

THE FILET MICROFLORA FROM THE STURGEON AND ORDINARY FISHES

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In this article the number of frozen forcemeat microorganisms prepared sturgeon flesh of fish and the number of lactic acid bacteria flesh of fish forcemeat in various nutrient mediums by direct seeding and through memory cultures – fish hydrolysis have been investigated. During the modified nutrient medium (e.g. MSB) use by us, the number of mesophilic lactic acid bacteria has been higher by 2–3 orders in magnitude, than in the other standard environments.

The current stage in the lactic acid bacteria flesh of fish study is associated with a number of the theoretical and the practical challenges solution. First of all, this is the new approaches development to the starters' creation for the different branches and the various sectors of the food industry [1, 2, 3].

So, the analysis has been shown, that the allocation sources of the new species and the strains are, mainly, the production strains, the culture collections, the human's and the animals' organism. The insufficient attention is being paid to the habitat niches of the lactic bacteria flesh, both the natural,

as well as the man – made ones. The lactic acid bacteria flesh are in the multi – species and the multi – strained community in them, which is quite increased the promising crops selecting possibility. In Kazakhstan, the total microflora and the lactic acid bacteria flesh of fish filet have not yet been studied, even though it has the great production value against the unwanted microorganisms [3].

Thus, the frozen filet microflora from the ordinary and the sturgeon flesh of fish filet has been studied by us. The contamination of the cooked flesh of fish filet from the sturgeons and the ordinary fishes has already been studied by us.

The frozen flesh fish filet samples from the ordinary and the sturgeon fishes have been served the research objects. The contamination of the flesh fish filet, having prepared from the sturgeon and the ordinary fishes have already been studied.

The flesh fish filet samples, having prepared from the sturgeons flesh of fish (e.g. beluga, hausen), and the ordinary (e.g. the bream, the Caspian roach, and etc.) fishes, having produced from the «Rakusha» PC and the «Hope» LLC have been served the research objects. The standard environments have already been used to be isolated the necessary microorganisms.

Thus, the comparative microflora of the flesh of fish filet, having prepared from the sturgeon and the ordinary flesh filet of fishes, have been given in the Table 1.

Table 1

The Number of the Different Microorganisms Groups in the Flesh of Fish Filet, Having Prepared from the Different Fishes (e.g. $\times 10^2$ KOE/g.)

The storage life of the flesh fish filet	The spore-forming bacteria		The yeast		The yeast-like fungi		The filamentous fungi	
	The filet from the ordinary fishes	The filet from the sturge-on fishes	The filet from the ordinary fishes	The filet from the sturgeon fishes	The filet from the ordinary fishes	The filet from the sturgeon fishes	The filet from the ordinary fishes	The filet from the sturgeon fishes
The prepared fish flesh filet in 24 hours	0,3 \pm 0,021	0,2 \pm 0,012	0,1 \pm 0,012	–	0,1 \pm 0,03	-	-	-
in 15 days (360 hours)	0,4 \pm 0,012	0,2 \pm 0,014	0,1 \pm 0,024	0,2 \pm 0,02	0,3 \pm 0,024	0,2 \pm 0,041	-	-
in 30 дней (720 hours)	0,6 \pm 0,032	0,5 \pm 0,03	0,2 \pm 0,021	0,1 \pm 0,012	0,2 \pm 0,032	0,4 \pm 0,032	0,2 \pm 0,02	0,2 \pm 0,02

It has been shown in the Table № 1, that the spore – forming bacteria, the yeast, the yeast – like, and the filamentous fungi are found for the quite different storage periods in the flesh of the fish filet. So, in the flesh of fish filet, there is a small number of the spore – forming bacteria, in the 30 days or 720 hours in 1 gram of the ordinary flesh of the fish filet has been made up the colonies, the forming units have been made up not more, than 60, and in the sturgeon flesh of fish filet – it has been made up only 40. So, the yeast, the yeast – like and the

filamentous fungi have not been found out in the forcemeat from the sturgeon fishes. The filamentous fungi in 30 days or 720 hours in 1 gram have been made up 30–40 colonies, while the next day and in the 15 days or 360 hours they have not been found out at all.

Thus, the flesh of the fish filet, having prepared from the ordinary and the sturgeon fishes, is completely met by the main microbiological requirements.

Further, the culture media selection for the lactic acid bacteria flesh of fish filet separation from the flesh

fish filet has been conducted by us. So, there is no any special culture media for the lactic acid bacteria from the flesh of fish filet, therefore, the lactic acid bacteria flesh of fish filet number study by us, the Kvasnikov',

the Lukovnikov', Bogdanov' culture media, and its modifications (e.g. MSB medium) have been used by the direct seeding and through the batch cultures – the fish hydrolyzate [4]. (see, the Table 2).

Table 2
The Number of the Lactic Acid Bacteria from the Flesh of Fish Filet of the Sturgeon Fishes, Depending from the Medium Composition and the Separation Methods (KOE/g)

The cultivation Temperat Media	The direct seeding			The storage environment, the fish hydrolyzate		
	30°C	37°C	45°C	30°C	37°C	45°C
Kvasnikov	$0,1 \cdot 10^2 \pm 0,02$	$0,5 \cdot 10^2 \pm 0,03$	-	$2 \cdot 10^2 \pm 0,01$	$4 \cdot 10^3 \pm 0,2$	-
Lukovnikov	$0,4 \cdot 10^2 \pm 0,04$	$0,5 \cdot 10^2 \pm 0,02$	$0,3 \cdot 10^2 \pm 0,01$	$8 \cdot 10^3 \pm 0,4$	$6 \cdot 10^2 \pm 0,2$	-
Bogdanov	$0,4 \cdot 10^2 \pm 0,021$	$0,8 \cdot 10^3 \pm 0,031$	-	$7 \cdot 10^4 \pm 0,13$	$8 \cdot 10^4 \pm 0,2$	-
MCF	$0,1 \cdot 10^2 \pm 0,01$	$0,2 \cdot 10^3 \pm 0,02$	-	$9 \cdot 10^6 \pm 0,21$	$8 \cdot 10^4 \pm 0,34$	-

During the modified nutrient medium (e.g. MSB) use by us, having prepared in the fish hydrolyzate, the number of mesophilic lactic acid bacteria has been higher by 2 orders in magnitude, than in the Bogdanov's environment, and it has been higher by 3 orders in magnitude, than in the Lukvnikov's environment. Therefore, for the lactic acid bacteria separation, the nutrient medium, having contained the hydrolyzate, is exerted the favorable condition.

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