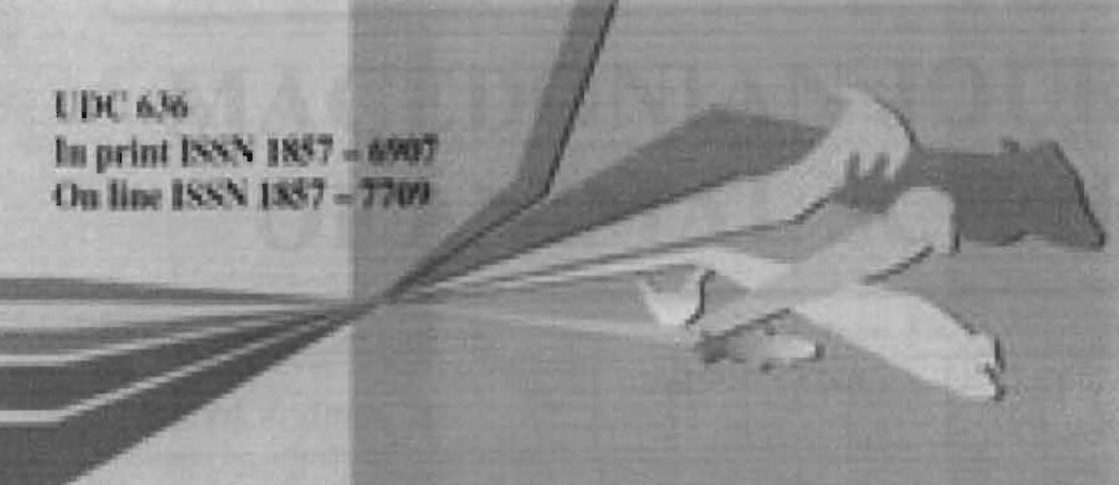


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<i>Maced. J. Anim. Sci.</i>	Vol.	No.	pp.	Skopje
	2	1	1-120	20

TABLE OF CONTENTS – СОДРЖИНА

Genetics and selection – Генетика и селекција

068 Nebojsa Lalic, Zvonko Spasic Bozidar, Milosevic, Milinko Milenkovic, N

Stolic

Phenotypic and genetic correlation of reproduction traits in Simmental cows

(Фенотипска и генетска корелација на репродуктивните својства кај сименталските крави)

069 Eglantina Xhemollari, Myzafer Cela, Jetmira Abeshi, Elenica Dimco

Haemoglobin values in sheep aged 6–9

(Вредности на хемоглобин кај овци на возраст од 6 до 9 години)

070 Zvonko Antunovic, Marcela Speranda, Duro Sencic, Josip Novoselec, Zv

Steiner, Mislav Djidara

Influence of age on some blood parameters of lambs in organic production

(Влијание на возраста врз некои параметри на крвта кај јагнињата во органското производство)

071 Anila Hoda, Lumturi Papa, Ylli Bicoku

Polymorphism of microsatellite loci in MHC complex for an Albanian goat breed

(Полиморфизам на микросателитските локуси во комплексот МНС кај албанската раса кози)

072 Fidel Gjurgji, Arjan Shumeli, Luan Hajno, Vilson Bozgo

Evaluation of some productive traits in breeds Large White and Duroc

(Процена на некои производни карактеристики на расите голема бела и дурок)

073 Vecdi Demircan, Hasan Y?lmaz, Hayati Koknaroglu, Zeynep Dernek, M

Gul, Tufan Bal

Comparison of white and brown laying hen farms in terms of performance and profitability

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068 Nebojsa Lalic, Zvonko Spasic Bozidar, Milosevic, Milinko Milenkovic, N

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073 Vecdi Demircan, Hasan Y?lmaz, Hayati Koknaroglu, Zeynep Dernek, M

Gul, Tufan Bal

Comparison of white and brown laying hen farms in terms of performance and profitability

(Споредба на бели и кафеави несилки во поглед на перформансите и профитабилноста)

Animal nutrition – Исхрана на домашни животни

074 Elmi Jusufi, Mentor Zekiri, Natasha Gjorgovska, Vesna Levkov

Contents of some macrobiogen elements in soil and their uptake at alfalfa
(Содржина на некои макробиогени елементи во почвата и нивното усвојување кај луцерка)

075 Vera Djekic, Milivoje Milovanovic, Mirjana Staletic, Vladimir Perisic

Triticale implementation in nonruminant animals nutrition
(Примена на тритикале во исхраната на непреживни животни)

076 Mariya Mangova, Kolyo Kolev

Yield and quality of bread wheat varieties created in the Institute of Plant Genetic Resources in Sadovo, Bulgaria
(Принос и квалитет на лебни сорти пченица создадени во Институтот за растителни генетски ресурси во Садово, Бугарија)

077 Nikola Stolic, Bozidar Milosevic, Zvonko Spasic, Zoran Ilic

Effects of prebiotic inclusion in the diet of weaned calves
(Ефект на вклучувањето на пребиотици во исхраната на одбиени телиња)

078 Ilija Uchkunov, Kulka Uchkunova, Georgi Kikindonov, Tzvetan Kikindo

Preslav variety – new achievement of the Bulgarian fodder beet breeding
(Видот преслав – ново достигнување на бугарското одгледување на крмното цвекло)

Food safety and quality – Квалитет и безбедност на храна

079 Fatmira Shehu, Bizena Bijo, Angela Di Pinto, Giancarlo Bozzo

Mycobacterium avium subspecies paratuberculosis identification in milk by means of ISO900 PCR
(Идентификација на Mycobacterium avium subspecies paratuberculosis во млекото со помош на ISO900 PCR)

080 Aco Kuzelov, Momcila Jordanoski, Zivko Gacovski, Dijana Trajcova

Carcass categorization and chemical composition of ostrich meat
(Категоризација на кланичниот труп и хемиски состав на месото од ној)

Ecology, natural resources and environment – Екологија, природни ресурси и животна средина

081 Albena Miteva, Zornitsa Stoyanova

Ecological aspects of sustainable agriculture in Bulgaria (On the basis of Silistra and Plovdiv regions)

(Еколошки аспекти на одржливото земјоделство во Бугарија (Врз база на регионите Силистра и Пловдив)

Alternative livestock production and hunting – Алтернативно сточарство и ловство

082 Maria Claudia Curadi, Roberto Leotta, Giovanna Contarini, Mario Orlandini

Milk fatty acids from different horse breeds compared with cow, goat and human milk

(Млечни масни киселини од различни раси коњи во споредба со кравјото, козјото и хуманото млеко)

083 Milos Beukovic, Zoran Popovic, Vladimir Maletic, Dejan Beukovic, Dario Dakovic

The impact of climatic factors on the percentage of the young in the population of brown hare (*Lepus europaeus* P.) in Vojvodina

(Влијание на климатските фактори врз процентот на младите во популацијата на кафеавите зајаци (*Lepus europaeus* P.) во Војводина)

Economics in animal husbandry – Економика во сточарството

084 Aco Kuzelov, Momcila Jordanoski, Zivko Gacovski, Dijana Trajцова

Economical benefit from ostrich (*Struthio camelus* L.) breeding and primary processing

(Стопанска корист од одгледувањето на ноеви (*Struthio camelus* L.) и постапки при нивната примарна обработка)

085 Zorica Sredojevic, Zorica Vasiljevic, Mile Pesevski

Economic effectiveness of the crop-livestock interactions in function of organic production

(Економската ефикасност на растително-сточарската интеракција во функција на органското производство)

086 Nadezhda Petrova, Iskra Nencheva

Competitiveness and adaptability to the European market of the stock breeding branch in Stara Zagora district

(Конкурентноста и адаптабилноста кон европскиот пазар на сточарските производи во областа Стара Загора)

087 George Zhelyazkov

Agrarian entrepreneurship and the institutional changes in Bulgaria

(Аграрното претприемништво и институционалните промени во Бугарија)

088 Hrabrin Bachev, Dimitar Nikolov, Ivanka Yanakieva, Teodor Radev

Efficiency of dairy cattle-breeding in Bulgaria

(Ефикасноста на млечното говедарство во Бугарија)

INSTRUCTIONS FOR AUTHORS – ИНСТРУКЦИИ ЗА АВТОРИТЕ

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ECONOMICAL BENEFIT FROM OSTRICH (*Struthio camelus* L.) BREEDING AND PRIMARY PROCESSING

Aco Kuzelov, Momčula Jordanoski, Živko Gacovski, Dijana Trajčova

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This work includes the economic benefit of ostrich rising and methods of primary analyses, ostrich transport to the slaughter house resting before primary treatment, stunning with blood, plucking the plumage, cutting the legs and the head, exenteration (removal of internal organs), washing, filtration and cooling.

Key words: ostrich; economic benefit; primary analyses

СТОПАНСКА КОРИСТ ОД ОДГЛЕДУВАЊЕТО НА НОЕВИ (*Struthio camelus* L.) И ПОСТАПКИ ПРИ НИВНАТА ПРИМАРНА ОБРАБОТКА

Во трудот се разгледани стопанската корист од одгледувањето на ноевите (*Struthio camelus*) и постапките пред и за време на нивната примарна обработка, како и постапката при транспортот на ноевите до клиницата. одморањето пред примарната обработка, терањето на ноевите од депото во клиницата, зашметувањето, искрвавувањето, кубењето на перјата, отстранувањето на нозете и главата, егзентерацијата, мисењето, педењето и ладењето.

Клучни зборови: ној; стопанска корист; примарна обработка

INTRODUCTION

Ostrich cultivation in farm conditions is very popular and profitable these days. Ostrich (*Struthio camelus* L.) is the biggest flyless bird in the world, with 2.7 meters height and 100–160 kg weight (<http://hr.wikipedia.org/wiki/Noj>).

The economic benefit of breeding ostriches is big, considering the use of almost all products such as feathers, leather, meat and eggs, oil.

Big demand for feathers from ostriches was the occasion for plant of ostriches in South Africa in 1860. Breeding ostriches spread worldwide by the end of the last century (Australia, Argentina, Botswana, Brazil, France, Israel, Namibia, Spain, England and USA).

This paper presents the estimation of economical benefit by ostrich breeding and primary process. Ostrich primary processing consists of ostrich transportation, resting before slaughtering,

transportation to the slaughterhouse, slaughtering, bleeding out, feather pluck, leg and head removing, washing, leaching and cooling (Драгоев, 2004).

Ostrich breeding in Macedonia is at the very beginning. The situation in ostrich breeding is not quite good, firstly because of lack of knowledge about the chemical composition of ostrich meat and secondly because of organization problems in farming, slaughtering and exporting.

The economical benefit and primary processing of ostriches are given in this paper.

ECONOMICAL BENEFIT FROM OSTRICH

Leather

Soft to the touch, the leather of ostrich is both flexible and durable, making it an ideal working material for the manufacture of most leather goods

and certainly luxury leather items. Because of these characteristics, ostrich leather is one of the chosen materials for fashion in boots making, handbags, wallets, belts and clothing. Leading fashion houses, such as Hermes, Louis Viton, Prada, Gucci and many others choose ostrich leather to exhibit its beauty and its high class status. Full of natural oils, ostrich leather resists drying and cracking and no other leather in the world can compete with it. This makes it one of the most expensive leathers in the world today with a range of 80 – 120 \$ per m² in USA.

Meat

Ostriches produce red meat that is very similar in taste and texture to beef. It is low in fat, cholesterol and an excellent source of protein and iron. The average meat yield of one ostrich bird is about 20 – 30 kg of deboned meat. Statistics show that current ostrich meat production is not enough to meet the increasing demand. In USA prime ostrich meat cuts costs approximately 8 – 10 \$. One day chick costs 50 – 80 \$, 30 to 50 kg chicks costs 130 – 200 \$, finished slaughtered birds 280 – 470 \$ (<http://www4.agr.gc.ca/AAFC-AAC/>).

According to Petar Jovanov, the president of the Macedonian Ostrich Society, 1 kg ostrich meat in Macedonia is about 400 – 450 den, one month old ostrich chick in Macedonia is about 80 – 100 euros.

Eggs

One hen lays on average 60 eggs per year, each weighing about 1,5 kg. Empty egg – shells are most valuable than complete eggs. These are decorated and very popular as souvenirs. One hatching egg costs about 20 – 50 \$ in USA (<http://www4.agr.gc.ca/AAFC-AAC/>).

Feathers

Ostrich feathers are equally long on both sides of the central shaft. Ostrich feathers are used for cleaning fine machinery and equipment as well as for decorations and fashion industry (Joy, 2005).

OSTRICH PRIMARY PROCESS

Ostrich primary processing is made according to the requirement of sanitary-hygienic and veterinary requirements and according to the *Regulation for protection and well condition of animal, No.*

113 from 2007, and Regulation for special needs for animal products, No. 115 from 2008. These are technological stages in ostrich processing:

1. Live ostriches;
2. Lading in the transport vehicle – trucks;
3. Transport;
4. Unlading in the slaughter house;
5. Resting for stress releasing;
6. Anesthesia;
7. Slaughter;
8. Bleeding;
9. Feathers removing;
10. Egzenteration;
11. Carcass washing;
12. Meat cooling.

Lading, transport and unlading

Transport of ostriches from the farm to the slaughterhouse is with the special vehicle. It is very important to minimize the noise during the transport, because it can be very stressful for the birds. Because of that, during the transport they have on their head a bag full of selen solution. This solution causes relax atmosphere for the birds and releases them from the stress during the transport. Every transport of ostriches must be followed by the workers who are walking by their side and on the back. The path should be limited with a high wall so the ostriches will go one by one and minimize the chance for their injury.

Resting

After entering the ostriches in the slaughter house, each of them must be specifically placed in a separate cage to rest and be quiet. Those places are separate from the place for slaughter, so they will stay here until they stabilize their mental condition away from noise and stress.

Fuddle

Fuddles for ostriches is made in shambles, with electricity. Using electricity before the slaughter enables the achievement of human procedure to remove the stress in the animals. In that way, panic is not created in the slaughterhouse, and the creation of violations of ostriches for slaughter is prevented.

According to some authors, only fuddle ostrich need electricity from 50 Hz during 4 seconds.

Electrodes for production electricity are high level quality ones, which are follow international standards and are very easy for manipulation. They put on head to the bottom of the key. This method prevents damaging corneal eye, which is used for medical purposes. Electroshock is performed using the standard, trusted apparatus with simple handling.

Bleeding

The bleeding of ostriches goes after slaughtering the ostrich. Bleeding must be made in full, to enable observation ostrich meat quality for the consumer goods. Bleeding is completely possible in this way so that the two incision knives are used, the first is in the chest, and the other on the neck of the ostrich.

Removal of feathers

Removal of feathers from the ostrich body is made on dry, without any water. Removal of feathers must be done completely and professionally, because of inhibition skin injuries. The next phase is the removal of skin and cutting the meat on pieces.

Exenteration

Exenterating ostriches of internal organs is done in the hammock position of troops. After slaughtering and removing the skin, the incision in the keel trunk is made by the electric saw. In the last phase of the approach of internal organs, washing the troops and storage of the meat in the refrigerator follow.

Washing

After removing the inside organs, the carcass is washed with water, so there will be no more any dirty pieces or blood.

The next stage is putting the meat into the refrigerators during the transport in the trade markets.

Measurements of weight

With the measurement the randman of the carcass and their weight are defined.

Cooling

Transport of fresh ostriches meat is with special truck with cooler, and the inside temperature is +4 °C.

The slaughtering of ostriches is well established in South Africa, Israel, Australia and Zimbabwe. Quite different methods are used in each country, but the most regular are the next:

Ostriches are offloaded from a truck into a walled run. Rubber mats are provided to help reduce injury through slipping. Green padding is placed on all walls of the loading ramp, run and holding pens. The walls should be high enough to prevent the ostrich from seeing over to minimize panic. The bird needs adequate feeding, watering and resting for 24 hours. The pens must be well padded and the floors well drained. The anesthesia is after the weighing with 80 volts to the head. Bleeding is done by cutting the throat near the head. Plucking off feathers is done manually. The carcass is then skinned and the skin is wet – salted. The feet are removed by a mechanical cutter. The exenteration is divided into clean offal (lungs, gizzard, liver, kidneys and heart) and dirty offal (trachea, viscera, gonads and abdominal fat). Within 30 minutes of bleeding, the thighs and legs are removed and cooled at 0 – 4 °C for 24 hours (Cooper, 2000).

CONCLUSIONS

The raw materials of the ostrich industry come mainly from abattoir. That's why the slaughtering process is very important.

The economical benefits of ostriches are big because of the number of products from one ostrich (meat, feather, skin, oil). The prices of these ostrich products are good enough. The market for ostrich meat is very big and more and more meat is needed every day, especially in the Middle East.

Ostrich business is very profitable, but also needs some regulations to work on it. For example in Macedonia there is no slaughterhouse that can slaughter and debone ostrich carcass. Ži-Va can slaughter only. There is no regulative for ostrich slaughtering. There is no export number, to export the meat in Europe or other countries. Macedonian ostrich farmers must export live weight ostriches and the price is 3 euros per kilo that is very little compared with 8 – 10 euro for one kilo ostrich meat.

This perspective agro business can bring good investments and work places in our country, that's why it is good to work a little on this problem.

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