ADVERSE EFFECT OF MIXING TAPIOCA AND SWEET POTATOES IN WHEAT FLOUR

FOR overcoming the food shortage in the country, the Ministry of Food has recommended the mixing of tapioca and sweet potatoes meal in wheat flour. This scheme while calculated to increase of food supply of the country, is likely to produce an adverse effect on the health of the nation, which is already suffering from an ill-balanced diet.

For religious and economic reasons animal proteins (meat, fish and eggs) are ruled out from the diet of a good percentage of the people. The intake of dairy products is very low in our country, the *per capita* consumption of dairy products in India being about one-tenth of Canada and Newzealand, one-eighth of Great Britain and one-seventh of U.S.A.[1] Due to ill-balanced diet, the people are undernourished and are afflicted by many diseases. Shortage of good quality proteins and the B-vitamins are the two outstanding nutritional deficiencies in the cereal diet of the masses. Addition of some food rich both in good quality proteins and vitamins of the B-complex is necessary for balancing the cereal diet.

TABLE I

Chemical Analysis of Some Foods

Percentages

Foods	Protein	Fat	Carbohydrate	Moisture	Ash
Wheat (whole)	13·0	2·0	72·4	11·0	1·6
Sweet potatoes	1·8	0·7	27·9	68·5	1·1
Tapioca	0·6	0·2	86·4	12·6	0·2
Food Yeast (*Torula utilis*)	48·0	2·0	34·0	8·0	8·0

As evident from Table I both tapioca and sweet potatoes are rich in carbohydrates which is principally starch. The addition of these starchy foods to wheat flour would render it ill-balanced. The resulting mixture will have less protein and fat and much more carbohydrate. These changes in protein, fat and carbohydrate contents will be proportional to the quantity of tapioca or sweet potatoes incorporated. Thus though the caloric intake of food will be increased due to the added carbohydrate there will be a marked fall in the percentage of the protein, and is likely to be a more widespread incidence of the deficiency diseases in the country.

In order to make this scheme practicable, the proposed mixture will have to be fortified with good quality proteins and the vitamins of the B-complex. As evident from Table I dried food yeast contains about 50% proteins of high nutritive value. Also yeast is a very rich source of B-vitamins. It can be added upto 5% to the flour, without any detectable change in taste and appearance of the product.

Food yeast can be easily produced in India either from molasses—a by-product of the sugar industry or from bassia flowers or from cellulosic waste materials such as wood, straw, stalks, husk, bagasse.

It is hoped that the Ministry of Food will reconsider their proposal and modify their scheme in the light of what has been presented in this note.

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ATTEMPTS TOWARDS THE SYNTHESIS OF SUBSTITUTED POLYGUANIDES

ON the basis of their observations, Curd and Rose[1] put forward the hypothesis that for antimalarial activity, the aromatic ring and the basic side chain should be linked through a system of alternate carbon and nitrogen atoms with appropriate double bonds; they also argued that the "tautomeric possibilities existing within certain known active drug molecules" relate to the antimalarial activity. Paludrine, satisfying all the above conditions, has been claimed to be one of the best antimalarials obtained so far.

With this background, it was thought worthwhile to prepare compounds with a larger number of these conjugated system of carbon and nitrogen atoms, expecting that such compounds might prove to be better and more effective antimalarials. The polyguanides, such as tri-, or tetra-guanides or even the higher members are to provide more of the tautomeric possibilities and such other factors. This postulation was also supported by our observation that the monoguanide derivative with *p*-chlorophenyl- and isopropyl groupings present at the two ends, (*viz.*, N^1-*p*-chlorophenyl-N^3-isopropyl-