

## **THE IMPACT OF POULTRY MEAT ATTRIBUTES ON BUYERS DECISION**

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### **ABSTRACT**

Meat market has an important rank position in the pool of a competitive market. Based on the FAO data, poultry meat products are widely most preferred products.

Knowing better consumers' preferences help the producer to fulfill the consumer needs offering the type of products they really needed. Consumers' behavior depend by several indicator related to a product. Meat product attributes are very important in the decision that consumer made choosing a specific product.

Based on the fact, that all type of meat are "fragile" products in terms of food security, we carry out this survey to show out the factors and attributes which impact the buyers' behavior in selecting poultry meat products.

Now a days, consumers are more awareness and have a good information regarding the food products. They pay high intention about food quality which is related closely with how safety are the products. They are concerned about nutrition and sensory aspects of meat products.

Our study aim to figure out the impact of poultry meat attributes in the consumers' preferences for this product.

In this regard, was conduct a survey with 250 participants in Tirana – Durres region.

Based on our study results it is show that price, origin of the poultry meat product and the appearance (color / texture) of the chicken meat are very significant factors in the buyers' decision.

On this study is pointed the correlation between origin - price, and price - appearance of poultry meat products. Another issue that was pointed by the interviewers was how safe from different diseases are the chicken products.

The results of this approach as an orientation for poultry meat industry and their marketing strategy and all other meat market actors how to operate in the open market and how to be in line with consumer preferences.

**Keywords:** attributes, behavior, consumer, meat color, meat, preferences, poultry meat, price, safe product.

## 1. INTRODUCTION

Poultry meat is a very popular food commodity around the world due to its low cost of production, low fat content, high nutritional value and distinct flavour, short time needed for cooking, its consumption has increased in recent decades in many countries . Fresh poultry meat belongs among a perishable food.

On a global level, poultry are valuable animals because of their contribution to protein sources, and to high contribution in the lifestyle of the consumers.

Based on the information on healthy nutrition and well- being, meat is a good source of protein, minerals (iron, zinc, calcium), and vitamins (A, B12 and other B vitamins) (Pereira & Vicente, 2013; Randolph et al., 2007). As part of a nutrition transition (Popkin, Adair, & Ng, 2012) and livestock revolution (Delgado, 2003), growth of meat consumption in developing countries is likely to increase.

Poultry, are categorized as domesticated birds kept either because of their products such as meat, feathers or eggs. They establish a diverse group of animals, which can be incorporated into many farming systems. Throughout the world, poultry is identified and estimated for the mutual benefit of animals and the humans involved. It is a great significance their ability to adapt many types of feed, such as residuals from agricultural activities, households and food processing industries. (M. Vaarst et al. 2015)

Based on FAO statistics, (FAO, April 2018, p. 3), world poultry meat output is estimated at 120.5 million in 2017, up 1.1 percent from 2016. Outputs expanded in almost all major poultry producing regions despite frequent outbreaks of the Highly Pathogenic Avian Influenza (HPAI) in Africa, Asia and Europe. Between 2010 and 2017, world poultry meat production has increased by 21.3 million tonnes, but over the years the rate of growth has been decelerating.

In the EU, output was constrained by HPAI outbreaks, limiting production growth to 0.8 percent as against 4 % , three years ago.

Statistics pointed out that average annual consumption of meat in developed countries is 75.5 kg/inhabitant, while consumption of 33.9 kg/inhabitant is estimated in developing countries.

Worldwide, levels of meat consumption are projected to increase by 72% in 2030 compared to the situation in 2000 (Fiala, 2008), (P.Udokumkun, et al.)

In many countries, HPAI outbreaks badly affected output, especially early in 2017, but recovered in the following months, leading to output stability. At the same time, the poultry sector encompasses a contrast between dominant global large corporations and small-scale producers especially in the Global South (2011). This can be assumed as a great potential, because a variety of different trends and its branches to development can be explored the last decade, the global poultry meat market has undergone an unpredicted and complex changes. The development of the poultry meat industry is steady growing and is one of the most competitive sector in the European market. In 2018, the production of the poultry meat in EU countries is increased with 4.2% (EU Market Situation for Poultry Committee for the Common Organization of the Agricultural Markets 24 January 2019). EU Policies in meat market intended to boost a safe, nutrition, fresh meat products towards the needs of consumers.

Based on FAO statistics (Sept. 2019), world meat production increased from 13 percent in the mid-1960s to 28 percent currently. The most radical shifts in consumption in favor of poultry meat took place in countries that were the traditional producers, and often major exporters, of bovine meat such as: Latin America, North America and Oceania as well as in the mutton-eating region of the Near East/North Africa. Once again, developing countries captured the majority of poultry meat production and consumption in 2016 and, with populations in these countries continuing to grow, they are expected to hold their place as the top importers of poultry meat collectively in 2017 as well. (OECD-FAO).

Although production growth has slowed, changing diets in these developing countries and strengthening economies continue to increase poultry production worldwide. During the past 15 years, poultry production was up nearly 43 million metric tons, according to FAO reports. As far as individual countries go, Brazil, China and the U.S. remain the leaders in poultry meat production, with 2017 production, (table 1) (Food Agriculture Organization, Apr.2018)

**Table 1**

<b>World exports of livestock products and percentage of world consumption</b>				
	<b>1964/66</b>	<b>1974/76</b>	<b>1984/86</b>	<b>1997/99</b>
<b>Total meat</b>				
Exports ('000 tonnes)	5996	8869	14011	27440
% of consumption	7.4	7.9	9.4	12.7
<b>Bovine</b>				

Exports ('000 tonnes)	3134	4626	6225	9505
% of consumption	9.4	10.3	12.2	16.4
<b>Pig meat</b>				
Exports ('000 tonnes)	1734	2522	4665	8270
% of consumption	5.7	6.0	7.9	9.6
<b>Poultry meat</b>				
Exports ('000 tonnes)	436	887	1973	8465
% of consumption	4.0	4.7	6.3	13.9
<b>Ovine</b>				
Exports ('000 tonnes)	691	835	1148	1200
% of consumption	11.1	12.6	14.1	11.2
<b>Milk and dairy (liquid milk equivalent)</b>				
Exports ('000 tonnes)	21606	31769	57004	71364
% of consumption	6.0	7.6	11.1	12.8

Source: Food Agriculture Organization, Apr.2018

Meanwhile, Albania economy in the latest years, has run through a vital economic growth where agriculture sector plays a significant role in the GDP growth.

Albanian economy statistics figure out a GDP growth which slightly but steadily is increased. Over the last 3 years, Albanian economy performed a real GDP growth rate by 3.82% in 2017 compared with 2016, after a growth rate by 3.31% in 2016 compared with 2015. (INSTAT, 2017). In 2018, the total GDP figure out that Trade, Accommodation, Construction and Food Services has an impact of 0.83% in GDP, the Administrative Services and Professional activities with 0.39%. and for sure, it is important the contribution of the Agriculture, Forestry, and Fishing sector which provides 0.33 % in the total GDP. (INSTAT,2019). Being an important source of employment for the economy is a dynamic reason to rank the agriculture sector as one of the most important sector of economy. During 2017, the Service sector and the Agriculture sector have the biggest number of employees, respectively with 42.4% and 38.2 % of the total employment rate. A considerable of the population is living in rural area and are employed in agriculture.

Meat production sector is one of the latest sector which is developing significantly in the market. The government strategy aims to boost agricultural production by providing financial support to farmers and facilitating private investment in the agro-processing sector. Also, the Private Financial Institutions supports the agriculture sector offering soft loan for the farmers and agro producers.

While, Albanian Agriculture statistics figure out the livestock production is 44% of the total agriculture output. In 2016, the number of cattle, sheep, goats and poultry have increase (table below). Meanwhile, in 2017, the number of livestock have slightly decrease compared with 2016. So, cattle from 492 head in 2016 decrease in 475 heads in 2017; sheep from 1972 heads drop down to 1926, poultry also has a decrease: from 8326 heads in 2016 drop down to 7835 heads. Although, the livestock production is 161 000 tones, and is increased with 0.9% (INSTAT, 2018)

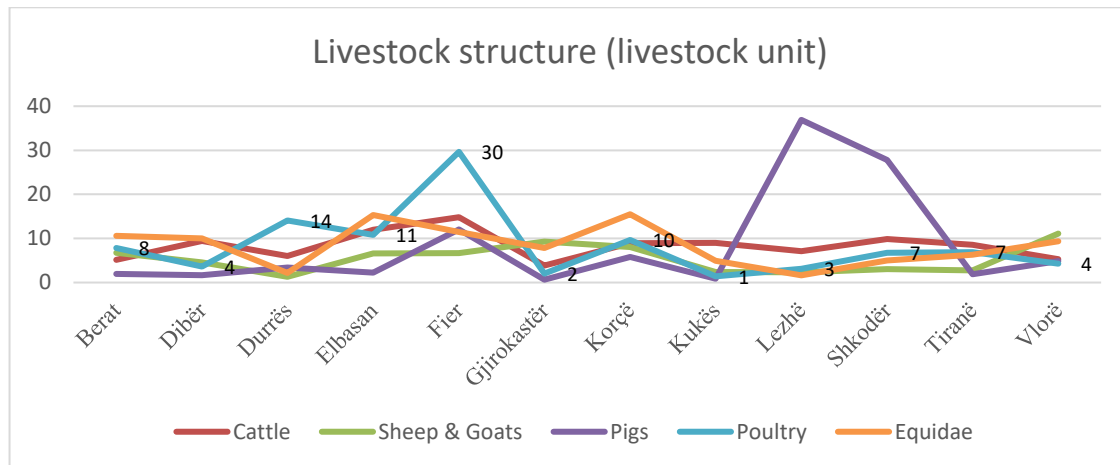
**Table 2: Animals in Albania; (Number of livestock 000 heads) (INSTAT, 2018)**

Description	2012	2013	2014	2015	2016	2017
<b>Cattle</b>	<b>498</b>	<b>498</b>	<b>500</b>	<b>504</b>	<b>492</b>	<b>475</b>
Cows	358	356	358	357	355	349
<b>Sheep/Goats</b>	<b>2,619</b>	<b>2,723</b>	<b>2,804</b>	<b>2,850</b>	<b>2,911</b>	<b>2,859</b>
<b>Sheep</b>	<b>1,809</b>	<b>1,856</b>	<b>1,896</b>	<b>1,918</b>	<b>1,972</b>	<b>1,926</b>
Milked sheep	1,390	1,413	1,419	1,417	1,428	1,407
<b>Goats</b>	<b>810</b>	<b>867</b>	<b>904</b>	<b>932</b>	<b>941</b>	<b>933</b>
Milked goats	614	656	695	700	716	717
<b>Pigs</b>	<b>159</b>	<b>152</b>	<b>172</b>	<b>171</b>	<b>181</b>	<b>180</b>
Sow	12	12	12	11	13	12
<b>Equidae</b>	<b>97</b>	<b>93</b>	<b>91</b>	<b>91</b>	<b>94</b>	<b>89</b>
Horses	34	35	32	31	32	32
<b>Poultry</b>	<b>9,494</b>	<b>8,928</b>	<b>9,493</b>	<b>8,558</b>	<b>8,326</b>	<b>7,835</b>
<b>Beehives</b>	<b>239</b>	<b>246</b>	<b>261</b>	<b>271</b>	<b>303</b>	<b>290</b>

Source of information: Ministry of Agriculture and Rural Development

Based on the INSTAT data 2018, figure 1 presented the contribution of livestock structure in main cities in Albania.

Figure 1



Source of information: INSTAT 2018

## 2. POULTRY MEAT PRODUCTS AND CONSUMER BEHAVIOR

This approach, present a data analysis on consumer preferences for poultry meat based on an analysis of extrinsic and intrinsic cues such as price, appearance and origin.

Based on the important position that hold meat products especially poultry meat products in the market, is necessary to adapt such marketing strategy, where meat producers and other marketing chain actors should be focused on the demand of the consumers towards the consumers 'attributes orientation.

In this regard, the producers is needed to adapt innovative technology, processes in order to offer a variety and good quality meat products.

Nowadays, living healthy is the focus of the consumers. Poultry meat is a good quality source of the protein on the consumer's diet.

Based on different studies, the consumers' attitudes are influenced by extrinsic cues as well by intrinsic cues for quality selection.

Nevertheless, consumers' choices are influenced by many factors that ultimately shape purchasing decisions. Font- i- Furnols and Guerrero (2014) identified consumers' behavior as depending on interrelated factors that included psychological influences (willingness, risk, expectations, sociocultural factors, lifestyle, and values), sensory qualities (visual appearance, texture, flavor, and odor), and marketing factors (price, label, brand, and availability).

Also, Grunert, Bredahl, and Brunsø (2004) used the Total Food Quality model to analyze consumers' perception and decision-making in determining meat quality. The model showed that consumers form expectations about quality at the point of purchase, based on their own experience and informational cues available in the shopping environment. These preferences are influenced not only by quality and consumer-related factors but also by context, culture, and information (Kanerva, 2013; York & Gossards, 2004).

Alemu, Olsen, Vedel, Pambo, and Owino (2017) showed that preferences in Kenya are also influenced by context and information in addition to product attributes.

In many studies is shown that "country of origin" and "place of purchase" are main key indicators. The experience quality indicators like flavour or smell, are hard to measure but they play an important role on the assessment of the quality of fresh meat.

In response to assess the safety of meat, "country of origin" may be consider as an extrinsic attribute cue. As well, place of purchase, color, portion of the meat and, fresh or frozen meat credence quality attribute cue are also very important.

In order to asses eating quality as well to indicate safety of meat products, consumers often refers to the "Country of origin" attribute. This holds for all four types of meat: beef and veal, pig meat, poultry meat, and goat meat.

Although, others meat attributes, which have been taking account by buyers preferences such as price, incomes, migration of the population, age, education etc are not less important.

The impact of the lower price of poultry meat than other types of meat, is a factor which may conduct the consumer to prefer the poultry meat consumption. (FENAVI, 2007; Galvis, 2000; Lanfranco & Rava, 2014).

The change of the lifestyle orientation based on healthy diet has also impacted on the increase of the buyers 'demand for meat products, especially for poultry meat products as they are a big source of proteins. They pay attention on the selection of safety and fresh products.

Culturally, meat is associated with wealth and consumption is viewed as a reflection of favourable economic conditions (Nestle, 1999). Some diseases have influence in the production of the red meat.

This phenomenon, has reflected in a more efficient production of other protein products such as poultry and fish. (Fernandez-Armesto, 2001).

Most commodities consist of hidden qualities that consumers cannot detect by pre-purchase or through normal use. Hence, given that consumers demand such qualities, information has to be communicated to the consumer by some trustworthy party to avoid a “lemons” effect. With respect to food, such qualities can be, for example, animal welfare process standards or long-term health hazards. Previous research has concluded that extrinsic cues such as country of origin (COO) are important in the consumer evaluation process. (Hoffmann, 2000)

Researchers have expended considerable effort to understand the importance that consumers place on country-of-origin (COO) information when they evaluate a product (for reviews, see Bilkey and Nes, 1982; Peterson and Jolibert, 1995; Pharr, 2005; Verlegh and Steenkamp, 1999). Consumers use COO information as a signal of product quality (Han, 1989) and authenticity (e.g. Holt et al., 2004). However, a singular view of COO does not adequately reflect emerging market realities because an increasing number of products are designed in, have parts from or are manufactured in more than one country (Jaffe and Nebenzahl, 2001). While such outsourcing often makes sense from a COO contingencies cost point of view, the potential consequences it may have for consumers’ use of COO information is an important issue for theory and practice. (Isenberg, 2010))

### **3. METHODOLOGY**

Based on the literature and various studies made, it was constructed and conducted a survey which will figure out the socio – demography and economic data situation of the interviewers, their desire to consume meat products especially poultry meat, type of poultry meat, through the poultry meat attributes.

The selection of the poultry meat attributes was made based on what other studies investigated and what different author has said regarding the products attributes.

This survey was conducted in the Tirana and Durres area, with around 250 interviewers.

Conjoint analysis has been used extensively in marketing research to estimate the impact of selected product (service) characteristics on customer preferences for products (services) (Louvier, January 1988)

Based on the above, we select the conjoint choice method to analyze the results of the surveys. Within this method, is easy to understand experience of the consumer and in the meantime to provide a reliable information for the consumer but mostly to provide useful information which should oriented the producers towards the buyers’ demands and socio – demographic situation of the consumer.



As well, the approach aims to show up the impact of attributes in the buyers decision and correlation of poultry meat attributes as: country of origin, price, age, gender, and color, place of purchase, type of product.

The perception of products, including perception of its attributes means the starting point for the consumer decision.

So, the combination of these indicators will give the necessary information needed to identify buyer's preferences towards the attributes of the poultry meat.

#### **4. DISCUSSION AND RESULTS**

Our survey is based on the different factors: cultural, social, individuals and psychological, which attempt to understand a market with different characteristics and desire of the different consumers of poultry meat products.

A combination of the attributes of poultry meat will conduct us in an analysis of buyers' preferences for poultry meat.

Based on our survey, 39.6% of the interviewers are male and 60.4% are female.

98.8 % of the interviewers declared that the product' price play a significant role on their decision of buying chicken products and only 1.2% of them considered the price as no significant in their decision of buying poultry meat products.

Meanwhile, regarding the origin of the poultry meat product, more than half of the interviewers, respectively 53.6% answered that the origin of the product is considered very important. 36.4% considered the origin important and only 0.8% considered this factor as low important in their decision to buy poultry product

Another important of poultry meat quality attribute is appearance, (color and texture). Our survey show out that 68% of the interviewers considered the appearance as very important on their decision of buying poultry meat products, 38% considered it important and only 1.2% considered the appearance as less important in the decision of buying poultry products.

Poultry meat color is a critical food quality attribute. Color is important for both the consumer's initial selection of a raw meat product in the marketplace and for the consumer's final evaluation and ultimate acceptance of the cooked product upon consumption. Froning reviewed the many live bird production and processing factors associated with poultry meat color. (Froning, 1995) The occurrence of pale poultry meat, particularly in turkey breasts, has been related to poor

functionality in further processing and excessive fluid accumulation in packaged products. (D.L. Fletcher, 1999).

A comparison between price, origin and appearance was used in this study in order to rank them from most important to less important. Below, the table 3, show that from these 3 attributes, the most important is presented the origin of the poultry product with average of 4.4 followed by appearance with an average of 4.1 and the last but not the least is the price with an average of 4.0.

**Table 3**

The criteria used: very important; important; less important	N	Minimum	Maximum	Mean	Std. Deviation
How important is on your buying decision the price	250	2	5	4	,61
How important is on your buying decision the product 'origin	250	2	5	4.42	,69
How important is on your buying decision the appearance	250	2	5	4.17	,83

*Source: Own data*

Although the result above show that the impact of three indicators: price, origin and appearance has the same impact on the buyers’ decision. So, the buyers’ decision for a poultry product, depends on the product ‘price, its appearance, and it origin.

In terms of gender segregation, the approach presented that the influence of 3 indicators of the poultry products: price, origin appearance on buying decision has slightly differences between female and male. These attributes have almost the same impact on female and male buying decision. Respectively, female assessed as more important the origin (average= 4.5) of the product then the male (average= 4.2), meanwhile male considered as most important for them, the price and appearance.

The influence of these three indicators are showing as below, (table 4).

**Table 4**

	Role of the price on your buying decision?	Role of the product origin on your buying decision?	Role of the appearance on your buying decision
Mann-Whitney U	5906,500	6215,500	7125,500
Wilcoxon W	17382,500	11165,500	18601,500
Z	-3,357	-2,522	-,668
Asymp. Sig. (2-tailed)	,001	,012	,504

Source: Own data

As the price is one of the indicator with high impact in the buying decision, and food safety is very important to consumers, our study also investigated the correlation between willingness to pay more for a certified product and gender and incomes.

To the question if the consumer is willing to pay more for safe poultry product, the results from our survey show that 94.8% of our interviewers are willing to pay more for safe product labelled in the product. They will be able to pay 16% more from the actual price of the poultry product, if they will have the possibility and the guarantee to select a safe and protected product by viruses such as HPAI (table 5)

**Table 5**

	N	Minimum	Maximum	Mean	Std. Deviation
How much more will you pay for a safe product labelled in the product? (%)	237	5,00	30,00	16,4557	6,59763
Valid N (listwise)	237				

Source: Own data

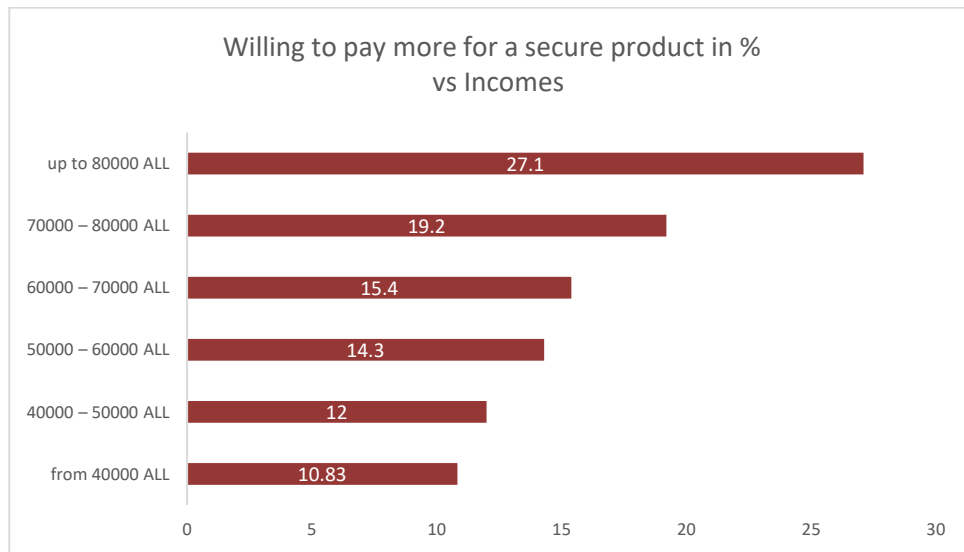
Both female and male, are equal ready to pay more for a safe and healthy poultry product.

Based on our data analysis it is showed that with the increase of monthly income of the consumer will increase also the willingness to pay more for safe and certified poultry products.

The figure 2 below show that the consumers with incomes in the amount of 40,000 ALL are willing to pay 10.8% more for a certified product than the actual price. Meanwhile, those who have incomes in the amount 60,000 – 70,000 ALL, are willing to pay 15.4% more for a certified

meat product. Those, who their incomes are around 80,000 ALL, are willing to pay till 27% more for a certified and safe poultry product.

Figure 2



Source: Own data

Statically, there is a significant correlation between monthly incomes and the willingness to pay more from the actual price for safe poultry product this correlation is positive and relatively strong ( $r=0.668 > 0.6$ ), showed in table 6:

Table 6

		Average of monthly incomes (ALL).	How much more will you pay for a safe product? %
Spearman's rho	Monthly average incomes (ALL).	1,000	0,668**
	Correlation Coefficient	.	0,000
	Sig. (2-tailed)	237	237
	N	237	237
rho	How much more will you pay for a certified product? %	0,668**	1,000
	Correlation Coefficient	0,000	.
	Sig. (2-tailed)	237	237
	N	237	237

\*\* . Correlation is significant at the 0.01 level (2-tailed). Source: Own data

In general, different characteristics, behaviors of the consumers towards different attributes of the product and the market segmentation should be the most important orientation for the producers in order to meet the consumers' expectation.

Our analysis figure out three attributes of the poultry meat products, origin, appearance (color and texture) and price are three significant indicator which lead the consumer preferences for poultry products.

Based on our research, it is showed that female preferences are most impact by the origin of poultry meat, meanwhile the male preferences are indicated mostly by the price and appearance.

But, in general both male and female preferences for poultry meat are almost indicated by all three main indicators: origin, appearance (color and texture) and price.

Appearance is critical for both the consumers' initial selection of the product as well as for final product satisfaction.

Texture is the single most important sensory property affecting final quality assessment. Appearance quality attributes include skin color, meat color, cooked meat pinkness, and appearance defects such as bruises and hemorrhages.

Since appearance is so critical for consumer selection, poultry producers go to great lengths to produce products with the appropriate color for a particular market and to avoid appearance defects which will negatively affect product selection or price.

An understanding of the major issues contributing to poultry color and meat tenderness is critical to producing uniform quality products. (Fletcher, June 2002). Although other quality issues such as juiciness and flavour are important, they are more a function of product preparation and infrequent, but acute, production or processing errors which are usually easily corrected or avoided.

The risk of contamination of poultry products by residues and bacteria exist everywhere, owing to the globalization of poultry production and trade. Counteracting this, the relative risk of contaminated poultry products reaching the market has reduced the last decade due to overall improvement hygiene standards and faster diagnostic tools and improvement of legislation in Albania.

Our data show that the consumer aware of the poultry meat product. They are interested to have a safe product. This message should be labelled in the poultry meat product.

The quality of control procedures during production and supply processes should estimate, control and reduce, and estimate the magnitude of food borne diseases.

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