

Posters

Effect of iron supplementation on biomarkers of iron status and serum zincA Fooladi Moghaddam¹, M Kimiagar²¹ Secretariat of Applied Research, Food and Drug Affair, Ministry of Health, Iran; ² National Nutrition & Food Technology Research Institute (NNFTRI), Iran

Background - In view of the importance of iron deficiency anemia (IDA) as a common nutritional and public health problem in developing countries, this study was undertaken to investigate the effect of iron supplementation on haematological and biochemical indices of iron status and serum zinc.

Design - The study was performed on 80, ID and IDA students matched for age, sex, initial Hb level and Fe status who were randomly allocated to a treatment group receiving daily iron supplements (150 mg ferrous sulfate tablets containing 50 mg of elemental iron) and a placebo group, during a 2-month period. In addition to haematological and biochemical iron status indices, serum zinc was measured at the beginning and at the end of the supplementation period. Independent and paired t-test, Chi-square and Mc Nemar tests were used for statistical analysis.

Outcomes - The result showed that prescription of ferrous sulfate to IDA subjects compared to the placebo group caused increases of 2.1g/dl in Hb concentrations ($P<0.001$), 6.2% in hematocrit ($P<0.001$), 7.6 fl in MCV ($P<0.02$), and 10.4 ng/ml in SF ($P<0.05$). The increases in ID subjects compared to the placebo group were 0.8% in hematocrit ($P<0.02$) and 18.8 ng/ml in SF ($P<0.01$). There was no significant decrease in mean serum zinc concentrations during iron supplementation.

Conclusion - Iron supplementation was effective especially in IDA subject. To clarify the exact effect of ferrous sulfate on hematological and biochemical iron status indices in individuals with ID, further studies are needed. Serum zinc alone is known to be a poor index of zinc status, therefore more sensitive indices must be used in studies that are aimed at determining the effect of iron supplementation on body zinc status.

Protein digestion in rainbow lorikeets, *Trichoglossus haematodus*

D Delia, TL Frankel

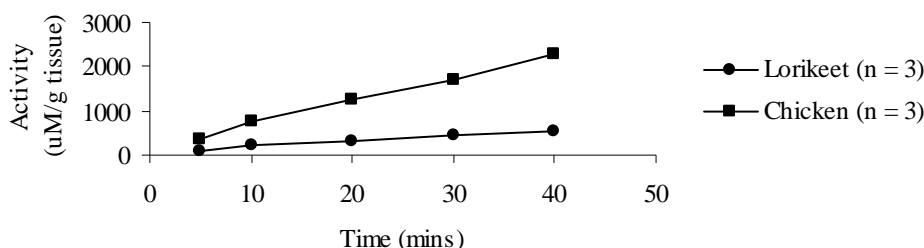
Dept of Agricultural Science, La Trobe University, Bundoora, VIC 3086

Background - Rainbow lorikeets are nectarivorous birds whose natural diet is low in protein and relatively high in free amino acids. Protein metabolisability (PM) of egg white (EW) protein is lower in rainbow lorikeets (6.9%) than whole egg protein in white leghorn roosters (13.9%).

Objective - (1) To determine whether PM of other sources of protein fed to lorikeets is higher than that of EW. (2) To compare the general proteolytic activity (GPA) (pepsin) of the proventriculus of the rainbow lorikeet and a granivorous bird, the domestic chicken, *Gallus gallus domesticus* L.

Design - (1) Five lorikeets were fed one of three diets, an EW diet, an EW and casein hydrolysate (CH) diet and a commercial "lorikeet and honeyeater" (L/H) feed (Wombaroo Food Products, Glen Osmond, SA). Lorikeets were kept in metabolism cages for 3d for feed intake measurements and excreta collection. Samples were freeze dried and analysed for nitrogen. (2) The GPA of the proventriculus of three lorikeets and three chickens was measured using haemoglobin as a substrate.

Outcomes - (1) The PM (mean \pm SD, n = 5) was $4.3 \pm 2.6\%$ for the EW diet, $5.6 \pm 2.5\%$ for the EW/CH diet and $7.3 \pm 3.2\%$ for the L/H feed. The PM for the EW diet was not significantly different from the EW/CH diet and L/H feed ($P>0.05$). (2) The GPA of the proventriculus of lorikeets at pH 1.0 was significantly lower ($P<0.01$) than that of the chicken at each incubation period.



Conclusions - (1) The results of the feeding experiments with lorikeets confirm that PM of artificial protein sources is low. (2) The GPA of the proventriculus of lorikeets is lower than that of the chicken. This may contribute to the low PM by lorikeets.