

THE FERTILITY OF BLUE FOX DAUGHTERS IN RELATION  
TO THE SIZE AND SEQUENCE OF THEIR MOTHER LITTER

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Fertility is an important productivity measure of fur animals, having a strong impact on the economics and efficiency of their breeding and management. This paper deals with some selection criteria affecting the fertility in Blue Fox females.

Materials-and-Methods

Our evaluation of some selection criteria was based on the productivity testing records on two Blue Fox farms from the period 1971 - 1979, involving a total of 1,394 daughters that gave birth to live cubs. We judged the fertility of these Blue Fox daughters in relation to the size and sequence of their mother litter. For statistical evaluation the following classification was used:

- Group I (4 or less cubs born)
- Group II (5 - 9 cubs born)
- Group III (10 and more cubs born)

Results

Tab. 1 provides an information on the number of live cubs produced by Blue Fox daughters (coming from the first to fifth littering by their mothers) in their first littering. It follows that there are practically no differences in fertility between Blue Fox daughters produced by one-year-old up to five-year-old mothers. The highest numbers of cubs born have come from the first ( $10.03 \pm 0.142$ ) and third ( $9.95 \pm 0.192$ ) mother litters,

Tab. 1

The number of Blue Fox cubs in 1st litter produced by daughters of mothers from 1st-5th litter

Group No.	Mother litter selection	n	$\bar{x}$	$s_{\bar{x}}$	s	v
1	I	402	10.03	0.142	2.856	28.46
2	II	551	9.84	0.134	3.156	32.07
3	III	264	9.95	0.192	3.128	31.42
4	IV	138	9.86	0.233	2.742	27.81
5	V	39	9.56	0.572	3.575	37.37

Tab. 2

The number of Blue Fox cubs in 1st litter from daughters of different mother litter sizes

Group No.	Mother litter size	n	$\bar{x}$	$s_{\bar{x}}$	s	v
1	4 or less	36	9.42	0.529	3.175	33.71
2	5 to 9	578	9.95	0.121	2.908	29.22
3	10 and more	780	9.91	0.112	3.116	31.45

while the lowest number of cubs born resulted from the selection from the fifth mother littering ( $9.56 \pm 0.572$ ), yet when taking into consideration the number of the weaned cubs, the latter figure would be highest ( $9.10 \pm 0.594$ ). When studying the number of the young that died-away of Blue Fox daughters in their first littering, the highest death rate was found in these originating from the first mother litter (21.24%), declining gradually with the increasing serial number of the litter, (2nd litter - 17.99%, 3rd litter - 16.68%, 4th litter - 16.02%, and 5th litter- 4.81% (absolute minimum death rate). These figures show clearly that the cub death rate in Blue Fox females originated from older mothers was in general lower.

In Tab. 2 are entered the numbers of cubs born in the first littering from daughters coming from different mother litter sizes (number of the young). It follows that there is no difference in the number of cubs when selecting the daughter from the 2nd (5-9 cubs born) or 3rd (10 and more cubs born) Groups. In terms of weaned cubs, the highest figure was found in Group III ( $8.20 \pm 0.128$ ) and in Group II ( $8.07 \pm 0.149$ ), while the lowest number of cubs born from daughters of Group I was  $9.42 \pm 0.529$ , the same applying also to the number of weaned cubs ( $6.92 \pm 0.635$ ) when relating the latter figure to other Groups under study.

Our data and evaluation of the number of born and weaned Blue Fox cubs from daughters in the first littering in relation to mother age have shown that there are no significant differences in the daughter fertility.

When evaluating the daughter fertility in relation to size of mother litter, preference from the point of breeding should be given to females originating from mothers producing greater litters spaced 2 or more years.

## S U M M A R Y

The experiment was aimed at some selection criteria governing the fertility of blue fox females, and included 1,394 daughters selected with regard to the size and order of their mother litter. No significant differences were found in the number of born and weaned cubs in blue fox daughters when relating them to the sequence of litter. When evaluating the fertility of blue fox daughters originating from litters of different size, females coming from litters of four or less cubs, and several littering, cannot be recommended for further breeding.

## R E S U M E N

El experimento trató de estudiar ~~ciertos~~ algunos criterios de selección que rigen la fertilidad de los zorros azules hembras, incluyendo 1394 hijas seleccionadas con respecto al tamaño y orden de la camada de sus madres. No existieron diferencias significativas en el número de nacidos y de destetados en los zorros azules hembras con relación al tipo de camada. Cuando se evalúa la fertilidad de las hijas de zorros azules originadas de ~~las~~ camadas de diferentes tamaños, las hembras procedentes de camadas de 4 o menos cachorros no pueden recomendarse para finalidades ulteriores de cría.