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ALTERNATIVE METHOD LOCATION PRODUCER OF FOX

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Its sciences rationale evaluation of alternative methods producer of silver fox on spatial intensity features connections - labeling territory and the body in urine reproductive period. Installed direct dependence between body treatment urine and sexual activity fox.

Keywords*: silver Fox, producer of, correlations communications, sexual activity.*

Spatio-temporal communication in the animal world is varied and used by living beings to signal something [7, 8, 13, 15]. We know that they are implemented in the physical, chemical, and even social manifestation. The most observable in science is a hierarchical relationship between living beings that are based on sound, verbal (and physical contact), visual and chemical communication [10, 12]. Among the latter the most effective advocates and marking pheromone communication of animals, particularly evident in members of the family *Canidae* [5, 9, 11].

The basis for experimental research was interesting phenomenon observed in male foxes different color types during mating, namely the coupling period beginning some individual male mature age begin to lubricate himself urine. Thus the intensity of lubrication in different males varies from small areas flank and inner thighs to the whole body and even space around (cage, feeders, cages near the ground). Practice have noticed that the more intense the urine occurs lubricate

the body, the better the male reproductive properties [2, 3, 6]. However, in the literature there are no data on studying the relationship between the properties of foxes. The purpose of research was to determine whether related reproductive performance of male silver-black foxes from their intensity lubrication urine your body.

Material and methods research. To study the intensity lubrication urine silver-black male foxes were conducted visual observations [1, 4]. In terms of lubrication body sires were divided into 4 groups: 0 - not lubricated male urine, and - low lubrication (part of the body which is oiled urine within 0.1 - 25%), II - moderate (25.1 - 50%), III - High (50.1 - 75%), IV - intensive (75.1 - 100%).

Sexually active males was determined by the number of paired females rut for the reporting and the base year. The study put the problems started with research - conducting correlation analysis. Relationship intensity lubrication urine male body with age determined by polihoryches index provider. Dependence fertilized investigated the ability of males with exterior indicator was determined using correlation coefficient and regression coefficient rectilinear [14]

Results. Visually assessed intensity lubrication urine male body silver-black foxes and spent counting different groups of animals: from no external characteristics to intense manifestation of the studied parameters (tab. 2).

Table 2

Affiliation males of all ages in groups according to the intensity of the body in urine lubrication

Indexes	Groups intensity lubricate the body in urine:									
	0 (0%)		I (0,1 - 25)		II (25,1 - 50)		III (50,1 - 75)		I (75,1 – 100)	
	гол.	%	гол.	%	гол.	%	гол.	%	гол.	%
The total number of males, h.	23	14,8	30	19,4	52	33,5	30	19,4	20	12,9
Age composition and structure of males:	8	34,7	10	33,3	12	23,1	6	20,0	4	20,0

2 years old										
younger than 3 years	2	8,7	8	26,7	13	25,0	5	16,7	2	10,0
younger than 4 years	0	0	0	0	10	19,2	6	20,0	2	10,0
younger than 5 years	3	13,0	0	0	9	17,3	1	3,3	5	25,0
over 5 years	10	43,5	12	40,0	8	15,4	10	33,3	6	30,0
over 10 years	0	0	0	0	0	0	2	6,7	1	5,0

By M.O. Plohinskym [14] determining the degree of correlation between quality indicators can be performed with polihorychnes indicator of connection, indicated by the Greek letter ρ and calculated by formula (1):

$$\rho = (a - 1)/\sqrt{(r_1-1)x(r_2-1)}, \qquad (1)$$

where ρ - polihorychnes rate communication;

$$a = \sum\{\sum f^2/n_2 /n_1\}$$

f - frequency correlation of the lattice cell for the first and second place;

n1 - number of frequency index for the first column in the lower total tape;

n2 - number of frequency bands for the second parameter in the right column total;

r1, r2 - number of shades that are broken first and second features;

n - total number of groups.

The reliability index due polihorychnes determined using the criterion $\chi 2$, which for this index is equal to n (a - 1) by the number of degrees of freedom ν = (r1 - 1) (r2 - 1).

Calculates polihorychnes rate communication intensity lubrication of the body in urine of males with their ages are given in table 3.

Table 3

Calculation polihorychnes rate communication intensity lubrication urine male body with their age

Indexes	Groups intensity lubricate the body in urine:										n_2	n=155, r_1=5, r_2=5
	0 (0%)		I (0,1 - 25)		II (25,1 - 50)		III (50,1 - 75)		I (75,1 – 100)			
	f	f^2/n_2	f	f^2/n_2	f	f^2/n_2	f	f^2/n_2	f	f^2/n_2		
The total number of males, ch.	8	1,6	10	2,5	12	3,6	6	0,9	4	0,4	40	
Age composition and structure of males: 2 years old	2	0,13	8	2,13	13	5,63	5	0,83	2	0,13	30	
younger than 3 years	0	0	0	0	10	5,56	6	2,00	2	0,22	18	
younger than 4 years	3	0,50	0	0	9	4,50	1	0,06	5	1,39	18	ρ = =0,065
younger than 5 years	10	2,17	12	3,13	8	1,39	10	2,17	6	0,78	46	
over 5 years	0	0	0	0	0	0	2	1,33	1	0,33	3	
n_1	23		30		52		30		20		n=155	
$\sum f^2/n_2$	4,4		7,76		20,68		7,29		3,25		a = 1,26	
$\sum f^2/n_2 /n_1$	0,19		0,26		0,40		0,24		0,17			

The reliability index polihorychnes $\chi 2 = n (a - 1) = 155 (1.26 - 1) = 40.3$. With the number of degrees of freedom $\nu = (r1 - 1) (r2 - 1) = (5 - 1) (5 - 1) = 16$ parameter $\chi 2 = \{36,3; 32.0; 26.3\}$. In our calculations, the calculated index $\chi 2 = 40,3$ meet the criterion of authenticity $P < 0.001$, indicating that a stable

relationship between straight males aged silver-black foxes and intensity lubrication urine their bodies.

For documentation zootechnical account was monitored number of paired males of all ages for females during the rut in the reporting and the base year. The results of this account are presented in Table 4.

Table 4

The number of females paired with males of varying intensity lubricate the body in urine reporting and the base year, Ch. / Male

Indexes	Groups intensity lubricate the body in urine:				
	0 (0%)	I (0,1 - 25)	II (25,1 - 50)	III (50,1 - 75)	I (75,1 – 100)
Financial year					
The total number of males, ch.	5,38 ± 2,26	5,20 ± 2,35	6,09 ± 2,26	8,00 ± 2,53	9,50 ± 1,00
Age composition and structure of males: 2 years old	4,00 ± 0	6,13 ± 2,30	7,23 ± 2,35	8,60 ± 2,61	11,50 ± 0
younger than 3 years	0	0	8,20 ± 2,44	9,17 ± 2,64	14,00 ± 0
younger than 4 years	7,33 ± 2,08	0	9,44 ± 1,51	15,00 ± 0*	10,80 ± 2,49
younger than 5 years	7,10 ± 2,69	8,17 ± 2,69	9,38 ± 2,83	10,40±2,07	12,33 ± 2,07
over 5 years	0	0	0	8,50	10,00
Base year					
The total number of males, ch.	4,63 ± 1,77	5,20 ± 1,81	5,73 ± 2,49	6,83 ± 2,93	7,00 ± 2,45
Age composition and structure of males: 2 years old	4,00 ± 0	6,63 ± 2,56	5,85 ± 1,47	7,20 ± 2,17	9,00 ± 0
younger than 3 years	0	0	6,90 ± 2,18	8,00 ± 2,10	10,00 ± 0

younger than 4 years	6,67 ± 1,15	0	7,33 ± 1,94	9,20 ± 1,30	10,00 ± 0
younger than 5 years	8,10 ± 2,51	8,08 ± 2,31	9,75 2,31	10,40 ± 1,84	10,50± 2,26
over 5 years	0	0	0	10,00 ± 0	10,00 ± 0

From the Tables it is clear that the lubrication between the intensity of the body in urine of males and their sexual activity, which is reflected in the number of paired mating period females, there is a straightforward relationship. However, in some age groups, this relationship has a direct partial character (males 5 years of age).

By calculation polihorychnes connection indicator intensity lubrication male bodies and their sexual activity is set high reliability - P <0.001 (Table. 5).

Table 5

Calculation polihorychnes rate communication intensity lubrication urine male body with their sexual activity (number of paired females during mating) for the financial year

Indexes	Groups intensity lubricate the body in urine:										n_2	n=155, r_1=3, r_2=5
	0 (0%)		I (0,1 - 25)		II (25,1 - 50)		III (50,1 - 75)		I (75,1 – 100)			
	f	f^2/n_2	f	f^2/n_2	f	f^2/n_2	f	f^2/n_2	f	f^2/n_2		
Sexual Activity: low (number of paired females from 3 to 7)	15	5,67	21	6,58	26	10,09	5	0,37	0	0	67	
moderate (8 - 12)	8	0,81	9	1,03	25	7,91	22	6,13	15	2,85	79	ρ = =0,12
high (13 - 15)	0	0	0	0	1	0,11	2	0,44	6	4,00	9	
n_1	23		30		52		29		31		n=155	
$\sum f^2/n_2$	6,48		7,61		18,11		6,94		6,85		a = 1,34	
$\sum f^2/n_2 /n_1$	0,28		0,25		0,35		0,24		0,22			

The reliability index polihorychnes $\chi 2$ = n (a - 1) = 155 (1.34 1) = 52.7, the number of degrees of freedom ν = (r1 - 1) (r2 - 1) = (3 - 1) (5 - 1) = 8 parameter $\chi 2$ = {26,1, 20,1, 15,5}. In our calculations, the calculated index $\chi 2$ = 52,7 meet the criterion of authenticity P <0,001.

Conclusion. Arguably, the lubrication between the intensity of the body in urine male silver-black foxes and their sexual activity are closely straightforward communication.

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