

Application of liquid smoke for the production of cooked ham

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To improve the flavour of the ham produced by an express technology, definite optimum doses of liquid smoke were used.

The results obtained from comparative physico-chemical and organoleptic analyses of ham lots prepared with or without the addition of liquid smoke, under the same manufacturing conditions and technological regime, show the positive impact of liquid smoke on cooked ham flavour.

Verwendung eines Räucherpräparates bei der Herstellung von Kochschinken

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Zur Verbesserung des Aromas und des Geschmackes von nach einer Expresstechnologie hergestelltem Schinken werden bestimmte optimale Dosen von einem Räucherpräparat verwendet.

Zu diesem Zwecke wurden physikalisch-chemische und sensorische Vergleichsuntersuchungen an mit und ohne Zusatz eines Räucherpräparates, bei gleichen Produktionsbedingungen und bei gleichem technologischen Regime hergestellten Schinkenpartien durchgeführt. Die erhaltenen Ergebnisse zeigen den positiven Einfluss des Räucherpräparates auf das Aroma und auf den Geschmack des Kochschinkens.

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Emploi d'une fumée liquide dans la fabrication du jambon cuit

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Pour l'amélioration de l'arôme et du goût du jambon, fabriqué d'après une méthode intensifiée, on a utilisé des doses optimales déterminées de fumée liquide. Les résultats, obtenus des études comparatives physico-chimiques et organoleptiques de différents lots de jambon, fabriqués avec ou sans adjonction de fumée liquide dans des conditions de fabrication et avec un régime technologique identiques, ont démontré l'influence positive de la fumée liquide sur l'arôme et le goût du jambon cuit.

Использование коптильного препарата для производства вареной ветчины

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Для улучшения аромата и вкуса производимой по экспрессной технологии ветчины используют определенные оптимальные дозы коптильного препарата. Результаты, полученные при сравнительных физико-химических и органолептических исследованиях партий ветчины, произведенных с прибавлением и без прибавления коптильного препарата при одинаковых производственных условиях и технологическом режиме, выявили положительное влияние коптильного препарата на аромат и вкус вареной ветчины.

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The production of ham and ham type meat products increases all the time. Stimulated by the high profitability and the possibility to use in the most effective way the first-class pig meat, this production is under the impact of a incessant process of improvement and intensification (4). The mechanization and automation, the new technologies and climatization permitted to cut down the production process from 15 - 16 to 2 - 3 days. This made possible for a large number of meatpacking plants and many countries to produce and offer for the home market and export big quantities of ham, including new assortments as "Delicatesse ham", "Ham in beer", "Cooked ham", "Fresh ham sausage" and others (3,9,6,8). Alongside with this, to a great extend the requirements for quality but most of all for flavour and taste were increased as well. It is well known that in recent years for the production of sausages with success are used smoke preparations (4,7,5,1,2).

With our present paper we have made an attempt to increase the organoleptic qualities and most of all the flavour and taste of ham produced after a speeded up technology, by using a smoke preparation.

Material and Method

For the production of test batches of ham we used hams from pig skinned carcasses of animals all coming from one farm, one breed and liveweight of about 115 kg.

We produced three types of cooked ham :

- Ham - after the classic technology and a production cycle of 15 days.
- Ham - produced by express technology of 3 days.
- Ham - produced by express technology with the addition of smoke preparation and a production cycle of 5 days.

The three types of ham were injected intermuscularly with a multiinjection machine with one and same salts solution of a complex type - for the "classic type ham" 6 - 7% with following dipping for 2 - 3 days in brine having the same contents, but with a lower concentration, and for the "express" type of ham with 12%.

The smoke preparation was "VNIIMP - I" SSSR in quantity of 100 grams for 100 kg salt solution. After the salting the meat for the "classic type of ham" was massaged without vacuum in containers type "Drencarn", periodically for 18 - 20 hours. The massaged meat was filled in metal forms and passed for pasteurization. The cooked ham was cooled for 120 minutes with tap water and for still more 16 - 18 hours in a room at 0 - 4°C. The cooled ham, after 24 hours was submitted to a test panel consisting of 8 well trained board. The organoleptic evaluation was made on the bases of the results of the tested samples after the 9 point hedonic scale. For the test were taken at least two blocks from one type of ham, and each person from the board evaluated three samples of the ham cut from different parts of the form - periphery and central.

The results were variation-statistically treated after Student-Fisher.

Results and Discussion

The results from the taste panel of the three types of ham are systemized on table 1.

Indices	Ham pressed	Ham express techn.	Ham with smoke prepar.
	$\bar{x}_1 \pm t$	$\bar{x}_2 \pm t$	$\bar{x}_3 \pm t$
Consistency	6,2 ± 0,56	7,0 ± 0,61	7,2 ± 0,59
Juiciness	7,2 ± 0,59	7,4 ± 0,61	7,6 ± 0,61
Colour	8,4 ± 0,61	8,5 ± 0,42	8,3 ± 0,56
Flavour	8,4 ± 0,42	6,0 ± 0,61	8,6 ± 0,42
Taste	8,6 ± 0,42	6,0 ± 0,42	8,7 ± 0,37
General evaluation	8,4 ± 0,61	7,0 ± 0,61	8,6 ± 0,42

From the data presented on table 1 it is seen that the ham produced with the addition of smoke preparation has an equal general organoleptic evaluation with the ham produced after the classic method and technology. Both hams, the classic and the one with smoke flavour added have significantly better organoleptical evaluation of $8,4 \pm 0,61$ and $8,6 \pm 0,42$ from the ham produced by the express technology having a production cycle of 3 days, namely $7,0 \pm 0,61$. Especially big are the differences of the three hams in relation to flavour and taste. As it was foreseen the biggest mark for flavour ($8,6 \pm 0,42$) and taste ($8,7 \pm 0,37$) received the ham with smoke flavour.

On the bases of these results and having in mind the advantages of the smoke preparations (2,5) we created an industrial technology for the production of a new assortment of ham "Reusse", which is produced in quantities and finds an excellent market in the country.

Conclusions

For the increase of flavour and taste of cooked hams it is possible to be used with success smoke flavour.

The Soviet smoke preparation "VNIIMP - I" used in quantity of 100 grams for each 100 kg salt solution considerably improves the organoleptical qualities of cooked ham and especially the flavour and taste.

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