

# **REDUCTION OF TANNIN LEVEL IN COCONUT HUSK CHIPS**

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## ABSTRACT

Coconut (*Cocos nucifera*) is economically important since every part of the tree gives benefits. For example coconut husk chips can be used as a growth medium due to excellent moisture retention and other favorable conditions. However, high tannin out flow is the major problem encountered in these coconut husk chips. Tannin which flows out from grow bags after adding water affects negatively on immature plant growth. Because of this, customers are not satisfied and thus demand for coconut husk chip based grow bags is decreasing. Main objective of this study was to find out the most suitable hot water treatment to reduce the tannin amount of coconut husk chips. Meanwhile, improvements of ideal conditions of chemical properties were also expected. Hot water was selected to treat coconut husk chips because of the limitations. Hot water treatments were carried out by using water at 30, 40, 50, 60, 70, 80, 90 and 100 °C. In each hot water treatment 20 g of coconut husk chips were taken and treated with hot water 2 hours. Five replicates were used each treatment (n=5). Then, the electrical conductivity of separated liquid extraction of tannin was measured and taken as the indicator of tannin amount in the liquid extraction. As results showed there was a significant ( $p<0.05$ ) effect of hot water treatments on decrease of tannin level in coconut husk chips. Also, hot water treatment at 100 °C removed highest amount of tannin within a short time as indicated by the highest value for electrical conductivity. Treated coconut husk chips were tested for pH, moisture content and water holding capacity in order to check suitability of chemical properties which were complied with product specifications. However, there was no significant ( $p<0.05$ ) effect on those properties as affected by hot water treatments. Based on obtained results, it is concluded that hot water treatment at 100 °C is suited for reduction of tannin content while keeping the chemical properties at acceptable level.

**Key words;** Tannin, Electrical conductivity, Moisture content, pH, Water holding capacity