

**THE EFFECT OF REPEATED THAWING ON BACTERIAL CONTAMINATION OF SEMI-FINISHED PRODUCTS**

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**Summary.** The article presents the results of bacteriological examination of meat products to determine microbiological parameters during repeated freezing and thawing. The study yielded semi-finished products in the implementation phase and after re-freezing. The goal of this research was to determine the intensity of the impact of repeated freezing and thawing on the bacterial background of meat products.

The study was conducted on the basis of the Chernigov regional state laboratory of veterinary medicine Department, Sumy national University. Samples of semi-finished products are selected at the stage of implementation in the trading network of the city of Chernihiv. The study subjected products, manufactured according to State standard of Ukraine (DSTU), as well as on its own specifications to manufacturers (TU) and those that had no markings.

To determine bacterial contamination of samples of semi-finished products used the methodology of microbiological research according to the state standards. In order to assess the effect of repeated thawing on the bacterial background of meat products, first conducted their study in the implementation phase.

Based on the results of research on the number of mesophilic aerobic and facultative anaerobic microorganisms (MAFAM) determined that the standards established by regulatory documents meets only one sample of semi-finished products So I can say that the implementation phase was a violation of the conditions of storage products, the shelf life is not expired, none of the sample.

Next, the samples were subjected to repeated freezing and thawing. For research thawed samples were again frozen in a freezer at minus 20 C, and then thawed in the refrigerator to achieve a temperature in the thickness of the product 1° C.

At this stage of the study showed that MAFAM increased in all samples, as well as, almost each sample of the selected bacteria groups, coli forms. As a result of the research it was found that the repeated thawing creates favorable conditions for development of microorganisms.

Repeated defrosting facilitates the creation of favorable conditions for the development of bacterial micro flora in the meat products. Therefore, at the stages of production, transportation, sale and storage should be carefully adhering to temperature conditions and to monitor the condition of freezers.

In the absence of freezers and frozen foods are not permitted for storage and implementation. Upon expiration of the established retention periods, or if there are any signs of change in organoleptic or physic-chemical parameters of semi-finished products must be immediately withdraw from the implementation and direct industrial processing with thermal effect, ensure the safety of manufactured products for consumption by humans or other animals

**Key words:** semi-finished products, defrostation, bacterial contamination, safety, storage conditions.

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**ORGANOLEPTICHNA AND TASTING ESTIMATION OF MEAT OF PIGS FOR CORRECTIONS OF FEED OF IRON SULFATE AND BY HIS CHELATES**

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**Summary.** In the article comparative influence of application of different connections and doses of iron is resulted on the organoleptic and tasting indexes of meat of pigs. The best information is got for the corrections of ration of methionates and lisinates iron.

**Key words:** pig, fattening, chelates, iron, feed, organoleptic tasting and evaluation, methionates and lisinates iron.

**Introduction.** An increase of production of agricultural products, especially such valuable product as pork, is one of major pertaining to national economy tasks [9]. At the estimation of meat qualities of pigs a large value has not only quantitative correlation of meat, fat and bones, in a carcass but also them food value [10]. After the back wall of animals in meat there are difficult fermentative, biochemicals and physical and chemical processes which determine his quality and technological properties to a great extent [1, 5].

To the complex of indexes which characterize the food value of meat, organoleptic descriptions enter, results of which often are eventual and decision at determination of quality of food products. Correct correlation of nutritives of meat determines his quality [11].

With the purpose of increase of production of pork apply amino acid, vitamins, macro- and microelements, enzymes and other bioactive matters which to accelerate growth and promote the productivity of pigs. Forage additions and compound influence on biological properties, veterinary-sanitary descriptions, change him food quality and biological value [3, 8].

To for some time past indemnification of deficit of iron in the rations of piglings was carried out due to different mineral compound which contain elements as inorganic salts [4, 6]. Biological availability of microelements from these connections is small, that is why the purpose of work was a study of the productivity and for slaughter indexes of pigs on fattening at the use of sulfate of iron and him хелатних connections [2, 7, 13].

**Materials and methods.** Researchers conducted on a feeding up sapling the pigs of large white breed during 122 days in the educational-scientifically production center (ESPC) of „Komarnivskiy” of the Lviv national university of veterinary medicine and biotechnology the name of S.Z. Gzhytskogo, which is located in Gorodockomu district of the Lviv area.

For carrying out a test four groups of animals were formed: one control and three experimental, for 10 heads in every group (tab. 1). The selection of animals in groups was conducted after the method of groups-analogues taking into account age, living mass and intensity of growth, for preparatory period.

Table 1

**Chart of carrying out a test**

Groups	An amount of chairmen is in a group	Character of feeding
Control	10	basic ration (BR)
I experimental	10	BR + Fe <sub>2</sub> SO <sub>4</sub> 0,8 mg/kg the masses of body
II experimental	10	BR + methionat iron 0,4 mg/kg the masses of body
III experimental	10	BR + lizynat iron 0,4 mg/kg the masses of body

**Results of experiments.** Organoleptichni researches were conducted in 24 hours after a backwall. It is thus set that all of carcasses of animals experimental and control groups were covered the crust of drying up, a color of meat was a pinky and muscles on a cut did not abandon a moist spot on a filtration paper. Consistency of meat in all of experimental carcasses was dense, a fossula at pressure was carried out quickly, meat juice is transparent, a smell at cooking was specific, inherent pork meat. Clear soup is transparent and fragrant. Fat – brilliant, white color, soft. Marrow filled all of road clearance of tubular bones, hard, rather yellow color. A tendon and joints of extremities is hard, white, brilliant, a synovia is transparent.

Our researches allow to assert that original appearance of meat was improved in relation to control in all of experimental groups accordingly on 0,2; 0,4 and a 0,8 mark.

An aroma of meat from the pigs of experimental groups was pleasant, expressed enough, an estimation hesitated scope from 7,4 to a 8,1 mark. The greatest mark was got by meat of the III experimental group of animals, where an index was higher from control on a 0,9 mark.

Taste qualities of the boiled meat were higher at all of experimental groups of animals by comparison to control on a 0,2 mark – I group; on a 0,4 mark is the II group; on a 0,6 mark ( $p < 0,05$ ) is the III group. The same picture was looked after at determination of tenderness and succulence of the boiled meat.

Improvement of original appearance, aroma, taste, tenderness and succulence of the boiled meat, little influence and on his general tasting estimation which was higher by comparison to control: I group – a 7,6 mark; II group – 7,9 and the III group – a 8,1 mark.

In all of groups of animals clear soup was transparent, fragrant, fat as large drops. The general estimation of quality of clear soup made in relation to control (7,4 mark): I group – a 7,6 mark; II group – 7,8 and the III group is 8,0 marks.

A most estimation in marks was got by clear soup, prepared from meat of pigs of the III experimental group, where a ration was enriched лизинатом iron: original appearance is more high on a 0,7 mark; aroma on a 0,6 mark; taste on a 0,7 mark and наваристість on a 0,6 mark by comparison to control.

The use of different connections and doses of iron positively influences on the organoleptichni and tasting indexes of meat of pigs. The ball estimation of quality of meat and clear soup made in relation to control (7,4 mark): I group – 7,6 and a 7,6 mark; II group – 7,9 and 7,8; III group – 8,1 and a 8,0 mark accordingly.

### **Conclusions**

The results of tasting estimation of meat and clear soup decide at determination of quality of products. For the animals of I of experimental group the organoleptichni indexes of meat and clear soup did not almost differ from control, rejection, were within the limits of a 0,2 mark. As a result of the additional fertilizing of метионатами iron (II experimental group) of value of indexes of tasting estimation grew on 0,4-0,6 marks. At adding to the ration of pigs of the III experimental group of лизинату iron a general estimation of meat and clear soup was the greatest and was 8,1 and 8,0 marks, that on 0,6-0,9 marks more than in control.

Meat of animals of the III experimental group differed the best taste qualities – tender, juicy enough, pleasant to the taste. Clear soup from such meat was rich, delicious, differed good original appearance, by a pleasant aroma and got a higher among all of group's ball estimation. Consequently, application of chelates connections of iron positively influenced on organoleptichni descriptions of pork, most effective was the use of lisinates iron.

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### **ОРГАНОЛЕПТИЧЕСКАЯ И ДЕГУСТАЦИОННАЯ ОЦЕНКА МЯСА СВИНЕЙ ЗА КОРРЕКЦИИ ПИТАНИЯ СУЛЬФАТОМ ЖЕЛЕЗА И ЕГО ХЕЛАТАМИ**

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Аннотация. В статье приведено сравнительное влияние применения разных соединений и доз железа на органолептические и дегустационные показатели мяса свиней.

Лучшими вкусовыми качествами отличалось мясо животных III опытной группы – нежное, сочное, приятное на вкус. Бульон из такого мяса был наваристым, вкусным, отличался хорошим внешним видом, приятным ароматом и получил высшую балльную оценку среди всех групп. Таким образом,

применение хелатных соединений железа положительно влияло на органолептические характеристики свинины, наиболее эффективным оказалось использование лизинату железа.

Ключевые слова: свиньи, откорм, хелаты, железо, органолептическая и дегустационная оценка, метионаты и лизинаты железа.

**ОРГАНОЛЕПТИЧНА ТА ДЕГУСТАЦІЙНА ОЦІНКА М'ЯСА СВИНЕЙ ЗА КОРЕКЦІЇ ЖИВЛЕННЯ СУЛЬФАТОМ ЗАЛІЗА ТА ЙОГО ХЕЛАТАМИ**

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**Анотація.** У статті наведено порівняльний вплив застосування різних сполук і доз заліза на органолептичні та дегустаційні показники м'яса свиней.

Найкращими смаковими якістьми відрізнялося м'ясо тварин III дослідної групи – ніжне, досить соковите, приємне на смак. Бульйон з такого м'яса був наваристим, смачним, відрізнявся гарним зовнішнім виглядом, приємним ароматом і одержав вищу серед усіх груп бальну оцінку. Отже, застосування хелатних сполук заліза позитивно впливало на органолептичні характеристики свинини, найбільш ефективним було використання лизинату заліза.

Ключові слова: свині, відгодівля, хелати, залізо, органолептична та дегустаційна оцінка,.

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**ЯКІСТЬ ТА БЕЗПЕЧНІСТЬ СВИНИНИ ЗАЛЕЖНО ВІД ВИКОРИСТАНИХ ДЕЗІНФЕКТАНТІВ**

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**Анотація.** У статті наведено результати досліджень якості м'яса свинини. За органолептичними, біохімічними та санітарними показниками м'ясо свиней дослідних груп не відрізнялось від проби м'яса контрольних тварин. М'ясо і топлений жир, отримані від свиней, при вирощуванні яких використовували в якості дезінфектанту Бі-дез™™™ здатні добре зберігатися протягом 8 діб при температурі 0 +4°С.

**Ключові слова:** м'ясо свиней, сало, маса ліверу, продуктивність, дезінфектанту Бі-дез™™™, кулінарні властивості, органолептичні, біохімічні, санітарні показники.

**Актуальність проблеми.** Україна є членом світової організації торгівлі вона тим самим підкреслила питання щодо якості та безпечності продуктів харчування. Розвиток виробництва свинини належної якості безпосередньо пов'язаний з із необхідністю підтримки належного рівня гігієни вирощування свиней. В сучасних умовах якість м'яса оцінюють комплексно – якість і безпеку. Тільки така комплексна оцінка може гарантувати санітарну якість м'яса.

М'ясо – цінний харчовий продукт для людини, але водночас є добрим живильним середовищем для мікроорганізмів, які розмножуються, можуть викликати його псування [1, 4, 6, 7].

Санітарна безпека і якість м'яса залежить від багатьох факторів, а саме: місця вигодовування тварин, від якості кормів, наявності ветеринарних препаратів, від санітарного стану обладнання на підприємствах [1, 2, 3, 5, 7]. Тому перспективним напрямом є використання на виробництві нових ефективних багатоконпонентних дезінфекційних препаратів, які запобігають розмноженню мікроорганізмів, але були б безпечними і нетоксичними для людей і тварин. Препарат Бі-дез™™™ діє бактерицидно та спороцидно на більшість грампозитивних і грамнегативних бактерій, віруліцидно, антипротозойно на еймерії, фунгіцидно та дезодоруюче [4, 5].

**Завдання дослідження:** вивчення розвитку свиней при відгодівлі та ветеринарно-санітарна оцінка м'ясної продукції свиней за використання препарату Бі-дез™™™ з метою дезінфекції приміщень свинарників.

**Матеріал і методи дослідження.** Дослідження проводили у ТОВ АФ «Вперед» Сумського району Сумської області. Для цього було визначено 15 голів поросят віком 60 днів. В дослідному приміщенні дезінфекція проводилась препаратом Бі-дез™™™ 1,0 % у контрольному –8 % розчином їдкого натру. Тварини утримувались на аналогічному раціоні. Свиней забивали по досягненню 100 кг