Sturgeon caviar technologies

Vesta~VAR

www.vesta-var.ru

For more than twenty years our experts are on the cutting edge of technology development for a unique delicacy – caviar. We offer probably the best alternative to boric chemicals: safe food additives VAREX-11, VAREX-12, LIV-1 and LIV-2. Preserving the riches of grained caviar flavour, we also protect your health.

According to Technical Regulations of the Customs Union and interstate standards (GOST) food additives VAREX-11 and LIV-1 are used for fresh grained caviar production, VAREX-12 and LIV-2 are used for pasteurized grained caviar production.

LIV-1, LIV-2

The development of complex food additives LIV-1 and LIV-2 made it possible to completely refuse from using boric chemicals (borax, E284 and E285) for sturgeon caviar in Russia by the mid-1990s, because caviar treated with LIV-1 and LIV-2 absolutely surpassed caviar with borax by the quality and safety for human health.

In order to give sturgeon caviar producers an opportunity **to repack finished product** in small consumer package **throughout the shelf life,** the specifications (TU) "Pasteurized sturgeon caviar" were certified. According to this technology caviar can be stored in jars and tins for up to 12 months at -2° to -4°C; the complex food additive **LIV-2** is used as a preservative.

"butchered" roe
(4-th grade of maturity)

ovulated roe
(5-th grade of maturity)

VAREX-11, VAREX-12

With the rapid development of **sturgeon farming** it has become necessary to produce caviar using **the 5-th grade of maturity ovulated eggs** (extracted in vivo), as well as the 4-th grade of maturity non-ovulated eggs. In this respect the Vesta-VAR company developed new manufacturing techniques for farmed sturgeon caviar in the 2000s.

The main feature of these innovative techniques is that the complex food additives (safe preservatives) VAREX-11 and VAREX-12 (mixtures with salt) are used. Being developed on the base of LIV-1 and LIV-2 long-term successful application experience and on the base of an improved methodology for complex food additives elaboration, **they brought the technology of farmed sturgeon caviar in Russia to a new leading level.**

Due to the use of VAREX-11 and VAREX-12 it has become possible **to store caviar at positive temperature and extend the shelf life**. This fact plays an important role when retailers choose their suppliers, because not many refridge units are designed for a small negative temperature (-2° to -4°C), and disturbance of temperature regime during storage and transportation significantly reduces the very small shelf life of caviar. **VAREX provides the "safety margin" at the temperature up to +4 °C.**

The advantages of food additives VAREX and LIV

- Perform a complex effect: **effectively slow down the processes of spoilage** and the appearance of undesirable after-tastes (of oxidized fat, bitterness, etc.), ensure the microbiological safety of caviar.
- **Significantly extend the shelf life** of caviar.
- **Preserve the natural flavour and inimitable bouquet of fresh caviar** throughout the shelf life.
- **Safe for health,** because do not contain hazardous ingredients (borax, sodium benzoate (E211), parabens, antibiotics, etc.).
- **Easy-to-use** and do not require changing the traditional technological process of caviar manufacturing.
- **Universal:** can be used both for "butchered" and ovulated roe.
- Caviar with these food additives **can be exported.**

With the ability to store product at positive temperature, extend its shelf life and maintain high quality, your caviar becomes high-demanded by caviar retailers and consumers and can be delivered to new markets abroad.

Using our food additives, you ensure consistent quality of caviar during shelf life, and also preserve the useful properties of the product that customers appreciate.

Comparative description of Russian standards (GOST and TU) for caviar

	GOST 7442-2017	GOST R 55486-2013	TU (developed by Vesta-VAR, LLC)	GOST 6052-2004	TU (developed by Vesta-VAR, LLC)
Field of use	for grained "butchered" roe	for grained "butchered" and ovulated roe		for grained pasteurized roe	
Preservative (complex food additive – mixture with salt)	VAREX-11, or LIV-1, or else		VAREX-11	LIV-2	VAREX-12
Salt content, %	3.5 to 5.0	2.5 to 5.0		3.0 to 5.0	2.5 to 4.5
Storage temperature, °C	with VAREX-11: +2 to +4, -2 to -4 is also permitted; with LIV-1: -2 to -4		+2 to +4, -2 to -4 is also permitted	-2 to -4	+2 to +6
Shelf life, up to	10 months – with VAREX-11; 9 months – with LIV-1		10 months	12 months	
Packaging	tins and jars	tins and jars; other kinds of packing are also permitted	tins; other kinds of packing are also permitted	tins and jars	tins and jars; other kinds of packing are also permitted
Residual content of sorbic acid in caviar, %, up to	0.2 – with VAREX-11; 0.1 – with LIV-1		0.2	does not contain sorbic acid	

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