1-6-3-1 – A Potential Mutant Line with High HCA Content".
5. Poster presentation at ITEX '07 (18th International Invention, Innovation and Technology Exhibition) 18 – 20 May 2007 at KLCC, Kuala Lumpur. Topic: "HCA from Roselle – A Potential Anti-Obesity Agent".
6. Oral presentation in the 9th MALAYSIAN APPLIED BIOLOGY SYMPOSIUM 30 – 31 May 2007 at Penang. Topic: "Natural crossing of Roselle (*Hibiscus sabdariffa* L)".



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High Performance Enzymatic Synthesis of Liquid Wax Ester

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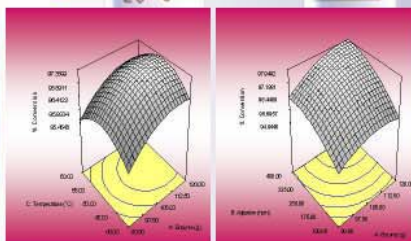
INTRODUCTION

Oleyl oleate, known as the principle component of a whale oil and a high-value specialty ester, was synthesized via enzymatic reaction between oleic acid and oleyl alcohol. An optimization study in large-scale production was performed in a 2L Stirred tank reactor using a Response surface methodology (RSM) based on 5-level, 3-variable, CCRD. The optimum conditions derived via RSM at a fixed reaction time of 1 h were amount of enzyme (A) of 104 g, agitation speed (B) of 388 rpm and temperature (C) of 49.7 °C. The actual experimental yield was 96.7 % under the optimum conditions. This compared well with the maximum predicted value of 97.6 %.

OBJECTIVES

- To synthesize oleyl oleate at large scale production
- To optimize the reaction via Response surface methodology (RSM)

RESULTS



Number	Optimal Conditions	Predicted Yield (%)	Actual Yield (%)
1	A = 104 g B = 388 rpm C = 49.7 °C	97.6	96.7
2	A = 108 g B = 390 rpm C = 48.5 °C	97.7	97.4
3	A = 118 g B = 356 rpm C = 47.2 °C	97.8	97.6

Novelty

- Newly synthesized wax ester using Novozym 435.
- The first published report in Malaysia on large scale production of liquid wax ester.

Research Potentials

- Production of another value-added compound for the palm oil industry of Malaysia.
- Exploiting biocatalysts in organic synthesis to produce liquid wax ester.

Potential Application

- Highly pure liquid wax ester for use in cosmetics.

METHODOLOGY



Pecipta07.

Academic Recognition

Mat Radzi, S., Basri, M., Salleh, A. B., Ariff, A., Mohamad, R., Abdul Rahman, M. B. and Raja Abdul Rahman, R. N. Z. (2005). Large Scale Production of Liquid Wax Ester by Immobilized Lipase. *Journal of Oleo Science*, 54: 203-209

Mat Radzi, S., Basri, M., Salleh, A. B., Ariff, A., Mohamad, R., Abdul Rahman, M. B. and Raja Abdul Rahman, R. N. Z. (2006). Optimization Study of Large Scale Enzymatic Synthesis of Liquid Wax Ester by Response Surface Methodology. *Journal of Chemical Technology and Biotechnology*, 81: 374-380



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GREEN SYNTHESIS OF NOVEL LIQUID WAX ESTERS VIA ENZYMATIC REACTION

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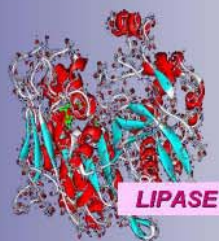


Introduction

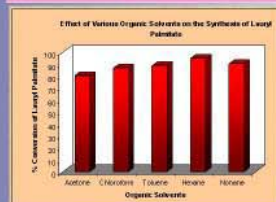
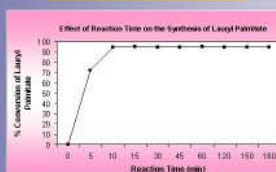
Green synthesis of organic fine chemicals is becoming more interesting nowadays due to the high demand of high purity product with environmentally friendly characteristics. Due to these reasons, we have developed a wide range of wax esters of different chain-length, exhibiting varied chemical and physical properties. The reactions were optimized based on one variable at-a-time approach to produce a high percentage conversion of wax esters (>90 %). Analysis by spectroscopy such as FTIR have shown that our synthesized wax esters are pure and do not contain any undesirable side product.

Objectives

- To develop a wide range of chain-length of wax esters with various chemical and physical properties.
- To obtain a set of optimal condition of various wax esters production.



Results



The optimum condition for wax ester syntheses;

- Reaction period of 30 min.
- Temperature of 45°C-50°C.
- Amount of enzyme of 0.2-0.4g.
- Molar ratio of 2:1
- Organic solvent of log P>2.5.

The percentage yields of liquid wax ester was >90%.

Novelty

- Development of new biotechnological application using immobilized lipases to produce wax esters.
- Production of high purity single chain derivatives which is considered to impart better wax ester performance than a mixed chain variety.
- Production of wax esters with unique property of excellent wetting behavior at interfaces and non-greasy feeling at skin surface.

Research Potentials

- Production of another value-added products for the enrichment of palm oil industry of Malaysia.

Potential Application

- Application for pilot scale production via appropriate reactor design.
- Potential ingredient for cosmetics, foods, drugs, pharmaceuticals and other chemical industries.



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Methodology

Palm-based Fatty Acids
+ Long-chain Alcohols

Hexane

Immobilized
Lipases

Liquid Wax Esters

Benefits

- **Nature** identical products
- **High yield** of esters (>90%)
- **Green** enzymatic synthesis

Pecipta07.



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THE NEW PRC AD-DIN STRESS COUNSELING TOOL

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INTRODUCTION

The New PRC Ad-Din Stress Counseling tool consists of three different theoretical counseling modules that include a set of assessment and counseling interventions that target the needs of highly stressed clients during treatments. Three types of different theoretical counseling modules which are 1. the person-centred 2. the rational behavior therapy and 3. the cognitive psychology Ad-Din have proved significantly efficient in reducing stress, increasing job satisfaction, coping skills and social support of teachers. This new stress counseling is also organized according to their strategic applications to the sequence of client needs and progression during treatment.

OBJECTIVES

1. To assess the effectiveness of the new PRC Ad-Din stress counseling tool which consists of three different theoretical counseling module (a person-centred, rational-emotive behavioral and cognitive psychology Ad-Din counselling groups) on job stress, job satisfaction, coping strategies and social support.
2. To investigate whether the effect of the new PRC Ad-Din module stress counseling was maintained a month after the treatment

METHODOLOGY

Instrument

The Occupational Stress Indicator Stress (OSI) was administered to assess job stress, job satisfaction, coping strategies and social support.

Reliability

The reliability of the OSI was measured using the Alpha Cronbach coefficient method.

The item-whole and construct validity were used to measure the validity of the questionnaire.

Design

The control pre, post and follow-up design was used.

Subjects

Subjects were 46 highly stressed teachers between 21 to 46 years old.

They were randomly divided into four groups

- a) person-centred
- b) rational-emotive behaviour
- c) cognitive psychology

DATA ANALYSIS

Data were analyzed using one-way ANOVA, ANCOVA and ANOVA repeated measure

significant level was set up at 0.05

Trend analysis and qualitative method was used to support the findings of the study.

NOVELTY AND INVENTIVENESS

- new findings in the Malaysian context to reduce stress, increase job satisfaction, coping skills and social support of workers
- organized according to their strategic applications to the sequence of Clients' needs and progression during treatment

USEFULNESS OF RESEARCH

As a stress reducing tool used by workers such as teachers, counselors, etc

COMMERCIAL POTENTIALS

can be commercialized as counselling reducing stress manual which acts as hands-on practical counselling session in addressing work-stress problems

CONTRIBUTION TO SUSTAINABLE DEVELOPMENT.

Environmental friendly and cost-effective

ACADEMIC RECOGNITION (RELATED PUBLICATION)

- Sapora Sipon (2006). The effectiveness of a person-centered and rational-emotive behaviour therapy on stress and job satisfaction of teachers: Key papers of the European Academy Psychological Association, Dublin, Ireland
- Penghayatan agama dan hubungannya dengan stress, burnout dan strategi berdaya tindak Guru (2006). Jurnal Penyelidikan Pendidikan. Jilid 8. Bahagian Perancangan dan Penyelidikan Dasar Pendidikan. Kementerian Pelajaran Malaysia.
- Sapora Sipon (2007). Kaunseling agama tangani isu dadah, 17 Julai 2007. Berita Harian
- Sapora Sipon (2007). Keberkesanan kaunseling kelompok psikologi kognitif Ad-Din dalam mengurangkan tahap stres, meningkatkan kepuasan kerja, strategi berdaya tindak dan sokongan sosial. Persidangan PERKAMA

The New PRC Ad-Din Stress Counselling Tool

SAPORA SIPON



FINDINGS

1. The new PRC Ad-Din Stress counseling tool showed significant reduction (pretest to post-test) on job stress significant increment on job satisfaction, coping skills and social support.

The new PRC Ad-Din Stress Counseling tool showed significant longer reduction (post-test to follow-up) on job stress, significant longer increment in job satisfaction, coping skills and social support

Table 1: Mean scores of stress of CC, REBT, CP and CG at the pre, post and follow-up level

	Pre	Post	Follow-up
CC	212.68	204.83	200.94
REBT	214.28	212.77	199.95
CP	209.93	212.42	211.93
CG	212.96	204.86	200.94

Mean score of coping skills of CC, REBT, CP and CG at the pre, post and follow-up level

	Pre	Post	Follow-up
CC	83.83	114.83	98.83
REBT	78.08	115.32	102.08
CP	83.35	120.83	116.47
CG	73.99	90.50	80.00

Table 2: Mean scores of job satisfaction of CC, REBT, CP and CG at the pre, post and follow-up level

	Pre	Post	Follow-up
CC	12.75	18.91	18.80
REBT	12.75	19.25	18.25
CP	14.83	23.17	21.33
CG	13.76	13.76	13.80

Mean score of social skills of CC, REBT, CP and CG at the pre, post and follow-up level

	Pre	Post	Follow-up
CC	110.00	131.91	131.00
REBT	94.41	128.91	122.16
CP	163.81	141.31	117.45
CG	98.89	93.39	93.00

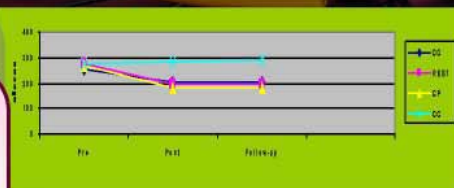


Figure 1: Trend analysis of mean score of stress of CC, REBT, CP and CG at the pre, post and follow-up level



Figure 2: Trend analysis of mean score of job satisfaction of CC, REBT, CP and CG at the pre, post and follow-up level

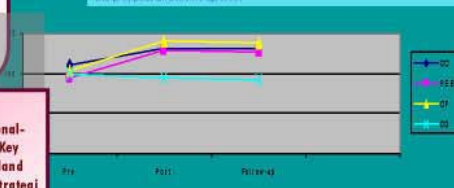


Figure 3: Trend analysis of mean score of coping skills of CC, REBT, CP and CG at the pre, post and follow-up level

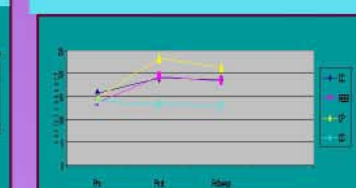


Figure 4: Trend analysis of mean score of social support of CC, REBT, CP and CG at the pre, post and follow-up level



THE NEW SPIRITUAL STRESS COUNSELING MODULE: PSYCHOLOGY COGNITIVE AD-DIN

SAPORA SIPON
OTHMAN MOHAMED

INTRODUCTION

This invention is in a form of a module that includes a set of assessment and counseling interventions that aim to reduce clients' stress. The module has been designed from the spiritual orientations and is highly focused and practical in order to meet the therapeutic needs of the clients. Evidence based on this new counseling module proves the improvement of clients' progress with significant reduction of job stress and increment of job satisfaction, coping skills and social support

OBJECTIVES

- To determine the effectiveness of the new spiritual stress counseling module on stress, job satisfaction, coping skills and social support of teachers.
- To investigate whether the effect of the new spiritual stress counseling module was maintained a month after the treatment.



METHODOLOGY

Design: A control pre, post and follow-up experimental design was used
- Instrument; Occupational Stress Indicator.
- Subject; 24 highly stressed teachers aged between 21 to 48 years old, randomly divided into 2 groups (1) the new spiritual stress counseling (treatment) (2) waiting list
- Treatment; The treatment group received the new spiritual stress counseling for six consecutive weeks, once in each week.

FINDINGS

- The new spiritual stress group counselling showed significant reduction (pretest to post-test) on job stress, significant increment in job satisfaction, coping skills and social support of subjects.
- The new spiritual stress counselling group showed longer reduction (post-test to follow-up) on job stress, significant longer increment in job satisfaction, coping skills and social support of subjects.

Table 1: Means of stress, job satisfaction, coping skills and social support of subjects pre, post and follow up

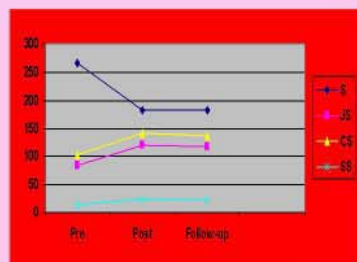


Figure 1: Trend analysis of means, Stress, job satisfaction, coping skill and social support of subjects at pre, post and follow up

S= Stress, JS= Job satisfaction
CS= Coping skills SS= Social Support

The New Spiritual Stress Counseling Module: **Psychology Cognitive Ad-Din**

Sapora Sipon
Othman Mohamed



NOVELTY AND INVENTIVENES

A new findings in group counseling using the spiritual elements in reducing workers' stress.

USEFULNESS OF RESEARCH

As an effective counseling tool to reduce stress.

COMMERCIAL POTENTIALS

Can be commercialized as stress reducing tool which uses spiritual elements to alleviate stress among workers

CONTRIBUTION TO SUSTAINABLE DEVELOPMENT

Environmental friendly and cost effective.



ACADEMIC RECOGNITION/ RELATED PUBLICATION

- Sapora Sipon (2006). The effectiveness of a person-centered and rational-emotive behaviour therapy on stress and job satisfaction of teachers. Key papers of the European Academy Psychology, Dublin
- Sapora Sipon (2006) Penghayatan agama dan hubungannya dengan stres, burnout dan strategi berdaya tindak guru. Jurnal Penyelidikan Pendidikan, Jilid 8, Bahagian Perancangan dan Penyelidikan Dasar Pendidikan, Kementerian Pelajaran Malaysia.
- Sapora Sipon (2007). Kaunseling agama tangani isu dadah, 17 Julai 2007. Berita Harian
- Sapora Sipon (2007). Keberkesanan kaunseling kelompok psikologi kognitif Ad-Din dalam mengurangkan tahap stres, meningkatkan kepuasan kerja, strategi berdaya tindak dan sokongan sosial. Persidangan PERKAMA



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THE PC COPING SKILLS COUNSELING MODULE

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The goal of this module is to help clients to have a better awareness and understanding of coping skills and job satisfaction. It is designed to help clients develop their abilities for avoiding distress. Evidence based on this research shows the module improves treatment engagement and client progress with significant increment of coping skills and job satisfaction

METHODOLOGY

-Instrument

The Occupational stress Indicator Stress was administered to assess job stress, job satisfaction, coping strategies and social support.

-Reliability

The reliability of the OSI was measured using the Alpha Cronbach coefficient method.

-the item-whole and construct validity were used to measure the validity of the questionnaire.

-Design

The control pre, post and follow-up design was used.

-Subjects

Subjects were 24 highly stressed teachers Between 21 to 46 years old.

-They were randomly divided into two groups

(i) person-centered

(ii) control group

NOVELTY AND INVENTIVENESS

A novel effort in the Malaysian scene on increasing job satisfaction and coping strategies

USEFULNESS OF RESEARCH

The PC coping skills counseling proved Significantly efficient in increasing job satisfaction, and coping skills. This new PC coping skills is also organized according to their strategic applications to the sequence of client needs and progression during treatment.

FINDINGS

The results of the research showed significant reduction (pretest to posttest) on job satisfaction and coping strategy. The treatment group also showed significant longer reduction (pretest to follow-up) on coping strategy and job satisfaction.

ANALYSIS DATA

Data were analyzed using one-way ANOVA, ANCOVA and ANOVA repeated measure

•significant level was set up at 0.05

•Trend analysis and qualitative method was used to support the findings of the study.

ACADEMIC RECOGNITION (RELATED PUBLICATION)

- Sapora Sipon (2006). The effectiveness of a person-centered and rational-emotive behaviour therapy On stress and job satisfaction of teachers: Key papers of the European Academy
- Penghayatan agama dan hubungannya dengan stress, burnout dan strategi berdaya tindak guru (2006). Jurnal Penyelidikan Pendidikan. Jilid 8. Bahagian Perancangan dan Penyelidikan Dasar Pendidikan. Kementerian Pelajaran Malaysia.
- Sapora Sipon (2007). Kaunseling agama tangani isu dadah, 17 Julai 2007. Berita Harian
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IMPACTS OF TOURISTS EXPENDITURE PATTERN IN MALAYSIA WITH SPECIAL REFERENCE TO MUSLIM COUNTRIES

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UNIVERSITI SAINS ISLAM MALAYSIA
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INTRODUCTION

The tourism industry has experienced a rapid growth and gained in importance for the Malaysian economy during the last two decades. Tourism is fast becoming Malaysia's second largest foreign exchange earner, after the manufacturing sector. The key positive economic impacts of tourism are foreign exchange earnings, contributions to government revenues and generation of employment and business opportunities. Due to the noticeable shift in the composition of tourists, Malaysia is making a major promotional push in the Middle East with a new focus on adventure and eco-tourism.

OBJECTIVES

The main objective is to identify and analyze the economic impacts of changing tourist profile on Malaysia's economy. Specific objectives are as follows:

1. To examine the profile and expenditure of tourists from Muslim countries.
2. To elucidate the comparative regional impact of tourist expenditures of both Muslim and Non-Muslim countries.
3. To draw some of the possible policy responses of the tourism sector, vis-à-vis, improvements within the industry.

METHODOLOGY

This research has adopted a conceptual framework based on conventional input-output model to determine the multiplier effects of each Ringgit spent on output, income and employment. Input-Output analysis creates a picture of a regional economy describing flows to and from industries and institutions. The impacts of tourism or any economic activity can be categorized into three effects: direct, indirect, and induced. Direct effects are those arising from the initial tourism spending such as money spent at a restaurant. The restaurant buys goods and services (inputs) from other businesses, thus generating indirect effects. Additionally, the restaurant employees spend part of their wages to buy various goods and services, thus generating induced effects. Figure (1) illustrates some of these impacts and leakages.

Backward Linkages and I-O Multipliers

Several different types of multipliers are generated using I-O models. For tourism industry, the output multiplier measures the combined effect of a RM1 change in its sales on the output of all local industries. All I-O multipliers measure the strength of Backward linkages or the degree to which an increase in activity by a given local industry causes additional purchases from other local industries and local resource providers. The same relationships are used in impact analysis, but the initial change in output is much larger than RM1 and is usually spread across several local industries.

Figure (1) Tourism Economic Impact Analysis



Input-output model

Using a balance equation of an open input-output system, The impacts of a particular class of tourist expenditure on sectoral output can be expressed as follows:

$$X = (I - A)^{-1} F$$

Where:

X = vector of sectoral output,
 $(I - A)^{-1}$ = Leontief inverse matrix,
 A = technical coefficient matrix,
 I = identity matrix,
 F = vector of tourist expenditure.

Overview of Country Economic System



FINDINGS

The main findings are as follows:

- 1- Tourism activity appears to be favourable not only to the external account but also in generating local value-added and tax revenue.
- 2- It proves that differences in expenditure profile among classes of tourists and the changing composition of tourist's arrivals in Malaysia have important policy recommendations on the economy.
- 3- Tourists from Arab countries, although their number is relatively small but increasing rapidly, spend relatively higher proportion on wholesale and retail trade than others.
- 4- Expenditure multipliers on output of hotel and restaurant are the smallest while those of transportation and wholesale and retail trade are the largest.
- 5- It is also important to note that the length of stay for Arab countries tourists is longer than that of American and European tourists. This pattern reflects the Arab tourists' purpose of visiting Malaysia for vacation and leisure.

POLICY IMPLICATIONS

Based on the findings, the research has identified a number of key imperatives as being critical to the development of tourism industry in Malaysia:

1. Explore the emotional, experiential side of the tourists so that the first visitors will find reasons to visit Malaysia.
2. New reasons must be created for the visitors who had been here but were not inclined to revisit. A new global brand identity for Malaysia could be based on the cultural and heritage background. What uniquely constitute Malaysia must be promoted to keep the inbound visitors coming. Batik is a unique feature of Malaysia that has the potential.
3. Education might be another marketable items that can generate a lot of income for the tourism sector. Malaysia aspires to be the regional center of excellence in education.

Usefulness

> The research provides some possible policy responses to promote Malaysia as an ideal destination for tourist from Islamic countries.

Peçipta 07.

Novelty

- It proves that differences in expenditure profile among classes of tourists and the Changing composition of tourist's arrivals in Malaysia have important policy Recommendations on the economy.
- It highlights a number of effects on each of the sectoral output, income and employment and explain which sector can benefit from tourist expenditure through direct, indirect and induced income and employment generations.

Commercial Potential

- ✓ Can be used to estimate policy or investment impacts and the total contribution of an industry to an economy.
- ✓ Can be used to exaggerate the benefits of policies or proposals in some cases and their costs in others.
- ✓ May be used to estimate the effects of a new local industry on jobs and incomes in all parts of the economy.
- ✓ It is also used to estimate policy or investment impacts and the total contribution of an industry to an economy.
- ✓ Can be used by TOURISM MALAYSIA and other players in this industry to identify the key short and long-haul markets, now and in the future.
- ✓ Can be used to predict the types of generated jobs.



Natural Flavour Esters Synthesized Using Commercial Hydrolytic Enzymes

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²Chemistry Department, Faculty of Science, Universiti Putra Malaysia, 43400 Serdang, Malaysia.

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Synthesis of Natural Flavour Esters

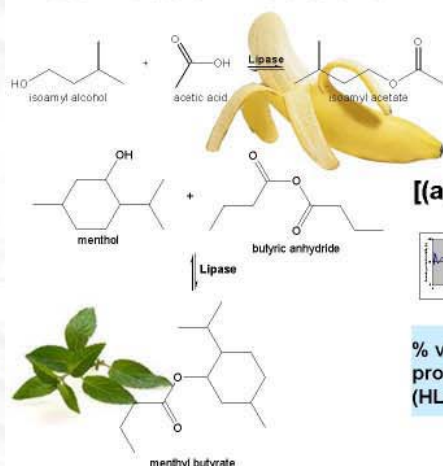
Esters are one of the most important classes of organic compounds and are synthesized by various ways: hydrolysis, esterification, transesterification and interesterification. The products of short chain acids and alcohols are important flavour and fragrance components in food, beverage cosmetic and pharmaceutical industries.

Isoamyl acetate is one of the most employed in food industries (74 000 kg/annum) because of its characteristics banana flavour while (-)-menthyl esters are endowed with distinct cooling and refreshing effect. Natural flavour esters extracted from plant are often in short supply and those produced by fermentation are at present too expensive for commercial exploitation. Enzymatic synthesis can be attractive as they are very selective and are performed at moderate temperatures and pressures compared with chemical syntheses. Esters produced through biocatalysis can be considered close to 'natural' and can potentially satisfy the recent consumer demand.

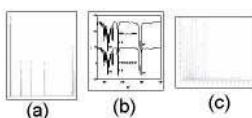


Candida rugosa lipase B in its open conformation

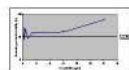
Esterification Procedure



Results

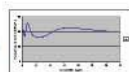


Characterization of (-)-menthyl butyrate [(a) GC, (b) FT-IR, (c) GC-MS]



% viability of breast cancer (MCF7) cell line

% viability of human promyelocytic leukemia (HL60) cell line



Cytotoxicity assay of isoamyl acetate

References

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- Welsh et al., (1989) *Critical Review of Biotechnology*. 9: 105-169.
- Mehmetoğlu et al., (2002) *Process Biotechnology*. 38: 379-386.

Process Advantages

- High product purity
- Low energy consumption
- Environmental friendly
- Simple and efficient
- Economical

Potential Applications



Pecipta 07.

SYSTEMATIC STUDIES ON THE LEVEL OF FORMALDEHYDE IN IMPORTED FRUITS



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¹Faculty of Science & Technology, Universiti Sains Islam Malaysia, Bandar Baru Nilai,
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INTRODUCTION

Formaldehyde is usually used as fumigant (which provokes asthma) in food to prolong shelf-life by preventing the growth of mould during shipment of imported fruits. Since Malaysia is one of the importers of imported fruits such as longan, lychee and lai (Chinese pear), those fruits may contain formaldehyde in certain concentration to thwart skin browning and post-harvest disease of fruits during shipment. Although formaldehyde contain naturally, there have been reports of abusive use of formaldehyde in certain food.

Furthermore, literature on property of formaldehyde stated that the formaldehyde is water soluble, so it is possible to measure the formaldehyde concentration in water of washing of the imported fruits (longan, lychee, and lai) by various techniques. In this work, two types of washing have chosen; soaking and rinsing under running water. Those fruits treat under the washing techniques with combination of two other treatments; peeling the husks and without peeling the husks. The formaldehyde determination is based on the reaction between formaldehyde and acetylacetone, producing yellow 3-5-diacetyl-1,4-dihydrolutidine measure the absorbance at 435nm by spectrophotometer.

Objectives

- To determine the level of formaldehyde in water of washing of imported fruits by using the experimental design method.
- To investigate which techniques of washing get the significant level of formaldehyde in imported fruits.

MATERIAL AND METHODS

Figure 1 shows a photograph of the experiment set-up

In determination of formaldehyde by HI 3838, 0.5mL of water sample placed into plastic vessel by using calibrated syringe provided. Then the filtered tap water added into the plastic vessel contained water sample to 5mL. Two drops of Alizarin Yellow R Indicator added into the vessel and mix carefully swirling the vessel in tight circle.

By using the kit, two possible observations after adding Alizarin Yellow R Indicator, if the solution is a red-orange colour, the HI3838-0 Reagent Titrant Solution added slowly but if the solution is yellow, two scoops of Sodium Sulfite added and mixed.

The formaldehyde level is determined by a simple acid titration. Since the solution is alkaline product, the solution was titrated by HI3838-0 Reagent Titrant Solution dropwise, swirling to mix after each drop until the solution turns from red-orange to yellow. The level of formaldehyde in the sample (%) obtained by multiplying by 10 the millimeter of titration solution read from the syringe scale.

Novelty

- The concentration of formaldehyde can be determined
- There are no published report in Malaysia on the effect of washing techniques on the level of formaldehyde.

Potential Applications

Washing techniques of the fruits as a precautionary measure before consumption of the fruits to minimize the formaldehyde level.

REFERENCES

Wang, S., Cui, X. and Fang, G. (2006) Rapid Determination of Formaldehyde and Sulfur Dioxide in Food Products and Chinese Herbs. Food Chemistry, 10:10-16



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Figure 1. experimental set-up



Figure 2. Techniques of washing

Table 1. Experimental Design

Std	Run	Block	Factor 1 A: Peeling	Factor 2 B: Washing Method	Factor 3 C: Treatment	Response 1 Formaldehyde µg/L
12	1	Block 1	Peeled	Soaked	H0338	
15	2	Block 1	Unpeeled	Rinsed	UV-Vis	
7	3	Block 1	Unpeeled	Soaked	H0338	
4	4	Block 1	Peeled	Rinsed	H0338	
19	5	Block 1	Unpeeled	Soaked	UV-Vis	
17	6	Block 1	Peeled	Rinsed	UV-Vis	
20	7	Block 1	Unpeeled	Soaked	UV-Vis	
24	8	Block 1	Peeled	Soaked	UV-Vis	
22	9	Block 1	Peeled	Soaked	UV-Vis	
11	10	Block 1	Peeled	Soaked	H0338	
16	11	Block 1	Peeled	Rinsed	UV-Vis	
23	12	Block 1	Peeled	Soaked	UV-Vis	
6	13	Block 1	Peeled	Rinsed	H0338	
2	14	Block 1	Unpeeled	Rinsed	H0338	
1	15	Block 1	Unpeeled	Rinsed	H0338	
9	16	Block 1	Unpeeled	Soaked	H0338	
8	17	Block 1	Unpeeled	Soaked	H0338	
18	18	Block 1	Peeled	Rinsed	UV-Vis	
3	19	Block 1	Unpeeled	Rinsed	H0338	
10	20	Block 1	Peeled	Soaked	H0338	
21	21	Block 1	Unpeeled	Soaked	UV-Vis	
14	22	Block 1	Unpeeled	Rinsed	UV-Vis	
5	23	Block 1	Peeled	Rinsed	H0338	
13	24	Block 1	Unpeeled	Rinsed	UV-Vis	

Table 2. Design Summary

Design Summary											
Design Type	Factorial		Blocks	24							
Initial Design	2 Level Factorial		Blocks	No Blocks							
Center Points	1										
Design Model	31										
Factor	Name	Units	Type	Low Actual	High Actual	Levels	2				
A	Peeling		Categorical	Unpeeled	Peeled	Levels	2				
B	Washing Method		Categorical	Soaked	Rinsed	Levels	2				
C	Treatment		Categorical	H0338	UV-Vis	Levels	2				
Response	Name	Units	Obs	Analysis	Estimate	Maximum	Mean	Std. Dev.	Ratio	Trans	Model
Y1	Formaldehyde (µg/L)	µg/L	9	Factorial	No Data	No Data	No Data	No Data	N/A	None	No model chosen

RecoTAC

Recovery Tool For Addiction Counseling

Reading to Recover : Exploring Bibliotherapy as a Motivational Tool for Recovering Addicts



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Objectives

- To provide counselors of recovering drug addicts with an alternative approach based on bibliotherapy aimed at helping addicts to explore themselves
- To guide counselors through the process of helping recovering drug addicts explore themselves by identifying with others in similar situations
- To help counselors inspire change in addicts by learning about other successfully recovering addicts

Introduction

RecoTAC is a tool developed to help counselors of recovering addicts work through an alternative approach aimed at helping addicts to explore themselves during the counseling process. The tool is based on an approach called bibliotherapy, a technique for structuring interaction between the client and the therapist based on mutual sharing of literature in fulfilling the client's therapeutic needs. It is also a form of supportive psychotherapy in which carefully selected reading materials are used. In bibliotherapy, the objective is to enable catharsis, which refers to the cleansing of emotions brought about through expressing oneself through some form of art, including literature. Counsellors of drug addicts need to help their clients to understand themselves and to cope with problems by providing literature relevant to their personal situations and developmental needs at appropriate times. The approach seeks to help recovering addicts identify with characters in the literature they read and to explore their own behaviors, tendencies and stage of change by discussing those of the characters. In general, the process of bibliotherapy goes through four basic stages: *identification*, *selection*, and *presentation* of literature, and *follow-up*. RecoTAC is designed to incorporate these stages into the counselling process, using a monograph of true stories of recovering addicts specifically compiled to complement the tool. The tool guides and support counsellors through these stages so that they can in turn help their clients. RecoTAC may be used in individual counseling or group counseling, and requires patience and practice on the part of the counselor.

The RecoTAC Process

The process consists of 5 steps carried out over a total of 6 to 10 sessions, depending on the responsiveness of the client(s) at each step. The following description of the process refers to group counseling, but it may be applied to individual counseling as well.

Step 1: Identifying and selecting literature

At this stage, the counselor needs to identify the backgrounds and needs of his clients, and select a chapter or chapters from the monograph appropriate for each addict. The reading material must feature characters and problems relevant to the addict's situation and needs.

Step 2: Structuring (Presentation of literature) Estimated duration : 1 – 2 hours

At this stage, the counselor needs to gather clients (suggested maximum of 10) in an environment conducive for a counseling. In the case of group counseling, a structuring process is conducted to inform the group members of their responsibilities as well as the ground rules of the group work. After group members have established a rapport with the counselor and among themselves, the selected chapter is presented to them. Group members are informed that every individual will need to read at least one article/story before coming into the next session.

Step 3: Group Dynamic (Presentation/Follow-up) Estimated duration : 4 to 5 sessions

Using the standard procedures for group counseling process, group members are requested to share their responses to what they have read. At this stage, it is imperative for the counselor to facilitate the sharing of feelings, thoughts and reflections. The counselor encourages self-exploration and self-disclosure during the sharing process so that they lead to catharsis, whereby the client achieves a sense of having 'cleansed' himself/herself, accepting who he/she is, and what he/she has done and needs to do. It is only after this cleansing that true healing or recovery can begin. The counselor's intervention focuses on what individuals have learned from the articles and they can improve themselves in terms of their readiness to change, to stay in sobriety (total recovery from addiction and maintenance of total recovery). Significant issues raised by the group members during the discussion must be pointed out and explored further at this stage.

Step 4: Developing a treatment plan

The counselor helps clients to develop a treatment plan based on the experiences learned and gained from the sharing process. Group members are asked to prepare proper documentation and records of action.

Step 5: Termination (Follow-up) Estimated duration : 2 hours

The counselor terminates the counseling session process after evaluating every client's treatment plan and its viability. An evaluation of every client's readiness is conducted to help him/her identify his/her readiness and to counter the barriers to change.

NOVELTY AND INVENTIVENESS

RecoTAC is a novel approach / tool that makes use of research and knowledge from the fields of drug addiction treatment and rehabilitation, counseling and literature to aid in the battle against an enemy of current and critical concern in Malaysia. It was designed to address an important need in drug addiction counseling: the need for addicts to engage in self-disclosure and to respond willingly to an appropriate stimulus. RecoTAC utilizes the true stories of successfully recovered addicts as that stimulus, recognizing that there can be no better encouragement for addicts than the evidence of other addicts who have gone through and overcome the same problems.

Recovering addicts who went through the counseling process in which RecoTAC was used have identified the following benefits:

- **Self-disclosure:** RecoTAC helps them open up and share their insecurities, knowing that there are other addicts who have shared and are sharing their experience.
- **Confidence:** The testimonials of successfully recovered addicts help hard-core recovering addicts to gain self-confidence and a sense of preparedness for the challenges of the long recovery process.
- **Relapse Prevention:** Reading about the problems faced by successfully recovered addicts raises awareness of the pitfalls and temptations that need to be avoided in order to prevent relapse.

COMMERCIAL POTENTIALS

A new tool for professional helpers in addiction counseling

CONTRIBUTION TO SUSTAINABLE DEVELOPMENT

- RecoTAC will be able to be applied as a meaningful recovery tool in addiction.
- RecoTAC enhanced counseling processes as well as a motivational tool for changes amongst recovery addicts in the rehabilitation process.

ACADEMIC RECOGNITION

- Abd. Halim, M.H., & Mardziah Hayati, A. (2005) Bibliotherapy : A Literature Based Alternative Approach in The Helping Process : Jurnal PERKAMA 141-151.
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THE EFFECTIVENESS OF ANNOTATIONS IN COMPUTER ASSISTED INSTRUCTION (CAI) IN ENHANCING STUDENTS COMPREHENSION OF A SCIENCE-BASED TEXT

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INTRODUCTION

Traditionally, textbooks have been the focal point for most of the instruction that students incur during class lectures or related educational activities. However, lack of meaningful integration between the teacher and content found in the textbooks can contribute to students' lack of knowledge on how they can approach the texts found in the book when they faced with a problem that mostly occurs in science education. As such, the use of CAI in the learning process has been to be effective due to the primary values and effects of the multimedia presentations in facilitating the learning environments that include having access to images, providing learners with visual information via pictures and animations associated to a context identified

SUMMARY OF FINDINGS

Results of the analysis indicate that there was a positive response towards the use of presentational mode of (text animation) in comparison to the use of (animation sound) in enhancing the global understanding of the text

CONCLUSION

The development of the multimedia software in relation to facilitating the students' comprehension should be lauded:50

- They positively enhance the understanding of the concept learned
- They provide attractive and a clearer explanation of information through the use of its dynamic presentation.
- Such tools can also assist the teacher in developing an individualised learning program to better meet the varied needs of students found in most classrooms especially in facilitating the weak students in enhancing their level of comprehension of the content text assigned.

However, in developing any multimedia software tools it is significantly important that:

- The constructions of any annotations found in the learning tool should provide referential connections between the two mental representations (verbal and visual representations) in optimising the comprehension level of the students in the texts read.
- Concerns regarding the effectiveness of computers in aiding the understanding and learning of the concepts learnt will then be addressed as the learners' role to be able to decode information from the screen as a more self conscious act of creating knowledge from a variety of presentational mode is also taken into considerations.

ACADEMIC RECOGNITION

Part of the paper entitled "The effectiveness of annotations in CAI in enhancing students comprehension of a science-base text" was presented at The University Science of Malaysia Higher Education Forum, Penang, Malaysia. 7-11 November

METHODOLOGY

Experimental Group 1
Text+ animation
(20 students)

Experimental Group 2
Sound+ animation
(20 students)

ANALYSIS



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EFFICIENT CONTROL OF VIRUS PROPAGATION (ECOVP)

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INTRODUCTION

The Efficient Control of Virus Propagation system is capable to educate users in handling computer virus incidents and at the same time helps to control computer virus propagation. This system uses an artificial intelligence technique called "Case Based Reasoning".

- To produce a system that is capable to help user handles virus incident efficiently and effectively using case based reasoning technique.
- The system is capable to educate user about computer viruses and helps to control computer virus propagation.
- To study and analyze the computer viruses awareness in Klang Valley and Putrajaya

PROJECT OBJECTIVES

METHODOLOGY

- Using V-Shape software lifecycle model
- Conduct questionnaire to analyze computer virus awareness among users.

FINDINGS

- Based on the questionnaire researcher conclude that users have a good knowledge related with the eradication procedure, anti-virus functionalities and capabilities.
- The system gives an accurate, efficient and effective way in handling virus incident.

NOVELTY AND INVENTIVENESS

- Produce a new virus classification
- Produce a new virus system that is ECOVP incident handling system.

RESEARCH POTENTIALS

- A report of knowledge and attitudes of computer viruses in Klang Valley and Putrajaya.
- Educate end user about handling computer viruses incident.
- User is capable to handle virus incident effectively by using this system and help to control the computer viruses propagation.

COMMERCIAL POTENTIALS

ECOVP system as computer virus incident handling software

CONTRIBUTION TO SUSTAINABLE DEVELOPMENT

- A new virus classification that can be a guideline for virus researcher in understanding computer virus.
- A new system called ECOVP system

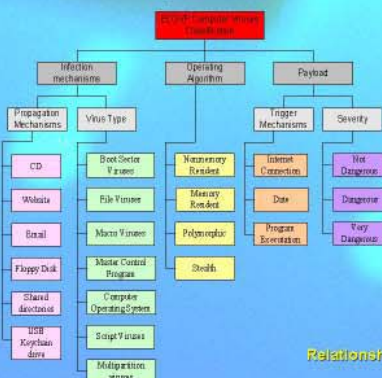
Similarity Function

$$\text{sim}(f_1^{-1}, f_1^{-2})$$

$$\text{Local Similarity} = \sum_{i=1}^n W_i \times \text{sim}(f_1^{-1}, f_1^{-2})$$

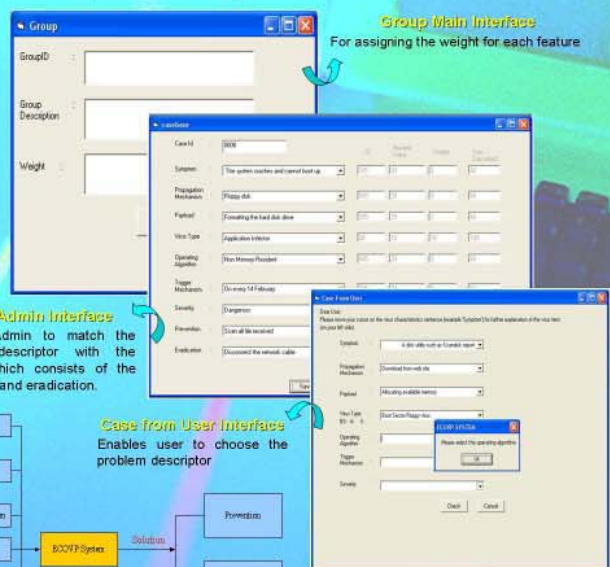
$$\text{Global Similarity} = \text{Sum Total for all local similarity}$$

ECOVP Computer Virus Classification



Main Admin Interface

Enables Admin to match the problem descriptor with the solution which consists of the prevention and eradication.



Relationship between ECOVP Virus Classification and ECOVP System

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Pcepta07.



Efficient Detection of Worm Attack (EDOWA)

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INTRODUCTION

EDOWA is a system that is capable to detect worm efficiently and provide an early warning to the system administrator. Worms are major threat to Internet-connected hosts and networks. Due to their nature that spread epidemically; they need to be detected quickly in order to contain its outbreak.

OBJECTIVES

- To detect new worm's attack based on the network packet using fuzzy logic technique
- To produce a system that is capable to provide an early warning to the system administrator

METHODOLOGY

- Using V-shape software lifecycle model
- Using qualitative review through books, journals and online resource for information on adaptive threshold and fuzzy logic

WORM OUTBREAK CHARACTERISTICS

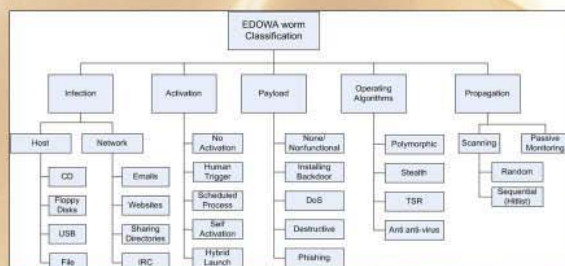
- When a worm outbreak occurs, it often produces anomalous network traffic patterns which are caused by enormous increase of probing signals, network scanning and attack packets.
- This kind of increment make it possible to detect an early outbreak by monitoring the network and look out for any anomalous increase of certain type of network packet.

FINDINGS - WORM DETECTION TECHNIQUE

This system implements adaptive threshold to detect anomalous increase of certain payload in network traffic packet. Only the data part of the network packet are recorded and any repeated same network content will be grouped together and counted to produce a graph. Administrator will be warned of any anomalous frequency of certain payload in network traffic packet.

NOVELTY AND INVENTIVENESS

- To produce new worm classification that has been tested used as the basis to build this system
- To produce EDOWA with new formula of artificial intelligence using adaptive threshold and fuzzy logic



EDOWA Worm Classification

REFERENCES

- Zou, C. C., Gong, W., Towsley, D., and Gao, L. 2005. The monitoring and early detection of internet worms. *IEEE/ACM Trans. Netw.* 13 (5) 961-974.
- Malan, D. J. and Smith, M. D. 2005. Host-based detection of worms through peer-to-peer cooperation. In *Proceedings of the 2005 ACM Workshop on Rapid Malcode*, Fairfax, VA, USA, WORM '05. ACM Press, New York, NY, 72-80.

USEFULNESS OF RESEARCH

- Contribution for malicious code research
- A system that is able to give early warning to the users especially the system administrator

COMMERCIAL POTENTIALS

Can be commercialized as the IDS software.

CONTRIBUTION TO SUSTAINABLE DEVELOPMENT

- Ground work for future research especially in malicious code field
- Able to detect worm attack at the early stage and to curb the widespread quickly

ACADEMIC RECOGNITION

- Emran Mohd Tamil, Mohd Yamani Idna Idris, Ahmad Helmi Mohd Isa, Tai Sin Fong, Abdul Hamid Othman (2006), *Towards a Fuzzy Graph Based Worm Detection And Early Warning System*, In Proceedings of 3rd International Conference on Artificial Intelligence in Engineering and Technology (ICAET 2006), 22-24 Nov 2006, Sabah, MALAYSIA.
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- Siti Aishah Md Nor, Madiah Mohd Saudi and Emran Mohd Tamil (2007), *EDOWA Worm Classification*, International Conference on Computational Intelligence and Security (CIS), IEEE.

Adaptive threshold formula

$$\sqrt{\sum \left\{ \text{frequency of network packets} \cdot \left(\frac{\sum \text{frequency of network packets}}{\sum \text{network packets}} \right)^2 + 10 \right.}$$



Main Interface: Real-time Network Packet Monitoring

Graph generated from the frequency calculation of most active content payload in the network traffic collected

Packet Log: Archive of network packet collected & analysed



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A High Speed Gigabit Network Coprocessor Chip Design to Detect Polymorphic Internet Worm

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INTRODUCTION

Polymorphic represents a very dangerous type of future worm that need to be addressed before it becomes a reality. This project proposes a (Field Programmable Gate Array) FPGA based implementation of approximate string matching algorithm (K-difference) to detect polymorphic or mutated worm.

METHODOLOGY

IMPLEMENTATION: RECONFIGURABLE HARDWARE

ALGORITHM: APPROXIMATE STRING MATCHING

APPLICATION: POLYMORPHIC WORM
DETECTION



Let i be filled with the worm signature that we want to match
Let j be filled with the network traffic that we want to search
Let $T[i,j]$ as the error

$T[i,0] = 0$
 $T[0,j] = i$

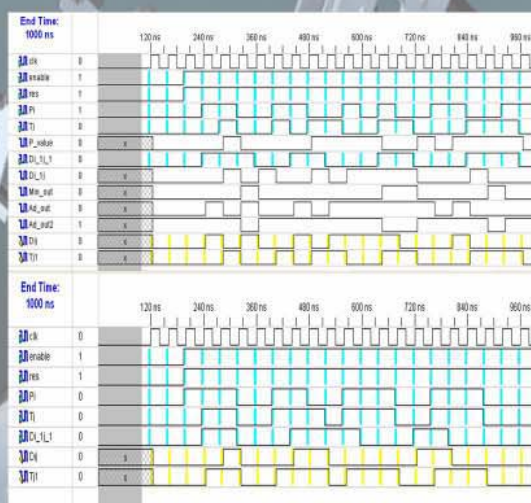
If $X_i = Y_j \rightarrow p=0$, else $p=1$
 $T[i,j] = \min\{T[i-1,j-1]+p, T[i,j-1]+1, T[i-1,j]+1\}$

K-difference formula
calculation

K-differences (x, m, y, n, k)

```
1 for j ← -1 to n-1
2   Do T[-1, j] ← 0
3 for i ← -1 to m-1
4   Do T[i, -1] ← i+1
5 for j ← 0 to n-1
6   Do for i ← 0 to m-1
7     Do if x[i] = y[j]
8       Then p ← 0
9       Else p ← 1
10    T[i, j] ← min{T[i-1, j-1]+p, T[i, j-1]+1, T[i-1, j]+1}
11 If T[m, n] ≤ k
12   Then REPORT (j)
```

K-Difference programming
implementation



Simulation & Synthesis Output for the Processing Element (PE) Block



Precipta 07.

OBJECTIVES

- Applying k-difference algorithm to detect worm with polymorphism (mutation) ability
- Implement the engine in high performance reconfigurable devices

RESEARCH POTENTIALS

- The flexibility of reconfigurable hardware is similar to reprogrammable software but it comes with the hardware performance.
- Applications that require intensive computation with demanding high system performance such as network security application (IDS for example) are suitable candidate to utilize FPGA architecture.

FINDINGS

K-difference Approximate String Algorithm

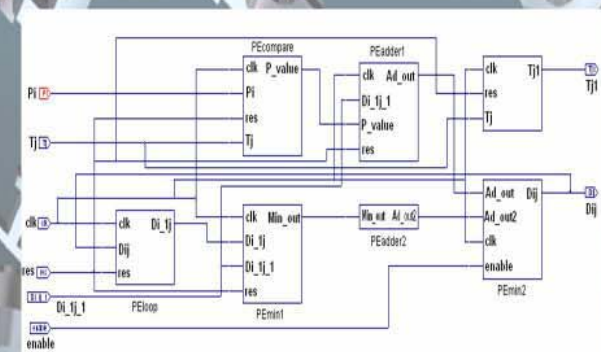
- K-difference is an approximate string matching algorithm that check how similar between a set of string towards a subset of a larger string based on its differences calculation.
- Approximate string matching has been implemented across various applications such DNA matching, spelling error correction and bio-informatics application.

FPGA Solution

- Hardware solution could provide a very high speed solutions compared to software solutions.
- FPGA devices provide a powerful platform with the advantages of ASIC design, including potential for parallelism, very efficient bit-level operations, and high bandwidth.
- FPGA allow the circuit to be reprogrammed to add or modify any function.

NOVELTY

- A new technique applying k-difference algorithm to detect worm with polymorphism ability
- A new high speed devices implementation for worm detection



FPGA implementation block diagram of the polymorphic worm detector

ACADEMIC RECOGNITION

- Nik Ismaliza Nik Idris, Emran Mohd Tamil, Mohd Yamani Idna Idris and Abdul Hamid @ Hamid Othman, 'Future Worm: A Review on Polymorphic Worm', MyEduSec Seminar 2007, Information Security In Educational Institution, 28-29 May 2007, Terengganu, Malaysia. (Status: Published).
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- Nik Ismaliza Nik Idris, Emran Mohd Tamil, Mohd Yamani Idna Idris, Zaidi Razak and Norzaily Mohamed Nor, 'A Review on Internet Worms and Polymorphic Worm', JASA Journal Volume 3, Centre for Research Excellence, UCSI, Malaysia. (Status: Full paper already submitted for evaluation).

READING ACADEMIC TEXTS AMONG FIRST YEAR BACHELOR OF FOOD TECHNOLOGY STUDENTS OF USIM



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& Haliza Harun
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OBJECTIVES

This study is carried out with the objectives of finding out:

1. If there is a significant difference in the means of vocabulary reading test scores between students who received treatment (the use of website article) and those students who did not receive any treatment.
2. If there is any significant difference in the means of comprehension test scores between students who received treatment (the use of website article) and those students who did not receive any treatment.



METHODOLOGY

The respondents were divided into two groups; experimental and control. Each group was given five passages followed by five tests. The theme of the passages was food technology. Each test contained five vocabulary and five comprehension questions. In answering the test questions, three methods were employed for both groups:

- (1) use of the dictionary
- (2) discussion of the texts with the instructor
- (3) explanation given by the instructor on the texts

However, the experimental group received treatment on the passages given to them. The treatment came in the form of using five website articles to answer the reading tests. This was done so as to enhance the respondents' understanding of the passages. For each session, the respondents in both groups were given one test. Each test contained a passage about 350 words long. The passage contained five comprehension and five vocabulary questions. The respondents were given forty-five minutes to answer the questions. The theme of the texts was food technology. The scores for each test were recorded and analyzed through right wrong analysis and frequency distribution.

RESULT & DISCUSSION

Based on the results obtained in investigating the significant difference of using website articles in enhancing the learners understanding of the assigned academic texts, it can be concluded that there is difference in the means of vocabulary and reading comprehension test scores between respondents who received treatment (the use of website article) and those respondents who did not receive any treatment. It is pertinent to point out that although the differences existed are discernable, the role of input obtained from the website articles has facilitated the learners not only in their comprehension skills but also in relation to their meaningful retention of their vocabulary acquisition.

CONCLUSION

It can be concluded that the use of website articles in enhancing students comprehension level should be seen as one of the pedagogical method in activating the schemata of the students. As reflected in the outcome of this study, the experimental group was able to obtain higher average scores in not only the total scores of each test, but also the average scores for the comprehension section as well as the vocabulary section found in all the five separate tests.

RELATED PUBLICATIONS

• "To Net or Not to Net: Internet in the Reading Class" - Paper Presented at 5th International Seminar on ELT, Beijing, China. 16-21 May 2007.

• "Using Internet to Improve Academic Reading" - Paper Presented at 3rd CAMTESOL, Phnom Penh, Cambodia. 23-24 February 2007.





EVALUATION OF THE AMANAH IKHTIAR MALAYSIA FOR POVERTY ALLEVIATION: A CASE RURAL AREAS IN TERENGGANU

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INTRODUCTION

Poverty is a problem that never been settled yet. In Malaysia, the study of poverty has a special significance in the economic development process since 1970 where the main objective is to alleviate poverty. Today, poverty is predominantly a rural phenomenon. According to Khan (2000) almost 63 percent of world poverty is found in rural areas. It also happened in Malaysia where the poverty gap in rural areas was five times higher than in urban areas, indicating that poverty was much more severe in the rural areas (Ninth Malaysia Plan, 2006).

Microfinance is one of the strategies to eradicate poverty especially in the rural areas. Microfinance can be defined as the provision of financial services, primarily savings and credit to poor households, which do not have access to formal financial institutions (McGuire & et al 1998). Amanah Ikhtiar Malaysia (AIM) is the largest microfinance institution in Malaysia that focuses to the poor especially in the rural areas. The main objective of its establishment was to uplift households out of poverty through providing small loan to the rural poor. The loan is to finance income generating activities such as farming, trading and fishing for example to buy seeds, raw materials and sampan.

RESEARCH OBJECTIVE

The main objective of the study is to analyze the effectiveness and efficiency programs of AIM in eradicating poverty in selected rural areas in Malaysia

METHODOLOGY

The research used quantitative method. The research investigated the role of AIM microfinance programs in four districts in Terengganu namely Kuala Terengganu, Hulu Terengganu, Besut and Pasir Puteh. These four districts were chosen because of the highest recipients of AIM loans in Terengganu and Terengganu is the poorest state in Peninsular of Malaysia (Ninth Malaysia Plan, 2006). A survey questionnaire was conducted to evaluate the effectiveness of AIM programs for poverty alleviation. Besides, the interviews with AIM Officers and AIM Branch Managers have been done to compile the data from respondents. Secondary data was obtained through publication done by AIM, newspaper, internet and library to further strengthen the understanding on the subject matter.

FINDINGS

The result found that AIM microfinance programs for poverty alleviation especially in the rural areas was successful and majority of respondents show that their monthly income was increased compared to that prior to their participation in AIM programs. The study found that 71% of respondents their monthly income above poverty line income that stated by government. Their living condition also improved which is more than 70% of respondents were living in their own house complete with basic facilities such as electricity and clean water. 100% shows that at least they have television, bed, kitchen, fan and sofa. Although the programs were succeeding but AIM only reach about 4% of the total poor in Malaysia because lack of fund and staff.

POLICY IMPLICATIONS

The current registration is inadequate for AIM as NGO to cooperate in microfinance programs and therefore, a new provision should be provided for licensing the MFI. It would be an opportunity for new MFI to be set up and this will further enable targeting and direct service to the informal sector. Attention should be given to abolish the program credit leakage to non-poor household because the study found that AIM still give a loan to their clients that not poor anymore. The study also found that some of respondents were joined AIM programs more than 10 years. It can be concluded that respondents too depend on AIM loan to finance their activities even though they are not qualified anymore.

ACADEMIC RECOGNITION

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•Norhaziah Nawai & Mohamed Sharief Bashir. 2006. "Evaluation Of The Microcredit Program for Poverty Alleviation: A Case of Amanah Ikhtiar Malaysia (AIM)". National Seminar in Islamic Banking and Finance (IBAF2006). Kuala Lumpur.

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FATWA DATABASE MANAGEMENT (FDM)

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INTRODUCTION

Fatwa has a vital role in Islam because it helps to explain the Divine Revelation in both religious and temporal matters. In the past paced world we live in, the Muslim ummah requires accurate and updated data in order to make informed and wise decisions. Fatwa Database Management (FDM) is a database of fatwa collections and information related from all over the world. FDM collects all fatwa from Malaysia and abroad countries for people and the researchers' guidance and references. The web based system was developed as a reference source in solving the issues and problem related to Islam law which it targeted the whole level of people globally

OBJECTIVES

The objectives of the development project of FDM are:
To develop a systematic global fatwa management database

- To construct a web based system to accumulate findings and information on fatwa as well as share and extend knowledge systematically

METHODOLOGY

There are 4 stages that involved in this research which are:
Planning and prototype development; FDM with the Planning stage and the prototype development stage which took 1 year to collect inputs given by every member that involved in this project. FDM is completed by 3 main group that is; technical, content management and operation that have combination of technology, management and fatwa background.
System implementation; System implementation stage took place in 2004 which concentrating on further user requirement, features enhancement, integration and testing the whole system.
Pasca system implementation; Pasca System Implementation took place in from 2005 until 2006.

CONTRIBUTION ON SUSTAINABLE DEVELOPMENT

This web based system has high value where it can nurture the integration of ummah through:

Information Sharing

Information related to fatwa can be shared via a portal which emboldens the information exchange and emergent among users all over the world.

Globally accessible

Globally assessed through the similar interface and 3 different languages has been provided for user –Malay language, English and Arabic.

Conservation

The system is also meant to conserve and extrude the sources and fatwa information which has been decided as guidance and references to researchers and public

Synergistic

A synergistic collaboration can be developed among institutions and agencies related for the purposes of research facilities in national, regional and international level

FINDINGS

FDM System is able to accommodate user in these aspects of:
User can get fatwa information globally from a structured database
•Accumulating findings and information on fatwa as well as sharing and extending knowledge systematically

Novelty

FDM provides the legitimate and trustful fatwa information of fatwa database using the computer technology thus offers the information to be accessible by every people around the world at any place and anytime. The fatwa is a ruling that conduct as a source of guidance to Muslims to solve the nowadays issues and challenges, where at this point FDM database management meets the need of Muslim society.

Commercial Potential

FDM have potential in commercial in terms of:

FDM can be used by other organization in this country such as Mufti Department through smart sharing, whereby INFAD and other Mufti Departments can collaborate on upload and updating fatwa.

FDM can give awareness to community related to multidimension and the relation with the implementation of Islam law in different situation and location of community and also to eliminate uncertainties among them in order to build understanding and cooperative in Islam society.

FDM can assist the fatwa decision making thus reduce the time needed in the process.

FDM possibly will be use to enhance research regarding fatwa in proactive way because of the existing knowledge and source that is easy to be accessed.

Usefulness research

FDM Services:



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SIRAH RASUL SUBJECT AT RELIGIOUS PRIMARY SCHOOL (SRA): PILOT STUDY ON THE SYLLIBUS AND ITS EFFECTIVENESS IN SEPANG, SELANGOR DARUL EHSAN

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INTRODUCTION

➤ Sirah Rasul is one of the subtopics in Sunnah Studies which describes the whole Prophet Rasulullah (p.b.u.h) life. Islam is religion which is based on originality and reliability of facts. Therefore, Sirah Rasul must also based on facts that must also based on fact that original and reliable.

➤ Since Sirah Rasul is being taught to all pupil Year 3 to Year 6 pupils in all SRA. Thus, this study is very important in order to determine the effectiveness of teaching and process of this particular subject and also to see how far it affects pupils daily life.

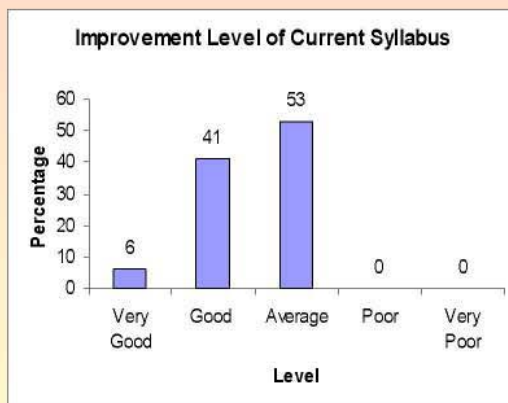
OBJECTIVE

- To study in detail the syllabus of Sirah Rasul subject (including to identify errors and mistakes in the current syllabus) at Religious Primary Schools in Sepang, Selangor and to observe the application of the teaching and learning of this subject in the places involved.
- To identify the effectiveness of the subject in the pupils daily life.

FINDINGS

• The findings of the study also show that the curriculum of the Sirah Rasul subject are not free from weaknesses and errors involving the textbooks of year three to year six a part of the lack of teaching aids and sources of references for the teachers involved.

• However, this research proves the Sirah Rasul subject should be continued for Sepang SRAs students and also in Selangor generally. Improvement Level of Current Syllabus Content Compared to Previous Syllabus



➤ It is suggested that the curriculum should be improved eventually in order to ensure the noble objective will be achieved in the future.

CONTRIBUTION TO SUSTAINABLE DEVELOPMENT

- The teaching guide will be very useful to all SRA teachers at all time.
- It also helps the Islamic Education Department to improve the teaching module and curriculum specification in future.

METHODOLOGY

- Method of documentation – Documents were gathered from Education Department of JAIS.
- Interviews were carried out with some selected teachers from 10 selected SRAs and some selected officers from JAIS.
- Questionnaires were given to 200 selected pupils from 10 selected SRAs.

NOVELTY AND INVENTIVENESS

- The study about this Sirah Rasul subject in SRAs, Sepang, Selangor, has not been carried out yet before.
- The research will product a new complete guide for teachers that contains lesson of Sirah Rasul, the learning outcomes, suggested activities and references.

USEFULNESS OF RESEARCH

- It will be very useful and resourceful to all Sirah Rasul teachers in SRAs, Selangor.

COMMERCIAL POTENTIAL

- It provides complete illustrations and detailed descriptions about important places, mosques, warsites, that are found in year 3 to year 6 texts.
- It also contains full descriptions of most figures who are mentioned in the same texts.

REFERENCES

- Huda cAli Jawwad al-Shamriyy dan Saadun Mahmud al-Samuk. 2004. *Al-Turuq al-Ilmiyyah li Tadrīs al-Hadīth wa al-Sirah wa al-Fiqh min al-Tarbiyyah al-Islamiyyah*. cAmman: Dar Wa'il li al-Nashr.
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Pecipta07.



Personal Digital Assistant (PDA) In Teaching Numerical Methods (The "Pocket NSolver" Package)

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INTRODUCTION

PDA's are "personal digital assistants," usually designed to fit in one's pocket, which can store documents, spreadsheets, calendar entries, games, databases, and lots of other resources normally associated with a laptop or desktop computer. The difference is that PDA's are relatively inexpensive and highly portable.

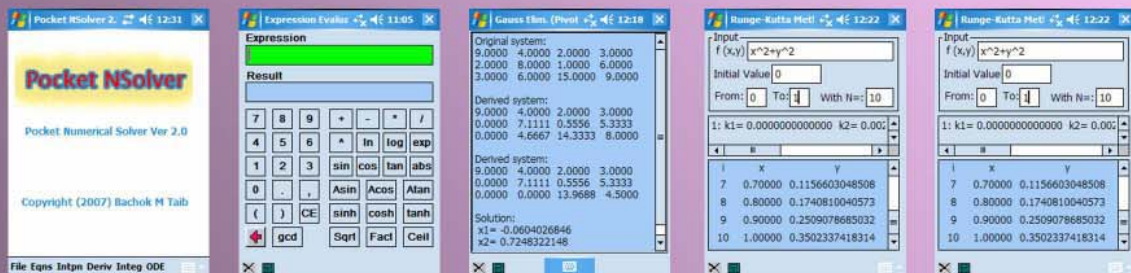
ADVANTAGE OF USING PDA'S IN EDUCATION

The most striking feature of PDA's is their portability. Using PDAs, *students can easily bring their computer to the project, instead of having to bring their project to the computer.* Students can truly have "anytime, anywhere" access to technology, improving the quality and effectiveness of the learning task. Portability can make a difference in a wide variety of settings, such as the lecture room, tutorial room or a field trip.

THE "POCKET NSOLVER" PACKAGE

A software package was developed for assisting in the teaching of the Numerical Methods. The "Pocket NSolver" is designed to run on Pocket PC under Mobile Window 2005 operating system. "Pocket NSolver" contains seven modules, Expression Evaluator, Solution of System of Linear Equations, Solution of Nonlinear Equations, Interpolations, Differentiations, Integrations and Solution of Ordinary Differential Equations.

SNAP SHOTS



NOVELTY AND INVENTIVENESS

The important feature of the package is the ability to display the intermediate steps before the final results and also the ability to display the results graphically or numerically.

RELATED PUBLICATIONS

Bachok M. Taib (2005). Pocket NSolver. Perisian PDA untuk Pengajaran Kaedah Berangka. Simp Keb. Sains Mat. Ke XIII, UUM, Hotel Holiday Villa Alor Star Kedah





Factors Influencing Individual Participation in Zakat

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INTRODUCTION

Zakat is one of the sources of funds available within the Islamic economic and financial system. Although it is obligatory for Muslims, the amount collected is relatively small compared to the income tax collections. One of the reasons could be lack of motivation among Muslims. The study aims to investigate the factors affecting individual decisions in zakat contribution and hence provide understanding of their motivation.



OBJECTIVES

- To determine the factors contributing individual active participation in zakat.
- To determine which factors contribute more in influencing individual participation in zakat either it is mainly due to religious duty or other factors.

METHODOLOGY

A survey questionnaire was designed based on past studies from both conventional as well as Islamic literature. The main dimensions were characterized by religious, utilitarian, self satisfaction and organizational factors. Factor analysis was used to provide some insights into the underlying structure of motivating factors of individuals participating in zakat.

FINDINGS

Based on the sample surveyed, findings indicate that participation in zakat is not only motivated by religious factor but also self satisfaction (for oneself and for others) and organization factor. The implication is that the efforts to raise the level of zakat activities should emphasize not only on the religious aspect but also the individual's and organizational dimensions.



ACADEMIC RECOGNITION

Muhamad Muda, Ainulashikin Marzuki & Amir Shaharuddin. 2005. Internal and External Factors Influencing Individual's Participation In Zakat: Preliminary Results. The Journal of Muamalat and Islamic Finance Research, Vol. 2/ No. 1 2005. pp.77 – 93.

Muhamad Muda, Ainulashikin Marzuki & Amir Shaharuddin. 2006. Factors Influencing Individual Participation In Zakat Contribution: Exploratory Investigation. Paper Presented in Seminar in Islamic Banking and Finance (IBAF), Kuala Lumpur, 29 & 30 August 2006.

A NEW APPROACH OF COMPARATIVE STUDY OF ORANG ASLI KINTAK GROUP'S LIFE STYLE



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PICTURES IN 1948 AND 1986



Penghulu Ehling and his son Ahlong



Simple Henyak or Hut



Wife and daughter weaving basket



Women responsibility: food preparation



Using bamboo for water storage



Using bamboo for cooking



Ehling and Ahlong practice with blowpipe



Selling Rotan at Grik



Choosing the right necessity



Ehling's son, Hamid and his family



Ehling's daughter, Semah and her family



Hamid's mother and in law weaving basket



Food gathering and preparation



Hamid's wife washing food



Din and Dada open bamboo for food



Zubir preparing his blowpipe



Using Santawong to transport rotan



Selling Rotan at Grik

Introduction :

Film is a time machine and a window on the past that can be forwarded or reversed for several purposes. It provides data which can be used as a primary source for past and future study. The film *Nomads of the Jungles* (NOTJ) was produced in 1948 by Louis de Rochemont Associated, an American Film Company for educational teaching aids. The film was widely used in American schools in 1950's – 1980's in Geography and Social Studies. It portrays the life style of Orang Asli (OA) in Malay Peninsular headed by Penghulu Ehling. NOTJ was discovered by the researcher in 1980 during his study in America. From early review, none of the Malaysian authorities or individuals had any knowledge or information regarding the film. In 1984, based on the literature review and several information, the researcher managed to locate the exact location of the filming area and traced the descend of Penghulu Ehling.

Objectives :

- (1) To review the historical context, background and rationale behind the film production
- (2) To assess the 'authenticity and the degree of ethnographicness' of NOTJ.
- (3) To list out the life style portrays in the film (1948) as a "base line" for a comparative study with present group's life style (1986).
- (4) To locate and visually document the same group as it lives now.

Methodology : Chart 1

- (1) Historical research
- (2) Ethnographic film content analysis using Ekman's VIR-D system (Visual Information Display and Retrieval System).
- (3) 'Mediated Film Approach' – it seems that the researcher were present in the film and observed the group
- (4) Margaret Mead's approach "study culture at a distance" – film is a time machine and the distance in term of time was reversed to be at present
- (5) Boasin's 'base line model' – a list of life style from content analysis was used as a tool 'as a check list' for comparison.
- (6) Heider's 'Attribute Dimension Grid' for ethnographic film.
- (7) Participation and observation.

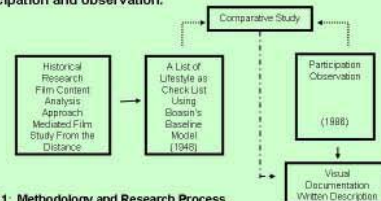


Chart 1: Methodology and Research Process

Findings : Chart 2

- Interrelated Factors Leading to the Production of NOTJ (1948).
- The film lacks ethnographic understanding and supporting printed materials, but the contents are 'authentic' and possess 'high ratings' in several ethnographic attributes.
- The group's basic life style has remained constant and the changes are not rapid.
- Obstacles to rapid changes include their leadership weakness and their attitudes toward life, people and development.
- Filming location area of NOTJ was at Grik Perak involving Orang Asli from Negritos-Kintak group, headed by Penghulu Ehling; currently most of his descend settle down at Kampung Bukit Asu, about 32 km north of Grik
- Approximately 7 hours of 'raw materials' in video footage of the group were recorded and only 59 minutes were used for visual documentation.

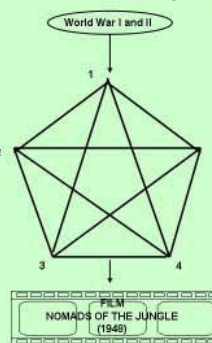


Chart 2: Interrelated Factors Leading To NOTJ Production
(Note: 1- Audio Visual Movement, 2 – Global Understanding; 3 – Geography Awareness; 4 – Progressive Education; and 5 – Study Culture From Distance)

Publication: Academic Recognition:

- *Film Sebagai Alat dan Bahan Kajian*. 1995. Serdang : Penerbitan UPM
- 'Film Sebagai Teks Sekolah'. *Utusan Melayu* 1 Mac 1993. An article, won award of 'Trophy Samad Idris' FINAS, 1994.
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Pecipta07.



Methodology of Studies on Hadith in Public Institutions of Higher Learning: A Comparative Study

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INTRODUCTION

In line with the importance of sunnah in Islam, the study of hadith has been continuing since the first call of Islamic dakwah. The impact of globalization and the emergence of learning system in the IPTA which is based on industrial demands has initiated the changes adjustments in the study of hadith. The time constraints in teaching and increase of softskill courses demand new teaching methodology. Alternatives should be given to these two factors (1) time constraints (2) difficulties in comprehension.



METHODS

This study has identified several variables that may be able to solve the problems related to time constraints and difficulties in comprehension. Among the selected variables are :

- the use of language (Arabic/ English/ B.Malaysia)
- the use of difficult terminologies in hadith
- the use of suitable reference
- the use of teaching aids based on ICT
- Teaching methodology
- Interest and so forth.

This study was administered to 184 students majoring in the study of hadith from 4 IPTA's (UM, UKM, UIAM, USIM).

	Percent
Very Agree	33.3
Agree	45.9
Not Sure	9.6
Disagree	10.9
Total	100.0

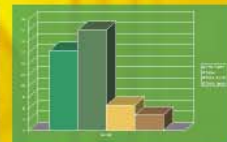


Table 1: ICT Facilitate Understanding

RESULTS AND DISCUSSION

This research shows that the use of teaching aids based on ICT promotes better understanding in the subject of hadith. Apart from that it also helps the educators/teachers/lecturers to facilitate students' understanding of the subject. These two aspects could solve the problem of time constraints. The use of ICT could also support the expertise in the study of hadith.

	Percent
Very Agree	36.1
Agree	45.4
Not Sure	11.5
Disagree	7.1
Total	100.0

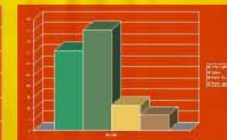


Table 2: ICT Provide a brief/detail understanding



Novelty

The use of teaching aids based on ICT which is implemented in the teaching of hadith in IPTA helps to develop faster understanding, besides saving time in teaching and learning of the subject.

Usefulness research

The findings of this research help the IPTA to solve the insufficient time and lack of course content related to hadith due to the increase of softskill course.

Commercial Potential

The new approach in teaching hadith adopted in USIM has the potentials to be applied in other IPTA as well as the IPTS inside and outside the country. Skills in teaching using teaching aids based on ICT in the study of hadith can be developed as one of the expertise in USIM through its programs such as the Study Of Sunnah with Information Management and the Study of Quran with Multimedia. The added advantage of this expertise would be able to promote USIM as the hub of Regional Hadith Compilation as proposed in the Seminar Warisan Nabawi SWAN 2007.

Contribution on sustainable development

The introduction to new methodologies in the study of hadith enables this study to compete with the development in this era of globalization. This will continue the legacy of previous scholars as to preserve the hadith and its role in making the missions of Islam Hadhari a success.

CONCLUSION

The use of teaching aids based on ICT is suitable in the teaching of hadith as it makes the teaching process easier and saves time.

ACKNOWLEDGEMENT

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