



## Keşan Satiret, One Of Turkey's Geographical Indications

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### Abstract

"Keşan Satiret" was discovered in 1960s in Kesan. The main feature of Keşan Satiret that differs from the other meat styles is its tenderness and taste. Keşan Satiret is made from regional type of sheep as is called Kıvırcık. Kıvırcık sheep weighs is about  $62.60 \pm 0.762$  kgs grown in the Trakya region. All Kıvırcık lambs feed in pastures of natural environment. The meat that is used to make Keşan Satiret has stored in the refrigerator about 2 days at the degree of 4 Celsius. After that, meat of lamb has processed by a special knife on a oak wood. There is only 5 gram of salt added into the 1 kg of Keşan Satiret. There is nothing included that other than salt in order to the Keşan Satiret. 250 gram of Keşan Satiret has grilled with a two sided barbecue and served as it is. Keşan Satiret is served with famous Ipsala Rice to the customer. Keşan Satiret also is advised to get sheep yoghurt or olive oil salad with. "Keşan Satiret" has approved by Turkish patent office and registered as a brand by Kesan Chamber of Commerce. It has been getting a Geographical Point Document for "Keşan Satiret". Kesan Chamber of Commerce has set standards for marketing of butchers and restaurants to Keşan Satiret.

**Key Words:** Keşan Satiret, Geographical Indications, Kıvırcık sheep, Meat taste, Sheep meat

### 1. Introduction

In 2013, the distribution of 996155 tons total red meat production is: 87.27 % beef, 10.33% lamb and sheep, 2.36 % goat and 0.037 % cow (Anonymous, 2014).

Meat is obtained from warm-blooded and healthy bovine, ovine and poultry. After slaughtering, when all the blood is drawn and parts unsuitable for consumption are removed, bone-in meat is obtained. The term "meat" is usually used for skeletal (striated) muscles. Fat, veins, blood, nerve tissue, connective tissue, epithelium and bony tissue that cannot be scraped off the carcas are also considered as meat.

The meat, which is rigid after slaughtering, softens with continuous maturation after Rigor Mortis (stiffness of death) and assumes a brittle structure. Newly slaughtered meat is indurable, poor in terms of aroma and taste, rubbery, hard to chew and sticky. For Rigor Mortis to be resolved meat should be rested at cold and hygienic conditions. During maturation the transparent structure of meat is distorted first and then the color turns into reddish brown. Then the color gets lighter and transparency

returns. Myoglobin and hemoglobin that gives its color to meat are color pigments of meat. In the meantime, mature color aroma shows up. During maturation pH may rise to 6.0 as a result of a series of enzymatic processes. At pH 6.4, meat is suspected to be rotten. The freezing point of meat starts from 0.5 °C and finishes at - 5 °C. Red beef meats' chemical composition is: 75 % water, 18.5 % protein, 3% fat, 1.5 % nitrogen compounds that do not exist in protein structure, 1% carbohydrate and 1% inorganic materials (Göğüş, 1986). Sheep meat (mutton) composition: 55-60 % water, 25% fat, 16% protein, 0.25 % carbohydrate (Öztan, 2008).

The product obtained by treatments other than freezing and cooling to increase the endurance of meat is called "meat product". Meat and meat products should be sold by stating type and class, and should be compatible with the legislation. In this study, the presentation and examination of Keşan Satiret of Keşan district that has Geographical Indication Registration Certificate is included.

## 2. Keşan Satiret

### 2.1 History of Keşan Satiret, One of Edirne's Geographical Indications

Since there was no electricity in Keşan and its vicinity before 1969, meats of slaughtered animals were used to be stripped off the bones and slivered and then served after being cooked in oak fire. Those meat were served to guests and liked very much. So this process is later commercialized by the locals. Before electrocutters were put into use in butchers, chopping meats was called as "kıyma". After electrocutters started to be used this process started to be called as "Satiret". Keşan Chamber of Commerce and Industry obtained geographical indication registration certificate with the name of Keşan Satiret for this product. In the frame of legislative decree no 555 Protection of Geographical Indications which is regulated by Law no 4128, copyright of Keşan Satiret is obtained from Turkish Patent Institute Presidency with official gazette advertisement dated 19th June 2011 and no 27969 (Anonymous, 2011).

### 2.2 Description and distinguishing features of Keşan Satiret

Keşan Satiret mixture contains at most 30 % calf beef (*Bos Taurus*) and at least 70% lamb meat of Kıvırcık (*Ovis aries*). Keşan Satiret may also be 100 % lamb. The reason Kıvırcık type lambs are preferred is because it is a local breed and their fat is more evenly distributed

throughout red muscles compared to other breeds. The fattiness level of carcass in Kıvırcık affects meat softness. This brings taste to Kıvırcık lamb meat (Ekiz et al., 2012). Kıvırcık lamb is the best quality meat producing local breed (Erdoğan et al., 2010). 6 months old live Kıvırcık lambs used in Keşan Satiret production weigh  $43.14 \pm 0.445$  kg on average (Ceyhan et al., 2007). These lambs are raised in natural grass fields in Keşan, İpsala and Enez districts in southern Thrace region in summer. They are fed with wheat, corn, malt and clover in winter.

### 2.3 Conversion of red meat into Keşan Satiret

Kıvırcıklambs raised in natural grassfields of Thrace region, are rested at +4 °C for 2 days in coolers. After meat is matured, nerves, veins, bones, cartilage and membranes that negatively affect texture of Keşan Satiret are removed from meat which is stripped off the carcass. If fat content of lamb meat is high, non-fatty veal arm is added as much as 30% of Satiret. Matured meat are placed on oak log and chopped with chopping knife. Meat is slaughtered into tiny pieces as small as lentil on the log without using any machine. Keşan Satiret contains only Kıvırcıklamb fat and its level does not exceed 25 %. To 1 kg of Keşan Satiret prepared, only 5g of salt is added and it is kneaded no other ingredient (tail fat, kidney fat, suet, bread, spice etc.) is added. This is one of the distinguishing properties of Keşan Satiret. Analysis results of Keşan Satiret are given in Table 1.

Table 1. Chemical and biological analysis report of Satiret.

Analysis carried out*	Results of analysis	Analysis method
Moisture (%)	58,95	TS 1743 ISO 1442,2001
Protein %, F-6, 25	15,09	AOAC 992.15, 1997
Oil (%)	24,40	TS 1744,1974
Ash (%)	1,10	TS 1746 ISO 936,2001
Carbohydrate value	0,46	
T.Mezofilik aerobik bacteria (Kob/g)	390000	FDA/BAM, 2001
E.coli 0157:H7 (25g)	TEDB	FDA/BAM, 2002
Staph.aureus (Kob/g)	120	FDA/BAM, 2001
Pseudomonas spp. (Kob/g)	80000	TS ISO 13720,1997
Salmonella spp. (var/yok)	TEDB	ISO 6579, 2002
Cadmium (Cd)	0,010 mg/kg	NMKL 161,1998
Lead (Pb)	TEDB	NMKL 161,1998

\* Istanbul Directorate of Food Control Laboratory, Ministry of Food -Agriculture and Livestock.

### 2.4 Presentation and Storage Conditions of Uncooked Keşan Satiret

One portion of uncooked Keşan Satiret prepared for serving is 250 gr. 250 gr Keşan Satiret is packed in square shape at 1 cm

thickness. Some butchers sell 100 gr round shaped packages on customer demand. Packed like this, Keşan Satiret is sold ready for cooking in grill. Keşan Satiret is kept at 0-4 °C in fridge for short terms. Keşan Satiret stored under these conditions is consumed in 2 days. For long term

storage, Keşan Satiret should be kept frozen at -18 °C for maximum 3 months. Keşan Satiret, as an alternative meat product is sold over 10% of normal meat value.

### **2.5 Cooking and Serving Keşan Satiret**

Keşan Satiret is cooked in oak fire by placing it in between wired grill. Keşan Satiret that is squeezed in wired grill is reversed several times in oak fire and cooked homogeneously. Keşan Satiret is fumed in fast and cinder fire. During cooking, fat content of Satiret causes fuming by dripping on oak coal. This is a desired

property. Keşan Satiret takes its taste and aroma during this process. Uncooked Satiret has 20-25 % cooking loss. Cooking level is the point of color change from red to dark brown. Net weight of one portion cooked Keşan Satiret is 180-200 gr. Cooked Keşan Satiret is brownish. Its taste is unique and its aroma is characteristic. Texture feeling in mouth is soft. After cooking Keşan Satiret is served hot with famous İpsala rice in white porcelain plates (figure 1). Keşan Satiret is recommended to be consumed with ewe yoghurt or olive oil salad.



**Figure 1.** Keşan Satiret plate that is ready to be served.

### **2.6 Nonregistered other Satirets**

The most important that distinguishes Satiret from other products sold in other regions with the name of Keşan Satiret is the use of Kıvrıkcık and veal, slaughtering these meats on oak log, particle size being as tiny as a lentil and cooking method. Raw material of Keşan Satiret is 99,5 % red meat and 0,5 % salt. But other satiret mixtures contain bread, spice and other additives so these products are called as köfte (meatball). Red meat content of köfte products is not stable. Without established standards,

Keşan Satiret is exposed to an unfair competition in terms of pricing against other products. Satır köfte is sold for 20-25% less than Keşan Satiret with the name of Satiret in neighbouring districts and cities. Keşan Satiret and other products should not be mixed together.

### **2.7. Audit for compliance of production with Keşan Satiret Geographical Indication Certificate**

22 butchers and 34 restaurants which are compliant with Keşan Satiret standards are granted Geographical Indication Registration

Permit by Keşan Chamber of Commerce and Industry. Those firms who fulfill their responsibilities and are granted Geographical Indication Registration Permit and sell Keşan Satıret have not been subjected to an audit until now.

Keşan Chamber of Commerce and Industry has the authority to make an audit as to registration purpose, distinguishing features, basic principles and compliance to properties stated in the analysis reports. One person from the chamber of artisans, one food engineer from KOSGEB Sinergy Chamber and one from Keşan Food Committee are entitled to carry out audits once every 6 months.

### 3. Kivırcık Breed, Source of Satıret

#### 3.1 Morphological Traits of Kivırcık Breed

Kivırcık ewe breed which constitutes the biggest portion of long and non-fatty lamb breeds in Turkey, is breeding in Marmara and partly in Aegean region. It constitutes 6 % of our ewe possession (Anonymous, 2014). Kivırcık ewes are totally white, bald headed and they rarely have black spots on their head and feet. Sheep don't have horns and aries have spiral horns. They have a long and thin tail structure (figure 2). Among sheep species in Turkey, it is the only local breed whose wool can be used in textile. Their lactation milk yield average are  $49.79 \pm 3.70$  kg (Altın et al., 2003).



Figure 2. Kivırcık breed aries and sheeps of Thrace region.

#### 3.2 Carcas in Kivırcık lambs, Meat amount in Carcas Parts and Meat quality

It is a medium size breed. Average cidago height of lambs is 64-66 cm. Lamb efficiency in Kivırcık sheep is 125% and it increases with better management and nutrition conditions.

Altinel et al. (1998), determined weight of Kivırcık lambs before slaughter as  $39.8 \pm 3.0$  kg, cold carcas efficiency as  $47.5 \pm 0.9$  kg, carcas meat weight as  $10.89 \pm 1.05$  kg, Carcas Fat weight  $3.97 \pm 0.44$ kg, Carcas bone weight as  $3.51 \pm 0.18$  kg.

Table 2. Monthly average weights of Kivırcık male lambs.

Sources of variation	*Overall (kg)
Birth weight	$4.09 \pm 0.049$
Fourth month weight	$38.17 \pm 0.525$
Sixth month weight	$43.14 \pm 0.445$
Yearling weight	$49.13 \pm 0.487$
Live Body Weight	$62.60 \pm 0.762$
Daily Live Weight Gain	$0.267 \pm 0.004$

\*Ceyhan ve ark., 2007

Altın et al. (2005), determined cold carcass efficiency as 50,27 %, arm ratio as 18.53 %, shoulder-back-waist ratio as 22.53%, hind ratio as 30.59%, neck ratio as 9.01%, tail ratio as 2.58 % in Kivircik sheep. Monthly average live weights and daily live weight gain (DLWG ) of Kivircik sheep are given in Table 2. As seen, Kivircik lambs show a faster growth in first 6 months then the coming months.

It is established that when Kivircik lambs are feeding together with local and culture

breeds after weaning, carcass efficiency and meat quality exceeds from other local breeds. (Ekiz et al.,2012; Yılmaz et al., 2009; Ceyhan et al., 2007). Kivircik breed ranks number one in terms of meat quality amongst local sheep breeds in our country. Young male sheeps have a higher meat quality. In figure 3, Kivircik lamb carcasses slaughtered in İpsala Lider Slaughterhouse in 2014 are given.



Figure 3. Kivircik male lamb carcasses slaughtered in 2014 .

### 3.3 Contribution of Keşan Satiret to Kivircik Sheep Breeding

Compared to culture breed sheep Kivircik breed sheep have lower efficiency. For this reason, Kivircik sheep is under the pressure of culture breeds and because of hybridization studies number of pure races gradually decreases.

Flocks of pure Kivircik sheep breed were registered by the Animal Breeds Registration Committee (Anonymus, 2006 and 2009) where is breeding around İstiranca Mountains in Kırklareli. National Animal Breeding Project in the hands of the people which has been developed by General Directorate of Agricultural Research and Policy (GDAR) of Ministry of Food, Agriculture and Livestock. In these frame, "Kivircik Breeding Project in the hands of the people" has put into action by GDAR since 2011. Project is now carried out in 12 central villages and with 38 breeder on 6300 sheep (Yılmaz, 2014). Project is

not limited to one location and can be spread to whole Thrace.

Lots of countries in the world, introduce their local genotypes, produce economically from these genotypes and make this successfully sustainable. Japan protects, Mishima and Kagoshima Black local cattle breeds and local chicken breeds Hinaidori and Tosa Jidori, by marketing them with special brands. Consumers are encouraged to buy these local chicken and cattle products. Similarly, Spain stopped the rapid decrease in the number of Iberian Pork that is a local pork which lives in oak forest by applying an efficient presentation and marketing strategy. Compared to other pork, 160% more revenue is obtained from this pork's Meat (Anonymus, 2007). In Italy local water buffalo breeding is encouraged for milk that is used in Mozzarella cheese. In Norway, Gammelnorsk sau sheep breed and Utegangargiet goat breed which are known to have special rural importance, were under the

risk of extinction when they changed to traditional meat production and increased the demand for these breeds (Ruane, 2000).

Milk of Kıvırcık sheep is used in the production of Edirne cheese (Yalçın, 1986). But as the number of sheep and milk production decreased Edirne cheese lose its leader position to Ezine cheese. Keşan Satiret product and Edirne white cheese consumption are tried to be increased. These products, form a base for Kıvırcık sheep breed to be popularized and sustainable again.

#### 4. Conclusion

Keşan Satiret, is an alternative meat product and sold for 10% over the normal meat price. It is considered by the consumers as a different meat product type and contributes to popularization of alternative red meat sources. It is a different palate taste for tourists and contributes economically to the region. Kıvırcık sheep breed makes the consumption of its meat sustainable and provides its accession by greater number of consumers.

Keşan Satiret, can increase lamb meat consumption and local relations can be spread to metropolis by developing marketing strategies. Registration of Keşan Satiret product as a geographical indication will provide an increase in Kıvırcık sheep breeder's income and render breeding of Kıvırcık sheep sustainable.

#### 5. Literature

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