

Veterinary and sanitary assessment and safety indicators for waterfowl meat

Iroda Salimova^{1*}, Shukurullayev Lochin², Zoyirov Shohjahon²

¹Researcher Institute of Veterinary Medicine of Samarkand Uzbekistan

²Student Institute of Veterinary Medicine of Samarkand Uzbekistan

***Corresponding Author:** Iroda Salimova, Appendicitis Presenting With Peri-Appendiceal Abscess in an Adult Male: Ultrasonographic Findings and Case Report.

Received Date: April 19, 2021; **Accepted Date:** April 30, 2021; **Published Date:** March 05, 2021.

Citation: Iroda Salimova, Shukurullayev Lochin, Zoyirov Shohjahon, (2021) Veterinary and sanitary assessment and safety indicators for waterfowl meat. *J. Scientific Research and Biomedical Informatics*, 2(3); Doi:10.31579/jsrbi.2021/017

Copyright: © 2021 Iroda Salimova, This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract

Wild duck meat is a valuable food product and has a high taste. At the same time, the rules for veterinary and sanitary examination and the definition of product safety have their own characteristics. A study of wild ducks shot in hunting farms of the Samarkand region was carried out. It has been established that the meat of wild ducks can be recommended as a product with a high nutritional value and can be eaten without restrictions.

Keywords: wild ducks; mallard; veterinary and sanitary examination; product safety; helminthological autopsy

INTRODUCTION

Proper and nutritious nutrition is one of the most important factors determining the health of the population. Among food products, poultry meat occupies a special place as a source of complete protein and good-quality fat. One of the promising poultry species, characterized by the most valuable qualities of meat, is waterfowl. The meat of wild ducks has a high nutritional value and provides the body's need for proteins, lipids, minerals and vitamins [9]. The rules of veterinary and sanitary examination and determination of the safety of this type of product have their own characteristics. The type of game slaughter, the degree of exsanguination, possible zoonothropotic diseases [5].

Objective of the study: To give a veterinary and sanitary assessment and determine the safety of wild duck meat for the consumer.

Materials and Methods: The study involved 25 carcasses of wild ducks of 2 species: mallard (*Anas platyrhynchos*) - 20 specimens and teal-whistle (*Anas crecca*) - 5 specimens, shot in hunting farms of the Samarkand region. The shooting of ducks on the fly was carried out within the approved hunting periods. Checks for compliance with the requirements of the Law of the President of the Republic of Uzbekistan No. 483-1 of 30.08.1997 "On the quality and safety of food products" of Article 8. Supervision and control

over the quality of food safety "and Post-mortem veterinary and sanitary examination were carried out in accordance with the requirements of O ' Z DSt 3308: 2018. Chicken meat (carcasses of chickens, chickens, broiler chickens and their parts) Organoleptic, physicochemical, microbiological studies, the chemical composition of meat were carried out in accordance with GOST [1-8].

The veterinary and sanitary examination of meat was carried out after complete removal of the feather cover and evisceration. The site of the lumbago was examined, the edges of the wound and the nature of bleeding were assessed. The presence of hemorrhages, tumors, pathological changes was established. [5].

Duck carcasses were subjected to complete helminthological dissection according to the method of K.I. Skryabin. The systematic affiliation of helminths was determined using reference literature. The study for sarcocystosis was carried out by compressor microscopy of muscles [9].

Research results

During the veterinary and sanitary examination of the carcasses, no visible pathological changes were found. The degree of exsanguination is good. The results of organoleptic studies are presented in table 1.

Indicator name	Characteristic
Appearance and color:	
carcass surfaces	dark yellow with a pink tinge
subcutaneous and internal adipose tissue	of Pale yellow or yellow
serous membrane of the thoracic-abdominal cavity	moist, shiny, free of dirt, slime and mold
muscles on the incision	slightly damp, do not leave a wet sticky spot on the filter paper; red color
Consistency	the muscles are dense,elastic,the pit formed when pressed with a spatula quickly leveled up
Smell	specific, specific to this poultry meat
transparency and aroma of broth	transparent, fragrant

Table 1: Organoleptic characteristics of wild duck carcasses

From the data given in the table, it follows that all the main organoleptic indicators of meat freshness correspond to the characteristics of good-quality fresh meat of waterfowl. The control of physicochemical parameters was

carried out 24 hours after shooting, that is, after the maturation process (see Table 2).

№ p/p	Number of samples	Indicators	Average result	Error rate
1	5	pH of meat (unit. pH)	6,43	0,3
2	5	fat peroxide number (%)	6,3	1,11
3	5	acid number (mg/g)	3,47	0,34
4	5	total acidity (°T)	1,76	
5	5	reaction with CuSO ₄ in broth	broth unchanged	
6	5	reaction to peroxidase	positive	

Table 2: Physicochemical parameters of wild duck meat

As can be seen from the data in the table, the physicochemical indicators of waterfowl meat are within the normal range, which characterizes it as a fresh, good-quality product. The chemical composition of duck meat depends on

the species, age and body condition of the bird. The content of intramuscular fat is determined by the age of the bird, the older it is, the more fat, and the moisture content is inversely proportional (see Table 3).

№ p/p	Indicator	Number of samples	Waterfowl	Error rate	Domestic duck
1	mass fraction of moisture, %	5	64,6	0,9	71,16
2	mass fraction of fat, %	5	16,13	0,1	3,42
3	protein according to Kjeldahl, %	5	20,91	0,87	14,22
4	calcium, %	5	0,05		0,03
5	phosphorus, mcg/cm ³ in terms P 2O ₅	5	0,347	0,053	0,14

Table 3: The chemical composition of wild duck meat (in comparison with homemade)

As can be seen from the table, the chemical composition of waterfowl meat in all respects is superior to domestic duck, except for the percentage of moisture, since in waterfowl the mass fraction of moisture decreases depending on age, therefore, the studied wild bird was older than domestic duck. During bacterioscopy of smears-prints prepared from the deep layers of the femoral and pectoral muscles, in 1 p.zr. were found single coccal and rod-shaped microorganisms, or their absence. There are no traces of muscle tissue decay.

At helminthological autopsy, the infection of ducks with helminths was 40%. 5 types of helminths have been identified, of which: trematodes - 2 species (*Tracheophylus sisovi*, *Hyptiasmus laevigatus*); cestodes - *Hymenolepis setigera*; nematodes - 2 species (*Syngamus trachea*, *Echinuria uncinata*). Mallard ducks have been observed large, dense, tumor-like nodes at the site of the transition of the glandular stomach into the muscular - characteristic of the parasitism of the nematodes *Echinuria uncinata*. A study for sarcocystosis was negative.

The identified parasites do not affect the presentation and nutritional value, do not pose a threat to human infection and are widespread components of the parasite fauna of wild anseriformes, in particular, ducks.

Conclusion

As a result of the studies carried out, organoleptic, physicochemical and microbiological indicators are within the normal range established by GOST, and indicate the freshness and good quality of the product. The chemical composition of waterfowl meat exceeded domestic duck, except for the percentage of moisture (which indicates an older age of the mallard).

The discovered 5 types of helminths do not pose a danger to humans, since completely removed when gutting a bird. Thus, the safety of these products is confirmed, and the meat can be sent for free sale.

References

1. GOST 31990-2012. Duck meat (carcasses and parts thereof). General technical conditions.
2. GOST 31470-2012. Poultry meat, by-products and semi-finished products from poultry meat. Methods organoleptic and physico-chemical research.
3. GOST R 51478-99 (ISO 2917-74). Meat and meat products. Control method of determination concentration of hydrogen ions (pH).
4. GOST 25011-81. Meat and meat products. Protein determination methods (with Amendment No. 1).
5. Seregin I.G., Kunakov A.A., Borovkov M.F., Kasatkin V.S. Veterinary and sanitary examination products of the slaughter of wild game animals and game birds. Moscow Publishing House - 2004. -- 189 p.
6. GOST 23042-86. Meat and meat products. Methods for the determination of fat.
7. Post-mortem veterinary and sanitary examination were carried out in accordance with the requirements of O ' Z DSt 3308: 2018.
8. GOST 9794-74. Meat products. Methods for determining the content of total phosphorus.
9. President of the Republic of Uzbekistan No. 483-1 of 30.08.1997 "On the quality and safety of food products" of Article 8. Supervision and control over the quality of food safety "
10. GOST R 51479-99. Meat and meat products. Method for determining the mass fraction of moisture.
11. <http://lib.znate.ru/docs/index-26635.html> - Nutritional value and chemical composition of poultry meat - 2014

