Turaco Diet review & research update.

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During 2012 Andy Beer (Sparsholt College Hampshire and RZSS) has analysed the faeces from several captive species of turaco at Cotswold Wildlife Park. All of these birds with the exception of one individual are fed on a standard zoo soft bill diet, a mix of; pellets, fruits and a few greens.

The one exception being a young Red-crested Turaco (who goes by the name of Tori) who has been trialled on a slightly different diet; with emphasis on increasing fibre content in the diet, addition of par-boiled sweet potato and carrot and raw peas to a diet which already contained T16 pellets, seasonal berries, greens and a decreased amount of soft fruits.

Visually the consistency of the faeces produced by this bird are better formed, less watery, and look more thoroughly digested.

Looking at the results of the analysis there is a noticeable difference between the results for the bird on a separate diet to the others. It is apparent that there is less water content within the faeces, an increase in the amount of crude protein and a decreased amount of all three fibres.

The potential implications are that:

1) The faecal protein content is increased through the formation of microbial protein as the population of fermentative organisms in the hind gut surges. The faecal crude protein is composed of undigested dietary crude protein, non-protein nitrogen (mainly ammonia, ammonium and nitrates and uric acid) and microbial protein. The dietary crude protein is assumed to have a high digestibility and as the protein content of the diet is low, the higher faecal level must arise from microbial sources.

2) Fibre digestion is effective as is seen by the decrease in the three types of fibre. As the main location for fibre fermentation is presumed to be the caecum, the increase in fibre digestion is due to a rise in the microbial population. If this is the case, it can be assumed that an increase in fibre content in the diet of these birds has a positive effect on gut bacteria and the digestive system. NDF is a measure of the cell wall content of plants and particularly of cellulose and hemi cellulose. These are the substrates fermented by bacteria in the hindgut and this could explain why the NDF levels in the Red Crested Turaco (Tori) reduced slightly on the higher fibre diet (see table 1). Firm conclusions are not possible because of the small data set.

This is just a starting point for our research; the initial analysis is taken from such a small sample size it would be premature to jump to conclusions. Work is now underway to change all of our turaco diets, collect and analyse the faeces and compare with the previous results.

We still need to find wild turaco faeces to analyse as a comparison; the results of such would help give us an indication that we are moving in a positive direction regarding the nutrition of our captive turaco populations.

If any holders have any thoughts or suggestions regarding turaco nutrition the studbook would be very interested to hear from you.

Table 1; A resume of data from the faecal analysis of Red Crested Turacos at Cotswold Wildlife Park

	Ash	Crude Protein	Crude Fibre	NDF	ADF	ADL
Red Crested Turaco different diet	9.11	12.66	13.19	30.84	16.86	5.21
Red Crested Turaco previous diet	8.97	12.24	15.57	31.74	18.68	5.48
Red Crested Turaco female	6.40	5.96	34.31	50.76	40.99	10.71
Red crested Turaco (Male 1)	7.63	9.19	23.72	40.88	28.16	7.78
Red Crested Turaco (Male 2)	7.32	8.86	24.97	40.32	30.26	8.42

Results of Turaco Faecal Analysis for Cotswold Wildlife Park (Analysed 20.07.12) collected March 2011

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Sample	Dry Matter (%) as voided	Dry matter (%) NIRS	Ash (%)	Crude Protein (%)	Crude Fibre (%)	Crude Fat (%)	NDF (%)	ADF (%)	ADL (%)	Total Soluble Sugars (%)
White Cheeked Turaco (Pheasant Aviary) Male and Female	12.22	89.7711	6.3226	7.8347	29.5043	3.6171	43.5484	35.5774	9.5504	4.3215
Lady Ross Turaco (Bottom Holding) Male and Female	10.67	89.7463	6.3128	6.7095	29.268	3.2247	44.427	33.9102	8.9132	5.3824
Red Crested Turaco (Bottom Holding) Male	12.04	90.0479	7.6286	9.1885	23.7129	3.7876	40.8761	28.1575	7.7748	5.885
Red Crested Turaco Tori Different Diet	15.09	90.1414	9.106	12.6557	13.1881	4.6295	30.836	16.8561	5.2105	4.701
Red Crested Turaco (Bottom Holding) Female	12.02	89.9299	6.3994	5.9594	34.311	2.8929	50.757	40.9938	10.7048	0.9339
Red Crested Turaco TORI Different diet	14.86	89.7798	8.9729	12.241	15.5639	4.0995	31.7427	18.6767	5.4762	4.2299
Lady Ross Turaco Male	11.39	88.9641	9.0648	10.8743	18.1451	3.1252	33.1272	22.3144	6.4882	6.1878
Great Bue Turaco (Walled Garden) Male and Female	12.75	89.8332	9.1154	9.6964	20.0175	2.9403	35.2935	23.9399	6.6602	8.786
Red Crested Turaco (Pheasant Aviary) Male	14.32	89.7214	7.3234	8.8571	24.97	3.2136	40.3178	30.2594	8.4169	5.0948
Violcaeous Turaco (Bottom Aviary) Male	10.31	89.7947	8.9569	10.809	19.1106	4.4572	38.1599	24.3513	7.7496	2.2078
Green Turaco Female	8.63	89.1344	7.0816	8.2314	26.6113	2.7163	37.1745	30.705	7.4646	8.2211
Green Turaco (Pheasant Aviary) Male	8.96	89.2066	6.7899	7.7703	32.5374	3.254	44.9221	38.3229	9.9266	trace

NDF = Neutral Detergent Fibre

ADF = Acid Detergent Fibre

ADL = Acid Detergent Lignin