

12:45 - 13:10

Anti-Cancer Activity of Un-inoculated Agarwood Branch Against MCF-7 Breast Cancer Cells <i>Assoc. Prof. Dr Yumi Zuhanis Has-Yun Hashim</i> <i>International Islamic University, Kuala Lumpur, Malaysia</i>	Effect of Antimicrobial Peptide on Apoptosis in HepG2 and HeLa Cell Lines <i>Miss. Wan Siti Nor Atirah Bin Wan Mohamad Azemin</i> <i>Universiti Sultan Zainal Abidin, Terengganu, Malaysia</i>	Production of Extracellular Thermostable Recombinant Phytase by <i>Escherichia coli</i> B121 (DE3) when Glycerol as Carbon Source and Induced with Lactose <i>Ms. Nor Zalina Othman</i> <i>Institute of Bioproduct Development, Universiti Teknologi Malaysia (UTM), Malaysia</i>	Free radical scavenging property and chemical profile of pyrroligneous acid from pineapple waste biomass <i>Dr. Sindhu Mathew</i> <i>Institute of Bioproduct Development, Universiti Teknologi Malaysia (UTM), Malaysia</i>
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13.10 - 14.30

LUNCH BREAK

S1-C: Natural & Herbal Products II	S1-D: Nutraceuticals & Functional Food II	S2-C: Bioprocess and Biomanufacturing II	S2-D: Agriculture and Biotechnology
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14:30 - 14:55

Induction of Apoptosis and Cell Cycle Arrest by Goniothalamin in Human U87 Malignant Glioma Cells <i>Ms. Shuhaibah Akmar Binti Ramli</i> <i>Universiti Sultan Zainal Abidin, Terengganu, Malaysia</i>	Current Challenge in Herbal Drug Development and Registration <i>Dr. Ravi K. B</i> <i>Bioneeds, Bangalore Rural District, Karnataka, India</i>	Bioactive molecules from sea organisms: a new hope for human health and wellness industry <i>Prof. Dr. Amel Hamza-Chaffai</i> <i>Marine Ecotoxicology, Sfax University, Sfax, Tunisia</i> <i>Bioremediation of Industrial</i>	Evaluation Of Different Innovative Agri Technology for Domestic Applications <i>Dr. Rama Yusvana</i> <i>Faculty of Industrial Science and Technology, Universiti Malaysia Pahang (UMP) Malaysia</i>
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14:55 - 15:20

Goblet cells and mucin related gene expression in mice infected with <i>Eimeria papillata</i> <i>Assoc. Prof. Dr. Mohamed A. Dkhil</i> <i>Department of Zoology, College of Science, King Saud University (KSU), Riyadh, Saudi Arabia</i>	Effect of Unripe <i>Carica papaya</i> Flesh Extract on IL-6 Concentration in Peripheral Blood Mononuclear Cell Culture <i>Mr. Jazli Aziz</i> <i>International Islamic University Malaysia, Kuantan, Pahang, Malaysia</i>	Dyes : Black Reactive 5 and Methylene Blue by White Rot Fungus <i>Ms. Siti Zulaiha Hanapi</i> <i>Institute of Bioproduct Development, Universiti Teknologi Malaysia (UTM), Malaysia</i>	Plant viruses-Excellent Nanobioteplates for Wellness <i>Dr. Abid Ali Khan</i> <i>Institute of Bioproduct Development, Universiti Teknologi Malaysia (UTM), Malaysia</i>
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15:20 - 15:45

Protective role of berberine on <i>Plasmodium chabaudi</i>-induced injury in liver and spleen of mice <i>Mr. Mahmoud Y. Lubbad</i> <i>Department of Zoology, College of Science, King Saud University (KSU), Riyadh, Saudi Arabia</i>	Bromelain and Cardiovascular Risk Factors in Diabetes: An Exploratory Randomized, Placebo Controlled, Double Blind Clinical Trial <i>Dr. Ley Chit Moy</i> <i>Lee Pineapple Co., Pte. Ltd. Johor Bahru, Johor, Malaysia</i>	Optimization Of Polysaccharide Production By <i>Lactobacillus Kefiranofaciens</i> Using Response Surface Methodology <i>Mr. Daniel Joe Dailin</i> <i>Institute of Bioproduct Development, Universiti Teknologi Malaysia (UTM), Malaysia</i>	Removal Of Methylene Blue Zn(II)-Impregnated Activated Carbon From Pineapple Waste Biomass <i>Mr. Mohammed Nabil Mohamad</i> <i>Institute of Bioproduct Development, Universiti Teknologi Malaysia (UTM), Malaysia</i>
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15.45 - 16.00

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16.00 - 16.30

POSTER PRESENTATION SESSION

16.30 - 17.00

PANEL DISCUSSION

ABSTRACTS FOR POSTER PRESENTATION

PS2-07

Combined Physical And Chemical Treatment Of Oil Palm Empty Fruit Bunch For The Production Of Bioethanol**Hazirah Binti Abd Hamid¹, Zainul Akmar Zakaria², Umi Aisah Asli¹**¹Department of Chemical Engineering, Faculty of Chemical Engineering, Universiti Teknologi Malaysia (UTM), Johor Bahru, Malaysia.²Institute of Bioproduct Development (IBD), Universiti Teknologi Malaysia (UTM), Johor Bahru, Malaysia.**Abstract**

In the current study, pressure pre-treatment on EFB fibres of oil palm followed by dilute acid pre-treatment was investigated to produce fermentable sugar. Dilute acid pre-treatment was chosen because during preliminary studies it has proven to be the best pre-treatment whereas pressure cooker was utilized as it is one of the existing equipment in the palm oil plant. The condition used was 5 psi, residence time of 30 minutes with 3% sulphuric acid which gives maximum glucose yields of 87.4%. As for hydrolysis process, biomass was subjected to a two-stage-acid hydrolysis, 72% followed by 4% sulphuric acid. Sample then was autoclave at 121°C for 1 hour. Fermentation was carried out using Baker's yeast (*Saccharomyces cerevisiae*) as ferment agents. Pressurized steam followed by dilute acid pre-treatment improved the fermentable sugar levels from EFB, which is expected to eventually increase bioethanol yield.

Keywords: Bioethanol, empty fruit bunch, fermentable sugars.

PS2-08

Optimization Of Exopolysaccharide Production By *Pleurotus Ostreatus* Using Different Cultivation Strategies**Masri, M.H.J¹, Othman, N.Z¹, Abd Malek, R¹, Aziz, R¹, Elsayed, E.A², Wadaan, M.A², El Enshasy, H.A^{1,3}**¹Institute Bioproduct Development (IBD), Universiti Teknologi Malaysia (UTM), Johor Bahru, Malaysia.²Zoology Department, Bioproducts Research Chair, Faculty of Science, King Saud University, Riyadh, Kingdom of Saudi Arabia.³Bioprocess Development Department, City for Scientific Research and Technology Applications (CSAT), New Burg Al Arab, Alexandria, Egypt.**Abstract**

Pleurotus ostreatus or known as oyster mushroom was regarded as one of the most cultivated mushroom around the world. One of the qualities it has is it able to produced exopolysaccharide called pleuran which secreted into the medium during submerged fermentation. The polysaccharide composed mainly of β -(1/3)-D glucose and β -(1/6)-D glucose linked by glycosidic bond. It has molecular weight of 2.4×10^4 Da with molecular formula of $(C_6H_{10}O_5)_x$. The importance of pleuran is that it has the immunomodulatory properties that associated in triggering our immune system response. Nowadays, submerged fermentation is considered as the best method in cultivation this kind of mushroom. However, the production process of this kind of mushroom and its exopolysaccharide production especially in term of medium component is still unclear. In this research, the objectives were to optimize the medium composition and to find the optimum carbon to nitrogen (C: N) ratio for high exopolysaccharide production. Eight different media was screened and followed by factor by factor optimization of the medium component. The factors that been studied were ideal concentration of glucose, yeast extract, ammonium sulfate and dipotassium phosphate. Media number six which contain glucose 60.0 g L⁻¹, yeast extract 2.0 g L⁻¹, $(NH_4)_2SO_4$ 5.0 g L⁻¹, $MgSO_4 \cdot 7H_2O$ 0.2 g L⁻¹, K_2HPO_4 1.0 g L⁻¹ was selected as best media production for *P. ostreatus* cultivation. The experiment then was further with different concentration of each component in the medium six excluding magnesium sulfate heptahydrate which maintained at 0.2 g L⁻¹ throughout all the experiment stage. The range concentration for glucose, yeast extract, ammonium sulfate and dipotassium phosphate was setup between 0 – 120 g L⁻¹, 0 – 4 g L⁻¹, 0 – 5 g L⁻¹ and 0 – 2 g L⁻¹ respectively. In order to get the best C: N ratio for highest exopolysaccharide production, eleven ratio of carbon to nitrogen was experimented ranging from 15:1 to 65:1. Result shown that the optimum concentration for glucose, yeast extract, ammonium sulfate and dipotassium phosphate was 80.0, 4.0, 2.5 and 1.0 g L⁻¹ respectively whiles the optimal C: N ratio recorded was 40: 1. The optimized medium also produced 2.83 g L⁻¹ of exopolysaccharide increasing up to 49 % when compared with un-optimized medium which only produced 1.9 g L⁻¹ of exopolysaccharide.

Keywords: *Pleurotus ostreatus*, exopolysaccharide, submerged fermentation, medium optimization, C: N ratio.