

AZIENDA USL. BOLOGNA CITY
Department of Prevention
Hygiene, Food and Drinks
(via Gramsci 12, 40121 Bologna, Tel:6079828)

Bologna 19/12/97

Messrs.
Eurochef
Viale delle Nazioni 101
41100 Modena

Ref: **REPORT ON THE MACHINE FOR FRYING POTATOES
KNOWN AS "POM'CHEF"**

Further to discussions and agreements made, herewith the report in question.

Yours faithfully,

Medical Director
Dr. A. Brunozzi

Round stamp: Azienda USL, Bologna City
Region of Emilia Romagna

Director of the Department of Prevention
Prof. A. Faggioli

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Date: 19/12/97

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REPORT ON EQUIPMENT FOR FRYING POTATOES KNOWN AS "POM'CHEF"

Given that the company EUROCHEF - Restaurant equipment, Viale delle Nazioni 101, Modena, following its request of 13/12/96 and further supporting documentation of 28/02/97 and 15/09/97, submitted its equipment, known as "pom'chef", used for the automatic production of fried potatoes, to the Department of Prevention for hygiene evaluation, the following procedures were carried out:

- the verification of the working of the machine and of the raw materials used, through two inspections on public premises where - with previously issued, temporary sanitary authorisation, issued by the Commune of Bologna - the machine had been installed for an experimental period;
- the taking of two samples of the oil used, before and after a certain number of production cycles;
- the study of the bibliography relating to the characteristics of the raw materials from a public health and nutritional point of view;
- the acquisition of certifying documentation on the materials in contact with food, in accordance with current norms;

- an evaluation of the category of business for which installation of the equipment appears compatible within the limitations envisaged by the health authorities.

THE WORKING OF THE MACHINE AND RAW MATERIALS USED

From the inspections carried out and the documentation acquired it was possible to verify that the POM'CHEF machine functions using as raw materials:

- pre-fried, frozen potatoes of the "OVENFRITES" variety (that is, produced by a special process which reduces their water content, thereby minimizing the emission of steam during the final re-hydration of the product prior to serving;
- oil with a high fuming point which, in the case inspected, was palm oil, but, according to the documentation presented, could be either sunflower or peanut oil.

The equipment, which is cube-shaped measuring about 60 cm along each edge (to be precise 61 cm x 60 cm x 58 cm), is manufactured entirely from stainless steel and has a loading lid through which the potatoes pass into a basket, also of stainless steel; here the potatoes remain for a programmable period (generally of 1 to 3 minutes at a temperature of 175°) and are then automatically ejected into a bowl, ready to be served. Thus, the potatoes do not come into contact with materials or gears inside the machine which might cause the introduction of foreign substances.

Since the oil has a very high fuming point, and since the equipment is perfectly sealed and has an external vaporizer for condensating the cooking vapours (cold-barrel), which are ducted into a container underneath the

machine, the production cycle is practically odourless. In fact, during the two experiments carried out no odours were noticed.

It is the opinion of the Department that, if the machine is correctly managed and the right raw materials are used, no fume extractor system linked to a vent pipe need to be installed.

As far as maintenance is concerned, the only operation to be carried out with regular frequency is the changing of the oil: to this purpose, the machine is supplied with an automatic display which warns the operator of the need to change the oil. The machine also has an alarm system which is triggered after an excessive number of fluctuations in temperature (ON / OFF), regardless of the number of cooking cycles carried out.

TAKING OF SAMPLES

The chemical analyses carried out by A.R.P.A., Provincial Department of Bologna, on the sample of oil taken after a series of cooking cycles and compared with a sample of unused oil did not show any degradation or production of unwanted substances.

NUTRITIONAL CHARACTERISTICS - BIBLIOGRAPHICAL STUDY

This Department has acquired through the Internet significant, up-to-date scientific documentation on the oil used, indicating some health problems which are attributable to the consumption of palm oil, and particularly:

- thrombogenic effect;
- hypercholesterolaemic effect;
- reddish colour due to the carotenes content which may, in pregnancy, cause genetic damage.

Bibliography:

- 1) *FALL IN TOTAL CHOLESTEROL CONCENTRATION OVER FIVE YEARS IN ASSOCIATION WITH CHANGES IN FATTY ACID COMPOSITION OF COOKING OIL IN MAURITIUS: CROSS SECTIONAL SURVEY (Uusitato U. et al., BMJ 1996)*
- 2) *NUTRITION & HEALTH IMPLICATIONS OF PALM OIL IN INDIAN DIETS (Ghafoorunissa - Indian J Med Res 1995)*
- 3) *ATHEROGENIC FACTORS IN THE DIET OF COSTA RICA POPULATION (Rodriguez Herrera N. et al., Arch Latinoam Nutr 1996)*
- 4) *COMPARISON OF THE EFFECTS OF DIETS ENRICHED IN LAURIC, PALMITIC AND OLEIC ACIDS ON SERUM LIPIDS AND LIPOPROTEINS IN HEALTHY WOMEN AND MEN (Temme E et al., AmJ Clin Nutr 1996)*
- 5) *DIETARY FATTY ACIDS IN ATHERO THROMBOGENICS: INFLUENCE OF PALM OIL INGESTION (De Bosch N. et al., Haemastasis 1996)*
- 6) *RED PALM OIL AS A SOURCE OF CETA-CAROTENE FOR COMBATING VITAMIN A DEFICIENCY (Manorama R. et al., Plant Foods Hum Nutr, 1996).*

Although it must be pointed out that these contra-indications refer to palm oil as an ingredient in food products (particularly sweets) and not in the frying process, the data would suggest that, its use is on the whole, inadvisable.

The documentation available shows none of the health contra-indications for peanut oil that it does for palm oil.

Moreover, peanut oil is also considered preferable by the distributors themselves, they generally advise its use, since its organoleptic properties have a better effect on the final product.

MATERIALS USED

The documentation certifying conformity with the norms of objects in contact with foodstuffs, including not only the oil bowl and baskets but also the fittings, was also examined, even if contact with the latter can be considered purely accidental.

KINDS OF BUSINESSES WITH HEALTH AUTHORISATION COMPATIBLE WITH THE USE OF THE MACHINE.

In the first place, it must be pointed out that the Pom'chef machine, although the handling of foodstuffs is reduced to a minimum, does not come under the regulations in art. 32 of d.p.r. 327/80 concerning automatic distributors (the installation of which requires only a simple communication to the supervising authority).

In the opinion of this Department of Prevention, the use of the machine in question should be considered subject to art. 327/80, para. 4 and 6: modification to premises or plant which "may be carried out with the permission of the competent health authorities".

It follows that each business, authorised and belonging to the categories listed below, intending to install the machine must request a specific permit which will be given after inspection and on the express opinion of the health authorities.

According to the current regulations, and in particular to the classification of businesses in the Commune of Bologna, the following categories are considered compatible.

- traditional, fast-food and self-service restaurants;
- company canteens with kitchens or functioning as self-service outlets;
- manufacturers of foodstuffs such as piadine, crescentine, take-away pizzas;
- take-away shops;

- bars belonging to the categories listed in the Commune Resolution 453/94 which are licensed to prepare and serve frozen pasta in single portions, with or without an extension for serving salads (Categories B3 and B2b).

With reference to the above it should be pointed out that pre-fried frozen potatoes of the Ovenfrites type are declared already edible once de-frozen and therefore ready for use after heating; this is a process comparable with that for single-portions of frozen pasta, and as such does not come under traditional cooking, which, as is known, is excluded from category B enterprises.

The hygiene requirements to be met in order to obtain the permit are as follows:

- general structural requirements for the specific categories of business, based on the present regulating norms;
- specific requirements concerning the positioning of the machine and relative accessories in suitable spaces and with adequate access, so as not to interfere, on a hygiene level, with the other functions of the business. The front of the machine, with the door for loading the potatoes into the machine and the outlet for the finished product, must be away from contact with the public.

CONCLUSIONS

The Department is in favour of the adoption of the POM'CHEF machine under the following conditions:

- that it be used exclusively with raw materials consisting of FROZEN, PRE-FRIED POTATOES OF THE "OVENFRITES" TYPE and PEANUT OIL;

- that the necessary cleaning and maintenance be carried out and, particularly, that the oil be changed every time the display lights up;
- that it be installed only on receipt of a health authority permit and only by businesses belonging to the categories mentioned above;
- that the original characteristics of the machine should not be tampered with.

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