TOTAL ANTIOXIDANT CONTENT OF SELECTED RICE *(Oryza sativa L)* VARIETIES AT DIFFERENT GERMINATION STAGES

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The objective of this study was to determine the effect of germination on total antioxidant content of selected rice varieties (*Oryza sativa* L); CIC white basmati (WB), CIC red basmati (RB), CIC red basmati improved (RBI), *Rath suwadel* (SW), At 362, Bg 352 and Bg 360. Total antioxidant content was determined by 2, 2-diphenyl–1-picrylhydrazyl (DPPH) scavenging assay and Ferric Reducing Antioxidant Power (FRAP) assay in all varieties at 6 germination stages; 0 (control), 24, 30, 36, 42 and 48 h of germination. The results obtained by two methods showed a significant relationship *($p<0.05$)* between the rice varieties & germination time and the total antioxidant contents of all tested varieties. Further, interaction between the rice varieties and germination time had a significant *($p<0.05$)* association with total antioxidant contents of all the varieties. According to the DPPH test, the highest total antioxidant contents were reported in RBI (82.6±2.86%) and RB (81.9±2.54%) both at 36 h and followed by At 362 (78.7±8.42%) at 0 h, Bg 360 (74.0±1.94%) at 0 h, BG 352 (58.5±1.87%) at 36 h, SW (62.4±2.30%) 48 h and WB (50.7±4.22%) at 24 h and (50.5±2.93%) at 36 h.Whereas in the FRAP method, the highest total antioxidant contents were reported in At 362 (2.36±1.97 Mm Fe(II) 100 g^{-1}) at 30 h and RBI (2.21±0.38 Mm Fe(II) 100 g^{-1}) at 36 h followed by RB (1.78±0.18 Mm Fe(II) 100 g^{-1}) at 42 h, Bg 352 (0.91±0.09 Mm Fe(II) 100 g^{-1}) at 36 h, Bg 360 (0.79±0.02 Mm Fe(II) 100 g^{-1}) at 0 h, SW (0.784±0.008 Mm Fe(II) 100 g^{-1}) at 48 h and WB (0.53±0.06 Mm Fe(II) 100 g^{-1}) at 24 h. Thus, various total antioxidant contents were expressed by different rice varieties at different germination stages.

Keywords: Germination stage, Rice, Total antioxidant content