

Research Article

OPEN ACCESS

Tull A., Moks E., Saarma U. 2021: Endoparasite prevalence and infection risk factors among cats in an animal shelter in Estonia. Folia Parasitol. 68: 010.

Online Resource 1. All best model sets, factors and weights for predicting infection intensity with endoparasites among shelter cats.

Models predicting infection intensity with endoparasites among shelter cats	Factors	Statistics	Weight w_i (AIC)
1. INT=AGE+TIME	A	$\beta_{ADULT}=0$ (reference) $\beta_{YOUNG}=1.0, SE=0.4, p=0.02$	0.30
	T	$\beta_{FORADOPTION}=0$ (reference) $\beta_{QUARANTINE}=-0.6, SE=0.4, p=0.09$	
2. INT=AGE	A	$\beta_{ADULT}=0$ (reference) $\beta_{YOUNG}=0.9, SE=0.4, p=0.03$	0.26
3. INT=LOCATION+AGE	L	$\beta_{RURAL}=0$ (reference) $\beta_{URBAN}=-0.5, SE=0.4, p=0.3$	0.16
	A	$\beta_{ADULT}=0$ (reference) $\beta_{YOUNG}=0.9, SE=0.4, p=0.04$	
4. INT=LOCATION+AGE+TIME	L	$\beta_{RURAL}=0$ (reference) $\beta_{URBAN}=-0.3, SE=0.5, p=0.5$	0.13
	A	$\beta_{ADULT}=0$ (reference) $\beta_{YOUNG}=1.0, SE=0.4, p=0.02$	
	T	$\beta_{FORADOPTION}=0$ (reference) $\beta_{QUARANTINE}=-0.6, SE=0.5, p=0.2$	

Only the best models are presented. INT – infection intensity is the number of egg (EPG) or oocyst (OPG) per gram of faecal sample; AGE – young cats are less than a year old and adult cats are over one year old; TIME – cats ready to be adopted by privates (held ≥ 15 days in the shelter) or cats in quarantine (held 1 – 14 days in the shelter); LOCATION – cats caught from rural or urban site and taken to the shelter; β – estimate of the coefficient; SE – standard error; w_i (AIC) – model weight of the best model, given the data and set of candidate models

Online Resource 2. All best model sets, factors and weights for predicting coinfection prevalence with endoparasites among shelter cats.

Models predicting coinfection prevalence with endoparasites among shelter cats	Factors	Statistics	Weight
1. COINF=LOCATION+AGE+TIME	L	$\beta_{RURAL}=0$ (reference) $\beta_{URBAN}=-1.3, SE=0.4, p=0.0005$	0.33
	A	$\beta_{ADULT}=0$ (reference) $B_{YOUNG}=0.3, SE=0.4, p=0.4$	
	T	$\beta_{FORADOPTION}=0$ (reference) $\beta_{QUARANTINE}=-0.4, SE=0.4, p=0.3$	
2. COINF=LOCATION+AGE	L	$\beta_{RURAL}=0$ (reference) $\beta_{URBAN}=-1.3, SE=0.4, p=0.0006$	0.26
	A	$\beta_{ADULT}=0$ (reference) $B_{YOUNG}=0.3, SE=0.4, p=0.5$	
3. COINF=LOCATION+TIME	L	$\beta_{RURAL}=0$ (reference) $\beta_{URBAN}=-1.3, SE=0.4, p=0.0004$	0.23
	T	$\beta_{FORADOPTION}=0$ (reference) $\beta_{QUARANTINE}=-0.3, SE=0.4, p=0.4$	
4. COINF=LOCATION	L	$\beta_{RURAL}=0$ (reference) $\beta_{URBAN}=-1.3, SE=0.4, p=0.0005$	0.18

Only the best models are presented. COINF – coinfection prevalence, binomial variable (1 – coinfecting with endoparasites, 0 – not coinfecting); LOCATION – cats caught from rural or urban site and taken to the shelter; TIME – cats ready to be adopted by privates (held ≥ 15 days in the shelter) or cats in quarantine (held 1 – 14 days in the shelter); AGE – young cats are less than a year old and adult cats are over one year old; β – estimate of the coefficient; SE – standard error; w_i (AIC) – model weight of the best model, given the data and set of candidate models

Address for correspondence: Ants Tull, Department of Zoology, Institute of Ecology and Earth Sciences, University of Tartu, Vanemuise 46, 51003 Tartu, Estonia. E-mail: A. Tull: ants.tull@ut.ee, E. Moks: epm.moks@vetlab.ee, U. Saarma: urmas.saarma@ut.ee

Online Resource 3. All best model sets, factors and weights for predicting endoparasite prevalence among shelter cats.

Models predicting infection risk with endoparasites among shelter cats	Factors	Statistics	Weight w_i (AIC)
1. INF=LOCATION+TIME	L	$\beta_{RURAL}=0$ (reference) $\beta_{URBAN}=-0.9$, SE= 0.3, $p<0.001$	0.55
	T	$\beta_{FORADOPTION}=0$ (reference) $\beta_{QUARANTINE}=-0.5$, SE=0.3, $p=0.03$	
2. INF=LOCATION+AGE+TIME	L	$\beta_{RURAL}=0$ (reference) $\beta_{URBAN}=-0.9$, SE=0.3, $p<0.001$	0.22
	A	$\beta_{ADULT}=0$ (reference) $B_{YOUNG}=0.1$, SE=0.3, $p=0.6$	
	T	$\beta_{FORADOPTION}=0$ (reference)	
		$\beta_{QUARANTINE}=-0.5$, SE=0.3, $p=0.03$	

Only the best models are presented. INF – infection prevalence, binomial variable (1 – infected with endoparasites, 0 – not infected); LOCATION – cats caught from rural or urban site and taken to the shelter; TIME – cats ready to be adopted by privates (held ≥ 15 days in the shelter) or cats in quarantine (held 1 – 14 days in the shelter); AGE – young cats are less than a year old and adult cats are over one year old; β – estimate of the coefficient; SE – standard error; w_i (AIC)– model weight of the best model, given the data and set of candidate models

Online Resource 4. Pairwise Chi-squared frequency tables (A vs. B, C vs. D, E vs. F, G vs. H, I vs. J and K vs L) with test results of potentially directly transmitted endoparasites and time spent in shelter by location.

Location and availability for adoption (for adoption or in quarantine)	Frequency of occurrence (infected and not infected)	Percent with 95% CL	χ^2 - statistic and p- value
A rural cats for adoption	35	24.8 (17.6–32.0)	$\chi^2=9.2$; $p=0.002^{**}$
	31	21.9 (15.1–28.9)	
B urban cats in quarantine	21	14.9 (8.9–20.8)	$\chi^2=5.5$; $p=0.06$
	54	38.3 (30.2–46.4)	
C rural cats for adoption	35	28.9 (20.7–37.1)	$\chi^2=5.5$; $p=0.01^*$
	31	25.6 (17.7–33.5)	
D urban cats for adoption	20	16.5 (9.8–23.2)	$\chi^2=0.8$; $p=0.3$
	35	28.9 (20.7–37.1)	
E rural cats in quarantine	43	25.4 (18.8–32.1)	$\chi^2=1.0$; $p=0.3$
	51	30.2 (23.2–37.2)	
F urban cats in quarantine	21	12.4 (7.4–17.5)	$\chi^2=1.3$; $p=0.2$
	54	32.0 (24.9–39.1)	
G rural cats for adoption	35	21.9 (15.4–28.4)	$\chi^2=1.3$; $p=0.2$
	31	19.4 (13.2–25.6)	
H rural cats in quarantine	43	26.9 (19.9–33.8)	$\chi^2=1.3$; $p=0.2$
	51	31.9 (24.6–39.2)	
I urban cats for adoption	20	15.4 (9.5–21.7)	$\chi^2=1.0$; $p=0.3$
	35	26.9 (19.2–34.6)	
J urban cats in quarantine	21	16.1 (9.7–22.6)	$\chi^2=1.0$; $p=0.3$
	54	41.5 (32.9–50.1)	
K urban cats for adoption	20	13.4 (7.9–18.9)	$\chi^2=1.3$; $p=0.2$
	35	23.5 (16.6–30.4)	
L rural cats in quarantine	43	28.9 (21.5–36.2)	$\chi^2=1.3$; $p=0.2$
	51	34.2 (26.5–41.9)	

$p<0.05$ *

$p<0.01$ **

$p<0.001$ ***

Potentially directly transmittable endoparasites consisted of *T. gondii*/*H. hammondi*, *Cryptosporidium* spp., *Giardia* sp., *Cystoisospora* spp., *T. cati* and *E. aerophilus*