

**STUDYING ON THE EFFECT OF RICE WEEVILS  
TREATMENT TEMPERATURE BY USING HIGH-  
FREQUENCY ELECTRIC WAVES (MICROWAVE) AND  
PADDY MOISTURE CONTENT ON RICE WEEVILS  
(*SITOPHILUS ORYZAE* LINNAEUS) ELIMINATION EFFECT**

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Summary**

In order to select the appropriate of treatment temperature by microwave system with rice kernel moisture content, we conduct to design completely randomized experiments with two factors: the first factor is treatment temperature at  $54\pm 0,1^{\circ}\text{C}$ ,  $55\pm 0,1^{\circ}\text{C}$ ,  $56\pm 0,1^{\circ}\text{C}$ ; the second factor is rice kernel moisture content at  $13\pm 0,17\%$ ,  $14\pm 0,19\%$ ,  $15\pm 0,16\%$  and the control samples without treatment. The results showed that: the ratio of adult rice weevils (*Sitophilus oryzae* Linnaeus) increase proportional with treatment temperature. With treatment temperature  $55\pm 0,1^{\circ}\text{C}$  to  $56\pm 0,1^{\circ}\text{C}$ , the rice weevils was fully eliminated (100% were eliminated and do not appear after 6 weeks storage). Rice kernel moisture content from  $13\pm 0,17\%$  –  $15\pm 0,16\%$  are less effect to adult rice weevils eliminate, however, high moisture content are ratio with reproductively rate of alive rice weevils after treatment by MW. Heat damaged kernel and broken rice rate increase direct proportional to treatment temperature and rice moisture content. The rate of milled rice, the percentage of whole kernels, the head rice yield are decreasing inversely with the treatment temperature and paddy moisture content. Treatment temperature and kernel moisture content have no effect on most of the rice quality indicator, such as whiteness, starch content, amylose content, quality of cooked rice, etc. The treatment temperature  $55\pm 0,1^{\circ}\text{C}$  and rice moistures content of  $13\pm 0,17\%$  to  $14\pm 0,19\%$  are suitable condition for rice weevils eliminate by MW.

**Keywords:** Rice weevils, *Sitophilus oryzae* Linnaeus, treatment temperature, paddy moisture content, microwave.