

Food hygiene steps of a new republic (meat inspection methods)

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Abstract. *Study Objectives:* In this study, it was aimed to announce a historically important source in meat inspection, which is a very important area of healthy eating, and the positive developments experienced thanks to this source to the scientific world. *Methods:* In this study, which was designed as document analysis, one of the qualitative research patterns, a historical book on meat inspection was examined. *Results:* With its establishment, the Republic of Turkey has entered development and enlightenment in all areas. In this period when veterinary services were started to be reconsidered, one of the first studies was about food range. A book called “*Meat Inspection Methods and Booklet about the Causes Seizure*” was published by Şevki Bey who was a Veterinary School Lecturer of Pathology and Meat Inspection in Istanbul. Consisting of two parts, the booklet includes a wide scope of animals from slaughtered birds, pet rabbits, fishes, and other aquatic products, hunting animals in the country to horse meat which is not consumed by people in that country. The author has mentioned neglecting food hygiene for a long period, and despite the significant knowledge, he has also stressed that there is a lack of legislative regulation. Although the work is short, the enabling legislation has been compared in Switzerland, Belgium, Germany, and France. *Conclusion:* Şevki made a warning on an area of veterinary medicine for the healthy and rich life of a newly founded nation that suffered under great battles for many years.

Key words: food hygiene, meat inspection, history of food hygiene, public health.

Introduction

Eating meat has not been just about reaching a dense protein source for human beings. The flesh-eating man was able to survive wherever he reached prey, surviving seasons or years without fruit and plants. For this, he constantly sought new hunting areas, discovered new places, new continents. He overcame the difficulties he faced in the search for meat with his intelligence, invented weapons, discovered fire, learned to use by-products such as leather and wool. He developed social life, established civilizations. The most important step for man's meat supply and the greatest revolution for his future was the domestication of

animals (1, 2). The Neolithic Revolution ushered in the transition from hunter-gatherer to settled life and regular food production (3). It formed high communities with the order of village, town, and city. As the structure of society became more complex, meeting the need for meat became more complex and difficult. “Meat” has been the trigger of very important changes in history. For example, the impetus for Columbus to seek an alternative route to India was to more easily bring the demanded spice to Europe for preserving and cooking meat. Marco Polo also traveled to the Far East for the same purpose (1).

The oldest prohibitions on meat hygiene are not to eat animals that have died of natural causes or killed

by wild animals. In ancient Egypt, pork was considered unclean, and its consumption was prohibited, possibly due to *Trichinella spiralis*. This prohibition developed and formed the first rules of food hygiene, such as forbidden foods and food preparation methods in the Old Testament. Kosher Laws set conditions for slaughter and conditions that make animals clean and fit to eat. The ban on slaughtering animals that lie silently and cannot be raised with a stick, and not eating the meat of sick and dying animals were the first examples of antemortem examination (3, 4).

Trying to explain the concepts of health and disease for rational reasons, Hippocrates established a relationship between food and human health. In the next two millennia, medicine and culinary art intertwined. While Pliny the Elder described the need for regulations for food control, Dioscorides defined standards for certain plant and animal products. Galen further developed Hippocrates' concept of zoonosis. Galen's rationale for the consumption of sick and dead meat, along with the Kosher Laws, was an important contribution to the issue of meat hygiene. The slaughter and sale of meat were regulated in ancient Greece and Rome. Roman market police fined meat sold without inspection and dumped it into the Tiber River. This rigorous control ended with the fall of the Empire, and science did not appear in Europe during the Middle Ages and in the next millennium (2, 3, 5, 6). The Church rejected the principles of Hippocrates and Galen, which linked the belief that man was created in the image of God, and animal diseases and human diseases. Despite this scholastic approach, Pope Zacharias (679–752) prohibited the consumption of meat from animals with zoonotic diseases (3).

Ancient Egyptian and Jewish practices in meat consumption persisted in Islamic food regulations (4). The "menu" was expanded, according to the Jews, by prohibiting the consumption of carrion, blood, and pigs, using sharp and clean knives, and shedding all blood, while allowing the consumption of rabbits and camels. Scientists such as the physicist and chemist Al-Khazini made high-precision scales for food control, paving the way for food laws to act against fraudsters. Health protection was equated with protection against fraud (3, 6).

In the middle ages, meat inspection was carried out in some parts of Italy, England, France, and

Germany (3, 5). With the laws enacted for meat inspection in Italy in the 13th and 14th centuries, butcher's licenses were renewed every year, and misrepresentation and unhealthy practices were prohibited (6). Although Paget discovered trichinellosis in 1835, it was not considered a serious health problem until the discovery of the parasite's life cycle, transmission, and pathogenicity (1860) by Zenker, Virchow, and Leuckart. These discoveries brought about the mandatory trichina inspection in pork in Germany in 1877 (7). Pasteur (1870) and Gerlach's (1875) studies on zoonoses, Koch's (1882) discovery of tuberculosis agent and the knowledge that it can be transmitted to humans by infected beef in 1892, Bang's discovery of brucellosis in 1896, commercial heat treatment, medical combined with developments, initiated the golden age of food microbiology, which continues today (2, 6, 7). In 1868, meat inspection in Germany started to be done in public slaughterhouses under the control of veterinarians (5). German scientist Robert von Ostertag founded the world's first academic department on meat inspection and dairy hygiene at the University of Berlin. The main theme of the VII. International Veterinary Congress held in Germany in 1899 was on meat examination. Decisions were made to carry out meat inspection by certified veterinarians, to develop meat inspection education in veterinary schools, and to have the slaughter under veterinary supervision (2, 5-8).

In England, III. Henry punished those who sold rotten, diseased meat by the yoke. The London Butchers' Guild introduced an expiration date system in 1423, criminalizing the sale of leftover meat from the previous Thursday on a Saturday. In 1869, the Infectious Animal Diseases Act was passed, which became the basis for Britain's modern meat legislation (7). In 1875, the Public Health Act was passed on meat inspection. In 1890, medics were authorized to confiscate spoiled meat (5, 7). In 1904, meat inspectors were required to have butchery or sanitation training, formerly including plumbers, carpenters, builders, and police (3).

With the commercial production of ice in 1855, cuts formerly made in the fall, etc., when temperatures dropped, spread throughout the year. This revolutionized the animal product trade, and in 1875 the first chilled beef was shipped from the USA to England. Now, the problems of storage, the transmission of animal diseases to distant places, disposal of dead

animals, and wastewater, which are experienced with the transportation of live animals, have been largely eliminated. The international trade of chilled meat gave rise to international meat inspection rules such as national meat inspection (3, 7). The United States passed the Meat Control Act for exports in 1890 and a law for the domestic market in 1891. Meat control in the United States was spruced up in 1906 after the revolutionary socialist Upton Sinclair's book *The Jungle*, which chronicled the drama of the working class in capitalist society and the dire working and hygienic conditions of Chicago slaughterhouses. In the same year, the Federal Meat Inspection Service was established, and a comprehensive Meat Inspection Act required ante and postmortem inspection (3, 4, 9). The first meat control law in Canada was passed in New France in 1706, in 1805, criteria for beef and pork inspectors were established in northern Canada, it was implemented in all of Canada in 1873. In 1907, the Meat and Canned Food Act, similar to the US legislation, was passed (5).

While these were happening in the West, meat hygiene and control followed a parallel development in Europe's eastern neighbour, the Ottoman Empire. After the conquest of Istanbul (1453), Sultan Mehmet the Conqueror had slaughterhouses built and forbade slaughter outside the slaughterhouse. Three years before the establishment of the veterinary school, in 1839, a decision was made to move the chicken shops to suitable places and dump the slaughter residues into the sea. In 1859, slaughtering of weak and sick animals and setting up slaughterhouses were made obligatory for municipalities with the municipal statute, and slaughter outside the slaughterhouse was prohibited (10). In 1880, with the change made in the curriculum of the Veterinary School, courses on Epidemic Diseases and Health Police began to be given. In 1895, Adil Mustafa Bey, who was educated in France, was appointed as a teacher of Meat Inspection. In the same year, public health issues were added to the curriculum.

The Republic of Turkey entered into a reconstruction process in all areas with its establishment. Veterinary services were also affected by this development. After the long and devastating period which started with the Balkan wars that brought the destruction of the Ottoman Empire and continued with World War

I and the Turkish Independence War (1912-1922), the new republic entered a development movement in all areas.

The Author, Distinguished Professor Şevki Akçay, was born in Izmir in 1888. He completed his elementary education in İzmir and his secondary and high school education in Istanbul Kuleli Military School with first-class honors and graduated from the Military Veterinary School in 1912. He joined the Balkan War as a first lieutenant and worked at the Ottoman Institute of Microbiology in Çemberlitaş, İstanbul. In this period, he participated in the Glanders research studies, and then served for the control and elimination of Rinderpest (cattle plague) in Edirne. He became a captain after the Balkan War, in 1912-1913, and gave lectures on Histology at the Military Veterinary School. He served on various fronts in World War I, as well. He founded a large veterinary hospital in Adana. He made great efforts for the control and elimination of Anthrax in the Adana region. Next, he gave lectures in Histology and Pathological-Anatomy at the Military Veterinary School as an associate professor. He served in Bolu for the control and elimination of cattle plague emerging during the most critical period of the Turkish War of Independence. Then, he was appointed as a lecturer in Histology, Embryology, Pathological Anatomy, and Meat Inspection in Veterinary College. He was sent to Germany in 1927 and studied at Berlin Veterinary Faculty Pathology and Food Analysis Institutes. He was assigned to teach General Pathology and Pathological-Anatomy at the Veterinary Faculty Higher Institute of Agriculture, founded in Ankara in 1933, as an Associate Professor. He was assigned as a second rank professor in 1936 by law No. 2291, as a first-rank professor and Director of Pathology Institute in 1939. He was given the title of Distinguished Professorship in 1944 with the decision of the Faculty Administrative Board and Board of Directors of the Higher Institute of Agriculture. His 43 works including 8 books and 35 research and monographs were published (11).

This study aimed to contribute to the historical process of meat inspection science. This contribution is to explain the situation of meat inspection in the world at the end of the 19th century, when its importance and scientificity were revealed, and to open it up for discussion with a book written on scientific

meat inspection in newly established Turkey. In terms of the modern history of the science of meat hygiene, the importance of a secular work has been tried to be revealed in the process that a religious and agricultural society has evolved into a republic. It was desired to present a scientific work to the field of science in a country that was written before the language revolution and where a secular understanding is now adopted.

Materials and Methods

In this study, which was designed as document analysis, one of the qualitative research patterns, a historical book on meat inspection was examined. One of the first studies in this period, when veterinary services started to be reconsidered, was in the field of food. A booklet entitled “*Notification on Meat Inspection Methods and Confiscation Conditions*” (12) was published by Şevki Bey, Medical Pathology and Meat Inspection Teacher from Veterinary College, in İstanbul, 1926 (Figure 1). The book was written in the Ottoman language with the Arabic alphabet since it had been prepared before the alphabet reform in Turkey, on November 1, 1928.

Results

The 20x15 cm size claret-red colored paperback booklet has 36 pages. The information of “Meat Inspection Methods and Notification on Confiscation Conditions / Veterinary College Pathology and Meat Inspection Lecturer / Şevki / İstanbul / Güzel Doğa Publishing / 1926” and a picture of a sheep are on the front cover. The back cover is empty. The first page is a copy of the front cover. The next page contains the “*Contents*” section (Figure 2). It is understood that the book was prepared in two parts.

The following topics are covered in the First Part: Meat Inspection Methods / Licensing to Slaughter Animals / Clinical Examination of Livestock / Post-Slaughter Meat Inspection / Marking Carcasses and Products / Procedure After Confiscation / Confiscation Procedure / Disposal of Confiscated Meat (12).

The following topics are covered in the Second Part: Confiscation Regulations / Situations Requiring Complete Confiscation / Situations Requiring Partial Confiscation / Edible Meats After Sterilization / Animal products and meat preparations / Organ Meat / Birds and Domestic Rabbits / Game Animals / Fish and Other Animals Living in Water (12).

The author’s preface is under the heading of “*Objective*” on the third page (Figure 3). This section consists of three pages in total. The author begins his writing by saying that issuing a meat inspection notice and a regulation on unsafe meat confiscation were two important issues that keep the hygiene experts engaged. He tells us that these two issues were the subject of many projects in foreign countries. He states that there were numerous qualified reports on this subject in the literature of veterinary medicine, that highly

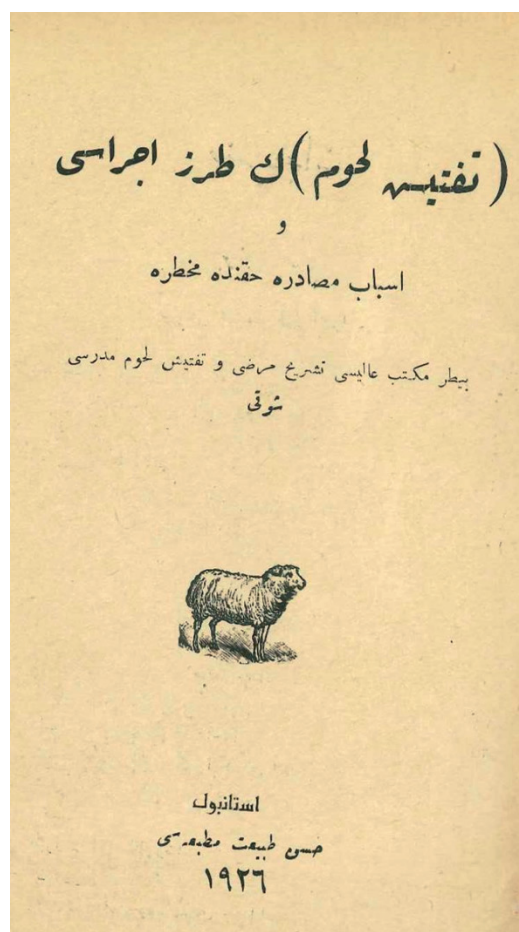


Figure 1. Cover of the booklet

مضمرجات

برنجی قسم

تفتیش لومك طرز اجراسی

صفحه	—	قصابی حیواناتك ذبحته مساعدہ
۶	—	قصابی حیواناتك جانل اولوق معاینه سی
۷	—	قصابی حیواناتك ذبحدنصكره کی معاینه سی
۹	—	لومك تغالاماسی
۱۴	—	مصدره اولنان لوم حقدنه بابله جق معامله
۱۵	—	مصدره اولنان لومك اعناسی
۱۷	—	

ایکینجی قسم

اسباب مصدره

۱۸	—	کاملآ مصدره کی موجب احوال
۲۴	—	قصبآ مصدره کی موجب احوال
	—	تعقیدنصكره قابل اکل اولایین ائلر
	—	محصولات و مستحضرات لحمیه
	—	سقطات
	—	طبور و اهل طاووشانلر
	—	آو حیواناتی
	—	بالقلر و سائر صوده پشایان حیوانات

Figure 2. Contents

clear and precise regulations on meat inspection were published particularly in Switzerland, Belgium and Germany. The author states that there was no independent meat inspection law in France, but according to a law issued in August 1905, a special Commission was established within the Ministry of Agriculture under a decree issued in April 1912. A report was prepared by the famous Meat Inspector Mavro on behalf of this Commission. Şevki Bey tells that the subjects as the history of meat inspection, evaluation of legislation in other countries, scientific and administrative organization, confiscation, and utilization of confiscated meat were mentioned in the report. However, the French Ministry of Agriculture did not show respect to the report, and a meat inspection regulation was not prepared independently. The author cites that the French Society of Veterinary Physicians decided at

مقصد

تفتیش لومك تعمیمی واسباب مصدره نك بر تعلیماته ایله تعیینی کیتیلری اوزون زماندنبری حفظالصحت متخصصلری مشغول ایلان ایکی مهم مسئلهدر . بو ایکی مسئله اجنبی مملکتلرده پك حقوق پروژهلرک موضوعی اولمشدر . بیطری لتهراتورلر بو نقطه نظرندن فوقالعاده زنکین اولوب پك زیاده مکمل راپورلر موجوددر . بالخاصه اسویجره ، بلجیکا و آلمانیاده تفتیش لوم حقدنه غایت صریح و قطعی تعلیماتاملر تنظیم و اعلان اولومشدر . فرانسهده باشلی باشنه برتفتیش لوم قانونی موجود دکلدک ؛ ۱۹۰۵ آغستوس تاریخی منع حیل و تشیقات قانونی موجبتجه اصدار اولنان ۱۹۱۲ نیسان تاریخی قرارنامه موادینه توفیقاً زراعت نظارتنده خصوصی بر قومسیون تشکل ایشدر . اشبو قومسیون نامه مشهور مفتش لوم (مورو) طرفندن بر راپور تنظیم ایدلش و اشبو راپورده تفتیش لومك تاریخچه سی ، اجنبی مملکتلرده موجود نظامات و تعلیماتک مطالعه سی ، تشکیلات اداریه و فیه سی ، اسباب مصدره و مصدره اولنان لومدن استفاده الح کی مواد غایت مکمل و واقفانه بر طرزده تثبیت و تصریح اولومشدر . فقط فرانسه زراعت نظارتی طرفندن اشبو راپور هنوز موقع مرعته وضع اولونامشدر . بوضورتله فرانسهده باشلی باشنه بر تفتیش لوم تعلیماتمه سی وجوده کتیرله - مهمشدر . بونی نظر دفته آلان فرانسه جمعیت بیطریه سی ۱۹۲۴

Figure 3. Objective

the General Congress in December 1924 as a consequence of that. The decision includes a proposal to the French Ministry of Agriculture to issue an implementing regulation on meat inspection. The French Society of Veterinary Physicians presented this proposal to the Ministry together with an example of a table and regulation explaining the situation (12).

The author puts the situation in Turkey in the picture regarding the meat inspection regulation. There was no law and regulation concerning meat inspection and butchery livestock in Turkey in those days. Although there were clear norms about the infectious diseases and the meats of the diseased animals in the "Animal Health Law", there was no instruction for many other situations. According to him, veterinarians in slaughterhouses had difficulty in their job because there was no significant, private, and clear

regulation. Especially in the cases brought to trial, people think that they are treated according to the arbitrary provisions since the confiscation and disposal of meat and meat products are not explicitly stated in the orders (12).

The author stated that he drafted a study on meat inspection at the Commission established by the order of the Ministry of Agriculture in 1925. He expressed that the draft titled "*Administration and science of Meat Inspection*" was prepared on pre-slaughter inspection and post-slaughter meat inspection, confiscation, utilization of confiscated meat, marking carcasses and products, an inspection of the butcher shops and places where meat products are produced, and sold, consulting an expert, the cases brought to trial excellently. The draft was taken as an example from the "*German Veterinary Service Regulation on Meat Inspection*" applied in Alsas Loren. In addition, there were citations from the related and useful parts for Turkey in the regulations of the countries such as France, Belgium, the USA, Hungary. Şevki Bey also adds that he prepared a "*Draft Law on Meat and Butchery Livestock*" by utilizing from "*German Meat and Butchery Livestock Law*" dated 1900. He further stated that he prepared the "*Slaughterhouse Law Draft*" and that the purpose of the draft was the duplication of modern slaughterhouses and the establishment in the whole country. He emphasizes that it is unnecessary to speak about the scope and importance of these studies (12).

Şevki Bey, the author, cites the purpose of preparing this small booklet in the last paragraph of the preface. He wants this booklet to be in the hands of those working in meat inspection as a reference in the process of implementing an important issue like meat inspection that is highly relevant to human health and the economy. He finishes the preface by saying that his primary objective is to serve his beloved country (12).

The content of the Booklet;

The author describes the conditions for meat inspection and licensing. Unless it is compulsory, slaughtering is prohibited before the pre-slaughter inspection. He also mentioned the unclean animals. He mentions the compulsory slaughtering conditions.

He emphasized that the age and weight limits were stated by the National Assembly Decision. He cites that the owner has to submit the sanitary certificate before the examination (12).

He explains the pre-slaughter inspection. An investigation about the general condition of the animal, the diseases that may affect the quality of the meat, or the place where the animal was kept have to be carried out according to the "*Animal Health Police Law*". The inspector has to record and confirm the type of animal, its gender, age, color and special sign, health status. Animals suffering from suspicious diseases have to be marked for a careful post-slaughter inspection (12).

It was also described how people contacting sick or suspected of sickness animals have to disinfect themselves, their clothes, and the materials they used. He also explained the post-mortem inspection in detail. He cites how to confiscate the diseased meat and record the situation with examples. He mentions how to prepare the conditional consumption meat for consumption. He explains the subject-related provisions in "*Animal Health Police Law*" (12).

He mentions the actions to be taken when there is an objection to the confiscation of the meat. He also guides livestock owners and describes the arbitral commission to be established related to the subject. The commission consists of the Ministry of Agriculture Official Veterinary Physician, Provincial Veterinary Director, or the Veterinary Faculty Meat Inspection Lecturer (12).

The author mentions horse meat that is not consumed in Turkey and explains that this is an important economic loss. At that time in Turkey, the same situation was also true for pigs although the proportion of non-Muslims was higher. The author finds the consumption of these meats important. He mentions the slaughterhouse inspection for birds, domestic rabbits, fishes, and other aquatic products and game animals in the booklet. He pays attention to parasitic inspection in all species (12).

Discussion and Conclusion

Instead of the Ottoman Empire, which collapsed at the end of the great wars, the newly established Republic of Turkey entered into a development and

innovation effort in every field. Public health was in a dire state. Foodborne illnesses were rampant. Along with all these modernization efforts, important breakthroughs have been made in the field of veterinary medicine and food hygiene. Şevki Akçay saw the food control problem of his country at the beginning of his academic life, identified the deficiencies in this issue, and struggled to solve it. One of the most important proofs of this is that the country, which had only one modern slaughterhouse at the proclamation of the Republic, has 120 slaughterhouses 10 years later (10).

In his study, the author examined the legislation of six modern countries and prepared a study based on these and taking into account the realities of the country. So much so that the booklet was published three years after the establishment of the first modern slaughterhouse in Turkey. It is seen in Şevki Akçay's biography studies that the work and its author are guiding these issues. Akçay made great efforts in opening the Analysis Laboratory of Foods of Animal Origin in 1927¹, veterinarians getting permission to open a food control laboratory in the same year, enacting the Science Slaughterhouse Law in 1930² and issuing the Meat Inspection Directive in 1932³ (11).

The booklet also contains information on the slaughter and control of pork and horse meat in a society where the majority of the population does not consume pork and horse meat. From this point of view, it can be said that the work is universal. In the preface of the booklet, the example of the French Veterinary Medical Association acting with its professional responsibilities as a non-governmental organization in meat control is a striking situation in terms of professional ethics (12).

The book is an important source for modern meat hygiene science to settle in the new Turkey. In this respect, the author went down in history as an important

name for Turkey in the science of meat hygiene. The study is one of those small but noteworthy notes in the history of meat hygiene science. In that period, there were huge infrastructure deficiencies in all areas from transportation, health, economy, to education in Turkey. A mobilization was declared in each area in order to close these deficits. Şevki Akçay defined this work as a declaration/ memorandum as well. He made a warning on an area of veterinary medicine for the healthy and rich life of a newly founded nation that suffered under great battles for many years.

This study was presented as an oral presentation at the World Association of History of Veterinary Medicine Congress held in Bergen, Norway in 2018, and was expanded and edited into an article in line with the criticisms.

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References

1. Hinman RB, Harris RB, The Story of Meat, Chicago – USA, Swift & Company, 1942, 1-9.
2. Griffith CJ, Food safety: where from and where to? British Food Journal, 2006; 108(1): 6-15.
3. Bell RG, Development of the principles and practices of meat hygiene: a microbiologist's perspective. Food Control, 1993; (4):3, 134-140.
4. Loeffel WJ, The Importance of Meat Inspection and Hygiene in the Operation of a Meat Laboratory. 1948; 104-110, <https://meatscience.org/docs/default-source/publications-resources/rmc/1948/the-importance-of-meat-inspection-and-hygiene-in-the-operation-of-a-meat-laboratory.pdf?sfvrsn=2#:~:text=There%20is%20always%20the%20possibility,of%20meat%20from%20infected%20animals.&text=Under%20federal%20inspection%2C%20the%20health,on%20the%20carcass%20and%20viscera>.
5. Derbyshire JB. Early history of the Canadian federal meat inspection service. Can Vet J, 2006; 47: 542-549.
6. Lasztity R, Petro-Turza M, Foldesi T. History of the Food Quality Standards, in Food Quality and Standards [Ed.

¹T.C. Resmi Gazete, Seriri Taharriyat ve Tahlilat Yapılan ve Masli Teamüller Aranılan Umuma Mahsus Bakteriyoloji ve Kimya Laboratuvarları Kanunu, No: 992, 19/3/1927; (580): 3-8, p., 149.

²T.C. Resmi Gazete, Umumî Hıfzıssıhha Kanunu, No: 1489, 06/05/1930 Ankara, p., 8895-8910.

³Veteriner Kanunları, Ziraat Vekâleti Neşriyatı, Ankara, 1940, p., 265-276

- Radomir Lasztity] in Encyclopedia of Life Support Systems (EOLSS), Developed under the Auspices of the UNESCO, Eolss Publishers, Oxford, UK, [http://www.eolss.net]
7. Johnson, RWM. Veterinary public health: An historical perspective in Knowledge for Sustainable Development: An Insight into the Encyclopedia of Life Support Systems, Vol 2, UNESCO and EOLSS Publishers, New York and London, 2002, [https://www.eolss.net/sample-chapters/c10/E5-18-02-01.pdf]
 8. Bekman M. Veteriner Kongre ve İtilanmeleri, Marifet Basımevi. İstanbul, 1945, 11-12.
 9. Anon. Cattle Inspection, Food and Nutrition Board Introduction and Historical Review of Meat Inspection, National Academy Press, Washington, 1990, p. 8-10, ISBN: 0-309-56847-1, https://doi.org/10.17226/1588
 10. Özgür, A. Türkiye'de Veteriner Hekimliği Halk Sağlığı Çalışmalarının Tarihsel Gelişimi, Ankara Üniversitesi, Sağlık Bilimleri Enstitüsü, Veteriner Hekimliği Tarihi ve Deontoloji AD, PhD Tezi, 1995, p. 24-29.
 11. Oytun HŞ. Ordinaryüs Profesör Şevki Akçay'ın Hayatı, Eserleri ve Verimli Çalışmalarına Dair. Türk Vet. Hekiml. Dern. Derg. 1958; 28(142-143): 3-11.
 12. Şevki, Teftiş-i Lühûmun Tarz-ı İcrası ve Esbab-ı Müsadere Hakkında Muhtıra, Hüsn-i Tabiat Matbaası, İstanbul, 1926.

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