Hematologic reference intervals in cockatiels (Nymphicus hollandicus)

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Introduction

•Cockatiels are the most common avian companion in the USA

•Information on standard hematological values for this species is limited, and the validity of previously published reference intervals (RI) are not well-described

•Avian hematology suffers from lack of automatization– nucleated avian red blood cells hinder use of automated methods, clinicians left to rely on time consuming manual methods with inherent variability

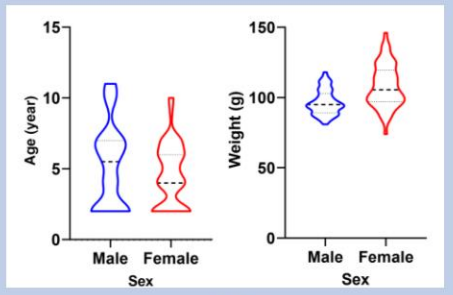
Materials & Methods

Sample Collection:

• 124 healthy cockatiels from captive breeding colony (62 males & 62 females, 2-11yr)

Results

• Figure 1 & 2: Age and weight distributions between sexes



Discussion

• Lymphocytes were the predominant leukocyte in this study, which was also reported by other previous studies in cockatiels [2,3]. These results differ from other widely published reference intervals in which heterophil was the predominant leukocyte

- Stress induced heterophilia is a common avian response to handling [4]

• While the highly-controlled conditions of a research colony may not be "representative" of client-owned conditions, this study prioritized a large sample size

Objective

To establish hematological reference intervals in cockatiels, explore age and sex differences, and assess parameters not previously reported, such as fibrinogen and thrombocyte count

							90% Confidence Interval	
Parameter	N	Mean	Median	SD	Subgroup	Reference Interval	Lower Limit	Upper Limit
WBC (cells/ul)	120	6481	6000	2661		2670 - 13689	1778-3444	11500 - 17777
	60				M	2245 - 10624	1778 -3127	9229 - 10700
	60				F	2704 - 15998	2500 - 3847	12041 - 17777
Bands (cells/ul)	120	14	0	44		0 - 137	0 - 0	94 - 354
Heterophils (cells/ul)	120	1773	1462	1187		388 - 5997	160 - 157	4000- 6785
	60				M	264 - 4667	160 - 585	3138 - 6016
	60				F	398 - 6408	387 - 547	4619 - 6785
Lymphocytes (cells/ul)	120	4122	3603	2041		1308 - 9978	1173 -1850	7614 - 14044
	60				M	1243 - 7854	1173 - 1710	6593 -8119
	60				F	1321 - 12514	1288 - 2073	9065 - 14044
Monocytes (cells/ul)	120	180	124	162		0 - 638	0 - 0	542 - 719
	60				M	0 - 600	0 - 21	455 - 640
	60				F	0 - 682	0 - 24	547 - 719
Eosinophils (cells/ul)	119	185	147	173		0 - 758	0-0	707 - 896
Basophils (cells/ul)	120	173	148	118		0 - 469	0-31	354 - 730
	60				M	0 - 403	0 - 16	316 - 470
	60				F	23 - 649	0 - 50	384 - 730

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