

4136523SIRS/M : MAJOR : RADIOLOGICAL SCIENCE; M.Sc.(RADIOLOGICAL SCIENCE)

KEY WORDS : IRON ABSORPTION / BIOAVAILABILITY / RADIOMETRIC IN VITRO MEASUREMENT / IRON NUTRITION

RUJIRA CHOKCHAI : RADIOMETRIC METHOD FOR DETERMINING ABSORPTION OF IRON FROM BREAKFAST MEALS. THESIS ADVISORS : NOPAMON SRITONGKUL, M.S., MALULEE TUNTAWIROON, M.S. 143 p. ISBN 974-664-289-8

A study was made on the effect of various drinks and supplement foods on the non-heme food iron availability. The drinks and supplement foods were taken with 3 different groups of breakfast meals. In the first 2 breakfasts, boiled rice and steamed rice meals were added with orange juice, milk, coffee and tea. In the third group, steamed rice meals were added with vanilla flavour cereal, chocolate flavour cereal, milo and ovaltine.

An in vitro radiometric (^{59}Fe) method was used to determine the percentage of food iron ionizability based on the simulation of gastrointestinal digestion and absorption. In the first 2 breakfast meals, orange juice increased the percentage of ionizable iron by 2 to 2.5 times. Milk has no significant effect. A reduction in iron absorption was seen when coffee was added (23 to 60%) or tea was added (85 to 88%) to the meals. In group 3 breakfast a reduction in the percentage of ionizable iron was seen when chocolate flavour cereal was added to the meal (37 to 64%) or milo (54%) or ovaltine (62%) was added. The present study shows that the choice of drink or supplement food to be taken with a meal can markedly affect the availability for non-heme iron.