

12:45 - 13:10

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

13.10 - 14.30

LUNCH BREAK

|   |  |   |  |
|---|--|---|--|
| <b>S1-C: Natural &amp; Herbal Products II</b> | <b>S1-D: Nutraceuticals &amp; Functional Food II</b> | <b>S2-C: Bioprocess and Biomanufacturing II</b> | <b>S2-D: Agriculture and Biotechnology</b> |
|---|--|---|--|

14:30 - 14:55

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

14:55 - 15:20

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

15:20 - 15:45

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

15.45 - 16.00  
16.00 - 16.30  
16.30 - 17.00~~ COFFEE BREAK~~  
POSTER PRESENTATION SESSION  
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 Hamid<sup>1</sup>, Zainul Akmar Zakaria<sup>2</sup>, Umi Aisah Asli<sup>1</sup>**<sup>1</sup>Department of Chemical Engineering, Faculty of Chemical Engineering, Universiti Teknologi Malaysia (UTM), Johor Bahru, Malaysia.<sup>2</sup>Institute 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.J<sup>1</sup>, Othman, N.Z<sup>1</sup>, Abd Malek, R<sup>1</sup>, Aziz, R<sup>1</sup>, Elsayed, E.A<sup>2</sup>, Wadaan, M.A<sup>2</sup>, El Enshasy, H.A<sup>1,3</sup>**<sup>1</sup>Institute Bioproduct Development (IBD), Universiti Teknologi Malaysia (UTM), Johor Bahru, Malaysia.<sup>2</sup>Zoology Department, Bioproducts Research Chair, Faculty of Science, King Saud University, Riyadh, Kingdom of Saudi Arabia.<sup>3</sup>Bioprocess Development Department, City for Scientific Research and Technology Applications (CSAT), New Bay 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 its ability to produce exopolysaccharide called pleuran which is secreted into the medium during submerged fermentation. The polysaccharide is composed mainly of  $\beta$ -(1/3)-D glucose and  $\beta$ -(1/6)-D glucose linked by glycosidic bond. It has a molecular weight of  $2.4 \times 10^4$  Da with a molecular formula of  $(C_6H_{10}O_5)_x$ . The importance of pleuran is that it has immunomodulatory properties associated with triggering our immune system response. Nowadays, submerged fermentation is considered the best method for cultivating this kind of mushroom. However, the production process of this kind of mushroom and its exopolysaccharide production, especially in terms of medium composition, 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 were screened and followed by factor-by-factor optimization of the medium component. The factors that were studied were ideal concentration of glucose, yeast extract, ammonium sulfate, and dipotassium phosphate. Media number six, which contains glucose 60.0 g L<sup>-1</sup>, yeast extract 2.0 g L<sup>-1</sup>,  $(NH_4)_2SO_4$  5 g L<sup>-1</sup>,  $MgSO_4 \cdot 7H_2O$  0.2 g L<sup>-1</sup>,  $K_2HPO_4$  1.0 g L<sup>-1</sup> was selected as the best media for *P. ostreatus* cultivation. This experiment was further conducted with different concentrations of each component in the medium, excluding magnesium sulfate heptahydrate which was maintained at 0.2 g L<sup>-1</sup> throughout all the experimental stages. The range of concentrations for glucose, yeast extract, ammonium sulfate, and dipotassium phosphate was set up between 0 – 1.0 g L<sup>-1</sup>, 0 – 4 g L<sup>-1</sup>, 0 – 5 g L<sup>-1</sup>, and 0 – 2 g L<sup>-1</sup> respectively. In order to get the best C: N ratio for highest exopolysaccharide production, eleven ratios of carbon to nitrogen were experimented, ranging from 15:1 to 65:1. Results showed that the optimum concentration for glucose, yeast extract, ammonium sulfate, and dipotassium phosphate was 80.0, 4.0, 2.0, and 1.0 g L<sup>-1</sup> respectively, while the optimal C: N ratio recorded was 40:1. The optimized medium also produced 2.8 g L<sup>-1</sup> of exopolysaccharide, increasing up to 49% when compared with un-optimized medium, which only produced 1.9 g L<sup>-1</sup> of exopolysaccharide.

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