

Möglichkeiten der Aromaanwendung in den Fleischerzeugnissen

MILICA POLIĆ, ŽARKO TRUMIĆ and PETAR MODIĆ

Jugoslawisches Institut für Fleischtechnologie, Beograd, SFR Jugoslawien

Für die betreffenden Untersuchungen haben wir Produktionsmodelle zustandegebracht die sich auf einen Konserventyp vom zerkleinerten Fleisch, eine Pastentyp, als auch auf einen Brühwursttyp beziehen, wobei die Gesetzbestimmungen über die erlaubten Mindestfleischmengen berücksichtigt worden waren, während wir Fettgewebe, Schwarten und Innereien in höchst erlaubten Mengen gebraucht haben. Bei den Versuchserzeugnissen wurden dem Rohstoff verschiedene Aroma-Preparate: Pork BZ 1032, Meat TA 212, Meat TA 2410/15 und Liver Intensifier 85802, als auch das Gewürz zugegeben, und bei den Kontrollerzeugnissen nur das Gewürz, das wir gewöhnlich bei der Herstellung von dieser Erzeugnissen zu gebrauchen pflegen.

Aufgrund den von uns durchgeführten sensorischen Untersuchungen kamen wir zur Schlussfolgerung dass die Anwendung von Aroma-Preparaten in der Kombination mit dem ausgewählten Gewürz bei den Erzeugnissen mit verhältnismässig wenig Fleisch technologisch durchaus rechtfertigt ist. Geschmack und Geruch von den Versuchserzeugnissen mit den zugegebenen Aroma-Preparaten waren wesentlich besser als es bei den gleichen Eigenschaften der Kontrollerzeugnissen der Fall war.

Possibility of the Application of Aroma in Meat Products

MILICA POLIĆ, Ž. TRUMIĆ, P. MODIĆ

Yugoslav Institute of Meat Technology, Belgrade, Yugoslavia

For these examinations, the authors have prepared model products of canned ground meat type, paste type and semi-dry sausage type, using the minimum allowed quantities of meat and the maximum allowed quantities of fatty tissue, pork rinds and edible offals. Experimental products were prepared with the addition of different quantities of aroma (Pork BZ 1032, Meat TA 212, Meat TA 2410/15 and Liver Intensifier 85802) and spices, whereas the controls were prepared only with the addition of spices being commonly used in the manufacture of these products.

On the basis of organoleptic evaluation the authors have concluded that the application of aroma in combination with selected spices is technologically justified in products containing a relatively small quantity of meat. Experimental products showed considerably better taste and odour than the controls.

K 9:2

Possibilités d'introduction des arômes dans les produits de la viande

MILICA POLIC, ZARKO TRUMIC, PETAR MODIC

Institut Yougoslave pour la Technologie de la Viande, Belgrade, Yougoslavie

Pour cette étude nous avons mis au point un modèle de production du genre conserves de viande hâchée, du genre pâté et du genre saucissons à durée limitée, en respectant les normes en vigueur visant les quantités minimales de viande autorisées, tandis que, par contre, le tissu grasseux, les membranes et les tripes de porc ont été utilisés suivant les quantités maximales permises. Aux produits d'essai nous avons ajouté aux matières premières différentes quantités d'arômes tels que PORK BZ 1032, Meat TA 212, Meat TA 2410/15 et Liver Intensifier 85802 ainsi que des épices, dans ceux de contrôle nous n'avons ajouté que les épices utilisées d'habitude pour la fabrication de ce genre de produit.

Sur la base des examens organoleptiques nous sommes arrivés à la conclusion que l'introduction des arômes avec des épices choisies se justifie pleinement technologiquement pour les produits dans la composition desquels n'entre qu'une faible quantité de viande. Le goût et l'odeur des produits d'essai avec adjonction d'arômes étaient nettement meilleurs que dans les produits de contrôle à propriétés semblables.

Возможность применения ароматов в мясопродуктах

МИЛИЦА ПОЛИЧ, ЖАРКО ТРУМИЧ, ПЕТАР МОДИЧ

Югославский институт по технологии мяса, Белград, СФР Югославия

Для этих исследований мы изготовили модель производства по типу консерв с фаршированным мясом, по типу паштет и по типу сырокопченых колбас, пользуясь при этом законным предписанием о минимально допускаемом количестве мяса, пока жирную ткань, свињскую шкуру и внутренности мы пользовали в максимально допускаемом количестве. В случае опытных продуктов мы основном сырье прибавляли различные количества ароматов (Pork BZ 1032, Meat TA 212, Meat TA 2410/15 and Liver Intensifier 85802) а также пряности (специи) а в случае контрольных образцов только специи которые обыкновенно пользуются при изготовлении этих продуктов.

На основании осуществленных органо-лептических исследований мы пришли к выводу что применение ароматов в комбинации с отобранным специями имеет полное технологическое оправдание у продуктов которые в своем составе имеют сравнительно небольшое количество мяса. Вкус и запах опытных продуктов с прибавлением ароматов были в значительной степени более качественным чем это был случай у тех же самых свойств контрольных продуктов.

Possibilities of the Application of Flavours in Meat Products

MILICA POLIĆ, ŽARKO TRUMIĆ and PETAR MODIĆ
Yugoslav Institute of Meat Technology, Belgrade, Yugoslavia

In professional literature, there is few data on the production and properties, specially on the use of preparations called meat flavours. Contrary to previous conceptions, today it is known that meat flavour preparations are obtained by very complex and controlled reactions (1, 2, 3, 4, 5, 6). The available literature data and the data of manufacturers indicate that these preparations are mainly used in the manufacture of soups, sauces, meat cheese, meat pies, sandwich stuffs and similar. However, there are not many published data on the possibility of their use in meat industry - in the production of sausages and canned meat, for example (7,8).

The lack of practical experiences gives rise to the question whether it is justifiable to use flavours in the manufacture of meat products, namely in which way can they be most favourably used. On the other hand, relatively high prices of meat and constant enlargement of the assortment in meat industry cause ever increasing use of secondary raw materials - slaughter by - products (edible offals, pork rinds, fatty tissue and others). These raw materials are in our country also used mainly for the production of cheaper kinds of sausages and canned meat products, for which the minimum quantity of meat has been prescribed by the statutory regulations. Due to that, the basic problem of the quality of these products is the problem of taste which corresponds more to the used secondary raw materials and spices than to meat.

Although the application of flavours is not permitted by our regulations, in this work we set the task to examine the effect of the addition of these preparations on some sensory properties of certain meat products.

Materials and methods

For these examinations we have prepared model products - in the types of semi-dry sausages, canned sterilized ground meat products and canned liver paste, according to the usual raw material composition. Experimental and control samples of sausages and canned meat contained the prescribed minimum quantity (25%) of meat and 20% of meat emulsion, whereas the rest of the stuff consisted of edible offals, fatty tissue, pork rinds, additives and spice extract premix. The liver paste contained 10% of pork head meat and 15% of ground pork liver, whereas the rest consisted of pork fatty tissue, water, additives and spice extract premix.

Experimental and control model products were prepared by applying the same relation of the basic raw material and additions, whereby the experimental products contained the examined meat flavours, namely liver flavour. For semi-dry sausage and canned meat models, Pork BZ 1032, Meat TA 212 and Meat TA 2410/15 flavours were used and for the liver paste model - Liver Intensifier 85802. The flavours were produced by "Givaudan" - Dübendorf, and they were applied in the quantities of 0.3, 0.5 and 1.0% in relation to the quantity of the prepared stuff. The stuffs of experimental and control sausages were filled in artificial casings and then heat processed in the smoking house. The liver paste stuff was filled in cans which were heat processed in the retort, in the way being commonly applied in the production of these products.

The authors carried out the sensory evaluation of experimental and control products by evaluating the intensity of odour and taste on meat or liver, using 3-point scale:

- 1 - insufficiently pronounced taste and odour on meat or liver;
- 2 - well pronounced taste and odour on meat or liver;
- 3 - intensively pronounced taste and odour on the used flavour.

K 9:4

The specificity of the formed taste and odour of experimental products was also evaluated, taking into consideration mutual influence of the used raw material, spices and flavour as well as the meat product type.

Results and discussion

The results of sensory evaluation of the intensity of taste and odour on meat or liver of experimental products containing the examined flavours are presented in table 1.

Influence of added flavours on the intensity of taste and odour on meat or liver

Table 1.

F l a v o u r	Quantity of added flavour, %	Taste and odour intensity		
		Sausage	Canned meat	Liver paste
Pork BA 1032	0.3	2	2	-
	0.5	2	2	-
	1.0	3	3	-
Meat TA 212	0.3	1	1	-
	0.5	2	2	-
	1.0	3	3	-
Meat TA 2410/15	0.3	1	1	-
	0.5	2	2	-
	1.0	3	3	-
Liver Intens. 85802	0.3	-	-	1
	0.5	-	-	2
	1.0	-	-	3

The results of sensory evaluation have shown that well pronounced, namely intensified taste and odour on meat, or liver is obtained in experimental products, in relation to controls, if Meat TA 212, Meat TA 2410/15 and Liver Intensifier 85802 are added in the quantity of 0.5%. In the conditions of our examinations, however, Pork BZ 1032 provides sufficiently pronounced, namely intensified taste and odour on meat already in the quantity of 0.3%.

Evaluation of the specificity of the formed taste and odour of experimental sausages and canned meat products has shown that Pork BZ 1032 in the quantity of 0.3% and Meat TA 212 in the quantity of 0.5% influence favourably the formation of agreeable and specific taste and odour, so that an impression is produced that experimental products contain considerably higher quantities of meat than the controls. This means that the mentioned flavours were compatible with the used raw material and spices regarding the formation of intensified agreeable taste on meat. In the case of Meat TA 2410/15, however, the taste and odour of experimental sausages and canned meat products, although intensified, were not specific for these meat product kinds. Therefore we think that this flavour is not suitable for the application in these meat products. Moreover, it does not meet the taste of our consumers.

Sensory evaluation of products has shown that in the conditions of our examinations, the best results regarding the formed intensified taste and odour on meat in sausages and canned meat products were obtained by the application of Pork BZ 1032 in the quantity of 0.3% and 0.5%, namely Meat TA 212 in the quantity of 0.5%. In the case of liver paste, the best results were obtained by the application of Liver Intensifier in the quantity of 0.5%. This quantity intensified sufficiently the taste and odour on liver. On the other hand, the application of the mentioned flavours in the quantity of 1% continues to intensify taste and odour of products, but with the predominance of taste of the examined flavours, the effect of basic raw materials and spices on the taste and odour of products is lost.

On the basis of the performed examinations it can be presumed that the use of 0.3 - 0.5% of Pork BZ 1032, namely 0.5% of Meat TA 212, would give significant results in the improvement of taste and odour of cheaper kinds of semi-dry sausages and canned sterilized ground meat products. The use of 0.5% of Liver Intensifier would considerably intensify the taste on liver of liver paste products containing low quantity of liver. In this way, the so-called "empty" taste of cheaper kinds of meat products, resulting from insufficient quantity of meat in their composition, namely from the predominant taste and odour of other ingredients, could be improved.

Conclusions

On the basis of the obtained examination results, the following conclusions can be drawn out:

- 1) In cheaper meat products containing a relatively small quantity of meat and considerably more other ingredients - fatty tissue, pork rinds and edible offals, the application of the examined meat flavours proved to be quite justifiable from the aspect of sensory evaluation of taste and odour of products.
- 2) Having in mind the raw material composition of experimental sausages and canned meat products, the best results regarding the intensification of taste and odour of meat products and regarding the specificity of the formed taste were obtained by the application of 0.3%, namely 0.5% of Pork BZ 1032 and 0.5% of Meat TA 212, and in the case of liver paste - 0.5% of Liver Intensifier.
- 3) The use of higher quantities of the above mentioned flavours (1.0%) intensifies too much the taste and odour on the added flavour and blocks the total effect of taste of the used raw material and spices, resulting in products being of nonspecific taste for our consumers.

Literature:

1. Heath H.B., 1972.: Food Manufacture, vol 47, No 1,
2. Sheide J., 1969.: Fleischwirtschaft, 3, 291.
3. Reynolds T.M., 1965.: Advanc. Food Res., 29 (II), 1059.
4. Song Piff-Soou, Chichester C.O., 1966.: J. Food Sci. 31 (6), 914.
5. Stewart T.F., 1969.: BFMIRA Sci. and Tehn. Surveys No 61.
6. Heyns K., Noak H., 1964: Chem. Ber. 97, 415.
7. Milica Polić, Ž. Trumić, P. Modić, 1974.: Tehnologija mesa 7-8, 222.
8. P. Modić, 1974: Tehnologija mesa 10, 294.

