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THE COMPARATIVE STUDY OF REPRODUCTION PARAMETERS FOR CHINCHILLA LANIGER

STUDIUL COMPARATIV AL INDICILOR DE REPRODUCERE LA CHINCHILLA LANIGER

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The study was made in 2007 on 500 females of Chinchilla,kept in individual cages, with a passage for the male. The next parameters were established based on reproduction results: prolificity index (PI), sex ratio, offspring survival index (OSI), female usage index (FUI). Based on these parameters, the fertility index has been calculated,during two births. For the first birth, the fertility index was 4.22 offsprings/female, for the second birth, it was 3.65 offsprings/female.
Key words: chinchilla, reproduction parameters, fertility index.

Introduction

Chinchilla is a rodent whose origins are in South America (Chile, Peru, Bolivia, Argentina) and its biotope is in Andes Mountain region. This species has a dense and beautiful fur and the importance of the Chinchillas, in particular,to the fur trade, has led to their becoming relatively endangered as a wild species. This is the reason why they are breeded in captivity in our days.

In Romania, this species is breeded in the farms just in the last few years, but because of the important earnings, the interest in breeding chinchilla has increased.

The main production of Chinchilla is represented by its fur, but we can also use its meat.

There are not too many studies about Chinchilla in Romania because it is a new species in the romanian farms.

The object of this study was to offer some conclusive dates about certain reproduction parameters, and the only comparativ bibliographical dates has been taken from the same author from another scientific paper work published in 2006.

Materials and Methods

The preliminary dates for the parameters calculation were taken for a period of a year from the ” Falnic” farm ,located in the village of Sag, Timis county.

For the parameters calculation, the births of 500 females were inventorized, using number of births, number of offsprings for a birth and number of weaned offsprings.

Based on the primary dates,next parameters were calculated:

-Prolificity index (PI)

-Sex ratio

-Offspring survival index (OSI)

-Fertility index (FI)

The prolificity index represents the number of offsprings from one birth. It can be determined with the next formula:

$$PI = BO / BF$$

PI – prolificity index (number of offsprings / female /birth);

BO – total number of born offsprings;

BF – total number of females who gave birth.

Sex ratio represents the ratio between the number of females and males for one birth.

Survival index provides us information about the percentage of the weaned offsprings from the total number of born offsprings. It can be determined with the next formula:

$$OSI = WO / BO \times 100$$

OSI – offspring survival index;

WO – number of weaned offsprings;

BO – number of born offsprings.

Female usage index represents the number of births of a female for a period of a year.

Theoretical calculation of FUI:

$$FUIt = 365 /(GD + SP)$$

FUIt – theoretical female usage index (births/ year / female)

365 – days of a year;

GD – gestation days;

SP – service period (days).

Practical calculation of FUI:

$$FUIp = (RR1 + RR2 + RR3)/ MF$$

FUIp – practical female usage index (births / year/ female);

RR – reproduction results for freshening;

MF – number of mating females.

Results and Discussions

Table 1 shows that the prolificity for the first birth was 2.16 offsprings/female, for the second birth it was 2.27. The average for these two births was 2.215 offsprings / birth

Sex ratio has been studied on 1837 offsprings, 886 males, 951 females and Table 2 shows that the sex ratio was 1 : 1.07, the number of females offspring was higher comparatively with our first study in 2005.

Table 1

Category	Birth		Prolificity					Total
			1	2	3	4	5	
Females who gave birth	1	No.	76	250	117	16	5	462
		%	16.48	54.22	25.37	3.47	0.43	99.97
	2	No.	51	229	116	24	1	421
		%	12.11	54.39	27.55	5.70	0.23	99.98
Number of offsprings	1	No.	76	500	351	64	10	1001
		%	7.59	49.95	35.06	6.39	0.99	99.98
	2	No.	51	458	348	96	5	958
		%	5.32	47.80	36.32	9.91	0.52	99.9

Table 2

Variety	Offspring/ratio	Birth 1		Birth 2		Total	
		M	F	M	F	M	F
Standard chinchilla	Offspring	448	502	438	449	886	951
	Ratio	1	1.12	1	1.02	1	1.07

Offspring survival index for the entire lot was 93.8% and from the total number of born offsprings (1958 /study/2 births) a percent of 93.75% has survived. The highest survival percentage was observed in the second birth: 94.9%.

Table 3

Birth	Survival index
1	94.9
2	92.6

The theoretical female usage index has been calculated for each birth and it was 3.25 births/year/female ,for the first birth, 2.55 births/year/female for the second birth.

The practical female usage index was 1.69 births/year/female .

The fertility index has been calculated based on these parameters. Table 4 shows that it was 4.36 for the first birth, 4.35 for the second one and 3.71 for the third birth.

Table 4

Calculation of fertility index/births	Birth 1	Birth 2
P.I.	2.16	2.27
O.S.I.	94.9	92.6
F.U.I. p	1.69	1.69
Fertility index	2.36	3.55

Conclusions

The conclusions based on these studies are:

1. The prolificity was 2.16 2.43 offsprings/female for the first birth, 2.27 2.31 offsprings/female for the second birth. The average was 2.215 2.23 offsprings/female/2 births comparative with our first study in 2005 when the prolificity was 2.43 offsprings/female for the first birth, 2.31 offsprings/female for the second birth.

2. The sex ratio in absolute values was 1:1.07, with a higher number of females, beside 2005 index study the sex ratio in absolute values was 1.01:1 with a higher number of males.

3. The offsprings survival index was 93.8 and from the total number of born offsprings (1958), a percentage of 93.75% has survived. The highest survival percentage was 94.9 in the second birth comparatively with former study when the offsprings survival index was 93.9 and from the total number of born offsprings (671), a percentage of 94.7% has survived. The highest survival percentage was 95.6% for the third birth.

4. The female usage index was 1.69 births/female/year and in 2005 was 1.98 births/female/year.

5. The average for the fertility index was 2-3 offsprings/female in 2007, comparatively in 2005 was 3-4 offsprings/female.

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