

HAEMATOLOGICAL AND SERUM BIOCHEMICAL VALUES OF URBAN WILD BOAR (*Sus scrofa*) IN BARCELONA

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INTRODUCTION and OBJECTIVES

The wild boars (*Sus scrofa*) population are increasing its density in Catalonia, owing to several factors such as the lack of natural predators, better access to food, changes in weather conditions and increased breeding. This increase means that wild boars have to look for more food to survive, so they get closer to civilization.

The aim of this study is to analyze the haematologic and biochemical variables of the wild boars captured in the streets of Barcelona, to make a comparison with recent studies of captured animals of the same species, which are less in contact with civilization. Haematological and biochemical variable records distinguish age and gender, so that their influence is taken into account.

MATERIALS AND METHODS

A total of 97 wild boars were studied. An approximate age was determined by state of dentition. The samples were taken after urban police phoned a SEFaS people because wild boars were causing trouble on the streets. Piglets, juveniles and adult wild boars were anesthetized using a combination of tiletamina-zolazepam (6.9 ± 1.8 mg/kg) and xylazine (3.5 ± 1.1 mg/kg), administered by a blowpipe. The samples were processed for analysis during 24 hours after extraction and were kept refrigerated until arrival at the laboratory. The collected serum samples were frozen at -20°C at the time of evaluation.

Table: Mean of body weight, for different sex and age groups

	Females (kg)	Males (kg)	Total
Piglets (0-6 months)	10 (5.38 ± 1.85)	5 (4.17 ± 0.58)	15 (5.05 ± 1.67)
Juveniles (> 6-12 months)	16 (30.31 ± 12.21)	18 (26.97 ± 11.52)	34 (28.54 ± 11.79)
Adults (from > 12 months)	20 (55.98 ± 14.76)	28 (52.56 ± 16.15)	48 (54.04 ± 15.49)
Total	46	51	97



Tables: hematologic and biochemical interval references of wild boar from Barcelona

Variable (units)	Number of samples (n)	Mean (sd)	CV (%)	Range (Min-Max)	Central 95 per cent interval	Variable (units)	Number of samples (n)	Mean (sd)	CV (%)	Range (Min-Max)	Central 95 per cent interval
White blood cells ($\times 10^9/\text{L}$)	74	11.54 ± 3.47	28.08	4.15 - 19.53	10.51 - 13.49	Cortisol (nmol/L)	97	244.55 ± 197.13	80.61	20.18 - 1057.30	204.82 - 284.28
Red blood cells ($\times 10^{12}/\text{L}$)	74	5.79 ± 0.72	12.52	4.31 - 7.85	5.62 - 5.96	Glucose (mmol/L)	94	6.23 ± 1.93	30.91	2.53 - 12.25	6.84 - 6.61
Haemoglobin (g/L)	76	119.6 ± 18.97	15.86	82 - 190	115.4 - 123.9	Cholesterol (mmol/L)	94	2.51 ± 1.29	34.63	0.46 - 4.23	2.33 - 2.69
Haematocrit (L/L)	74	0.35 ± 0.05	12.80	0.24 - 0.47	0.34 - 0.36	Triglycerides (mmol/L)	97	0.62 ± 0.5	79.60	0.07 - 2.84	0.52 - 0.72
MCV (fL)	76	60.82 ± 5.6	9.20	51.9 - 78.3	59.54 - 62.10	Total bilirubin ($\mu\text{mol}/\text{L}$)	93	2.68 ± 0.78	29.07	0.17 - 5.47	2.52 - 2.84
MCH (pg)	76	20.43 ± 2.19	10.71	15.9 - 25	19.93 - 20.93	Lactate (mmol/L)	91	3.83 ± 1.67	43.60	1.7 - 9.1	3.49 - 4.17
MCHC (g/L)	72	338.4 ± 19.1	5.60	293 - 381	334.1 - 342.9	Creatinine ($\mu\text{mol}/\text{L}$)	97	92.22 ± 25.18	27.30	44.2 - 145.86	87.14 - 97.29
Neutrophils (%)	76	48.14 ± 15.42	32.02	20.9 - 87.5	44.62 - 51.67	Urea (mmol/L)	95	4.02 ± 1.51	37.30	1.23 - 8.31	3.73 - 4.32
Lymphocytes (%)	76	43.36 ± 13.85	31.93	9.4 - 70.9	40.2 - 46.52	CK (IU/L)	95	1062 ± 1430	134.58	98.5 - 10056.9	775.13 - 1350.3
Monocytes (%)	76	4.78 ± 1.91	40.02	1.2 - 9.2	4.34 - 5.22	LDH (IU/L)	91	769.52 ± 310.61	40.36	180.6 - 1660.4	705.72 - 833.34
Eosinophils (%)	76	2.35 ± 1.95	82.89	0.3 - 9.6	1.91 - 2.80	AST (IU/L)	96	62.68 ± 73.95	117.99	6.01 - 531	47.88 - 77.47
Basophils (%)	76	0.94 ± 1.01	107.13	0.1 - 7.1	0.72 - 1.17	ALT (IU/L)	97	41.23 ± 20.48	49.66	11.1 - 143.4	37.1 - 45.35
Neutrophils ($\times 10^9/\text{L}$)	74	5.34 ± 2.58	50.06	1.25 - 13.23	4.73 - 5.96	AP (IU/L)	95	83.13 ± 43.41	52.21	8.07 - 266.65	74.29 - 91.85
Lymphocytes ($\times 10^9/\text{L}$)	76	4.89 ± 1.79	37.10	1.49 - 10	4.45 - 5.33	Sodium (mmol/L)	97	133.2 ± 15.31	15.70	66.4 - 155.9	128.43 - 136.3
Monocytes ($\times 10^9/\text{L}$)	74	0.51 ± 0.25	41.19	0.13 - 1.14	0.46 - 0.55	Chloride (mmol/L)	97	92.4 ± 8.2	8.40	50.3 - 110.8	90.46 - 95.21
Eosinophils ($\times 10^9/\text{L}$)	76	0.26 ± 0.23	88.07	0.04 - 1.17	0.21 - 0.32	Potassium (mmol/L)	96	4.92 ± 1.27	25.71	2.63 - 9.46	4.66 - 5.17
Basophils ($10^9/\text{L}$)	73	0.05 ± 0.03	61.80	0.01 - 0.16	0.04 - 0.06	Total protein (g/L)	95	65.06 ± 9.07	13.94	41 - 84	63.24 - 66.88
Platelets ($\times 10^9/\text{L}$)	74	422.32 ± 159.58	37.78	11 - 834	385.96 - 458.6						

RESULTS

Table: Statistically significant age differences

Variable (units)	n	Mean (sd)	n	Mean (sd)	n	Mean (sd)	Greater effect		
							Adults	Juveniles	Piglets
WBC ($10^9/\text{L}$)	26	$10.76 (2.99)$ a	26	$11.15 (3.63)$ ab	10	$13.61 (3.64)$ b	Female		
MCV (fL)	35	$63.98 (5.01)$ a	31	$58.16 (4.52)$ b	10	$58.02 (5.15)$ ab	Both		
MCH (pg)	35	$21.44 (1.8)$ a	31	$19.75 (2.07)$ b	10	$19 (2.36)$ b	Both		
Neutrophils (%)	35	$48.31 (15.27)$ ab	31	$44.47 (14.69)$ a	10	$58.92 (14.28)$ b	-		
Lymphocytes (%)	35	$43.79 (14.09)$ ab	31	$45.91 (12.78)$ a	10	$33.91 (13.41)$ b	-		
Monocytes (%)	35	$4.2 (1.82)$ a	31	$5.6 (1.73)$ b	10	$4.25 (1.98)$ a	Male		
Neutrophils ($\times 10^9/\text{L}$)	35	$5.32 (2.88)$ a	29	$4.58 (1.96)$ a	10	$7.64 (2.57)$ b	Both		
Lymphocytes ($\times 10^9/\text{L}$)	26	$4.44 (1.36)$ a	28	$5.4 (1.82)$ b	10	$4.67 (2.5)$ ab	-		
Monocytes ($\times 10^9/\text{L}$)	35	$0.42 (0.17)$ a	29	$0.59 (0.2)$ b	10	$0.54 (0.26)$ ab	Both		
Basophils ($\times 10^9/\text{L}$)	34	$0.036 (0.019)$ a	31	$0.056 (0.031)$ b	8	$0.05 (0.04)$ ab	Both		
Platelets ($\times 10^9/\text{L}$)	34	$325.24 (119.53)$ a	31	$502.16 (143.53)$ b	9	$514.11 (148.19)$ b	Both		
Cholesterol (mmol/L)	45	$2.42 (0.71)$ a	33	$2.48 (1.08)$ ab	13	$2.9 (0.77)$ b	Female		
AP (IU/L)	45	$65.74 (34.08)$ a	34	$85.98 (39.76)$ b	13	$130.58 (45.8)$ c	Both		
Creatinine ($\mu\text{mol}/\text{L}$)	35	$107.75 (18.33)$ a	31	$82.09 (20.39)$ b	13	$57.6 (8.98)$ c	Both		
Lactate (mmol/L)	44	$3.93 (1.32)$ a	32	$3.16 (1.51)$ b	12	$5.17 (2.48)$ c	Both		
Chloride (mmol/L)	33	$94.86 (6.65)$ a	25	$93.63 (9.18)$ ab	12	$89.78 (8.25)$ b	-		
Potassium (mmol/L)	46	$5.24 (1.17)$ a	34	$4.55 (1.36)$ b	13	$4.53 (1.13)$ b	Male		
Total protein (g/L)	47	$68.3 (8.01)$ a	32	$63.43 (9.22)$ b	13	$58.82 (5.99)$ b	Both		

Table: Statistically significant sex differences

Variable (units)	n	Female Mean (sd)	Male Mean (sd)	p-value	Greater effect

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