CORPORAL INDEXES OF STANDARD CURL PARAKEETS

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Abstract

The 90 studied individuals came from three nurseries from Iaşi and Vaslui counties.

Index of pectoral muscles development, on total effective, has the highest values of 93.66±1.45, at the individuals from L1 nursery, followed by the ones from nursery L2, 91.66±0.51 and by the birds from L3 nursery, 91.01±0.53. The character was homogenous (V%=3.04-8.46) and missed the statistical differences between batches.

Index of compaction was in the interval 212.83±.3.62, as it was at batch L1 and 222.92±3.16, at batch L3. Were significant statistical differences between batches L1 and L3 and variability was lower at batches L1 and L3 and medium at batch L2.

Bone index oscillated between the limits 90.83±1.56, at batch L3 and 104.45±1.35, as it was at batch L1. After comparing the mean values of bone index at the experimental batches were founded distinct significant differences between batches L1 and L2, respectively very significant between batches L1 and L3.

Key words: parakeets, corporal indexes

INTRODUCTION

The main reason which was at the base of this study was the one that now the literature regarding these breed of bird is extremely poor in data (Antonescu G., 1987; Nesterov V. and all, 1996; Tărtăşeanu Roberta, 2005 şi 2009; Griggio M. and all, 2009).

The research was focused on the acknowledge level of some corporal indexes such as: index of pectoral muscles development, compaction index and bone index.

MATERIAL AND METHODS

Research took place on a number of 90 standard curl parakeets, male and females, growth in three nurseries from Iaşi and Vaslui counties.

After realising the corporal measurements (length of sternal hull, trunk length, thoracic perimeter, shin perimeter etc) were establish (Deleanu Ş. and R. Dimitrie, 1972; Bartels T. and all, 2009), through calculation formulas, the values of the three corporal indexes considered to be representative for this category of birds (Quinter D., 1998; Williams J., 2001), as follows:

- *index of pectoral muscles development*, was calculated based on the ratio between the length of sternal hull and the trunk length (show the bird abilities for flying);

- *compaction index*, permit the appreciation of bird flying ability, because show the development degree of the chest, connected with lung capacity;
- *bone index* represent ration between shin perimeter and the thoracic one, providing information regarding the development level of skeletal system.

The obtained data were processed with ANOVA uni-factorial statistic software (Usturoi M.G., 2008).

RESULTS AND DISCUSSION

1. Index of pectoral muscles development. At females, the index of pectoral muscles development establish for the individuals from nursery L1 presented a minimum of 84.05 and a maximum of 114.97, resulting a mean value on nursery of 96.54±2.63. The studied character was less homogenous, aspect shown by the value of variation coefficient of 10.54%. At nurseries L2 and L3, the index of pectoral muscles development was lower, of only 90.92±0.84 respectively, of 89.95±0.81. In the last two cases, the values calculated for variation coefficient (V%=3.50-3.56) show a much better homogeneity of the studied character. Analyse of the difference signification of batches means show the existence of significant statistical differences between batches L1 and L3 (*table 1*).

Table 1

Index of pectoral muscles development and signification of the differences between batches means, at standard curl parakeets (*Melopsittacus undulatus*)

Specification	Batches	n	$\overline{X} \pm S_{\overline{X}}$ (cm)	V%	Min.	Max.
Females	L1	15	96.54±2.63	10.54	84.05	114.97
	L2	15	90.92±0.84	3.56	85.36	97.39
	L3	15	89.95±0.81	3.50	85.27	95.13
	Significance between batches	L1 vs. L2 = n.s.; F(4.1545) < Fα(4.1959) for 1:28 GL L1 vs. L3 = *; F(5.7348) > Fα(4.1959) for 1:28 GL L2 vs. L3 = n.s.; F(0.6857) < Fα(4.1959) for 1:28 GL				
Males	L1	15	90.77±0.75	3.22	85.51	94.74
	L2	15	92.40±0.54	2.28	88.94	96.23
	L3	15	92.06±0.61	2.55	88.58	96.27
	Significance between batches	L1 vs. L2 = n.s.; F(3.0614) < Fα(4.1959) for 1:28 GL L1 vs. L3 = n.s.; F(1.7719) < Fα(4.1959) for 1:28 GL L2 vs. L3 = n.s.; F(0.1726) < Fα(4.1959) for 1:28 GL				
Both genders	L1	30	93.66±1.45	8.46	84.05	114.97
	L2	30	91.66±0.51	3.04	85.36	97.39
	L3	30	91.01±0.53	3.22	85.27	96.27
	Significance between batches	L1 vs. L2 = n.s.; F(1.6972) < Fα(4.0068) for 1:58 GL L1 vs. L3 = n.s.; F(2.9521) < Fα(4.0068) for 1:58 GL L2 vs. L3 = n.s.; F(0.7796) < Fα(4.0068) for 1:58 GL				

In the case of males, the mean established values for index of pectoral muscles development oscillated between 90.77±0.75, as it was at the nursery L1 and 92.40±0.54, at nursery L2. Variation coefficient presented

values specific to a very low variability (V%=2.28-3.22). Between the studied batches were not provided differences with statistic signification (*table 1*).

Concretion of the index of pectoral muscles development for both genders lead to the conclusion that the highest values of 93.66±1.45, were founded at the individuals from nursery L1, followed by the ones from nursery L2, with 91.66±0.51 and by the birds from nursery L3, with only 91.01±0.53. Must be put in light the homogeneity of the studied character (V%=3.04-8.46), and also the lack of statistical differences between batches (*table 1*).

2. Compaction index. At females from nursery L1, compaction index was at a mean level of 226.89±4.29, at the ones from nursery L2, of 225.71±7.13, and at the individuals from nursery L3, of 229.03±4.04. If at batches L1 and L3 the analysed character was homogenous (V%=6.84-7.32), at batch L2, values of variation coefficient (V%=12.23) show a medium variability. Between batches did not exist statistical differences (*table 2*).

Table 2

Compaction index and signification of the differences between batches means, at standard curl parakeets (*Melopsittacus undulatus*)

Specification	Batches	n	$\overline{X} \pm S_{\overline{X}}$ (cm)	V%	Min.	Max.
Females	L1	15	226.88±4.29	7.32	187.50	266.30
	L2	15	225.71±7.13	12.23	182.93	281.44
	L3	15	229.03±4.04	6.83	200.92	255.70
	Significance between batches	L1 vs. L2 = n.s.; F(0.0199) < Fα(4.4159) for 1:28 GL L1 vs. L3 = n.s.; F(0.1325) < Fα(4.4159) for 1:28 GL L2 vs. L3 = n.s.; F(0.1642) < Fα(4.4159) for 1:28 GL				
Males	L1	15	198.78±2.76	5.38	181.32	215.88
	L2	15	203.75±4.82	9.17	178.28	242.95
	L3	15	216.80±4.44	7.94	194.50	254.74
	Significance between batches	L1 vs. L2 = n.s.; F(0.8016) < Fα(4.1959) for 1:28 GL L1 vs. L3 = **; F(11.8650) > Fα(7.6356) for 1:28 GL L2 vs. L3 = n.s.; F(3.9579) < Fα(4.1959) for 1:28 GL				
Both genders	L1	30	212.83±3.62	9.31	181.32	266.30
	L2	30	214.73±4.69	11.97	178.28	281.44
	L3	30	222.92±3.16	7.77	194.50	255.70
	Significance between batches	L1 vs. L2 = n.s.; F(0.1029) < Fα(4.0068) for 1:58 GL L1 vs. L3 = * ; F(4.4049) > Fα(4.0068) for 1:58 GL L2 vs. L3 = n.s.; F(2.0916) < Fα(4.0068) for 1:58 GL				

In male case, the mean compaction index presented a minimum of 198.78±2.76, at batch L1 and a maximum of 216.80±4.44, at batch L3, which determine the apparition of distinct significances differences between them. At batch L2 was recorded an intermediary value for compaction index of 203.75±4.82. The studied character was homogenous, the calculated values for variation coefficient being of 5.39-9.17% (*table 2*).

Calculated for both genders, the mean compaction index was placed in the interval 212.83±3.62, as it was at batch L1 and 222.92±3.16, at batch

L3; an intermediary value of 214.73±4.69, being recorded at the birds from L2 batch. Comparing the obtained results was shown the existence of significant statistical differences between batches L1 and L3. The studied character presented a low variability at batches L1 and L3 (V%=7.77-9.31) and medium (V%=11.97) at batch L2 (*table 2*).

3. Bone index. The females from batch L3 presented the lowest bone index of only 93.26±2.07, followed, in an increasing order, by the ones from batch L2, with 94.79±4.41 and by the females from batch L1, with 109.67±1.33. Statistical differences between batches L1 and L2 were distinct significant, and the ones between batches L1 and L3, very significant. The studied character presented a low variability at batches L1 and L3 (V%=4.70-8.59) and medium at batch L2 (V%=18.03) (*table 3*).

Also at males were found statistical differences, significant type between batches L2 and L3 respectively, very significant between batches L1 and L3. Mean value of bone index was of 99.22±1.36 at batch L1 (V%=5.32), of 96.72±2.71 at batch L2 (V%=10.86) and of only 88.40±2.22 at batch L3 (V%=9.75) (*table 3*).

Bone index calculated for birds of both genders oscillated from 90.83±1.56, value determinate at batch L3 respectively, 104.45±1.35, as it was at batch L1. Comparing the mean values of bone index from the experimental batches were founded distinct significant differences between batches L1 and L2 respectively, very significant between batches L1 and L3 (*table 3*).

Table 3

Bone index and signification of the differences between batches means, at standard curl parakeets (*Melopsittacus undulatus*)

Specification	Batches	n	$\overline{X} \pm S_{\overline{X}}$	V%	Min.	Max.
Females	L1	15	109.67±1.33	4.70	100.97	121.73
	L2	15	94.79±4.41	18.03	69.58	121.88
	L3	15	93.26±2.07	8.59	80.17	105.39
	Signification between batches	L1 vs. L2 = **; F(10.4275) > Fα(7.6356) for 1:28 GL L1 vs. L3 = ***; F(44.4698) > Fα(7.6356) for 1:28 GL L2 vs. L3 = n.s.; F(0.0986) < Fα(4.1959) for 1:28 GL				
Males	L1	15	99.22±1.36	5.31	88.31	106.68
	L2	15	96.72±2.71	10.86	73.58	118.44
	L3	15	88.40±2.22	9.75	71.26	99.64
	Signification between batches	L1 vs. L2 = n.s.; F(0.6751) < Fα(4.1959) for 1:28 GL L1 vs. L3 = ***; F(17.1931) > Fα(13.4975) for 1:28 GL L2 vs. L3 = *; F(5.6322) > Fα(4.1959) for 1:28 GL				
Both genders	L1	30	104.45±1.35	7.07	88.31	121.73
	L2	30	95.76±2.55	14.59	69.59	121.88
	L3	30	90.83±1.56	9.41	71.26	105.39
	Signification between batches	L1 vs. L2 = **; F(9.0668) > Fα(7.0930) for 1:58 GL L1 vs. L3 = ***; F(43.5974) > Fα(12.0154) for 1:58 GL L2 vs. L3 = n.s.; F(2,7165) < Fα(4.0068) for 1:58 GL				

CONCLUSIONS

Index of pectoral muscles development, calculated on a total number, had the highest values, 93.66±1.45, at the individuals from nursery L1, followed by the ones from nursery L2, 91.66±0.51 and by the birds from nursery L3, 91.01±0.53. Must be show the homogeneity of the studied character (V%=3.04-8.46), and also the lack of the statistical differences between batches.

Compaction index, calculated for both genders, was between 212.83±3.62, as it was at batch L1 and 222.92±3.16, at batch L3; an intermediary value of 214.73±4.69, being recorded at the birds from batch L2. Comparing the obtained results show the existence of significant statistical differences between batches L1 and L3. The studied character presented a low variability at batches L1 and L3 (V%=7.77-9.31) and medium (V%=11.97) at batch L2.

Bone index, calculated for females and males, oscillated between limits of 90.83±1.56, at batch L3 and respectively, 104.45±1.35, as it was at batch L1. Comparing the mean values of bone index from the experimental batches were founded distinct significant differences between batches L1 and L2 respectively, very significant between batches L1 and L3.

REFERENCES

1. Antonescu G., 1987, Peruşul ondulat, Exotica, 2, 60-65.
2. Bartels T., K. Cramer, P. Wolf, M. Hassig and A. Boos, 2009, Osteological examinations on the budgerigar (*Melopsittacus undulatus Shaw 1805*) with special reference to skeletal alterations conditioned by breeding, Journal of Veterinary Medicine, 38, 262-269.
3. Deleanu Ş. and R. Dimitrie, 1972, Păsări de apartament, Ed. CERES, Bucureşti.
4. Griggio M., Valeria Zanollo and H. Hoi, 2009, UV plumage color is an honest signal of quality in male budgerigars, The Ecological Society of Japan, 25, 77-82.
5. Nesterov V., S. Benescu, I. Andreescu, 1996, Păsări de colivie şi volieră, Ed. Ceres, Bucuresti.
6. Quinter D., 1998, Păsări de apartament, Ed. MAST, Bucureşti.
7. Tărtăşeanu Roberta, 2005, Creşterea peruşilor, Ed. Alex-Alex, Bucureşti.
8. Tărtăşeanu Roberta, 2009, Creşterea peruşilor, Ed. Alex-Alex, Bucureşti.
9. Usturoi M.G., 2008, Creşterea păsărilor, Ed. Ion Ionescu de la Brad, Iaşi.
10. Williams J., 2001, Păsări exotice, Ed. Lucman, Bucureşti.