

# COMPARISON OF PROTEIN AND MICRO NUTRIENTS CONTENT OF SELECTED RICE VARIETIES GROWN IN DIFFERENT AGRO-ECOLOGICAL REGIONS

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Rice is the main cereal crop that is grown under diverse environmental conditions and a wide variety of soils found in Sri Lanka. Since rice is the staple food among Sri Lankans, it is necessary to investigate the micronutrient and protein status of major rice varieties grown in different agro ecological regions. In the present study, five rice varieties namely Bg 352, Bg 358, Bg 366, Bw 11-722, At 10-1350 were grown in *Maha* season of the year 2014/2015. Rice samples were collected from five locations i.e. Batalegoda, Bombuwela, Mahailuppallama, Ambalantota and Samanthurai which belong to different agro ecological regions. Rice samples were dehusked and the whole grain grinded manually to particle sizes of 0.5 mm and used for evaluation of Iron (Fe), Manganese (Mn), Zinc (Zn), Copper (Cu) and protein content. Soil samples collected from studied locations were used for the evaluation of soil chemical properties. The result of the soil evaluation showed that the mean results of the Fe, Zn, Mn, Cu, Olsen's P, exchangeable Potassium (K), organic matter (OM), Total N and electrical conductivity (EC) ranged from 73.43 - 461.85 mg/Kg, 0.89 - 7.8 mg/Kg, 3.84 - 22.12 mg/Kg, 1.51 - 1.98 mg/Kg, 3.83 - 13.58 mg/Kg, 19.75 - 94 mg/Kg, 1.2% - 13.27% , 0.07 % - 0.57% and 0.04 - 0.14 dS/m respectively. The concentration of Zn, Fe, Mn and Cu among different varieties varied from 24.04 - 41.98 mg/Kg, 13.05 - 60.66 mg/Kg, 7.91 - 27.29 mg/Kg and 2.81 - 9.11 mg/Kg respectively. There was no significant correlation between soil micro nutrients and grain micro nutrients contents. Soil micro nutrients negatively correlated with soil pH, EC, Olsen's P, exchangeable K and positively correlated with soil organic matter contents at all locations. The results further revealed that rice grains of different varieties contain protein level of 6.6% - 12.64 %. There was no any significant variety x location interaction ( $p>0.05$ ) for protein content of rice. Hence, these varieties can be recommended for any selected location. There was a significant variety x location interaction ( $p<0.05$ ) for micro nutrient contents. Hence, the findings suggest that micro nutrients content in rice grains depend not only on genotypic variables but also soil factors.

**Keywords:** Agro ecological regions, Micro nutrients, Protein, Rice varieties, Soil chemical parameters