

Silvius STANCIU¹,
Nicoleta STANCIUC²,
Loredana DUMITRASCU²,
Roxana ION¹,
Costel NISTOR²

¹The University of Economic Studies of Bucharest,

² " Dun rea de Jos" University of Galati

THE EFFECTS OF HORSE MEAT SCANDAL ON ROMANIAN MEAT MARKET

Keywords

Risk

Traceability

Horse

Beef meat

Business Continuity Plan

JEL Classification

M16, M21

Abstract

Sustainable business in the domestic production of meat must meet both the usual Requirements regarding quality, safety for customer and New Challenges in the European meat market. The Romanian food industry must meet the challenge of recent suspicions regarding the substitution of beef meat with horse meat. The modern applicable to meat traceability systems and authentication procedures can be considered as new ways to support fair trade and transparency, THUS, removing suspicions that appeared lately. Lack of safety measures in the field can affect business continuity critically, creating significant losses.

1. INTRODUCTION.

The scandal of horse meat sold as beef meat was a topic of interest for the media and a question mark for every average European consumer from Britain, Romania or other countries from Europe where there was the suspicion of horse meat marketed as beef. The subject of horse meat labeled as beef is known by most consumers from Romania and it is a frequently debated topic in the media and society, being regarded as one of the most viral social issues in the past year (www.ziare.com).

2. THE EVENTS

The scandal broke out when there were found traces of horse meat in frozen lasagna pasta sold on the British market, although the signs of possible fraud with beef existed before. In mid-January, the Irish authorities discovered horse meat in minced meat produced in the UK and Ireland, sold in these two countries as beef. Important amounts of horse meat (in some products up to 100% substitution), were also discovered in meat for steak (provided by British and Irish companies) or in lasagna and spaghetti Bolognese (from the French company Comigel). British subsidiary of the Swedish group Findus, which sells frozen products, admitted that there were problems with packages of meat used for lasagna Comigel. French producer said, also, that some of packets of lasagna delivered to the company Findus contained horse meat at a rate of 99-100% (<http://www.mediafax.ro>). As a result of information published in the British press, the habits of British citizens regarding the food consumption have changed. Thus, according to The Guardian, a British consumer confidence decreased by 24%, about 30% of consumers bought less processed meat, and 24% of them have purchased less cooked meat foods or chose to buy vegetarian products. (www.evz.ro).

The Romanian manufacturer's involvement in the scandal was made by the announcement of president Comigel (January 2013), who announced that the manufacture of the pasta was made with beef from Romania. Spanghero, French supplier of the meat for the brand Findus lasagna, incriminated for the tampering with

beef, said he planned to bring to trial the Romanian manufacturer that supplied him.

In Romania traces of horse meat were founded in minced meat for smalls, in deposits of frozen meat, relabeling actions in fake of the horse meat as beef on behalf of other economic agents in a refrigerated warehouse in Alba County (<http://www.ansvsa.ro>). The amplifying factor for the dissemination of the information was the discovery of 500 kilograms of horse meat abandoned on the edge of a lake in Cluj county.

In the autochthonous media, the scandal of horse meat, labeled as beef broke out in mid-January 2013 and is not completely over. In the traditional media, the topic has generated more than 25 hours of TV broadcast, 3 hours of radio broadcast and 82-pages of tabloid newspapers focusing on the key information and statements made public both in Romania and in the international press (www.mediaimage.ro). In social media, the news generated rather ironic comments, the amplifying factor being the withdrawn from sale of patties sold at IKEA, suspected of horse meat content. The total exposure of the subject on social networks accumulated more than 15,000 appearances, 500 Romanian blog posts, 2,000 posts on Facebook.com, 43 movies loaded on Youtube.com, over 20000000 estimated views (www.zelist.ro/monitor). The huge amount of media content made the level of interest in the subject, measured by the Google search engine to increase by 400% in February 2013 compared to September 2011 when the issue of the marketed horse meat instead of beef first appeared in a market in Bucharest, after an inspection made by the authorities.

The explanation for the special interest that this subject had in the discussed period should be correlated to two factors: the *credibility of the source* (an article published in the international press about the situation from Romania, even at the level of an assumption is likely to become quickly the subject of press and discussion on the internet) and the *recurrence*, the topic of the food safety being responsible for the appearance of some communication crises, especially in the food area (www.r-g.ro).

Heavily publicized, although without evidence of the direct effect on the consumer

safety, the subject has created suspicions about the origin of the meat, in general, and generated behavioral changes for more than half of respondents. Most of them are turning to the packaged chicken meat from known manufacturers (14.26%), while 7.75% said they didn't bought beef at all. When it comes about buying meat in which they trust, the most important mentioned three criteria remain the brand of the producer (63% of respondents), the type of meat from which is prepared the product (55% of surveyed consumers) and the information that certify the origin and quality of the product (48% of respondents).

The study "The crisis of horse meat in front of the Romanian consumer" conducted from February 28 to March 4, 2013 by the agency Rogalski - Grigoriu Public Relations on the IVOX.ro platform, applied to the sample of 4659 people, sought to identify the level of awareness of meat horse scandal, the source from which consumers have learned about the situation, the perception on authorities intervention and the impact on the meat consumption. On a secondary level, there were assessed the Romanian consumer preferences related to meat and criteria for the procurement of meat and meat products.

The research highlighted the consumers' orientation towards different types of meat (the expressed preferences were: 26% for chicken, 21% for pork, 20% for fish meat, 12% for turkey), the fact that the vast majority heard about the horse meat scandal (97%) and knew the horse meat edibility (63%). The source of the news about the horse meat scandal was, mainly, television (78%), followed by internet (14%), radio (3%) or family (3%) and press (2%). The subject was of most interest to respondents, 9 of 10 consumers discussing it with someone of their surrounding (44% family, friends -23% or colleagues -22%). The evaluation of the amount of the virality of the subject, according to the Rogalski - Grigoriu hierarchy scale, showed a score of 4.75, close to the maximum (Rogalski - Grigoriu, 2013 value). The question of the confidence in the origin of the purchased meat showed a decreased confidence of the Romanian consumer. Thus, almost half of the respondents have less confidence in meat products (51.7%), while only 47.63% and respectively 0.66% have

as much or even more confidence in it. The conclusions of the study regarding the meat selection criteria are that most Romanian consumers trust the origin (manufacturer's brand - 63%, meat type -55%) and quality (information proving the quality and origin of the product is important for 48% of persons included in the sample), the other less important criteria (presentation, packed or loose 25% product price 22%, packaging 11%). ([Www.r-g.ro](http://www.r-g.ro)).

3. ACTIONS OF THE AUTHORITIES

Romanian authorities were involved in clarifying the aspects related to the origin of beef substituted with horse meat. The survey that was carried out by order of the minister of agriculture revealed that the alert was false, Romanian processors being wrongly incriminated "The lots of rigged horse meat are not from Romania" (www.gandul.info.ro). In the support of the Romanian authorities are coming the minister of agriculture of Ireland, who confirms that the lots of horse meat left from Romania labeled correctly.

Romanian public perception of crisis management is embodied in the option of 40.7% of respondents who consider that the authorities in Romania properly intervened to restore truth, the Prime Minister being the public personality most visible in this controversy (65%).

At European level, the European Commission (EC) provided the notification on the suspicion of fraud by substituting beef with the horse meat, through the Rapid Alert System (SRAF) for batches of lasagna product distributed in the UK and Luxembourg from raw materials obtained from France (www.ansvsa.ro). Tests carried out in the Community, after the outbreak of horse meat scandal, allowed detection of up to 5% horse meat products labeled as containing beef, but also, traces of other substances that are banned in food.



Fig. 1. The Circuit of horse meat in Europe (www.zeroledge.com) respectively at Findus (www.thenewstribes.com)

Investigations conducted in Europe led to the detection of a network of companies that act at Community level, which purchased horse meat from two approved slaughterhouses from Romania (one slaughterhouse strictly specialized on slaughtering horses) and labeled as beef on trade route (which included Cyprus, the Netherlands, France). In the circuit, 130 Dutch companies and 370 companies from other European countries were incriminated. Holland ordered withdrawal from the market of 50,000 tons of beef likely to be substituted, the authorities recognizing that import-export firm Willy Selten, acting in wholesale trade of meat sold in the last 2 years 50.0000 tones of adulterated meat (ZDF - TV. Channel)

The official reaction at European level resulted in recommendations to the Minister regarding the labeling of horse meat source and EC request of the Member States to carrying out two sets of DNA tests on of beef products, co-financed by Community funds.

4. EATING HORSE MEAT

Although in Romania, and also in Anglo-Saxon influence areas, horse is not a traditional source of meat, there are evidences of eating horse meat by humans since ancient times. Archaeological information and cave drawings show that the Upper Paleolithic wild horses were an important food source for primitive man (Terrejón, 2001). Horse meat was consumed by Germanic peoples as part of antichristian

religious ceremonies. In many parts of Europe the consumption of horse meat has continued until present time, despite papal prohibition to consume that meat. For some current users such as French, horse meat consumption habit developed during the revolution because of famine or during the Napoleonic campaigns. The horse meat was widely accepted in the last years of the French Empire in the French cuisine. High cost of living in Paris led primarily by its purchasing by the poorest layer of the population. In 1866 the French government legalized the consumption of horse meat, being registered the first food store, opened in eastern Paris. Generally, horses were used as a last source of food in times of siege or starvation. Controversies on horse meat consumption in 1948 were also in the UK, there was suspicion that more than two million Britons ate horse meat without knowing it. In many countries horse meat is considered a delicacy. In Japan, horse meat is part of the recipe product called sashimi appreciated by tourists; the vast majority does not know what it contains what they eat. In China, in Guangxi Province, a traditional way to eat combine the horse meat and the noodles and the result is a soup which is said to be delicious. In Ukraine, horse meat is consumed in the form of sausages called Mahan and Sudzhuk and, in Austria, Leberkäse - bologna made from horse meat is consumed (www.wikipedia.com). In Germany there are butchers specialized in horse meat (Pferdemetzgereien) and the meat is consumed as Sauerbraten (roast with gravy) or

Bavarian Rosswurst. In Iceland is consumed in the form of steaks and grills, and in Malta the most expensive meat in the market is the stallion meat. In Slovenia there is a fast food chain called Hot Horse, serving Horseburgers. In Kazakhstan, a country where horse meat is consumed frequently, there are traditional sausages assortments made of horse meat. Horse meat is very popular in Italy, considered one of the most

popular types of meat or a delicacy (prosciutto di cavallo). Mongolian people eat horse meat, considered to be of a very high quality, mostly in winter. (Http://www.evz.ro). The main producers and consumers of horse meat in the world are Asian countries, Argentina, the U.S. and Mexico, which have important effects to animals. Romania ranks 12 in the hierarchy based on faostat.fao classification.

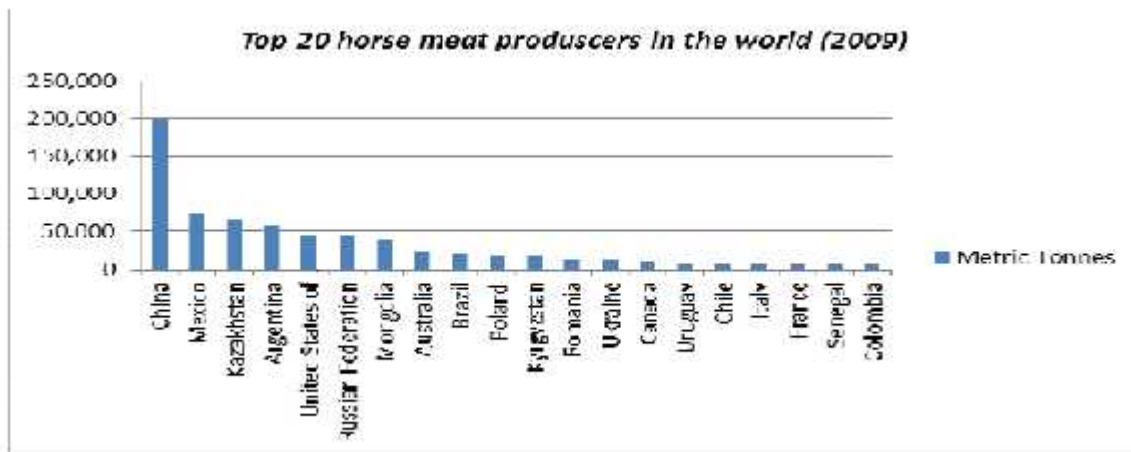


Fig. 2. The main producers of horsemeat, 2009 (faostatdatabase.com.)



Fig. 3. The main producers of horse meat to the European and global (2011) (taken www.mirror.co.uk)

5. Nutritional characteristics of horse meat

According to nutrition experts, horse meat is a more valuable food than beef. The horse meat is rich in mineral elements: it contains about 3.9 mg iron/100 g, covering about 21% of

a person's daily iron (compared with 10% beef, with an iron content of 1.9 g/100 g), a sodium amount of 53 mg/100 g relatively close to the beef (55 mg/100 g), an amount of zinc which covers one third of the daily necessity.

Table 1. The chemical composition of beef and horse (Banu, 2009 www.pferd-und-fleisch.de)

Species and category	Status of fattening	meat chemical composition (%)				Energy amount (calories/100 g)
		water	proteins	lipids	minerals	
	Fat	62.5	19.2	17.3	1.0	236.6
	Average	68.3	20.0	10.7	1.1	181.5
	Weak	74.0	21.1	3.8	1.1	121.8
Youth cattle's	Fat	64.8	18.6	15.6	1.0	221.3
	Average	68.0	20.0	11.0	1.0	184.3
	Weak	74.4	21.0	3.5	1.1	118.5
Beef	Beef steak	74.0	23.0	3.0	1.0	117.0
Horse meat	Average	75.2	27.0	2.7	1.0	175.0

Concentration in some vitamins overcome the beef values, covering the daily requirement of vitamin B 12 in a proportion of 50% (compared to 21% for beef), of vitamin B3 (in a proportion of 39%), vitamin B12 in proportion of 150%, being less rich in vitamin B6, niacin, folic acid. The cholesterol content is moderate, close to beef (52mg/100 g). Horse meat is richer in omega-3 fatty acids (360 mg/100 g) than beef (21 mg/100 g) (Pino, 2011). Energy value of 100 g cooked horse meat is 175 calories, 55 calories from fat. In comparison, 100 g cooked fat beef has a caloric value of 273 calories, which come mostly (over 60%) of fat (<http://nutritiondata.self.com>.)

5. SAFE FOOD CONDITIONS FOR HORSE MEAT PRODUCTION IN ROMANIA

From the presented data it appears that the major problems of horse meat consumption are not due to the composition of the flesh, but both the consumer preferences and hygienic quality of meat.

In order to ensure food safety for the food operators in Romania there were implemented programs of self-control to ensure product safety and hygiene of the slaughter. These programs are supervised by veterinarians, according to the National Surveillance Programme (Cornea, 2013). In all slaughterhouses in Romania slaughter is under constant surveillance of the

veterinarians, the ANSVSA employees who are required to perform pre-examination and post-mortem inspection of animals, the results of these tests are recorded in special registers.

Slaughterhouses have implemented traceability procedures ensuring the correlation between the identification plate on the final product and the number of individual animal identification, animal origin and destination of the finished products. So, at the arriving at slaughterhouses, horses are accompanied by a series of documents certifying both the origin and animal health: passport, health certificate, document for the food chain, documents on the animal movement from the holding of origin to the slaughterhouse, crotalia auricularae, microchip (specifically for horses). Cattle and horse slaughtering is done in separate slaughter parties.

All slaughtering units have implemented HACCP program in which are specified both the operating procedures and records for these slaughters. During the slaughter process the parts of the animal (head, organs, skin, skeleton) are identified with the labels that can provide the link between the live animal and its parts. There are also prepared process sheets in which there are enrolled the number of animals slaughtered and carcass quantities produced. Additionally, official veterinarians are conducting pre- and post-mortem examination of the animals in which there are submitted data on the documents of origin, on the quantities produced during slaughtering, the results of the pre-and post-mortem examinations.

Meat labeling is done in accordance with EC Directive 2000/13: product name, items of slaughter unit identification / slicing, lot number / traceability / date of the minimal durability, brand identification of slaughterhouse / slicing plant, details on the conditions storage (<http://eur-lex.europa.eu>).

In order to perform intra communitarian commerce, there are prepared specific

documents: commercial documents (invoices, notices) transportation documents stating the place of loading and destination (CMR; sheet of loading (packing list); certified quality; individual product labels. Sending batch to carry intra communitarian exchanges can be done only after the final inspection (documentary and physical) of the products by the official veterinarian that provides the veterinary supervision of the unit of origin). In order to carry out intra-Community trade the unit must be authorized veterinary for such activities. List of approved units / authorized activities is published on the website ANSVSA being

communicated to the European Commission and Member States (<http://www.ansvsa.ro>).

6. IMPLICATIONS SCANDAL HORSE MEAT ON ROMANIAN MEAT SECTOR

A thorough analysis of the scandal reveals, in addition to the aspects inciting the press, a number of implications for the credibility of the Romanian sector of the meat, with negative effects on local processors.



Figure 4. Romanian Exports of meat solipeds

According to the schedule presented in the period of January 2007 - December 2012 Romania registered a significant increase in the value of exports of solipeds meat (horse, mule and donkey). In the first 11 months of 2012, Romania exported meat solipeds of 12.3 million. Main trading partners in exports were Belgium (4.5 million), Bulgaria (3.1 million), Italy (2 million), Poland (1.6 million). Smaller amounts were for markets in the Netherlands, Austria, Hungary, Greece, Germany and Czech Republic. Data presented in the recent years imposes Romania as one of the largest exporters of horse meat worldwide (www.mediafax.ro/economic). After the scandal broke, Romanian exports of horse meat decreased significantly (reaching only 6000 to the early months of 2013). A negative trend was also recorded in exports of sliced beef.

7. CONCLUSIONS.

The pieces of information presented in the press have changed food consumption habits of citizens. With the decrease of the consumer

confidence (especially the British) decreased also the sales of processed meat and beef products. British consumers turned to poultry or became vegetarians. Romanian consumers are receptive to food safety issues, changing relatively quickly their preferences based on the information from the media. The subject of horse meat has generated confusion in Romania. Consumer migration to the packaged chicken, produced to the known manufacturers shows that trust is built over time and is reconfirmed in times of crisis. Although unsubstantiated allegations against Romanian producers strongly affected meat sector in Romania, demonstrating its frailty and dependence on the Community market.

References

- [1] Banu, C., (coord), 2009, Treaty of Food Industry, ASAB Publishing House, Bucharest
- [2] Oprea, C., 2013 Health inspection procedures and documents required for slaughterhouses authorized to participate in intra-Agro Romania, <http://www.agroromania.ro>.
- [3] Marvin, H., 1998, Good to Eat: Riddles of Food and Culture, Waveland Pr Inc, UK

- [4] Pino, D., 2011, "How Nutritious Is Horse?" <http://science.kqed.org>, accessed May 2013
- [5] Stein, J., 2007, "Horse - It's What's for Dinner". www.time.com, Retrieved 2013.
- [6] Terrejón, FG, 2001 Exotic Livestock Production and the Transition, "Geohistorical Variables in the Evolution of the Economic System Pehuenche DURING the Colonial Period" *Universum Magazine*
- [7] Weil, K., 2007, "They Eat Horses, Don't They? Hippophagy and Frenchness", *Gastronomica Spring*, Vol 7, No. 2, Pages 44-51,
- [8] ***Characteristics of the Meat"Viande Richelieu, Inc. Covers Nutrients, Age, The sex of the animal, Race, Color, Tenderness, Taste, and Meat cuts." [Vianderichelieu.com](http://vianderichelieu.com). retrieved 2013
- [9] *** Fichier canadien sur les éléments nutritifs 2011, quoted <http://www.vianderichelieu.com>.
- [10] *** "Carne de caballo, el negocio tabú que florece en la Argentina". *La Nación*, retrieved 2013
- [11] *** Directive EC 2000/13, accessed <http://eur-lex.europa.eu>
- [12] *** "" Food in Kazakhstan. "" "" Food in Every Country." www.foodbycountry.com. retrieved 2013
- [13] *** "Food Standards Agency - Labelling Rules". www.Tna.europarchive.org. retrieved 2013
- [14] *** "Horse Slaughter and Horse Meat: the Facts". www.optimail.com.au. retrieved 2013
- [15] *** "Hot Horse". www.ljubljana, retrieved 2012
- [16] *** "Horse Meat vs Beef - What's the Difference and SHOULD We Be Eating It?" [Http://www.healthambition.com](http://www.healthambition.com)
- [17] *** "Nutrition Facts and Analysis for Beef, Grass-Fed, Strip Steaks, Lean Only, Raw". www.life.com., retrieved 2013
- [18] *** "Romania-Denies-Blame-for-Europe-HorseMeat-Scandal" [http://www.thenewstribes.com/](http://www.thenewstribes.com) accessed 2013
- [19] *** "USDA Promotes Horse & Goat Meat", *International Generic Horse Assoc ..* retrieved 2013
- [20] *** ZDF-TV channel, teletext, pp. 120, 121, 122 / 04.11.2013: Fleischscandal, accessed May 2013
. *** [Www. ANSVSA. com](http://www.ANSVSA.com), accessed 2013
- [21] *** [Http://eur-lex.europa.eu](http://eur-lex.europa.eu), accessed 2013
- [22] *** [Www.gandul.info.ro](http://www.gandul.info.ro), accessed February 2013
- [23] *** [Http://www.mediafax.ro](http://www.mediafax.ro), accessed May 2013
- [24] *** [Http://www.mirror.co.uk/news/uk-news/horse-meat-lasagne-factor](http://www.mirror.co.uk/news/uk-news/horse-meat-lasagne-factor)., Accessed 2013
- [25] *** [Http://nutritiondata.self.com/facts/lamb-veal-and-game-products](http://nutritiondata.self.com/facts/lamb-veal-and-game-products)., Accessed May 2013
- [26] *** [Www.mediaimage.ro](http://www.mediaimage.ro)., Study 9 to 27 February 2013, accessed May 2013
- [27] *** [Www.pferd-und-fleisch.de](http://www.pferd-und-fleisch.de), accessed May 2013
- [28] [Www.r-g.ro](http://www.r-g.ro) *** accessed 2013
- [29] [Http://www.zerohedge.com/news/2013](http://www.zerohedge.com/news/2013) ***
- [30] *** [Http://www.ziare.com](http://www.ziare.com). Accessed May 2013
- [31] *** [Www.zelist.ro](http://www.zelist.ro) / monitor, study, 4 February to 4 March 2013.
- [32] *** [Www.wikipedia.com](http://www.wikipedia.com), accessed 2012-2013