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Progress Report - October 1970

Harvard-Thailand Rice Fortification Project

Contract No. AID/CSD-2170

In the latter part of August 1970 Dr. Stanley Gershoff went to Thailand to review the progress of Phase III of this contract, a pilot rice fortification field study and to make final preparations for initiating Phase IV, a full field study in early 1971. As previously reported the progress of the pilot study, the cooperation obtained from Thai Officials and village millers, the facilities available and the acceptance of the programs in the villages of Phase III receiving the rice fortification grains (RFG) have exceeded expectations and we are very pleased.

The children in the four pilot villages were re-examined in June and it appears that most of the problems of doing physical examinations have been solved.

Although Phase III has proceeded better than we expected, our experience has disclosed a few problems. First, there has been rising discontent in the raw control village. The village children have been examined twice but their parents see no sign of any benefits accruing to them. Furthermore, they have heard of health programs (not a part of Phase III) in other villages and they are not happy that they have received no aid.

We have had some problems in obtaining accurate skin fold measurements in squirming pre-school children but we think that we have

minimized them. We are also still not completely satisfied with the RFG. We have now received 5 different batches of RFG from Ajinomoto. The initial shipments caked. The Ajinomoto Co. was appraised of this problem and they have evidently been experimenting with their RFG coatings. Lot 4 remained hard after cooking and was not satisfactory. However, lot 5 does not cake and is quite acceptable to the villagers.

We expect this Fall to study in rats the biological availability of the nutrients in RFG after cooking Thai style. The laboratory at the Thai Division of Nutrition has obtained amino acid analysis data on Thai rice with and without RFG before and after cooking. There is no doubt that the people in the villages have been using the RFG. Daily checks at the mills indicate that the RFG is being added to the rice. We have figures on the amount of rice milled in each mill every day and the amount of RFG used checks within a couple of percent of amount which should be added. Furthermore we have urinary thiamine excretion data, indicating that the RFG containing thiamine is being consumed.

It has been decided to initiate Phase IV, a full field study in January 1971 as scheduled. Twenty-five villages containing approximately 2600 pre-school children and a total population of about 15,000 people will be studied. Eighteen of these villages had been selected by early September of this year and the full cooperation of the millers and villagers been assured. Because of the difficulties observed in the raw control village of the pilot study some changes will be made in our experimental design. The design shall be as follows:

5 villages will receive day care centers and a placebo RFG

5 villages will receive day care centers and an RFG containing thiamin, vitamin A and Fe

5 villages will receive day care centers and the complete RFG containing lysine and theomine in addition to thiamin, vitamin A and Fe

5 villages will not receive day care centers but will receive the complete RFG.

5 villages will act as raw controls. In order to minimize the difficulties we have had with our raw control village, these villages will be selected in an area about 20 kilometers away from our other experimental villages or villages in which other major child health and/or nutrition programs have been initiated. The children in the raw control villages will receive the same initial and final physical examinations given in the other villages. However, the periodic examinations given in the raw control villages during the experimental period will be limited to weights and body lengths to avoid difficulty with the villagers. Ofcourse, if the experimental results obtained in the other 20 villages indicate that more complete physicals are needed in the raw control villages the option of expanding the periodic physical examinations will be available.

Concern continues to be expressed both in Boston and Bangkok about starting the full field study in January of 1971 with financial support assured only until June 1971. Nevertheless, we have felt that to drastically alter our time table at this time with Phase III proceeding smoothly would not be wise. It is expected that both Drs. Gershoff and McGandy will be in Thailand while the base line data for the full field

study are being obtained. It is only during part of the first three months of the year that they can arrange to absent themselves from their duties in Boston. The monsoons which occur in the summer in Thailand make it an undesirable time to start Phase IV.

To prepare for the start of Phase IV in January, 12 day care centers and 17 RFG dispensers will have to be built. Some additional personnel will have to be hired and additional transportation will have to be arranged.