

**ADVANCES IN FOOD TECHNOLOGY AND CHANGES IN
FOOD CONSUMPTION PATTERNS:
EXAMPLES FROM THE MALAYSIAN SCENE***

by

TEE E SIONG

Nutrition Division, Institute for Medical Research, Kuala Lumpur, Malaysia.

INTRODUCTION

Advances and developments in food technology have brought about much progress in food storage, handling, preservation and preparation. Along with these advances came the introduction of many 'new' foods. The availability of such food items had brought about many changes in the food consumption patterns of communities. Amara Pongsapich (1978), in her keynote address at the 1st ASEAN Seminar-Workshop on Food Habits had described briefly how technological developments and 'civilization' had been the cause of shift of food pattern and eating habits of the people, and the resulting nutritional deficiencies and imbalances. It is the intention of this paper to expand on this point and give specific examples from the Malaysian scene. The examples cited here would appear similar in other countries in the region, and are already well known observations. It is however thought worthwhile to remind ourselves of such changes and ill-effects during this 2nd Workshop on Food Habits, when we are concerned with food technology and community nutrition, with special reference to local food consumption patterns.

THE MODERN DIETARIES

Changes in food consumption pattern as a result of the introduction of modern food technology, and the consequences of such changes in food habits had been observed and recognized by investigators in nutrition in Malaysia as early as in 1900. An attempt will be made here to collect and report some of the observations of these investigators.

Early in 1929, Mummery spoke of the modern Asian diet: "one will find that the basis of the diet is rice, devoid of all the important husk. It is varied with white bread, sweet-stuffs, dried fish, tinned milk, tinned butter and cooked and highly seasoned meats. Little wonder that such a diet, devoid as it is of the accepted essentials, when introduced into a community as yet uneducated to combat its evils, should produce such dire results". He was referring to the ill-effects that modern diets had on the dental conditions in Malaya. But his statement also described clearly the inadequacy of such diets in terms of nutrient content.

The article of Thomson (1962) on the Evolution of the Diet of Modern Man has relevance in this context. In this article, Datin Lady Thomson, a nutritionist in the Institute for Medical Research, described "the dietary mistakes of the modern, western diet, which contained too many refined foods, refined flours and sugar products.

Writing in the Malaysian Dental Journal, J. J. Engholm described the excessive consumption of processed foods and tooth decay. He also spoke of the nutritive value, or rather the non-nutritive value, of such diets: "the dry prepared cereals, white bread and refined sugar have little or no nutritional value." It was felt that these foods could furnish a large number of calories with little, if any, real nutrition (Engholm, 1965).

Chong (1978) in his paper on Socio-cultural Aspects of Food Habits and Malnutrition, spoke briefly of rural-urban migration and the resulting problems of over-crowding, poor sanitation and malnutrition. The food patterns and habits of such migrants had inevitably altered with their new surroundings, and there is a tendency to use "convenience, refined and perhaps less nutritive foods". In the same

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paper, he also referred to the effects of urbanisation on the aborigines (Orang Asli). It was said that "as the Orang Asli are brought into wider socio-economic contact with the rest of the Malaysians, this 'urbanisation' process has brought with it a changing life style and food pattern of increased intake of fat, salt, sugar, alcohol and convenience foods".

It is clear that such a changed dietary pattern has a particularly detrimental effect on the poor, who unfortunately, were also ignorant. Mummery (1929), in making the remark quoted earlier, had recognized this. With the desire to be modern, civilized and to catch up with advancement, they were caught in this technological advancement. As a result, their nutritional health had suffered. It is thus important to recognize the deficiencies of these diets. It is necessary to make efforts to correct these deficiencies.

THE OVER-POLISHED RICE

The milling of rice had made available a rice which is polished, has a better keeping quality, and more appealing to the consumer. It was however soon realized that with the widespread consumption of polished rice, especially among the poor coolies working in mines, most of whom were Chinese, there was an associated increase in the incidence of beri-beri in the country. Investigators soon pin-pointed the cause of the disease as due to a nutritional defect in highly milled rice. These studies were being actively pursued by various investigators in the Institute for Medical Research as early as in 1900, and has been well documented by Byron (1951).

Investigators were soon studying ways and means of overcoming this problem of consuming over-polished rice. Researchers such as Byron (1947) and Simpson (1954, 1955) looked into the possibility of substituting the white rice with under-polished, enriched or parboiled rice.

It is gratifying to note that food technologists in the region are aware of such deficiencies and are making efforts to correct this. In the last ASEAN Seminar-Workshop on Food Habits, the food technologists present had come to a consensus and agreed that there is an urgent need to look into the over-polishing

of rice and the acceptability of under-milled rice.

ARTIFICIAL MILK FORMULAE

Advances in food technology had made possible better preservation of milk. Various types of milk powder, each claimed by the manufacturer to be the best suited for babies, became available. In addition, the sweetened condensed milk, which is relatively cheaper, easier to prepare and keeps well, came into the market. Due to the availability of these, and various social reasons, many modern mothers gave up the practice of breast feeding for these more prestigious modern methods of bottle feeding their infants. Several investigators, in the course of their nutrition surveys in the country, had noted and reported this shift. Much of the nutrient deficiencies had been attributed to the improper infant feeding practices.

Viswalingam (1929), in a brief review of food disease in Malaya, had said: "not a little of the disorders of infantile life is due to the artificial feeding on sophisticated foods and yet the modern mother would wean her baby from the breast on the flimsiest excuse". The hazards of abandoning breast feeding were also mentioned by Cross (1940): "the infant mortality rates among artificially fed infants has been known to be as much as 56 times greater than among breast fed infants". Thomson reported from a study in Ipoh, Perak, that: "artificial feeding is becoming more fashionable and indeed, although the baby may at frequent intervals be given the breast to suckle, the main 'meals' consisted of sweetened condensed milk and rice" (Thomson, 1950). Some years later, reporting a study she made in the Parit District of Perak, Thomson described very well the invasion of sweetened condensed milk and their ill-effects: "this clearly shows the popularity of sweetened condensed milk in spite of teaching, by health nurses in the area, in the use of powdered milk. The reasons for this preference for sweetened condensed milk are easily understood. A small amount may be purchased, it is easy to prepare and advertising of the product has been most efficient for many years. This use of sweetened condensed milk creates many feeding problems and leads to much ill health. As made by the mothers, the protein content is far too low and if made in more concentrated strength, has sugar in excess. The usual

strength given to the child is little but a sweetened watery drink" (Thomson, 1960).

Wylde (1961) had this to say about giving sweetened condensed milk to infants: "Chinese are also very fond of sweetened condensed milk and supply this practically undiluted to very small infants, who present with dehydration, diarrhoea and vomiting." Other earlier investigators who described this unsatisfactory infant feeding practice were Will (1949), Field (1955), Said (1955) and Millis (1958).

In more recent studies, Teoh (1975), Kandiah and Lim (1976) Balakrishnan and Haji Hussein (1977) also reported changes in infant feeding pattern in rural areas. There was however no mention of sweetened condensed milk being used as a substitute for breast milk. Abdullah and Hassan (1978), in the course of their study of the dietary pattern of a coastal village in Trengganu, had observed that sweetened condensed milk was a common breast milk substitute for infants because milk powder was not readily available.

Such modern feeding practices have also influenced the aborigines (Orang Asli) of our country. In the course of several nutrition surveys carried out on Iban (Sea Dayak), Bidayuh (Land Dayak) and Melanau children in Sarawak, Anderson (1976 a, b, c; 1977) reported the use of sweetened condensed milk and powdered milk for those infants weaned from the breast, Rasiah (1977) reported that many aspects of the Orang Asli way of life, including nutritional aspects, of the Semai Community in Kampung Sungei Odak had been changed. It was observed that a popular brand of sweetened condensed milk was used by some mothers who weaned their infants from the breast.

The widespread use of processed milk formulae, including sweetened condensed milk, had come about mainly due to commercial advertising. Thomson (1960) had noted this and said: "it is unfortunate that a flood of efficient commercial advertising makes it also a great danger. Where knowledge is limited and times are difficult, this commercial efficiency is apt to tempt the ignorant to buy unsuitable foods and to use unsuitable methods of feeding". Thomson, in this remark, had also emphasized on the particular vulnerability

of the ignorant and the poor.

SOFT DRINKS, CANDIES, SNACKS

Another group of foods that have been introduced by modern technology consist of soft drinks (aerated bottled drinks), candies, sweets and the large variety of manufactured snacks now available in the market. One suspects that such 'foods', if one may call them foods, have invaded and penetrated deep into the rural communities. Even in the not so easily accessible kampungs, one may be able to find posters and pin-ups of the soft drinks and manufactured snacks. Rasiah (1977) reported that such sophisticated foods have also reached our Orang Asli. It was said that the range of foods eaten by the Semai in Kampung Sungei Odak have been considerably widened by contact with the exterior. Some of the foods listed included the various manufactured beverages available in our supermarkets, soft drinks, beer and canned foods.

Rosemary Firth (1966), in her book on *Housekeeping Among Malay Peasants*, reported some rather interesting observations. In 1940, she completed her studies of the living conditions of some coastal villages in Kelantan. She reported that snacking was popular and described the foods taken as mainly home-made snacks. She noted that they appeared to be quite good sources of fat, although they were mostly carbohydrate and sugar. She felt that they could provide quite a good source of quick energy, although as the main source of food they were probably expensive and inadequate. Firth was able to return to these same villages after 23 years, in 1963. She studied the changes in spending patterns of these people and reported that the expenditure on snacks had shifted from "home-made rice sweetmeats to factory-made biscuits, ices, flavoured boiled sweets, breads and buns." A comparison into the items sold in the village shops then and in 1940 revealed that there was "an astonishing quantity and variety of goods in 1963". Essential food stocks now included what she described as "semi-essential, western style, luxurious" goods, such as soft drinks, sweet biscuits, sugar, ice cream, nuts, tea, bottled coffee and condensed milk.

In their study of dietary practices in a Malay coastal village in Trengganu, Abdullah and Has-

san (1978) also looked into the types of food items sold in the village stores. It was reported that they sold mainly bottled soft drinks, condensed milk, canned sardines and varieties of biscuits. They noted that "it is interesting to observe the popularity for supposedly luxury items such as soft drinks and biscuits."

Christine Wilson (1970), in her study of food beliefs and practices of Malay fishermen, also in Trengganu, reported the types of foods sold in the village 'kedai'. Biscuits, candies and snacks were mentioned, and the photographs she presented clearly showed a stack of a popular brand of soft drink prominently displayed. There was no particular comment on these food items. Snacking was said to be common and the foods consumed ranged from home-made cakes to candies and chocolates.

A ready market for such products would be the school canteens. From some preliminary observations the author has made, it would appear that these highly processed foods, devoid of any real nutritive value, have made a rather strong-hold in these canteens. One can clearly see that these snacks and candies have replaced the home-made snacks which may be green-bean soup, 'nasi-lemak', 'kueh-kueh', fried 'mee-hoon' etc. One can understand how detrimental this can be especially to the primary school children, besides the harmful effects to the teeth. When we are now talking about supplementary feeding programmes to school children, could not we first consider that the snacks they buy with their pocket-money be at least of some nutritional value?

Other perhaps even more undesirable ill-effects of the consumption of such snacks would result when manufacturers, intentionally or otherwise, use sub-standard and/or non-permitted ingredients or additives for these foods. For example, the excessive use of colouring matters, permitted or otherwise, in snacks and drinks is not uncommon. The hazards of the continuing consumption of these non-permitted additives to foods is well known.

Again, the ill-effects of these food items would be most felt by the ignorant and the poor. Advertising has again played an efficient

role in promoting them. The continuing and increasing invasion of such items is clearly evident. One dreads to think of the consequences if such shift in the snacking habits is permitted to continue unchecked.

CONCLUDING REMARKS

This discussion has attempted to highlight some areas where advances in food technology and modernization had brought about much undesirable changes in food habits and consumption patterns. It is hoped that it has emphasized the need for continuing lookout for such foods. Continuing efforts must be made to deter and impede the invasion of these sophisticated foods.

Education has been one of the major means of combating such an invasion. The recent breast feeding campaign and the drawing up of a code of ethics for milk powder manufacturers in the country are moves towards this direction. It is hoped that it is the most needed segments of the population that will actually receive the relevant information on proper infant and child feeding practices. It is felt that the extent of the use of soft drinks, candies and manufactured snacks, especially among children, should be thoroughly investigated. Advertisements on radio, television, in the cinema and all other mass media, pertaining to foods, need to be carefully followed and their messages scrutinised. It is hoped that the invasion of such luxurious foods could be effectively checked.

The examples brought out in this paper seem to have painted a rather unpleasant picture of the role of food technology in community health and nutrition. One must not, however, forget the positive contributions that food technology has made towards developing community nutritional status. The development of nutritious and acceptable supplementary foods, the fortification of foods, improved technology for the preservation and storage of foods are some of the familiar examples to the nutritionists. The need for an understanding and cooperation between nutritionists and food technologists has been recognized. We will hear more of this interaction between these professionals and other allied professions further on during this meeting.

SUMMARY

Advances in food technology and modernization had brought about much changes in the food habits of communities. Such changes and the resulting ill-effects on the nutritional status of the people had been recognized early by investigators in the country. Some observations by Malaysian investigators on the general inadequacy of modern diets were cited. Specific examples of some such 'new' food items, introduced as a result of advances in technology, were next discussed. Observations made by various investigators in the country on the general acceptance of such foods and the resulting detrimental effects were quoted. The ill-effects were particularly felt by the poor, who were also ignorant. It is felt that there is a need to re-emphasize the dangers of such foods. It is hoped that the 'invasion' of such sophisticated, luxurious and non-essential foods into our communities could be effectively checked.

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