

*Materials of Conferences***LIPID EXCHANGE INDEXES  
IN PIG BLOOD**

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In addition to academic interest, the study in the content of lipids and their metabolism in organism is of great practical value. Lipids make up a vast group of substances greatly different in their chemical composition, functions and content in different organisms. They play a great role in vital processes. Lipids being one of the basic components of biological membranes, they exert influence upon the membranes permeability. They are involved in creating intercellular contacts to transmit nerve impulses. To protect different organs and tissues against mechanical impacts and produce thermoinsulating coatings of plants and animals is one of the main functions of lipids.

Successful achievements have been made to elucidate chemical structure of lipoproteins, composite proteins, that are composed of proteins and lipids. Fatty acids, neutral fats, cholesterids, phospholipids, etc., can be a part of lipoproteins. Lipoproteins are included in the composition of cellular, nuclear, mitochondrial and microsomal membranes. They can be found in nerve tissue, myelinic coats, retina, chicken egg-yolk, milk and blood serum. The composition of lipoproteins includes lipid nucleus surrounded by polar lipids and protein coating. Lipoproteins perform different biological functions. Cardiolipin, in particular, extracted from heart muscle has immune properties.

Lipoproteins can undergo peroxide modification that mainly occurs in arterial wall, but can happen in blood channel. The relationship is identified between the quantity of products of peroxide oxidation of lipids in blood and the emergence of cataract and atherosclerosis. Under the peroxide oxidation of lipids multiple breaks in membranes during chain reactions take place and may cause cell destruction.

An experiment was carried out at Closed Joint Stock «Landrace» in Novosibirsk region. The content of total lipids was examined in the blood serum of Landrace pigs during postnatal development. The animals were selected and grouped by the principle of analogues with regard to origin, breed, productivity, age and live weight. The pigs were kept following the technology for complexes

and farms. The blood to examine was taken from aural vein. Statistical processing of the data was done with the package of applied software Statistica 6 and Excel.

The data obtained showed that lipid concentration in the blood serum gradually increases during postnatal development of the pigs. The lowest content of the examined parameter was found in 2-month pigs. At the age of 4 months the level of blood lipids was much higher. The highest content of the examined parameter was observed in 6-month gilts. In this age period the concentration of lipids was by 33,42 % higher ( $p < 0,001$ ) in comparison with the animals aged 2 months.

The experiment detected a considerable growth of the level of blood lipids in the 6-month gilts and this testifies to intensive fattening in the period of ontogenesis.

**XANTHINE OXIDASE ACTIVITY  
OF PIG BLOOD**

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The search for blood tests to predict productive blood traits is a pressing issue. The choice of optimal spectrums of enzymes catalyzing different metabolic reactions is the basis of enzymatic prognostication of animal productivity.

An experiment was carried out on the training farm «Tulinskoye» of Novosibirsk State Agrarian University. Precocious Meat pig breed of Novosibirsk breeding that is well-adapted to local natural and climatic conditions was the object of research.

The research was carried out on control fattening animals aged 2, 3, 4, 5 and 6 months. In the experiment the offspring of six Precocious Meat boars was under the control (Svetly 1704, Sovet 1618, Sayan 25, Som 60, Sobol 139 and Signal 1440).

The animals were selected to be grouped following the principle of analogues with regard to origin, breed, productivity, age and live weight. The pigs were kept following the technology for complexes and farms. Blood to examine was taken from aural vein. Statistical processing of the data was done with the package of applied software Statistica

6 and Excel. The activity of xanthine oxidase in the pigs blood serum was identified. The examined enzyme took part in metabolism of nucleic acids. The influence of the Precocious Meat boars upon the activity of xanthine oxidase in the offspring blood serum was examined. Age variability of the enzyme activity was determined to depend upon restructuring of metabolic processes in different periods of postnatal ontogenesis.

It was found that the offspring of all the boars had different mean levels of the enzyme activity in different age periods. The 2 and 5 month offspring had the highest activity of the enzyme. At the age of 6 months the xanthine oxidase activity was by 32,0% ( $p < 0,001$ ) higher in Sobol 139 than in Sayan 225. The enzymatic activity of blood was different in the animals different in productive traits.

Correlations between the blood enzymatic activity and economically valuable traits of pigs were examined. It was identified that the correlation levels changed during ontogenetic development. In ontogenesis the correlations changed both in strength and direction.

The data obtained testifies to the influence of boar's genotype upon the level of xanthine oxidase activity in offspring.

#### **LYMPHATIC SYSTEM: PROJECT OF DIVISION IN THE INTERNATIONAL ANATOMICAL TERMINOLOGY**

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Lymphatic system plays important role in human life, its structure is studied and described in detail in literature. But in the International Anatomical Terminology (1998) the proper division is absent. I propose the project of such division as addition to the Terminology and is formed on the principles of Terminology. The project consists of three parts – the general terms, the main lymphatic collectors (thoracic duct and right lymphatic duct) and the regional lymphatic paths (on the regions of human body). In the project are included such additional terms, as «lymphatic postcapillary» and «lymphatic vessel unimascular type», «valvar cylinder», «lymphatic sinuses», «lymphatic trunk», «lymphatic duct» – all these formations have di-

rect concern to organization of lymph flow from organs. In the project are taken into account too:

1) inconstancy of cervical and abdominal parts of thoracic duct, its cervical arch and (terminal) cisterna, initial (abdominal) chyle cisterna, right lymphatic duct;

2) variants of formation of thoracic duct (chyle cisterna, plexus of lumbar trunks or their simplex confluence), its thoracical part (existence of semithoracic duct and another collaterals) and chyle cisterna (own of the duct, of lumbar trunk or transitive from lumbar trunk to the duct), tributaries of lymphatic ducts and their main roots in connection with regional lymph nodes;

3) the connections of lymphatic ducts and trunks with cervical veins;

4) regional lymphatic paths (of head and neck, upper and lower limbs, thoracic, abdominal and pelvic), constant and often discovered, including collaterals and plexuses. I put inconstant formations of lymphatic system in brackets.

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#### **INFLUENCE OF THE WAYS OF THE BIOCHEMICAL MATURATION HERRING PACIFIC ON CHANGE STRUCTURED-MECHANICAL FACTORS**

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*The impact of various Pacific herring maturing methods under the production of salted output on the rheological indexes alteration is defined*

Biochemical processes that take place within the process of the fish maturing cause alterations in rheological characteristics of muscle tissue. The muscle tissue tenderization while maturing is an important sensory characteristic. The speed of the fish's tissue softening is directly dependent on the protease activity [1, 2]. We have developed methods of the Pacific herring maturing that allow us to increase the speed of the fish's biochemical maturing and shorten the duration of