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Fakultas Teknobiologi

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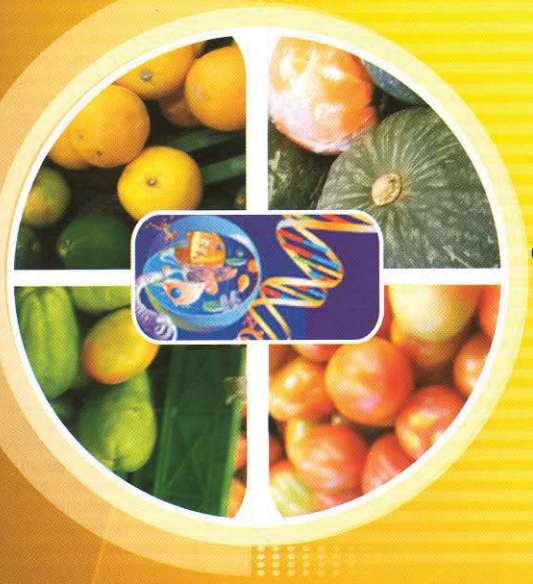

1st International Seminar on

"Natural Resources Biotechnology: From Local to Global"

September 8th – 9th 2015
Faculty of Biotechnology
Universitas Atma Jaya Yogyakarta

Seminar Committee

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Welcome Speech
Chair of the Seminar Committee

Distinguished Guests,
Honorable Speakers,
Ladies and Gentlemen,

It is a great pleasure to welcome all of you to the International Seminar "Natural Resources: From Local to Global". The Faculty of Biotechnology of Universitas Atma Jaya Yogyakarta runs this seminar to commemorate the 50th Anniversary of the Universitas Atma Jaya Anniversary and the 25th Anniversary of the Faculty of Biotechnology. Your presence is your present for the anniversary of our university and faculty as well.

The Anniversary is not the only reason to run this seminar. A greater reason is behind the seminar. Indonesia is rich in biodiversity. It is a challenge for us, as scientist, to maintain the biodiversity and to develop the potential of the biodiversity for the common good. Through this seminar, the scientific research on Indonesian biodiversity can be shared and probably the finding of the new research can inspire us for further exploration. Therefore, the seminars goal is to facilitate the spread of the research on local potential of biodiversity to the global level. Hopefully, it can attract more researchers to explore the wealth of local biodiversity.

The committee invites speakers who are expertise in the research concerning biodiversity. Our invited speakers are Assoc. Prof. Dr. Michael Murkovic from Graz University of Technology Austria (food scientist), Assoc.Prof. Worawidh Wajjwalku from Kasetsart University Bangkok Thailand (Veterinary disease biotechnology), Dr. Kathryn McMahon from Edith Cowan University Australia (Seagrass biotechnology), Prof. Marco Nemesio E. Montano, PhD from University of the Philippines (Seaweed biotechnology), Prof. Jun Kawabata from Hokkaido University Japan (food biochemist), Endang Semiarti, PhD from Universitas Gadjah Mada, Indonesia (Plant biotechnology), Ign. Pramana Yudha, PhD from Universitas Atma Jaya Yogyakarta (Conservation genetics), Dr Machmud Thohari from Technical Team for Environmental Biosafety, Ministry of Enviroment & Forestry Indonesia (Environmental Biosafety), Dr Harvey Glick from Asia Regulatory Policy & Scientific Affairs Monsanto Company (Regulatory Policy & Scientific Affairs Monsanto). It is a good opportunity to learn from the speakers to enhance and to update our knowledge. I hope this seminar is of benefit to all of us.

In conclusion, I wish you a successful seminar and a pleasant stay in Yogyakarta.

With kind regard
Coordinator of conference program

Dr. rer. nat. Yuliana Reni Swasti, S.TP., MP.

WELCOME SPEECH
DEAN
FACULTY OF BIOTECHNOLOGY
UNIVERSITAS ATMA JAYA YOGYAKARTA

Distinguished Guests,
Honorable Speakers,
Ladies and Gentlemen,

On behalf of the Faculty of Biotechnology, Universitas Atma Jaya Yogyakarta and the Committee of the International Seminar, I would like to first of all to extend our heart-felt thanks for your presence at this Seminar. This seminar is so significant in a sense that it focuses on natural resources with local content but by utilizing biotechnology they will become global and worldwide products and services as well.

Biotechnology has been developed very rapidly and it is believed to be "a new wave in the economic world". Biotechnology has contributed in all aspects of humans' life, such as food production, health, industry, environment, etc. The role of biotechnology for the betterment of human beings, however, is still need to be improved. Indonesia, with its huge biodiversity, has a potency to develop and applied biotechnology nationwide.

The role of biotechnology has increased rapidly. Many are believed that biotechnology has become an integral part of modern industries with high economic values. On the other hand, it needs to be closely managed in order to avoid its negative impacts. The are some example of negative impacts with relate to biotechnology application, such as intellectual property rights, genetically modified organisms (GMOs), environmental degradations, biodiversity issues, indigenous people knowledge, biosafety, etc.

The Seminar covers topics such as: Functional Foods, Food Biotechnology, Biopharmacy, Health/Medical Biotechnology, Environmental Biotechnology, Legal Aspect of Biotechnology, Bioinformatics, and Social-Economic Aspects of Biotechnology. This Seminar will be presented nine (9) invited speakers with different topics and expertise. There will be some papers and posters to be presented also in this Seminar from some participants from the Philippines and Indonesia.

Henceforth, in commemorating its 50th anniversary Universitas Atma Jaya Yogyakarta (UAJY) and 25th anniversary of Faculty of Biotechnology, Universitas Atma Jaya Yogyakarta (UAJY) on September 2015, it is worthy and appropriate to explore the newest innovations in the field of research and development of biotechnology to be applied in many aspects for the betterment of human beings. The Seminar takes this opportunity to discuss and hopefully find ways to solve problems faced by human beings in the world.

I would like to take this opportunity to express my sincere thanks and gratitude to the Committee and in particular to the honorable speakers. Before closing this remarks, allow me to ask the Rector of Universitas Atma Jaya Yogyakarta to open this Seminar officially.

Finally, this is an opportune time for me to wish you all in the two (2) fruitful days of interesting and beneficial programs and hope you have a pleasant stay in Yogyakarta.

Thank you very much and may God bless us all. Amen.

Yogyakarta, 8 September 2015

Dean

Drs. B. Boy Rahardjo Sidharta, M.Sc

Brief Contents

Variation of Rice Husk, Corn Husk and Corn Hump Ratio as Alternative Growth Media for Pleurotus osteatus (*White Oyster Mushroom*)

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Abstract

Natural waste like rice husk, corn husk and corn hump are potential as alternatives substrates for Pleurotus ostreatus growth media because its nutrition. This research aimed to obtain the best variation of substrate composition for the growth of the mushroom. Parameters were wet weight of the fruiting bodies (yield), cap's diameter and fruiting bodies morphology. Based on the result, medium consist of 0.5 kg rice husk, 0.25 kg corn husk and 0.25 kg corn hump is the only composition gave the same yield as the control (100% sawdusk) did. There was also no significant difference on cap's diameter and morphology of the fruiting bodies.

Keywords: sawdust, rice husk, corn husk, corn hump, oyster mushroom

1. INTRODUCTION

Edible mushrooms are widely consumed in Indonesia where the climate is suitable for the natural growth as well as the cultivation of certain mushrooms. White oyster mushroom (*Pleurotus ostreatus*) is one of the most commonly cultivated edible mushrooms in Indonesia (Suriawiria, 2002). The cultivation process of white oyster mushroom usually makes use of a sawdust baglog as a substrate for the mushroom growth. Nowadays, the availability of sawdust tends to be limited, hampering the oyster mushroom cultivation in general. Therefore, search efforts for alternative substrates providing sufficient nutrition for the mushroom growth have gained a big interest.

According to Cahyana *et al.*, (2006), the necessary nutrient composition for oyster mushroom growth more or less includes 27% lignin, 70% karbohidrat (selulosa dan glukosa), protein, nitrogen, fiber, and vitamins like tiamin at 100µg/L. All those nutrients are available in sawdust (Senyah, 1989). Rice husk, corn husk and corn hump are examples of agricultural solid waste obtained easily in huge amount in agricultural countries like Indonesia. They are used so far only as mix components for making fertilizer. The carbohydrate content in Rice husk, corn husk and corn hump has been reported to be high enough, making them potential as alternative growth substrates for mushroom growing on sawdust.

This work aimed to evaluate the capacity of those materials in substituting the sawdust portion in the common growth substrate. Their percentage in the total baglog composition was varied to see the influence on the fresh weight and morphology of the fresh mushroom yielded.