V. DISCUSSION

To avoid electroplating and to improve the efficiency of countings, simultaneous measurement of Fe-55 and Fe-59 by liquid scintillation system was studied by using modified Katz's method. The method yields slightly higher efficiency than that of Eakins'. The modification involves the use of different scintillant, the emulsion counting and larger volume of sample digest.

The results of measurement are reproducible. Stability is well maintained by an appropriate calibration and settings of the measuring equipment.

From the results of measurement of such blood activity and from such model of experiments, the per cent iron absorption from food were chosen at two levels, i.e. at 5 mg (fortification) and at 100 mg (supplementation). The values were plotted against the per cent iron absorption from reference dose of those individual subjects (Fig. 8). From this relationship, the 30 % absorption from reference dose values were read for % iron absorption from food of both 5 mg and 100 mg iron contents. The two values were then plotted, representing eventually the 30 % line for the evaluation of average food iron absorption of that population (Fig. 9). The duration of fortification or supplementation may be calculated from the amount of deficit and the actual daily iron absorption from such diets of those particular types.

As an example: the iron deficit of an anemic (Fe deficiency type) at 10 gm% Hb = 5,000 x 0.255 or 1,275 mg . At 5 mg fortification (1:1000 of salt) the daily iron absorption from food at 30%. Fe absorption from reference dose = 11.5/100 x 5 = 0.575 mg a day, and, it will require 1275/0.575 = 2217.39 days or 73.91 months or 6.16 years for fortification. Similarly at 20 mg level (1: 250 of salt) the required time for fortification will be 1275/(10.9 x 20/100)= 585 days or 19.2 months or 1.6 years. At 100 mg supplementation, it will take 1275/6.9 = 184.78 days or 6.16 months or 0.51 years. The time for fortification at 20 mg will be 585/184.78 or about 3 times as long as that for supplementation at 100 mg.