

## RABBIT LOCAL BREED: IDENTIFICATION AND USE AS AN ALTERNATIVE ACTIVITY IN SMALL SCALE FARMS – PRELIMINARY STUDY –

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The rabbit is a limited spread species in Albania. It is rather difficult to determine the origin of the local rabbit population of Albania. It can be classified in a middle breeding group. It is a population with high morphological and biological variability, with high variation in the coat color. The preliminary results of identification and characterization show that the local rabbit population is under the uncontrolled gene migration causing the high phenotypic variability. Causal and uncontrolled copulations are frequent in this population. Mature females and males have a live body weight respectively of 3–3.5 kg and 4–5 kg. The age of does at the first mating is 4.5–5 months. The number of litters per year is 4–5, the litter size at birth (total born) 6.5–7.6, at weaning is 6–7. The young rabbits weight is 2330 g on average at 98 days of age. So one doe can produce up to 62 kg of meat live weight and its longevity is 3–4 years. The gross income of the farmer (small scale farms with limited inputs) from one doe per year is in round 400 Euro. The rabbit local breed is very well adapted to hard living conditions. Its management in small scale farms conditions as an alternative activity could be profitable as well as helpful for the rabbit local breed conservation and development in Albania.

**Key words:** rabbit; description; performance; growth rate; small scale farm

## ЛОКАЛЕН ВИД ПИТОМ ЗАЈАК: ИДЕНТИФИКАЦИЈА И ОДГЛЕДУВАЊЕ КАКО АЛТЕРНАТИВНА АКТИВНОСТ ВО МАЛИТЕ ФАРМИ – ПРЕЛИМИНАРНА СТУДИЈА –

Питомиот зајак е ограничено распространет во Албанија. Прилично е тешко да се одреди потеклото на неговата локална популација. Може да биде класифициран во средна одгледувачка група. Тоа е популација со висока морфолошка и биолошка променливост и со висока варијација во бојата на крзното. Прелиминарните резултати од идентификацијата и карактеризација покажуваат дека локалната популација на питом зајак е под влијание на неконтролирана миграција на гени, што предизвикува висока фенотипска променливост. Неконтролираните копулации се чести во оваа популација. Зрелите женки и мажјаци имаат жива маса од 3–3,5 kg и 4–5 kg соодветно. Возраста на женките при првото парење е 4,5 до 5 месеци. Бројот на легла годишно е 4–5, големината на леглото при раѓање (вкупно родени) е 6,5–7,6, при одбивање е 6 – 7. Младите питоми зајаци имаат телесна маса во просек од 2330 g при старост од 98 дена. Една женка може да даде 62 kg месо жива мера и нејзината должина на живот е 3–4 години. Приходот на фармерот (мали фарми со ограничени приноси) од една женка годишно е околу 400 евра. Локалното одгледување на питомиот зајак е многу добро приспособено кон тешките животни услови. Одгледувањето на зајакот во услови на мали фарми како алтернативна активност може да биде профитабилно, но и од помош за заштита и развој на локалниот вид питом зајак во Албанија.

**Клучни зборови:** зајак; опис; карактеристика; прираст; мала фарма

### INTRODUCTION

Rabbit is a species with restricted spread in Albania. Animals of the local population are rec-

ognized with the name “house rabbits”. This nomination has been used to distinguish it from hare (wild rabbit). According to Toro (1981) the origin of this population is difficult to be defined.

Different thesis are being discussed about this. It might be stated that: (i) Actual population of the domestic rabbits originates from domestic animals, during the last period of Medievalism, in the region of southeastern Europe, France, Italy, Spain which have been brought, during XIX century and later, in Albania from travelers who have visited these lands, (ii) domestic rabbit is a population created as a result of the spontaneous process of the domestication of the wild rabbit that lives in different regions of Albania and (iii) actual population originates from a casual mixture of the animals domesticated in Albania those brought from other regions of Europe. Independently from this uncertain situation, it is important to be stressed that the local population of rabbits in Albania is characterized with great diversity of the morpho-biologic features. It is distinguished for a great variation of mantel color, quality of coat, body size, head and other external features. It is a population with a high level of phenotypic heterogeneity, which is typical for the genetically improved populations. As such the hypothesis that this population is classified in the group of native populations, in which the flux of gene migration of the cultivated races is small, has a high probability to be true.

The identification of this population, its morpho-biologic characterization the tracking of genetic niche, the estimation of genetic distances from other populations, are the objectives of a study initiated in Albania. The object of this study is the estimation and the finding of the optimal options for the stable economic usage of this species, by considering it as a possibility to develop an alternative productivity activity in the small family farm. In this material there have been introduced some of first results reached in the framework of this study.

## MATERIAL AND METHOD

The growth of rabbits in Albania is an activity that is held only in small family farms. There are regions where the growth of this animal is an activity that has created an experience. The growth of rabbits is made mainly to produce meat for auto-consumption and a small quantity of production is destined for commerce. There are farms where the growth of rabbits is an activity mainly of the youth and is developed as their hobby. There is no center of intensive or semi-intensive growth of

rabbits for meat. In the meat market, rabbit meat is rarely present. However, the tendency of its big presence in the menu of the restaurants that serve distinguished customers has actually begun to appear. This situation, a consequence of the full lack of information on this species, has conditioned the formulation of the job method and the quality of the material that shall be used for its performance. In its first phase, the study has been focused on the development of two main components:

(i) identification and characterization of the local population of rabbit in Albania,

(ii) drafting of Technologic Cards for the breeding of this animal in the conditions of small family farm.

For realization of the objectives the following has been defined in these two components:

a) Development and implementation of the methodology on the identification of the actual population of the domestic rabbit. The focus of this methodology is the organization of the work on terrain for gathering information in accordance with the fulfillment of the demands of the respective Guidelines of FAO and demands of DAD-IS. In this identifying process activities have been provided through which it is aimed to be conducted: (i) census. (ii) morpho-biologic and technical description of the animals and the estimation of production performances, (iii) identification of the production system.

b) Identification of regions areas and/or administrative units where the identifying expeditions will be held, by using as a guide the existing information on the growth of rabbit in existing farms. It has been defined that in every area, within the region, not less than 5–10 farms, will be identified, that will serve as contact farms. In these farms the observation and measurements for the morpho-biological characterization of domestic rabbit will be conducted and the control of reproduction indexes and the dynamic of rabbit growth for meat will be organized. In the contact farms tests of different rearing technologies of rabbits will be organized as an alternative production activity in the small family farm.

In this material the results gathered in the district of Berat, one of the regions of Albania with a tradition in the growth of rabbit will be introduced. The contact farms are situated in the communes of Poshnje and Kutalli.

## RESULTS OF IDENTIFICATION AND CHARACTERIZATION PROCESS OF THE LOCAL RABBIT BREED

### I. Population data\*:

Population size (heads)	1200
Number of females used for breeding	280
Number of males used for breeding	90

### II. Description

**Body conformation.** Domestic rabbit might be classified in the group of middle size breeds. It is an animal with a solid trunk. The skeleton is covered by compact muscles, flashy shoulders and ample pelvis. It has strong back with right shape. The head is with a prolix shape, convex profile. It has sharp and erect ears, with a length over 20 cm. Their color fully coincides with the color of the coat (white, grey, dusty, brown, etc). It has dark big eyes, red or black and very long back feet, covered with thick and strong leather in the hoof side, where the nails are well distinguished from the pigment. The tail is right. The upper part is dark. The average values of some indexes of the body conformation are provided in Table 1

Table 1

*Average values of body measurement (cm)  
in adult animals*

Trait	Female		Male	
	Mean	Range	Mean	Range
Body length	43	37–45	46	44–47
Chest circumference.	31.4	29–33	33	31–34
Loin width	12.4	11–15	14.3	13–15
Thigh circumference	19.1	17–22	20.4	18–22
Head circumference	21.1	19–23	23	21–24

**Coat and color.** The coat is soft and is characterized by average thickness and length of the fluff, about 2.0 cm. The typical color of the domestic rabbit is dusty to auburn. However there are encountered dusty, dappled, totally white, or fur rabbits with a predominance of the maroon or mixed maroon with white. The high variability of coat color, which is encountered also in the animals breed in the same farm, might be explained with casual crossing and the full absence of coupling program. In order to reduce the effect of in-

breeding, the farmers use reproducers often bought at the market. In these cases those are interested only in body size of the reproducer, its weight and price.

**Temperament.** It is distinguished for agility, finesse, and conviction. It runs with a speed about 60 km/h and is very watchful. It lives 8–10 years. It grows late but at the same time it is not exigent and adapts to the conditions of the environment where it grows.



\*Statistical data for Poshnje and Kutalli communes, only.

### III. Performance

**Reproduction characteristics.** The female rabbits reach sexual maturity at the age of 11–12 months. It is coupled 4–5 times a year. The litter size at birth (total born) is about 6–8 and rarely 10. During a year a female rabbit grows on average 30–32 young rabbits. The greatest productivity is realized in the months of May and June.

Table 2

#### Information of sexual maturity

Trait	Mean	Range
Age of buck at the first service (months)	5	4.5–6
Age of doe at the first mating (months)	3.5	3–4.5
Age of doe at the first kindling (months)	4.5	4–5
Weight of buck at the first service (kg)	3.2	2.5–4
Weight of doe at the first mating (kg)	2.5	2.5–3

Table 3

#### Fertility and fecundity traits

Trait	Mean	Range
Conception rate (%)	80	70–90
Kindling interval (days)	55	40–80
Litter size at birth (total born)	7.8	7–8.6
Litter size at weaning (5 weeks)	7	6–8
Litter weight at birth (g)	342	294–394
Litter weight at weaning (5 weeks)	788	510–1158
Prénatal mortality per litter (heads)	1.5	1–2
Number of litters per year	4.5	4–5
Does longevity (years)	3.5	3–6

**Productive performances.** In the practice of small family farms, rabbits kept for meat are held up to the age of 12–14 weeks. Average data of the body weight gain from birth to the age of 14 weeks are provided in Table 4.

### IV. Rearing system

The prevailing rearing system is the extensive system of production, with limited inputs. Women and children often look after rabbits.

Table 4

#### Post-weaning growth of traits of body weights and gains (g)

Trait	Mean	Range
Weight at 14 days	225	195–241
Weight at 21 days	369	320–400
Weight at 28 days	570	520–700
Weight at weining (5 weeks)	788	510–1158
Weight at 8 weekse	1338.2	1303–1373
Weight at 12 weeks	1847.3	1812–1880
Weight at 14 weeks	2223.8	2188.8–2258.8
Daily gain 5–8 weeks	26.2	21.8–37.2
Dialy gain 8–14 weeks	21.0	21.1–21.07
Prodhim mish peshe e gjalle nga nje lepurushke/vit	62	60–68

**Rabbit feeding:** Rabbits are fed by food produced in farms as pasture grass, alfalfa, clover, potatoes, sugar-beet, cucurbit, watermelon, carrots, apple, apricot, acacia, poplar and willow leaves. Fresh nettles are often used to the young rabbits. Cereals as oat, barley, maize, and legumes as peas pieces, beans are used in a small quantity. Water is given without limitation.

**The sheltering** of rabbits is done in very simple shelters prepared by casual means as timber, furring, perches, rods. The rabbit cages are kept in yards near the house, in wind and rain protected areas. The used cages are usually with the dimensions of 70 cm of wideness, 90 cm of length and 50–60 cm of height. They are placed on 4 feet to stand about 1–1.4 m over the ground level, the floor is made of a metallic net, the squares of which in general have dimensions of 1.25×1.25 mm.

**Hygiene, prophylaxis and illnesses:** The hygienic-sanitary conditions in the mini farm of rabbits are pretty modest. No special care is shown about the cleaning and hygiene of the cages. The litter is rarely changed. The protocol of vaccination is not implemented rigorously and the visits of the veterinary doctor at the farm are really scarce. As a result, there are not rare cases when illnesses are the cause for the death of all the rabbits at the small family farms. The routine illnesses are frequent and the charge with parasites is high. The young rabbits are often affected from illnesses of

the digestive apparatus. Parasites are frequent in feet and ears.



## V. The first results in a family farm

In the framework of a pilot project, at 30 family farms in the communes of Poshnje and Kutalli the first rabbit breeding was experimented, at the level of a mini farm, as an alternative producing activity. The mini farms were created with 3 couples of reproducing rabbits, of the local population. Two cages were constructed for the sheltering of fattening rabbits and one cage for reproduction. The feeding of the rabbits was based mainly on food produced from the farm itself. A small supplement of 1 kv of feedstuff was bought at the market. The farmer wife or the daughter looked after the mini farm.

During a year there were realized 5 litters per female rabbit with an average of the litter size at birth of 7 young rabbits. The farm produced in total 98 fattening rabbits at the age of 14 weeks, with an average weight of 1305 g. Converted into monetary value, by using for this aim the actual price of the retail sale of rabbit meat, 3.2 Euro/kg, the farm realized a gross income of about 400 Euro/year. The results of this farm were generalized in a seminar. These results reinforced the idea that the preservation of the genetic local fund of the domestic rabbits might be successfully realized through the stimulation and realization of the economic usage of this animal, as an opportunity to exert an alternative producing activity in the small family farm.

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