

OBSERVATION ON THE USE OF YELLOW COLOURING MATTERS IN SOME FOOD PRODUCTS SOLD IN JAKARTA *

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ABSTRAK

Beberapa macam makanan terolah berwarna kuning yang dijual di Jakarta telah diperiksa mengenai bahan pewarna yang digunakan. Ditemukan bahwa tempe dan tahu mengandung bahan pewarna non-pangan metanil kuning. Dari 15 contoh bakmi segar yang diperiksa, 13 diantaranya diwarnai bahan pewarna tartrazin yang diizinkan, sedangkan yang 2 lagi diwarnai dengan pewarna non-pangan metanil kuning. Dari 4 macam bakmi kering yang digungkus kantong plastik dan berlabel, ditemukan 2 macam yang mengandung metanil kuning, dan 2 macam lainnya berupa mie "instant" diwarnai bahan pewarna tartrazine yang diizinkan. Delapan dari 9 macam bahan pewarna yang dijual sebagai bahan pewarna pangan di Jakarta ternyata mengandung metanil kuning dan yang satu lagi mengandung bahan pewarna non-pangan auramin O.

INTRODUCTION

In Jakarta, yellow coloured foods start to be increasingly favoured by the general population. For instance cooked soybean prior to fermentation and also pressed soy curd are soaked in a solution containing yellow synthetic colouring matter. Wheat noodles are also yellow coloured.

It is speculated that, as reported for snacks and drinks (Sihombing, 1978), the colouring matters used are synthetic non-edible dyes-tuffs, hazardous to the health of the consumers. A small investigation is therefore carried out in Jakarta and the result is herewith reported.

MATERIALS AND METHOD

Materials

1. *Non-registered Fresh foods.*

Freshly prepared yellow coloured foods, not registered at the Directorate General of Food and Drug Control (Direktorat Jenderal Pengawasan Obat dan Minuman = P.O.M.), Ministry of Health Republic of Indonesia, viz.: "tempe" (mould treated soy bean), "takwa" (soy curd), fresh "mie" (wheat noodles).

Of each product 5 samples (15 in total) were bought respectively in the markets in Central Jakarta (Pasar Senen), South Jakarta (Jatinegara),

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and the satellite town of Jakarta (Kebayoran Baru).

These yellow coloured foods were made by the producer in limited quantities only, as they do not keep well and have to be used within two days. These foods are produced at a small home-industrial basis and have a limited distribution. As these foods are not packaged, and do not keep for more than 2 days, they need not to be registered at the P.O.M.

2. Registered Foods.

Yellow coloured dry wheat noodles, wrapped in plastic bag with a printed label, stating amongst others the brand name of the products and the registration number at the P.O.M. (Ministry of Health). The samples bought consist of : 4 different brands of dried "egg" noodles, and 2 different brands of instant noodles.

The production of dried wheat noodles and in especially instant noodles, demanded a more or less higher technology than the preparation of products mentioned before such as "tempe", "takwa", and fresh noodles. These foods have a higher keeping quality and are registered at the P.O.M.

3. Registered Food colours

Yellow synthetic colouring matters, packed in small plastic bags or small bottles provided with a printed label, stating amongst others the brand name or trade name of the product and the Registration number were bought in the 3 market places of Jakarta.

In total, 9 different brands (3 from each markets place) of yellow colouring products were bought. Two

samples do not have a registration number.

Methods

The yellow colouring matters were extracted from the foods using knitting wool, and further indentified chromatographically according to Pearson (1971), and Thaler (1954), using the reference standards.

The quantity of the coloring matter was measured spectrophotometrically.

As reference standards for the yellow colouring agents were used:
Non-edible colouring matters:

Metanil yellow, C.I. 13065, from BDH, obtained from P.T. Pebapan Metanilgelb Typ 8047, Basf product, obtained from P.T. Indrasari Jakarta.

Auramine O, Riedel-De Haen product, obtained from P.T. Saro Godung.

Permitted as food colour:

Tertrazine C.I. 19140,

Oehme & Baier product obtained from P.T. Kalbe Farma. F.D. & C. Yellow No. 5, from International Flavors & Fragrances. Editorial Sunset yellow F.C. ICI product, obtained form P.T. Galic Bina Mada.

RESULTS AND DISCUSSION

Results

1. Freshly prepared, yellow coloured foods :

a. "Tempe"

All 15 samples of yellow coloured "tempe" were found to contain the non-edible metanil yellow, ranging from 8.9-30.9 mil-

ligram per 100 grams of fresh food.

b. "Takwa"

All 15 samples of "takwa" were found to contain the non-edible metanil yellow ranging from 8.4 — 29.2 milligram per 100 grams of the fresh material.

c. Fresh weat noodles

From 15 samples of wheat noodles, 13 samples were coloured with the permitted food colour tartrazine, and only 2 samples were found to be coloured with the non-edible metanil yellow. The quantity used per 100 grams of fresh material were ranging from 1.44 to 1.98 milligrams.

2. *Dry wheat noodles, yellow coloured, wrapped in plastic bags:*

a. Dried "egg" noodles

All four sample of dried noodles having different labels, were found to be coloured with a non-edible colouring matter auramine 0, with the concentrations ranging from 3.89 to 4.12 millograms/100 grams.

b. Instant noodles

The 2 samples of instant noodles were found to contain the permitted food colour tartrazine.

3. *Yellow synthetic colouring matters:*

All nine samples of yellow colouring matters were found to contain non-edible colouring matters i.e. 8 batches contain metanil yellow, and one batch contains auramine 0.

Discussion

The practice of colouring the cooked soybean yellow prior to

fermentation, is probably of recent origin. The reason is unknown, although one may speculate whether the product may become more attractive if the beans at the cross section are more yellowish in colour than usual, or as some producers claim, the "tempe" will keep longer.

In regard to "takwa", usually it is coloured yellow, using the natural pigment of the rhizome of the *curcuma domestica val.* or "kunyit". The availability or the cheaper synthetic non-edible metanil yellow may be a reason for its use as a substitute. It is heartening to know that almost all samples of fresh noodles investigated do contain the permitted edible colour tartrazine, as only 2 out of the 15 samples investigated contain the non-edible metanil yellow.

In regard to the packaged foods and dyestuffs, offered for sale in labeled plastic bags or bottles provided with a registration number, they all contain a non-edible colouring matter, with the exception of the two samples of instant noodles. The four samples of packaged dry noodles, labeled as "egg" noodles, were found to be coloured with the non-edible auramine. Apparently auramine and not metanil yellow is considered to be more suitable for imitating the presence of egg yolk in the noodles. It is therefore quite evident that this practice is fraudulent and is cheating the consumer, exposing them to hazardous health risk. Their registration of the P.O.M. would have been rejected or denied at the very start, if it was known beforehand that non-edible colouring matters were involved.

The two samples of instant noodles, as mentioned before, are coloured with the permitted food

colour tartrazine. These products are manufactured by bigger companies, who use more sophisticated technology and are anxious to protect and safeguard their wellknown brand name.

As manufacturers of dried noodles do use the non-edible metanil yellow instead of the edible tartrazine, one then wonders, why can the small home-industries afford to use the edible tartrazine in their fresh noodles, although higher in price(?). May it be for bigger profit?

The repacked colouring matters offered for sale in small bags, they also should in fact contain a permitted food colour, as on the label is stated the registration number with the Ministry of Health (P.O.M.), which is required for the sale of food colours. The fact that they contain a non-edible toxic dyestuff is indeed a dishonest, and fraudulent practice,

against which appropriate measures must be taken.

The finding reported is an argument for the necessity of a constant vigil and inspection of the foods, foodproducts, and food colours. In case of violation, it must be followed by a penalty or injunction if found to be dishonest and cheating. The registration number may provide an easy clue to their origin or manufacture or repacking.

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