



## **Saving the black variety of the Red face Tsigai - documenting efforts to rescue an endangered breed**

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**Abstract.** The black woolled Tsigai individuals, appears in red faced herds, due to the "W" gene recessive allele "w", in a homozygous state. In order to clarify of which sheep is about our discussion, the present paper aims to display a concise phenotypic and behavioral description of the black woolled Tsigai, to avoid any mix up with any other black woolled or black faced sheep breed. Our black woolled Tsigai, as an ancient animal typically have a stable, steady gait and is constantly in motion while grazing. They are able to walk tens of kilometers a day on poor grassland mountain pastures, searching for food. They have a very strong herd spirit. Their temperament is lively, attentive, yet easy to get used to and well handled. Concerning production performances, these also indicate an ancient character: the average milk yield of sheep is 60-80 L lactation<sup>-1</sup>, with 6-7% fat and 6% protein content.

**Key Words:** wool color, ancient breed, location, milk fat content, milk protein content.

**Introduction.** Sheep keeping has always been an important part of the Romanian agriculture. Romania, being a country with an ancestral sheep breeding, has a vast literature which supports this branch of the animal husbandry (Grosu et al 2005; Dărăban 2006; Cighi 2008; Oroian et al 2009; Zăhan et al 2011; etc.)

The present paper suggests to consider earlier studies, performed on ancient, rustic and hardy sheep breeds kept in extreme environmental conditions (Kataria et al 2010; Maan & Kataria 2012; Bani Ismail et al 2015), whose results are also relevant in the case of our sheep varieties, which are maintained during the grazing season on alpine pastures.

The Tsigai sheep is the second important sheep breed in Romania with 24.3% of the national sheep stocks (the first is the Turcana breed with 52.4%). The Tsigai sheep are kept in mountain and submountain regions with large pasture areas in extensive exploitation systems. Just like the Turcana breed, the Tsigai sheep is a multipurpose breed, nowadays focusing on cheese production. The lamb production became more promoted and economically efficient in the last years, due the possibilities to export the lambs, being delivered live in the largest share in the EU countries (Ilişiu et al 2012).

The aim of the present paper is to clarify the breed/variety origin and to support its future breeding program directions.

**What is like the black variety of the Red face Tsigai?** Although the answer seems straightforward at a first glance, there are in fact many misunderstandings. Some people think of Suffolk, or Carabaş-like, black-headed and toe-like but white wool sheep when they hear its name, others understand the name's meaning, but say it's not black woolled but red woolled, and finally there's the third category, which doesn't express its opinion but look amazed. In order to avoid any misunderstandings, in Figure 1, we present a black woolled Tsigai ewe, with very good conformation and color intensity.



Figure 1. Freshly trimmed black variety of the Red face Tsigai (ewe) (original).

Accordingly, in our opinion, the second category is the most interesting in terms of debating. People know that we are referring to the native Tsigai sheep in Harghita and Covasna counties, which is sloe-black, but due to the passage of time and the blissful activity of sunlight, the woolen fibers fade and wear a shade of coffee to red. However, the head and feet remain black all the time, just like the wool's root, so after sheep shearing we get back our black sheep. An exception is represented by the sheeps that start to turn gray, so white fibers appear in the black wool, but that's a different aspect. Indeed, our ancestors, because of their color on the pasture, mostly called these sheep as red woolled, but this term leads to a great deal of misunderstanding, because at first, everyone thinks of Red face Tsigai, also known as the Red face Tsigai of Covasna (Figure 2).



Figure 2. The Red face Tsigai and its black variety comparison (original).

Further complications are that, it is not a big mistake to think of a black variety of the Red face Tsigai, because looking closely at the subject and observing the animals' appearance, it turns out that they are actually two different color varieties of the same breed, which have been bred together for a long period of time. Furthermore, the two varieties could not exist very well without each other, since the gray woolen dresses, which had long been so popular, were made from a mixture of two different kinds of wool. Nowadays they are not fabricated any more, and this is what makes this subject more interesting.

Moreover, in the textile industry, there is a difficulty in obtaining *mélange* color (a color effect obtained by the mixing of fibers in different colors before the blend), when is needed. One of the biggest challenges encountered in the elaboration of *mélange* colors in textile consists of the imprecise estimation of fiber colors to obtain the desired color (Yesil & Sabir 2011). Of course this situation can be encountered if we do not need to produce/elaborate *mélange* color if we already have a colored raw material which is homogenous, has an accurate color and intensity. Therefore, due to the graying nature of the black wool (Figure 3), we can already obtain, without any external input (textile industry – coloring – de-coloring) gray wool. The same situation is in the case of reddened sheep (Figures 4-6), which could be considered worthless initially, but through a careful processing, dark red wool could be obtained, and the possibilities are infinite if we consider mixing wools of different available colors (Figure 7).



Figure 3. Sunburned and graying sheep with its still dark black lamb (original).



Figure 4. Black ram lamb between red faced ones (original).



Figure 5. Strongly reddened black sheep in a mixt colored flock (original).



Figure 6. Reddened black sheep (original).



Figure 7. Black wool vs. white wool (original).

Clothing production using different kinds of materials is not fastidiousness of modern days; it has been manufactured for a long time (Figure 8).



Figure 8. Traditional gray pants made from two types of wool (Source: Internet).

Now that we've outlined what we mean when we think of black variety of the Red face Tsigai, we will try to describe in detail the origin and appearance of the breed/color variation. Unfortunately, there is very little, and most often contradictory, data on the origin, and only a thorough genetic examination can be helpful. However, what seems clear is that the ancestors of the breed came from the east (presumably not of their own accord), possibly bypassing the Black Sea from the south, and then creating more or less distinct populations in and around the Carpathian Basin. Among the south-western ranges of the Eastern Carpathians, especially in Covasna and Harghita counties, red-faced, white woolled, small-bodied version, including the black woolled variety, has always been found. Interestingly, Tajikistan's famous sheep breed, Gissar (Figures 9-11), is available in just two color variants (red and black), just as the Tsigai of Covasna.



Figure 9. Black Gissar rams in Tajikistan (Photo: Latifi Latif).



Figure 10. Red faced Gissar rams (Photo: Latifi Latif).



Figure 11. Gissar herd of mixed colors (Photo: Latifi Latif).

In short, the appearance of the black variety of the Red face Tsigai is more likely to be an adaptation to the mountain conditions (cold, heavy rainfall, low quality pastures), small-bodied, short-legged, but bulky. The height at the withers is 60-65 cm for rams and 55-60 cm for sheep. Adult rams weigh 65-80 kg and adult sheep 45-60 kg, significantly higher, as reported by Miclea et al (2009), Pop (2012), and Cighi (2016) for the same breed. The rams used to wear a strong, dark gray, worm-like horn, but nowadays, even if we see a black ram, it is also mostly polled. Sheep are usually polled, but there are also sickle-horned individuals. The muzzle is slightly elongated, without wool and the rams have strong muzzle, but sheep may also have a slight ram like muzzle. The forehead is lightly covered with wool, the ears are small and lively. The neck is thin, rather long. The body is deep, gradually expanding. The back is straight, slightly muscular, with flat rump. The feet are dry, as in this description, tight, the legs are strong and covered with hair. Nails are hard, black, and resistant to ovine foot rot.

Ancient animals typically have a stable, steady gait and are constantly in motion while grazing. They are able to walk tens of kilometers a day on poor grassland mountain pastures, searching for food. They have a very strong herd spirit, not being left behind (Figure 12). Their temperament is lively, attentive, yet easy to get used to and well handled.



Figure 12. Herd spirit in a Red face Tsigai flock (original).

Similarly, the performance of the breed indicates an ancient character: the average milk yield of sheep is 60-80 L lactation<sup>-1</sup>, with 6-7% fat and 6% protein content. According to tradition, the first third of the lactation is for the lambs and only afterwards is the sheep milking started, at the same time as they are driven out to pasture. Milk is used to prepare simple, short-ripened cheese that is either eaten fresh or kneaded into cottage cheese. Due to the shape of the udder and the small amount of milk, this breed is not suitable for machine milking. The daily weight gain of lambs is 180-220 g, which in today's hyper-intensive livestock breeding (Coroian et al 2009; Dărăban et al 2009; Rafeeq et al 2010) is very low, but in return they have high quality meat with a strong characteristic taste.

**Conclusions.** It is clear from the above that the black woolled Tsigai is an obsolete color variety of an obsolete breed in every aspect, so it is not surprising that it needs to be rescued. At the same time, we may be wondering why we should save and maintain such an unfashionable stock. In our next paper, we will try to answer this question as well.

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