

**BAMBOO ACTIVATED CARBON AS ADSORBENTS OF
ETHYLENE GAS RELEASE FROM MANGO: A REVIEW**

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This Final Year Project entitled “**Bamboo Activated Carbon as Adsorbents of Ethylene Gas Release from Mango: A Review**” was submitted by Alia Natasha binti Azmi in partial fulfilment of the requirements for the Degree of Bachelor of Science (Hons.) Applied Chemistry, in the Faculty of Applied Sciences, and was approved by

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ABSTRACT

BAMBOO ACTIVATED CARBON AS ADSORBENTS OF ETHYLENE GAS RELEASE FROM MANGO: A REVIEW

Activated carbon is an important sorbent due to its large surface area, high adsorption capacity, porous structure and selective adsorption. It is also able to adsorb organic compounds and organic metal complexes. In industry, activated carbon was frequently utilized to separate, remove and modify various compounds in gas and liquid form. The accumulation of ethylene gas during storage will lead to maturation process in most climacteric fruits and loss of green skin colour in non-climacteric fruits. Presence of moisture during storage, either by respiration process of fruits or uncontrolled temperature in storage chamber or during transportation process can lead to fruit skin disorders and loss of skin colours. The purpose of this study is to review the adsorption activity of bamboo activated carbon on the ethylene gas and the fruits moisture, to review the negative effect of ethylene gas release from fruits and to suggest the best storage performance for better shelf-life using bamboo activated carbon. The goal of this research is to gain a better knowledge in developing activated carbon and bamboo activated carbon which has high adsorptive properties toward ethylene gas and moisture through various activation methods and activating agents. Since bamboo is a material that is easy to find, abundant in the market and environmentally friendly, bamboo is the best material at the moment to be used as one of the activated carbon production materials. The adsorption activity of bamboo activated carbon toward ethylene gas and moisture has been determined. Bamboo activated carbon has the most surface area other than other activated carbon. Bamboo activated carbon shows the highest surface area and total pore formation when compared to coconut shell activated carbon and oil palm empty fruit bunch activated carbon.

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