

EFFECTS OF DIFFERENT POLISHING TIMES AND COOKING ON THE PHYTOCHEMICAL PROPERTIES OF PIGMENTED RICE CULTIVARS

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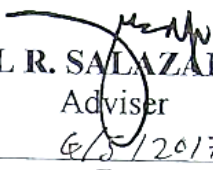
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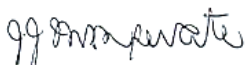
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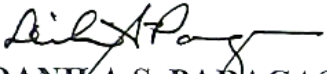
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EFFECTS OF DIFFERENT POLISHING TIMES AND COOKING ON THE PHYTOCHEMICAL PROPERTIES OF PIGMENTED RICE CULTIVARS

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ABSTRACT

Background: Pigmented rice cultivars (black and red) are known to have high levels of phytochemical content. The effect of different polishing times, 15, 30 and 45 seconds, and cooking on the phytochemical and antioxidant properties of NSIC Rc 160, Minaangan and Brillante was investigated. **Methods:** The rice samples were polished for 0, 15, 30 and 45 sec and was subjected to cooking. The phytochemical properties of raw and cooked rice samples were determined by evaluating the total anthocyanin, total phenolic and total flavonoid contents while antioxidant properties were determined by the DPPH free radical scavenging activity and FRAP assay. Sensory test were conducted to evaluate and recommend a suitable condition of the rice varieties for consumption. **Results:** The results shows that the total anthocyanin, total phenolic and total flavonoid contents of NSIC Rc 160, Minaangan and Brillante decreased significantly after polishing by up to 85.7%. Similarly, DPPH free radical scavenging activity and FRAP of NSIC Rc 160, Minaangan and Brillante decreased significantly after polishing by up to 79.9% due to the decrease of phytochemicals. Rice cooking decreased the total anthocyanin, total phenolic and flavonoid content of all the rice varieties by up to 100%. Antioxidant property, DPPH free radical scavenging activity and FRAP, decreased upon cooking by up to 92%. The condition for consumption of NSIC Rc 160 is 45 sec polishing time, 30 sec polishing time for Minaangan and unpolished for Brillante, these results were recommended by the sensory panelists. **Conclusion:** The results indicates that polishing and cooking significantly reduced the phytochemical and antioxidant activity of pigmented rice cultivars. Unpolished rice is the healthiest condition that is also consumable.

Keywords: pigmented rice cultivars, polishing, cooking, antioxidant activity, sensory evaluation

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