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Appendix I – Letter survey

«Name_institution»
«Street»
«Zip_code_and_City»
«PO_Box»
«Country»

Jolanda Polet and Timo Weber
Hogeschool Van Hall Larenstein
P.O. Box 1528, 8901 BV Leeuwarden
The Netherlands
jolanda.polet@wur.nl
timoweber@gmx.ch

Leeuwarden
26 February 2008

Request to participate in a nutrition survey.

Dear Sir/Madam,

With this letter I would like to ask your attention for the following research project; 'Development of a new diet for Kodiak bears' (*Ursus arctos middendorffi*).
This research is carried out by Jolanda Polet and Timo Weber as final thesis for the Bachelor Wildlife Management, at Van Hall Larenstein Professional University, part of Wageningen University.

This assignment carried out for Emmen Zoo (www.noorderdierenpark.nl) in the Netherlands. We would like a new feeding protocol for our Kodiak bears that mimics the in-situ situation as good as possible. To optimize the diet of the bears, information about feeding, reproduction, and health problems is important. To make an inventory of the situation of the bears in captivity the enclosed survey has been developed.

We would appreciate your cooperation; it will approximately take 30 minutes of your time. If you would like a digital version of the survey, please send us your e-mail address and we will send you the file. The surveys can be returned to Van Hall Larenstein, ATTN: T. Huisman, by fax, mail or email as added on the survey (page 6). We would be pleased to receive your reply before 18.03.2008. After finishing the project in June, you will receive a PDF file of the report.

Yours faithfully,

Cora Berndt
Zoo nutritionist Emmen Zoo

Appendix II – Reminding letter survey

Jolanda Polet and Timo Weber
Hogeschool Van Hall Larenstein
P.O. Box 1528, 8901 BV Leeuwarden
The Netherlands
jolanda.polet@wur.nl
timoweber@gmx.ch

«Name_institution»
«Street»
«Zip_code»«City»
«Country»

Leeuwarden
15 February 2008

Reminder to participate in a survey.

Dear Sir/Madam,

You received a letter of recommendation to participate in the 'Survey Nutrion Kodiak Bears' about three weeks ago. Until today I have not received a response from your institution. With this letter I would like to ask your attention once more for the following research project; 'Development of a new diet for Kodiak bears' (*Ursus arctos middendorffi*).

To optimize the diet of the bears, information about feeding, reproduction, and health problems is important. To make an inventory of the situation of the bears in captivity the enclosed survey has been developed. For the execution of this research your participation to this survey is of great importance.

I would appreciate your cooperation; it will approximately take 30 minutes of your time. The survey can be returned to Van Hall Larenstein, ATTN: T. Huisman, by fax, mail or email as added on the survey (page 7). We would be pleased to receive your reply before 26.04.2008. After finishing the project in June, you will receive a PDF file of the report.

Yours faithfully,

Cora Berndt
Zoo nutritionist

Appendix III – Letter for the animal keepers in Emmen Zoo

Beste belangstellende,

Wij zijn Jolanda Polet en Timo Weber en zitten in het laatste jaar van de HBO opleiding 'Diermanagement, richting Wildlife' aan het 'Van Hall Larenstein' te Leeuwarden. Gedurende de periode februari 2008 t/m juni 2008 zullen wij aan een afstudeerproject werken en vervolgens afstuderen.
Ons afstudeeronderzoek wordt uitgevoerd voor 'Dierenpark Emmen' en zal gericht zijn op het optimaliseren van het dieet van de Kodiak beren. Vanuit Emmen wil men graag een zo natuurlijk mogelijk dieet voeren dat uitvoerbaar is in deze dierentuin. Dit betekent dat de mannetjes gedurende de winter buiten zichtbaar moeten zijn, maar het vrouwtje wel in winterrust mag in relatie tot voortplanting. Het huidige dieet is al seizoensgebonden, maar is wat verouderd. Ons doel is om het huidige dieet te optimaliseren door te kijken naar de natuurlijke situatie en de situatie in gevangenschap.

Tijdens het onderzoek willen we het volgende uitvoeren:

- Literatuurstudie
- Onderzoekers aanschrijven
- Bestaande enquête over het dieet van beren uitwerken
- Aanvullende enquête uitvoeren
- Gebruikte diëten in dierentuinen vergelijken
- Verteerbaarheid meten van huidig rantsoen tussen begin maart en begin april

Voor het meten van de verteerbaarheid van het huidige rantsoen hebben wij uw hulp nodig als verzorger van de Kodiak beren. Wat wij graag van u willen vragen is:

- om de feces gedurende een week te verzamelen per individu (voor de verteerbaarheid)
- voeding gedurende dezelfde week wegen en terug wegen per voedingsmiddel (voor zover mogelijk)
- terug wegen welke voedingsmiddelen over blijven

Hoe nauwkeuriger de gegevens zijn die u ons kan leveren, hoe betrouwbaarder de resultaten. Wanneer komt het u het best uit om deze activiteiten uit te voeren?
Aangezien u met de dieren werkt willen we ook graag uw kennis en ervaring meenemen in het optimaliseren van het dieet. Hieronder zijn een paar vragen om ons kennis te geven van de huidige situatie vanuit uw oogpunt.

- Wat vindt u van de huidige situatie waarin de Kodiak beren leven?
- Hebt u opmerkingen voor het verbeteren van de huidige situatie?
- Wat vindt u van het huidige dieet?
- Hebt u opmerkingen voor het verbeteren van het huidige dieet?
- Denkt u dat het meten van de verteerbaarheid goed uit te voeren is?
- Hebt u nog overige opmerkingen?

Zou u zo vriendelijk willen zijn om dit binnen vier dagen beantwoord te retourneren bij Cora?
Alvast bedankt voor uw hulp en informatie!

Vriendelijke groet,

Jolanda Polet en Timo Weber

Appendix IV – Protocol sampling animal keepers Emmen Zoo

Protocol monster verzamelen van 25.03.08 – 01.04.08

Planning

	Dag 1	Dag 2	Dag 3	Dag 4	Dag 5	Dag 6	Dag 7	Dag 8
Wegen van voer	x	x	x	x	x	x	x	
Monster name voer	x	x	x	x	x	x	x	
Terugwegen voer		x	x	x	x	x	x	x
Monster name rest voer		x	x	x	x	x	x	x
Monster name feces		x	x	x	x	x	x	x

Stappenplan monster name voer

Punt 1: Vul de label in op de door ons geleverde zak.
Punt 2: Weeg ieder voedingsmiddel nauwkeurig af op de door ons geleverde weegschaal, op drie decimaal. Noteer dit per voedingsmiddel.
Punt 3: Neem van ieder voedingsmiddel 10% weg.
Punt 4: Verzamel deze voedingsmiddelen in de gelabelde zak.
Punt 5: Plaats deze zak in de toegewezen vriezer.

Stappenplan monster name teruggevonden voer

Punt 1: Vul de label in op de door ons geleverde zak.
Punt 2: Zoek het overgebleven voer en stop dit in de gelabelde zak.
Punt 3: Plaats deze zak in de toegewezen vriezer.

Stappenplan monster name feces

Punt 1: Vul de label in op de door ons geleverde zak.
Punt 2: Verzamel alle aanwezige feces in een schone emmer.
Punt 3: Let op! Laat bij het verzamelen een dun laagje feces op de ondergrond achter.
Punt 4: Meng de verzamelde feces met een schoon voorwerp tot een homogene massa.
Punt 5: Neem van de homogene massa tenminste 250 gram weg en plaats dit in de gelabelde zak.
Punt 6: Plaats deze zak in de toegewezen vriezer.

Label

Titel project:	Dieet Kodiak beren
Name verzorger:	Andre van Gemmert
Datum:	24-03-2008
Tijd:	11:30
Monster code:	Feces 7

Appendix V – Legend for diet calculation

Table XII.1 – Conversion from weights, volumes, parts and energy.

1	US gallon	=	3.785	Litre
1	Quart (liquid quart) (qt)	=	0.946	Litre
1	Cup	=	0.237	Litre
1	Pound (lb)	=	0.454	kg
1	Ounce (oz)	=	0.028	Gram
1	ppm from a gram	=	0.0001	Gram
1	Kcal	=	4.1867	kJ

Table XII.2 – Conversion of volumes of food item in kg of food item.

Dog chow

1	Litre	=	0.384	kg
1	Quart	=	0.363	kg
1	Cup	=	0.091	kg

Apples and Carrots

1	Bucket (20-25 L) of apples/carrots	=	11.340	kg

Gras

1	Litre	=	0.225	kg

Table XII.3 – Conversion of one piece of food item in kg.

Amount	**Food items**	**Kg**	**Source**
1	Apple	0.125	Voedingscentrum
1	Banana	0.125	Voedingscentrum
1	Bear	0.125	Voedingscentrum
1	Beet	0.820	USDA
1	Bread	0.800	Emmen Zoo
1	Carrots	0.090	USDA
1	Corn on the cob	0.275	-
1	Cup rice cooked	0.186	USDA
1	Egg	0.050	USDA
1	Grapefruit	0.196	USDA
1	Herring filet	0.184	USDA
1	Herring*	0.736	USDA
1	Onions	0.110	USDA
1	Orange	0.145	USDA
1	Qt Mazuri® Omnivor-Zoo Feed "A"	0.363	-
1	Slice of bread	0.035	Voedingscentrum
1	Tomato	0.123	USDA
1	Trout	0.250	USDA
1	Weiners	0.045	USDA

* 2 x Herring filet x 2

Table XII.4 – The metabolic energy intake of the various categories of nutrients.

1g	Protein	=	14.7	kJ
1g	Fat	=	35.6	kJ
1g	Carbohydrates	=	14.7	kJ

The data is based on the dog metabolic energy intake (Pibot et al., 2006, p.16)

Appendix VI – The energy and nutrients of the used food items

TableXIII.1

										mg/100g						IU		
No.	**KJ**	**Water**	**CP**	**CFat**	**CBD**	**CFibre**	**NFE**	**Ash**	**Total %**	**Ca**	**Fe**	**Mg**	**P**	**K**	**Na**	**A**	**BC**	**D**
1	218	85.6%	0.3%	0.2%	13.8%	2.4%	10.4%	0.2%	100.0%	6.0	0.12	5.0	11.0	107.0	1.0	-	54	-
2	205	57.0%	8.4%	2.3%	-	28.5%	-	3.6%	99.8%	13.0	0.50	3.0	59.0	533.0	4.0	-	20	-
3	371	74.9%	1.1%	0.3%	22.8%	2.6%	12.2%	0.8%	100.0%	5.0	0.26	27.0	22.0	358.0	1.0	-	64	-
4	1029	6.6%	17.3%	7.0%	66.2%	15.4%	1.5%	2.9%	100.0%	58.0	5.41	235.0	734.0	566.0	4.0	0	-	-
5	141	89.3%	2.8%	0.4%	6.6%	2.6%	1.7%	0.9%	100.0%	47.0	0.73	21.0	66.0	316.0	33.0	-	623	-
6	103	92.2%	1.3%	0.1%	5.8%	2.5%	3.2%	0.6%	100.0%	40.0	0.47	12.0	26.0	170.0	18.0	-	98	-
7	658	64.3%	18.8%	10.7%	-	1.1%	-	1.6%	95.4%	520.0	18.70	-	440.0	30.0	220.0	1200	-	-
8	173	88.3%	0.9%	0.2%	9.6%	2.8%	4.7%	1.0%	100.0%	33.0	0.30	12.0	35.0	320.0	69.0	-	16706	-
9	692	65.0%	18.0%	12.0%	-	1.5%	-	4.5%	99.5%	600.0	-	-	500.0	-	-	3500	-	550
10	1088	2.1%	13.1%	4.9%	74.2%	29.3%	15.7%	5.6%	100.0%	389.0	17.60	362.0	1150.0	1020.0	242.0	-	1747	-
11	263	82.3%	1.1%	0.2%	16.0%	2.1%	12.8%	0.5%	100.0%	13.0	0.36	11.0	21.0	222.0	0.0	-	64	-
12	640	67.5%	13.8%	12.3%	-	-	-	3.1%	96.6%	720.0	3.97	16.3	460.0	204.2	140.8	1157	-	-
13	57	87.0%	2.7%	0.5%	-	2.8%	-	1.5%	91.7%	-	-	-	-	-	-	-	-	-
14	60	77.5%	2.1%	0.6%	-	4.8%	0.5%	1.3%	81.5%	30.0	-	-	40.0	270.0	-	-	-	-
15	1200	12.0%	18.0%	6.0%	-	6.0%	-	-	36.0%	-	-	-	-	-	-	-	-	-
16	1653	10.0%	30.0%	20.0%	37.0%	3.0%	34.0%	3.0%	100.0%	1200.0	-	-	1000.0	-	-	2500	-	-
17	1437	12.4%	21.6%	11.8%	47.8%	3.9%	44.5%	4.8%	84.0%	933.3	0.00	150.0	766.7	630.0	200.0	2000	-	-
18	598	75.8%	12.6%	9.9%	0.8%	0.0%	0.8%	0.9%	100.0%	53.0	1.83	12.0	191.0	134.0	140.0	487	-	-
19	477	75.7%	18.9%	3.7%	0.0%	0.0%		1.5%	99.7%	80.0	1.49	30.0	200.0	356.0	70.0	100	-	-
20	657	71.6%	18.2%	8.8%	0.0%	0.0%	0.0%	1.7%	100.3%	63.8	1.43	42.0	211.3	362.3	76.0	118	-	-
21	647	74.6%	12.6%	10.6%	1.1%	0.0%	1.1%	1.1%	100.0%	50.0	1.19	10.0	172.0	126.0	124.0	586	-	-
22	361	75.5%	0.9%	0.2%	22.6%	3.1%	15.6%	0.8%	100.0%	22.1	0.39	15.7	23.3	264.4	1.3		182	0
23	1550	17.5%	21.5%	13.0%	48.0%	3.0%	-	-	100.0%	500.0	-	100.0	400.0	630.0	-	-	-	-
24	138	90.5%	0.7%	0.1%	8.4%	1.1%	7.3%	0.3%	100.0%	12.0	0.06	9.0	8.0	148.0	0.0	-	33	-
25	288	80.5%	0.7%	0.2%	18.1%	0.9%	15.5%	0.5%	100.0%	10.0	0.36	7.0	20.0	191.0	2.0	-	66	-
26	93	83.7%	3.7%	0.7%	10.2%	3.7%	1.0%	1.7%	100.0%	90.0	-	-	70.0	600.0	-	-	-	-
27	816	71.5%	16.4%	13.9%	0.0%	0.0%	0.0%	2.4%	104.2%	83.0	1.12	32.0	228.0	423.0	74.0	106	-	-
28	71	93.8%	1.3%	0.2%	3.4%	3.1%	0.3%	1.4%	100.0%	52.0	0.83	15.0	28.0	314.0	22.0	-	2167	-

29	1272	17.1%	0.3%	0.0%	82.4%	0.2%	82.1%	0.2%	100.0%	6.0	0.42	2.0	4.0	52.0	4.0	0	-	-
30	113	91.0%	1.7%	0.1%	6.2%	3.6%	2.6%	1.0%	100.0%	24.0	0.40	19.0	46.0	350.0	20.0	-	36	-
31	61	95.1%	1.4%	0.2%	2.8%	1.3%	0.8%	0.6%	100.0%	36.0	0.86	13.0	29.0	194.0	28.0	-	7405	-
32	564	70.8%	20.4%	3.6%	3.9%	0.0%	0.0%	1.3%	100.0%	5.0	4.90	18.0	387.0	313.0	69.0	16898	-	-
33	858	63.6%	18.6%	13.9%	-	0.0%	0.0%	1.4%	97.4%	12.0	1.63	76.0	217.0	314.0	90.0	167	-	-
34	861	61.9%	18.7%	13.4%	5.7%	-	-	0.9%	100.6%	16.9	2.06	86.4	285.0	297.0	48.9	-	-	-
35	571	73.3%	21.4%	5.0%	0.0%	0.0%	0.0%	1.1%	100.7%	9.0	2.38	22.0	198.0	346.0	66.0	0	-	-
36	898	65.7%	18.6%	15.0%	0.0%	0.0%	0.0%	0.9%	100.2%	15.0	2.09	18.0	171.0	295.0	66.0	0	-	-
37	1389	54.4%	14.4%	30.0%	0.0%	0.0%	0.0%	0.7%	99.4%	24.0	1.64	14.0	132.0	218.0	67.0	0	-	-
38	180	87.7%	1.4%	0.4%	9.8%	1.7%	8.1%	0.7%	100.0%	39.0	1.85	18.0	38.0	194.0	10.0	-	25	-
39	484	69.0%	18.4%	6.0%	-	1.1%	-	3.1%	96.5%	700.0	-	-	400.0	-	-	5515	-	-
40	1100	10.0%	27.0%	4.0%	-	9.0%	-	7.7%	48.7%	1165.0	34.67	226.6	867.1	1260.0	400.0	-	-	-
41	2629	5.3%	15.0%	60.8%	16.7%	9.7%	4.3%	2.3%	100.0%	114.0	4.70	163.0	290.0	680.0	0.0	-	20	-
42	322	81.6%	3.2%	1.7%	12.5%	-	-	0.9%	100.0%	80.0	1.30	26.0	60.0	213.0	9.0	-	0	-
43	1382	24.5%	25.0%	7.6%	42.9%	5.0%	-		100.0%	2200.0	5.80	220.0	1400.0	940.0	250.0	1400	-	-
44	166	89.1%	1.1%	0.1%	9.3%	1.7%	4.2%	0.4%	100.0%	23.0	0.21	10.0	29.0	146.0	4.0	-	2	-
45	262	82.3%	1.3%	0.3%	15.5%	4.5%	-	0.6%	100.0%	70.0	0.80	14.0	22.0	196.0	2.0	-	250	-
46	467	77.1%	17.7%	3.9%	0.1%	0.0%	0.0%	1.1%	100.0%	7.0	4.31	21.0	212.0	287.0	98.0	0	-	-
47	242	83.7%	0.4%	0.1%	15.5%	3.1%	9.8%	0.3%	100.0%	9.0	0.17	7.0	11.0	119.0	1.0	-	23	-
48	288	81.6%	1.7%	0.1%	15.7%	2.4%	1.2%	0.9%	100.0%	9.0	0.52	21.0	62.0	407.0	6.0	-	8	-
49	283	80.7%	1.1%	0.2%	17.1%	2.5%	9.9%	0.9%	100.0%	20.2	0.43	14.7	32.3	310.3	13.3	-	1409	0
50	1006	30.9%	2.2%	0.4%	63.9%	7.1%	38.1%	2.6%	100.0%	43.0	0.93	41.0	69.0	732.0	2.0	-	781	-
51	109	91.6%	1.0%	0.1%	6.5%	0.5%	1.4%	0.8%	100.0%	21.0	0.80	12.0	44.0	340.0	1.0	-	7348	-
52	1238	16.6%	2.5%	0.5%	78.5%	6.8%	-	1.9%	100.0%	28.0	2.59	30.0	75.0	825.0	28.0	-	0	-
53	180	87.6%	1.6%	0.2%	9.6%	2.8%	6.8%	1.1%	100.0%	16.0	0.80	23.0	40.0	325.0	78.0	-	33	-
54	544	68.6%	2.4%	0.2%	28.6%	0.3%	-	0.2%	100.0%	3.0	1.49	13.0	37.0	29.0	0.0	-	0	-
55	485	76.4%	19.9%	3.5%	0.0%	0.0%	0.0%	1.2%	101.0%	13.0	0.77	26.0	230.0	323.0	67.0	117	-	-
56	0	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	99.8%	100.0%	24.0	0.33	1.0	0.0	8.0	38758.0	0	-	-
57	249	74.0%	1.1%	0.1%	19.9%	1.2%	15.6%	4.9%	100.0%	-	-	-	40.0	210.0	-	-	-	-
58	64	-	2.7%	0.7%	-	-	-	66.4%	69.8%	20000.0	40.00	100.0	4000.0	-	80.0	50000	-	-
59	1343	10.0%	17.0%	8.0%	58.5%	3.5%	55.0%	6.5%	100.0%	1100.0		200.0	900.0	-	200.0	1500	-	150
60	494	69.6%	1.5%	0.2%	27.9%	4.1%	0.5%	0.8%	100.0%	17.0	0.54	21.0	55.0	816.0	9.0	-	138	-
61	75	94.5%	0.9%	0.2%	3.9%	1.2%	2.6%	0.5%	100.0%	10.0	0.27	11.0	24.0	237.0	5.0	-	833	-
62	148	88.9%	1.3%	0.2%	8.5%	2.0%	3.8%	1.1%	100.0%	24.7	0.51	14.4	43.8	274.7	28.2	-	2748	0

63	199	67.0%	6.9%	0.8%	14.4%	-	4.7%	4.0%	89.1%	-	-	-	-	-	-	-	-	-
64	3774	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0	0.00	0.0	0.0	0.0	-	4246	-	338
65	127	91.5%	0.6%	0.2%	7.6%	0.4%	6.2%	0.3%	100.0%	7.0	0.24	10.0	11.0	112.0	1.0	-	569	-
66	1369	53.2%	11.4%	30.3%	2.4%	0.0%	1.6%	2.8%	100.0%	10.0	1.34	13.0	140.0	130.0	1025.0	0	-	-
67	60	59.4%	4.1%	-	20.2%	-	-	-	83.6%	9.0		-	0.5	-	-	-	-	-
68	3290	7.4%	6.7%	84.4%	0.0%	-	-	1.5%	100.0%	-	4.50	-	107.0	-	-	240	-	-
69	0	10.0%	20.0%	-	-	-	-	-	30.0%	-	-	-	-	-	-	-	-	-
70	240	84.2%	0.7%	0.3%	14.5%	2.4%	10.0%	0.2%	100.0%	6.0	0.28	6.0	12.0	77.0	1.0	54	-	-
71	141	90.2%	0.8%	0.2%	8.2%	0.9%	7.9%	0.7%	100.0%	9.0	0.21	12.0	15.0	267.0	16.0	3382	-	-
72	136	91.0%	0.7%	0.3%	7.7%	2.0%	4.9%	0.4%	100.0%	16.0	0.41	13.0	24.0	153.0	1.0	12	-	-
73	904	9.9%	15.6%	4.3%	64.5%	42.8%	0.4%	5.8%	100.0%	73.0	10.57	611.0	1013.0	1182.0	2.0	-	9	-
74	1210	27.8%	11.8%	1.8%	56.4%	2.4%	2.6%	2.2%	100.0%	44.0	3.63	28.0	114.0	128.0	650.0	0	-	-
75	718	23.5%	17.7%	16.4%	0.0%	0.0%	0.0%	0.5%	58.1%	3.8	1.20	4.5	58.8	73.8	16.5	36	-	-
76	176	88.0%	1.5%	0.3%	9.2%	1.8%	1.6%	1.0%	100.0%	43.0	0.70	20.0	115.0	300.0	100.0	0	-	-
77	619	71.4%	20.8%	6.6%	0.0%	0.0%	0.0%	1.2%	100.0%	43.0	1.50	22.0	245.0	361.0	52.0	57	-	-

DM = dry matter, CP = crude protein, CFat = crude fat, CBD = carbohydrates by difference, NFC = non fibre carbohydrates, CFibre = crude fibre, Ca = calcium, P = phosphorus, Na = sodium, K = potassium, Mg = magnesium, Fe = iron, A = vitamin A, BC = beta carotene, D = vitamin D

Appendix VII – Diet from the institutions

In the following tables from every institution the individual diets for the bears are listed. The information is rendered for one bear, per day and in kilogram.

6 Emmen Zoo

	Apple	Bread	Fish freshwater	Fruit diverse	Gras	Mackerel	Meat 15% fat	Sup-plements*	Dog chow**	Total kg
Jan							1.000	0.005	0.250	1.255
Feb		0.400					1.000	0.005	0.250	1.655
Mar	0.500	0.400					1.000	0.005	0.500	2.405
Apr	1.000	0.800			2.000		1.000	0.005	0.500	5.305
May	1.000	0.800			2.000		1.500	0.005	0.500	5.805
Jun	2.000	0.800	1.000		2.000		1.500	0.005	0.500	7.805
Jul	2.000	0.800	2.000	2.000	2.000		2.000	0.005	0.500	11.305
Aug	2.000	0.800	1.000	2.000	2.000	1.000			0.500	9.300
Sep		0.800		2.000	2.000	2.000			0.500	7.300
Oct		0.800		2.000	2.000	2.000			0.500	7.300
Nov		0.400	1.000			1.000			0.250	2.650
Dec							1.000	0.005	0.250	1.255

**Supplement is Carnizoo and used over the meat*

***Dog chow is Konacorn, Croc senior menu*

7 Indianapolis Zoo

	Bone	Bread	Cereals	Fruit diverse*	Gras	Carnivore diet**	Omnivore***	Total kg
Year	2%	2%	5%	10%	18%	8%	60%	100.00%

Average fed energy per day 22867.5 kcal of 95741.6 kJ

**Fruit diverse are apples, berries, melons etc.*

***Carnivore diets is Natural Balance 5% fat carnivore diet*

****Omnivore is Mazuri® Omnivor-Zoo Feed "A"*

12 Pittsburgh Zoo

	Apple	Carrot	Dog chow	Herring	Omnivore*	Orange	Sweet potato	Total kg
Year	0.200	0.152	0.336	0.680	0.908	0.200	0.250	2.726

**Omnivor is Mazuri® Omnivor-Zoo Feed "A"*

1 time per month 1 bone

4 capsule of cranberry (475 mg) per day

15 Silver Springs Natures Theme Park

	Apple	Carrot	Dog chow*	Fish oil	Lettuce	Orange	Sweet potato	Total kg
Year	0.480	0.920	1.987	0.075	0.960	0.233	0.747	5.402

**Dog chow survey 15 Silver Springs*

Other food items that are used sometimes: natural cereal, pineapples, cantaloupes, corn on the cob, grapes, watermelons, pumpkins, pears, broccoli, yogurt, peaches, grapefruit, small fish and other fruits and vegetables.

18 Tierpark Hagenbeck GmbH

	Apple	Banana	Bread	Carrot	Chicken	Dog chow	Egg cooked	Meat 15% fat	Onions	Orange	Potatoes	Red beets	Rice	Total kg
Feb	2.000	0.219	0.188	1.500	0.215	0.500	0.061	0.429	0.165	0.181	1.500	0.082	0.786	7.825

21 Zoo Duisburg AG

	Apple	Carrot	Dog chow	Gras	Meat 15% fat	Trout whole*	Total kg
Year	3.780	3.780	0.641	6.000	5.000	1.607	20.808

**Trout are fed alive*

25 Assiniboine Park Zoo

	Apple	Bread	Carrot	Dog chow	Liver	Wieners	Total kg
Apr	0.438	0.123	0.318	0.817	0.750	0.810	3.254
May	0.438	0.123	0.318	0.817	0.750	0.810	3.254
Jun	0.438	0.123	0.318	0.817	0.750	0.810	3.254
Jul	0.438	0.123	0.318	0.817	0.750	0.810	3.254
Aug	0.438	0.123	0.318	0.817	0.750	0.810	3.254
Sep	0.438	0.123	0.318	0.817	0.750	0.810	3.254
Oct	0.438	0.123	0.318	0.817	0.750	0.810	3.254
Nov	0.438	0.123	0.318	0.817	0.750	0.000	2.444

January. February, Mart and December bears are in hibernation

33 Columbus Zoo

Diet 1 for a 400 kg bear

	Apple	Banana	Carrot	Carnivore diet*	Omnivore**	Pears	Salmon filet with skin	Sweet potato	Trout whole	Total kg
Year	0.180	0.180	0.018	0.880	3.340	0.160	0.080	0.680	1.190	6.708

Diet 2 for a 250 kg bear

	Apple	Carrot	Carnivore diet*	Omnivore**	Pears	Salmon filet with skin	Sweet potato	Tomato	Trout whole	Total kg
Year	0.129	0.231	0.778	1.866	0.014	0.080	0.583	0.014	0.486	4.181

**Carnivore diet Natural Balance 10% fat carnivore diet*

***Omnivor Mazuri® Omnivor-Zoo Feed "A"*

34 Dakota Zoo

Apple	Bread	Cherries	Dog chow	Fish	Grapes	Lettuce	Meat 15% fat	Pears

Approximately 10-12.5 kg each, depending upon how much is left the day before from feeding.

37 Great Plains Zoo

	Apple	Bread	Broccoli	Carnivore meat*	Carrot	Dog chow**	Fish	Sweet potato	Total kg
Jan	0.600	0.400	0.300	0.986	0.400	2.100	0.900	1.000	6.686
Feb	0.600	0.400	0.300	0.986	0.400	3.600	0.900	1.000	8.186
Mar	0.600	0.400	0.600	0.986	0.400	4.500	0.900	2.000	10.386
Apr	0.600	0.400	0.600	0.986	0.400	4.500	0.900	2.000	10.386
May	0.600	0.400	0.600	0.986	0.400	4.500	0.900	2.000	10.386
Jun	0.600	0.400	0.600	0.986	0.400	4.500	0.900	2.000	10.386
Jul	0.600	0.400	0.600	0.986	0.400	4.500	0.900	2.000	10.386
Aug	0.600	0.400	0.600	0.986	0.400	4.500	0.900	2.000	10.386
Sep	0.600	0.400	0.600	0.986	0.400	4.500	0.900	2.000	10.386
Oct	0.800	0.400	0.600	0.986	0.600	3.600	0.900	3.000	10.886
Nov	0.800	0.400	0.600	0.986	0.600	3.600	0.900	3.000	10.886
Dec	0.600	0.400	0.300	0.986	0.400	2.100	0.900	1.000	6.686

**Carnivore meat is Triple A carnivore meat*

***Dog chow is Purina Exclusive*

44 Little Rock Zoo

	Apple	Bamboo	Bone	Cat diet	Clover	Corn on the cob	Dog chow*	Egg cooked	Grape-fruit	Gras	Meal-worms	Mulberry	Orange	Tomato	Vetch	Willow	Total kg
Mar	0.125	0.371	0.437		0.021	0.079	0.227	0.014	0.028	0.021	0.008	0.082	0.021	0.018	0.124	0.062	1.637
Apr	0.250	0.371	0.437		0.021	0.079	0.397	0.014	0.028	0.021	0.008	0.082	0.021	0.018	0.124	0.062	1.932
May	0.375	0.371	0.437	1.134	0.021	0.079	0.794	0.014	0.028	0.021	0.008	0.082	0.021	0.018	0.124	0.062	3.588
Jun	0.375	0.371	0.437	1.512	0.021	0.079	0.907	0.014	0.028	0.021	0.008	0.082	0.021	0.018	0.124	0.062	4.079
Jul	0.375	0.053	0.437	2.268		0.079	0.851	0.014	0.028		0.008	0.012	0.021	0.018	0.018	0.009	4.190
Aug	0.375	0.053	0.437	2.268		0.079	1.315	0.014	0.028		0.008	0.012	0.021	0.018	0.018	0.009	4.655
Sep	0.375	0.053	0.437	2.268		0.079	1.576	0.014	0.028		0.008	0.012	0.021	0.018	0.018	0.009	4.916
Oct	0.375		0.437	2.268		0.079	1.293	0.014	0.028		0.008	0.000	0.021	0.018			4.541
Nov	0.375		0.437	2.268		0.079	0.692	0.014	0.028		0.008	0.000	0.021	0.018			3.940
Dec	0.375		0.437	0.794		0.079	0.102	0.014	0.028		0.008	0.000	0.021	0.018			1.876

January and February bears are in Hibernation

**Dog chow is a mix from 50% Purina dog chow, 25% pounds Hills science diet canine maintenance and 25% pounds Nebraska Brand Omnivore diet*

47 Nikolaev Zoo

	Bran wheat	Bread	Cab-bage	Carrot	Cereals	Corn on the cob	Fish	Dog Chow*	Fruit diverse	Meat 15% fat	Okra	Pump-kin	Salt	Sugar beets	Tomato	Vege-table div.	Water-melon	Total kg
Jan	0.100	1.000		0.500	0.500		1.000	0.050	0.500	1.000	0.200		0.010	0.500	0.000	0.000	0.000	5.360
Feb	0.100	1.000		0.500	0.500		1.000	0.050	0.500	1.000	0.200		0.010	0.500	0.000	0.000	0.000	5.360
Mar	0.100	1.000		0.500	0.500		1.000	0.050	0.500	1.000	0.200		0.010	0.500	0.000	0.000	0.000	5.360
Apr	0.100	1.500	0.200	1.000	0.500		2.000	0.050	1.000	2.000	0.200		0.010	1.000	0.000	0.000	0.000	9.560
May	0.100	1.500	0.200	1.000	0.500		2.000	0.050	1.000	2.000	0.200		0.010	1.000	0.000	0.000	0.000	9.560
Jun	0.100	1.500	0.200	1.000	0.500		2.000	0.050	1.000	2.000	0.200		0.010	1.000	0.000	0.000	0.000	9.560
Jul	0.100	3.000	0.500	2.000	0.500	3.000	2.000	0.050	1.000	2.000	0.200		0.010	1.000	1.000	1.000	4.000	21.360
Aug	0.100	3.000	0.500	2.000	0.500	3.000	2.000	0.050	1.000	2.000	0.200		0.010	1.000	1.000	1.000	4.000	21.360
Sep	0.100	3.000	0.500	2.000	0.500	3.000	2.000	0.050	1.000	2.000	0.200		0.010	1.000	1.000	1.000	4.000	21.360
Oct	0.100	4.000	0.500	1.000	0.500		3.000	0.050	1.000	2.000	0.200	1.000	0.010	1.000	1.000	0.000	4.000	19.360
Nov	0.100	4.000	0.500	1.000	0.500		3.000	0.050	1.000	2.000	0.200	1.000	0.010	1.000	1.000	0.000	4.000	19.360
Dec	0.100	4.000	0.500	1.000	0.500		3.000	0.050	1.000	2.000	0.200	1.000	0.010	1.000	1.000	0.000	4.000	19.360

**Dog chow is Fodder's yeasts*

48 North Carolina Zoological Park

Bear Yepani

	Diet type	Apple	Carrot	Cat diet*	Dog chow	Herring	Omnivore**	Orange	Sweet potato	Total kg
Jan	Diet 5	0.397	0.369	0.283	0.539	0.736	0.510	0.283	0.340	3.458
Feb	Diet 2,5	0.198	0.184	0.142	0.283	0.368	0.241	0.142	0.170	1.729
Mar	Diet 2	0.170	0.142	0.113	0.227	0.368	0.198	0.113	0.142	1.474
Apr	Diet 3	0.227	0.227	0.170	0.340	0.368	0.283	0.170	0.198	1.984
May	Diet 4	0.312	0.283	0.227	0.425	0.368	0.397	0.227	0.283	2.523
Jun	Diet 4	0.312	0.283	0.227	0.425	0.368	0.397	0.227	0.283	2.523
Jul	Diet 5	0.397	0.369	0.283	0.539	0.736	0.510	0.283	0.340	3.458
Aug	Diet 7	0.567	0.510	0.397	0.765	1.104	0.709	0.397	0.482	4.931
Sep	Diet 8	0.624	0.567	0.454	0.879	1.104	0.794	0.454	0.539	5.413
Oct	Diet 12	0.964	0.879	0.680	1.304	1.472	1.191	0.680	0.822	7.992
Nov	Diet 12	0.964	0.879	0.680	1.304	1.472	1.191	0.680	0.822	7.992
Dec	Diet 9	0.709	0.652	0.510	0.964	1.472	0.907	0.510	0.624	6.348

Bear Tommo

	Diet type	Apple	Carrot	Cat diet*	Dog chow	Herring	Omnivore**	Orange	Sweet potato	Total kg
Jan	Diet 5	0.595	0.539	0.397	0.822	0.736	0.737	0.397	0.510	4.733
Feb	Diet 2.5	0.298	0.269	0.213	0.397	0.368	0.383	0.213	0.255	2.395
Mar	Diet 2	0.227	0.227	0.170	0.312	0.368	0.312	0.170	0.198	1.984
Apr	Diet 3	0.369	0.312	0.255	0.482	0.368	0.454	0.255	0.312	2.806
May	Diet 4	0.482	0.454	0.340	0.652	0.368	0.595	0.340	0.397	3.628
Jun	Diet 5	0.595	0.539	0.397	0.822	0.736	0.737	0.397	0.510	4.733
Jul	Diet 6.5	0.765	0.709	0.524	1.063	0.920	0.978	0.524	0.666	6.151
Aug	Diet 7	0.822	0.765	0.567	1.134	1.104	1.049	0.567	0.709	6.717
Sep	Diet 8	0.964	0.879	0.652	1.304	1.104	1.191	0.652	0.822	7.568
Oct	Diet 10.5	1.247	1.134	0.865	1.446	1.472	1.573	0.865	1.077	9.679
Nov	Diet 10.5	1.247	1.134	0.865	1.446	1.472	1.573	0.865	1.077	9.679
Dec	Diet 9	1.077	0.992	0.737	1.474	1.472	1.332	0.737	0.907	8.730

**Cat diet is Nebraska Feline Diet*

***Omnivore Mazuri® Omnivor-Zoo Feed "A"*

49 Northwest Trek Wildlife Park

	Omnivore*	Produce**	Total kg
Jan	0.907	1.134	2.041
Feb	0.907	1.134	2.041
Mar	0.907	1.134	2.041
Apr	6.804	1.814	8.618
May	6.804	1.814	8.618
Jun	6.804	1.814	8.618
Jul	6.804	1.814	8.618
Aug	6.804	1.814	8.618
Sep	6.804	1.814	8.618
Oct	6.804	1.814	8.618
Nov	0.907	1.134	2.041
Dec	0.907	1.134	2.041

**Omnivor Mazuri® Omnivor-Zoo Feed "A"*

***Produce is out apples, grapes blueberries, carrots, yams, lettuce, raisins, cantaloupe, honeydews, strawberries and seasonal fruits and vegetables*

56 Saint Louis Zoo

	Cat diet	Fish *	Omnivore	Total kg
Jan	0.300	0.227	0.900	1.427
Feb	0.300	0.227	0.900	1.427
Mar	0.300	0.227	0.900	1.427
Apr	0.500	0.378	1.500	2.378
May	0.700	0.529	2.100	3.329
Jun	0.900	0.680	2.700	4.280
Jul	0.900	0.680	2.700	4.280
Aug	0.900	0.680	2.700	4.280
Sep	0.900	0.680	2.700	4.280
Oct	0.700	0.529	2.100	3.329
Nov	0.500	0.378	1.500	2.378
Dec	0.300	0.227	0.900	1.427

**Fish are mackerel, herring or chicken, backs and necks*

Supplement 1 to 3 ml Thiamine-E past daily

104 Ouwehands Zoo

Part 1

	Apple	Bread	Carrot	Celeriac	Corn on the cob	Endive	Fish	Kohlrabi	Lettuce	Mackerel	Meat 15% fat	Nuts	Ox heart	Pears	Potatoes
Jan*			0.000								0.080	0.140			
Feb	0.150		0.000									0.140		0.800	
Mar	0.340		0.290			0.400		0.047	0.300		0.793	0.107		0.000	0.053
Apr	0.720	0.800	0.770			0.400		0.100	0.300		0.780		0.310		0.120
May	0.720	0.800	0.770	0.060		0.400		0.100	0.300		0.780		0.310		0.120
Jun	0.720	0.800	0.770			0.400	0.220	0.100	0.300	0.163	0.780		0.310		
Jul	1.160	0.043	0.450			0.800	0.460		0.900	0.270	1.320	0.070	0.400		
Aug	1.160	0.043	0.450		0.083	0.800	0.460		0.990	0.270	1.320	0.070	0.400	0.320	
Sep	1.160	0.043	0.450		0.083	0.800			0.900	0.270	1.320	0.070	0.400	0.640	
Oct	0.550				0.083					0.187	0.470	0.720		0.640	
Nov*	0.550										0.470	0.720		0.640	
Dec*	0.550										0.470	0.527		0.640	

Part 2

	Prunes	Raisins	Red beets	Sugar beets	Watermelon	Total kg
Jan*						0.220
Feb						1.090
Mar						2.330
Apr						4.300
May				0.060		4.420
Jun						4.563
Jul					0.600	6.473
Aug	0.120	0.050			0.600	7.135
Sep	0.020	0.010	0.317	0.053		6.535
Oct			0.250	0.120		3.019
Nov*						2.380
Dec*						2.187

**Fed when awake*

Appendix VIII – Calculated energy, fat and protein in de different diets

Table X.1 – Calculated energy in de different diets.

	Month	*6	7	12	15	18	21	25	33a	33b	34	37	44	47	48a	48b	49	56	104	Ø MJ	Median
MJ per bear and day	Jan	12.3	-	25.4	34.2	-	84.4	0.0	63.0	36.5	-	59.3	0.0	39.3	26.7	36.5	15.7	13.5	4.4	30.1	26.7
	Feb	17.2	-	25.4	34.2	32.3	84.4	0.0	63.0	36.5	-	84.1	0.0	39.3	13.3	18.4	15.7	13.5	5.9	30.2	21.9
	Mar	21.6	-	25.4	34.2	-	84.4	0.0	63.0	36.5	-	104.3	8.2	39.3	11.4	15.3	15.7	13.5	11.8	32.3	21.6
	Apr	29.4	-	25.4	34.2	-	84.4	30.0	63.0	36.5	-	104.3	10.9	65.0	15.3	21.5	99.1	22.4	22.0	44.2	30.0
	May	33.9	-	25.4	34.2	-	84.4	30.0	63.0	36.5	-	104.3	24.7	65.0	19.3	27.6	99.1	31.4	22.2	46.8	33.9
	Jun	40.9	-	25.4	34.2	-	84.4	30.0	63.0	36.5	-	104.3	29.0	65.0	19.3	36.5	99.1	40.4	24.5	48.8	36.5
	Jul	57.3	-	25.4	34.2	-	84.4	30.0	63.0	36.5	-	104.3	32.4	94.3	26.7	47.5	99.1	40.4	26.6	53.5	40.4
	Aug	43.2	95.7	25.4	34.2	-	84.4	30.0	63.0	36.5	-	104.3	39.0	94.3	38.1	51.8	99.1	40.4	29.3	54.2	40.4
	Sep	42.6	-	25.4	34.2	-	84.4	30.0	63.0	36.5	-	104.3	42.8	94.3	41.9	58.1	99.1	40.4	25.4	54.8	42.6
	Oct	42.6	-	25.4	34.2	-	84.4	30.0	63.0	36.5	-	95.2	38.5	109.1	61.4	72.8	99.1	31.4	28.3	56.8	42.6
	Nov	21.5	-	25.4	34.2	-	84.4	18.9	63.0	36.5	-	95.2	29.9	109.1	61.4	72.8	15.7	22.4	25.9	47.8	34.2
	Dec	12.3	-	25.4	34.2	-	84.4	0.0	63.0	36.5	-	59.3	11.2	109.1	49.0	67.2	15.7	13.5	20.8	40.1	34.2

**Number institution*

Table X.2 – Calculated crude protein in de different diets.

	Month	*6	7	12	15	18	21	25	33a	33b	34	37	44	47	48a	48b	49	56	104	Ø MJ	Median
Crude fat per bear and day in gram	Jan	170	-	205	201	-	989	0	390	225	-	617	0	298	241	307	71	92	97	260	205
	Feb	177	-	205	201	171	989	0	390	225	-	917	0	298	121	155	71	92	86	256	174
	Mar	198	-	205	201	-	989	0	390	225	-	1099	112	298	108	134	71	92	186	287	198
	Apr	220	-	205	201	-	989	372	390	225	-	1099	132	548	135	175	521	153	148	368	220
	May	295	-	205	201	-	989	372	390	225	-	1099	315	548	161	217	521	214	149	393	295
	Jun	334	-	205	201	-	989	372	390	225	-	1099	374	548	161	307	521	276	190	413	334
	Jul	450	-	205	201	-	989	372	390	225	-	1099	449	606	241	396	521	276	342	451	390
	Aug	252	-	205	201	-	989	372	390	225	-	1099	504	606	349	440	521	276	344	451	372
	Sep	351	-	205	201	-	989	372	390	225	-	1099	534	606	376	482	521	276	303	462	376
	Oct	351	-	205	201	-	989	372	390	225	-	922	500	691	537	607	521	214	537	484	500
	Nov	203	-	205	201	-	989	127	390	225	-	922	429	691	537	607	71	153	510	417	390
	Dec	170	-	205	201	-	989	0	390	225	-	617	183	691	453	575	71	92	392	350	225

**Number institution-*

Table X.3 – Calculated crude fat in de different diets.

	Month	*6	7	12	15	18	21	25	33a	33b	34	37	44	47	48a	48b	49	56	104	Ø MJ	Median
Crude protein per bear and day in gram	**Jan**	229	-	419	395	-	1669	0	1274	738	-	1055	0	598	429	574	239	338	36	533	419
	Feb	276	-	419	395	318	1669	0	1274	738	-	1505	0	598	214	290	239	338	24	519	328
	Mar	319	-	419	395	-	1669	0	1274	738	-	1799	177	598	185	244	239	338	178	572	338
	Apr	442	-	419	395	-	1669	440	1274	738	-	1799	214	1042	243	336	1721	564	316	774	442
	May	535	-	419	395	-	1669	440	1274	738	-	1799	504	1042	303	427	1721	789	317	825	535
	Jun	726	-	419	395	-	1669	440	1274	738	-	1799	597	1042	303	574	1721	1015	384	873	726
	Jul	1026	-	419	395	-	1669	440	1274	738	-	1799	682	1341	429	745	1721	1015	499	946	745
	Aug	652	-	419	395	-	1669	440	1274	738	-	1799	783	1341	614	818	1721	1015	507	946	783
	Sep	644	-	419	395	-	1669	440	1274	738	-	1799	839	1341	672	910	1721	1015	422	953	839
	Oct	644	-	419	395	-	1669	440	1274	738	-	1547	772	1565	976	1144	1721	789	241	956	789
	Nov	464	-	419	395	-	1669	348	1274	738	-	1547	642	1565	976	1144	239	564	199	812	642
	Dec	229	-	419	395	-	1669	0	1274	738	-	1055	249	1565	792	1061	239	338	170	680	419

**Number institution*

Appendix IX – Sampling food and faeces in Emmen Zoo

From every food item that the bears got fed, 5% was taken in the period of 25.03.08 to 01.04.08. The total weight of every food item and the calculated and effective amount of food taken away are listed in Table XII.1. Furthermore the effective percentages of the food samples that were taken away are calculate. The amount of collected faeces and an estimation of the percentage that was collected from the total produce faeces are listed in Table XII.2.

Table XII.1 – Sample collection in the period from 25.3.08 to 1.4.08 in Emmen Zoo with the total weight per food item and the calculated and effective amount taken away.

Day 1 (25.03)	**Amount (g)**	**5 % of item**	**Sample taken**	**% effective amount**
Apples	4287.22	214.36	214.44	5.00%
Bread	2393.40	119.67	119.67	5.00%
Dog chow	1396.50	69.83	69.82	5.00%
Freshwater fish	5115.97	255.80	255.03	4.98%
Total	13193.09	659.65	658.96	4.99%
Day 2 (26.03)	**Amount (g)**	**5 % of item**	**Sample taken**	**% effective amount**
Apples	2755.60	137.78	131.59	4.78%
Beef	6000.00	300.00	300.00	5.00%
Bread	2440.90	122.05	122.65	5.02%
Carrots	1662.80	83.14	81.15	4.88%
Dog chow	1580.90	79.05	79.61	5.04%
Maïskiem horse cakes	459.24	22.96	22.15	4.82%
Total	14899.44	744.97	737.15	4.95%
Day 3 (27.03)	**Amount (g)**	**5 % of item**	**Sample taken**	**% effective amount**
Apples	2446.10	122.31	122.94	5.03%
Bread	1345.70	67.29	67.56	5.02%
Carrots	4198.50	209.93	202.16	4.82%
Dog chow	1617.60	80.88	80.90	5.00%
Fish (Mackerel)	2996.90	149.85	145.66	4.86%
Lams Cat cracker	456.14	22.81	22.97	5.04%
Total	13060.94	653.05	642.19	4.92%
Day 4 (28.03)	**Amount (g)**	**5 % of item**	**Sample taken**	**% effective amount**
Apples	2680.90	134.05	131.34	4.90%
Bread	2437.30	121.87	121.30	4.98%
Carrots	1604.50	80.23	79.93	4.98%
Dog chow	1385.70	69.29	69.88	5.04%
Total	8108.40	405.42	402.45	4.96%

Continuation from Table XII.1

Day 5 (29.03)	**Amount (g)**	**5 % of item**	**Sample taken**	**% effective amount**
Apples	2273.00	113.65	113.96	5.01%
Bread	2412.90	120.65	120.75	5.00%
Carrots	502.96	25.15	25.12	4.99%
Dog chow	1507.20	75.36	75.35	5.00%
Fish	2310.00	115.50	115.36	4.99%
Freshwater fish	*7965.90	398.30	398.93	5.01%
Maïskiem horse cakes	612.740	30.64	30.97	5.05%
Cherry-pick	**	**	**	**
Total	17584.70	879.24	880.44	5.01%
**348.35 g freshwater fish were not eaten by Greta* ***Cherry-pick were fed but not measured and no sample was taken*				
Day 6 (30.03)	**Amount (g)**	**5 % of item**	**Sample taken**	**% effective amount**
Apples	2347.80	117.39	117.36	5.00%
Bread	2425.40	121.27	121.41	5.01%
Carrots	1003.40	50.17	50.88	5.07%
Dog chow	1417.50	70.88	70.87	5.00%
Freshwater fish	6789.20	339.46	338.63	4.99%
Lams Cat cracker	465.62	23.28	23.29	5.00%
Total	14448.92	722.45	722.44	5.00%
Day 7 (31.03)	**Amount (g)**	**5 % of item**	**Sample taken**	**% effective amount**
Apples	2339.7	116.99	114.05	4.87%
Bread	2435.1	121.76	121.66	5.00%
Carrots	554.65	27.73	32.80	5.91%
Dog chow	1509.2	75.46	75.20	4.98%
Fish	5318.6	265.93	268.54	5.05%
Maïskiem horse cakes	462.02	23.10	20.91	4.53%
Total	12619.27	630.96	633.16	5.02%

Table XII.2 – Collecting faeces and an estimate of the total produces faeces

Faeces sampling	**Amount collected faeces (kg)**	**Estimated collected % of total faeces**	**Total (kg)**
Day 2 (26.03)	8.00	90%	8.89
Day 3 (27.03)	7.00	81%	8.64
Day 4 (28.03)	7.00	81%	8.64
Day 5 (29.03)	5.80	70%	8.29
Day 6 (30.03)*	2.50	50%	5.00
Day 7 (31.03)*	8.00	-	8.00
Day 8 (01.04)	6.20	-	6.20
Average	6.36	0.74	7.67

**Outside no faeces was found and faeces was thin*
***Faeces was thin*

Appendix X – Data of samples and diet Emmen Zoo

Table XIII.1a – Data of the samples from Emmen Zoo.

Emmen Zoo Samples

	Apple	Bread	Carrot	Dog chow*	Fish freshwater	Mackerel	Meat 30% fat	Dog chow**	Total Kg
25.3	0.214	0.120	0.000	0.000	0.255	0.000	0.000	0.070	0.659
26.3	0.138	0.123	0.081	0.022	0.000	0.000	0.300	0.080	0.743
27.3	0.123	0.068	0.202	0.023	0.000	0.146	0.000	0.081	0.642
28.3	0.131	0.121	0.080	0.000	0.000	0.000	0.000	0.070	0.402
29.3	0.114	0.121	0.025	0.031	0.514	0.000	0.000	0.075	0.880
30.3	0.117	0.121	0.051	0.023	0.339	0.000	0.000	0.071	0.722
31.3	0.114	0.122	0.033	0.021	0.269	0.000	0.000	0.075	0.633
Average	0.136	0.114	0.067	0.017	0.197	0.021	0.043	0.075	0.669

**Dog chow Maïskiem horse cakes and Lams Cat cracker*

***Dog chow Emmen is Konacorn, Croc senior menu*

Table XIII.1a – Data of the diet from Emmen Zoo in the collecting period.

Emmen Zoo diet per bear and day

	Apple	Bread	Carrot	Dog chow*	Fish freshwater	Mackerel	Meat 30% fat	Dog chow**	Total Kg
25.3	1.429	0.798	0.000	0.000	1.705	0.000	0.000	0.466	4.398
26.3	0.919	0.814	0.554	0.153	0.000	0.000	2.000	0.527	4.966
27.3	0.815	0.449	1.400	0.152	0.000	0.999	0.000	0.539	4.354
28.3	0.894	0.812	0.535	0.000	0.000	0.000	0.000	0.462	2.703
29.3	0.758	2.413	0.168	0.204	3.309	0.000	0.000	0.502	7.354
30.3	0.783	0.808	0.334	0.155	2.263	0.000	0.000	0.473	4.816
31.3	0.780	0.812	0.185	0.154	1.773	0.000	0.000	0.503	4.206
Average	0.911	0.986	0.454	0.117	1.293	0.143	0.286	0.496	4.685

**Maïskiem horse cakes and Lams Cat cracker*

***Dog chow is Konacorn, Croc senior menu*

Appendix XI – Dry Matter analyses

Food

Id-code	Weight (g) box	Initial weight (g) sample	Weight (g) dried box	Final weight (g) dried sample	% DM	Moisture
KBFood25.03.2008	1003.64	652.26	1235.57	231.93	35.56%	64.44%
KBFood26.03.2008	420.77	731.94	771.26	350.49	47.89%	52.11%
KBFood27.03.2008	1003.92	631.34	1239.18	235.26	37.26%	62.74%
KBFood28.03.2008	1004.76	400.26	1165.51	160.75	40.16%	59.84%
KBFood29.03.3008	409.83	859.38	723.54	313.71	36.50%	63.50%
KBFood30.03.2008	1004.05	719.73	1283.24	279.19	38.79%	61.21%
KBFood31.03.2008	413.00	632.72	656.22	243.22	38.44%	61.56%

DM = dry matter

% DM = (Weight (g) dried box - Weight (g) box) / Initial weight (g) sample

Faeces

Id-code	Weight (g) box	Initial weight (g) sample	Weight (g) dried box	Final weight (g) dried sample	% DM	Moisture
KBFaeces26.03.2008	85.81	246.41	133.17	47.36	19.22%	80.78%
KBFaeces27.03.2008	88.29	244.41	127.39	39.10	16.00%	84.00%
KBFaeces28.03.2008	88.88	240.10	135.27	46.39	19.32%	80.68%
KBFaeces29.03.2008	88.95	244.81	133.79	44.84	18.32%	81.68%
KBFaeces30.03.2008	84.13	221.25	125.98	41.85	18.92%	81.08%
KBFaeces31.03.2008	89.42	235.55	132.17	42.75	18.15%	81.85%
KBFaeces01.04.2008	77.95	244.32	122.39	44.44	18.19%	81.81%

DM = dry matter

% DM = (Weight (g) dried box - Weight (g) box) / Initial weight (g) sample

Appendix XII – Dry matter of air dry matter calculation

Food

Id-code	Weight (g) crucible	Weight (g) food sample	Weight (g) dried crucible	Weight (g) dried sample	% DM	Moisture
KBFood25.03.2008a	17.2188	5.2204	22.2622	5.0434	96.61%	3.39%
KBFood25.03.2008b	16.7791	5.4504	22.0439	5.2648	96.59%	3.41%
KBFood26.03.2008a	13.9446	5.4956	19.3365	5.3919	98.11%	1.89%
KBFood26.03.2008b	14.7949	5.2150	19.9044	5.1095	97.98%	2.02%
KBFood27.03.2008a	14.7119	5.0443	19.6542	4.9423	97.98%	2.02%
KBFood27.03.2008b	16.0637	5.3310	21.2884	5.2247	98.01%	1.99%
KBFood28.03.2008a	14.5561	5.2189	19.6409	5.0848	97.43%	2.57%
KBFood28.03.2008b	13.8136	5.6989	19.3679	5.5543	97.46%	2.54%
KBFood29.03.2008a	16.3003	5.0174	21.1610	4.8607	96.88%	3.12%
KBFood29.03.2008b	15.0059	5.1178	19.9648	4.9589	96.90%	3.10%
KBFood30.03.2008a	13.9279	5.5585	19.3538	5.4259	97.61%	2.39%
KBFood30.03.2008b	14.5262	5.2897	19.6892	5.1630	97.60%	2.40%
KBFood31.03.2008a	15.1171	5.5515	20.5179	5.4008	97.29%	2.71%
KBFood31.03.2008b	13.2240	5.1359	18.2193	4.9953	97.26%	2.74%

DM = dry matter; AD = air dry matter
DM of AD = weight dried sample / weight food sample

Id-code	a	b	Average %	Low -3% Average %	High +3% Average %	Absolute %	Deviation
KBFood25.03.2008	96.61%	96.59%	96.60%	93.70%	99.50%	0.01%	1.00
KBFood26.03.2008	98.11%	97.98%	98.05%	95.10%	100.99%	0.14%	1.00
KBFood27.03.2008	97.98%	98.01%	97.99%	95.05%	100.93%	0.03%	1.00
KBFood28.03.2008	97.43%	97.46%	97.45%	94.52%	100.37%	0.03%	1.00
KBFood29.03.2008	96.88%	96.90%	96.89%	93.98%	99.79%	0.02%	1.00
KBFood30.03.2008	97.61%	97.60%	97.61%	94.68%	100.54%	0.01%	1.00
KBFood31.03.2008	97.29%	97.26%	97.27%	94.36%	100.19%	0.02%	1.00

Faeces

Id-code	Weight (g) crucible	Weight (g) food sample	Weight (g) dried crucible	Weight (g) dried sample	% DM	Moisture
KBFeaces26.03.2008a	12.2258	5.1847	17.2665	5.0407	97.22%	2.78%
KBFeaces26.03.2008b	13.1618	4.8402	17.8671	4.7053	97.21%	2.79%
KBFeaces27.03.2008a	13.8470	5.0782	18.7613	4.9143	96.77%	3.23%
KBFeaces27.03.2008b	14.2831	5.2307	19.3442	5.0611	96.76%	3.24%
KBFeaces28.03.2008a	15.4030	5.2354	20.5112	5.1082	97.57%	2.43%
KBFeaces28.03.2008b	13.0973	5.1224	18.0954	4.9981	97.57%	2.43%
KBFeaces29.03.2008a	15.0052	5.1504	20.0093	5.0041	97.16%	2.84%
KBFeaces29.03.2008b	12.7576	5.0004	17.6144	4.8568	97.13%	2.87%
KBFeaces30.03.2008a	14.6980	5.1252	19.6652	4.9672	96.92%	3.08%
KBFeaces30.03.2008b	14.2750	5.3064	19.4172	5.1422	96.91%	3.09%
KBFeaces31.03.2008a	14.4405	5.1565	19.4488	5.0083	97.13%	2.87%
KBFeaces31.03.2008b	13.5058	4.9100	18.2807	4.7749	97.25%	2.75%
KBFeaces01.04.2008a	14.2476	4.8658	18.9848	4.7372	97.36%	2.64%
KBFeaces01.04.2008b	14.8380	5.3089	20.0082	5.1702	97.39%	2.61%

Id-code	a	b	Average %	Low -3% Average %	High +3% Average %	Absolute %	Deviation
KBFeaces26.03.2008	97.22%	97.21%	97.22%	94.30%	100.13%	0.01%	1.00
KBFeaces27.03.2008	96.77%	96.76%	96.77%	93.86%	99.67%	0.01%	1.00
KBFeaces28.03.2008	97.57%	97.57%	97.57%	94.64%	100.50%	0.00%	1.00
KBFeaces29.03.2008	97.16%	97.13%	97.14%	94.23%	100.06%	0.03%	1.00
KBFeaces30.03.2008	96.92%	96.91%	96.91%	94.00%	99.82%	0.01%	1.00
KBFeaces31.03.2008	97.13%	97.25%	97.19%	94.27%	100.10%	0.12%	1.00
KBFeaces01.04.2008	97.36%	97.39%	97.37%	94.45%	100.29%	0.03%	1.00

Appendix XIII – Ash analyses

Food

Id-code	Weight (g) crucible	Weight (g) Food sample	Weight (g) ashed crucible	Weight (g) ashed sample	% Ash AD	% Ash DM
KBFood25.03.2008a	22.6527	5.0257	23.0524	0.3997	7.95%	8.23%
KBFood25.03.2008b	15.2014	5.0008	15.5876	0.3862	7.72%	7.99%
KBFood25.03.2008c	22.4205	5.0081	22.7984	0.3779	7.55%	7.81%
KBFood26.03.2008a	23.4781	5.0880	23.6633	0.1852	3.64%	3.71%
KBFood26.03.2008b	21.4058	5.0141	21.5914	0.1856	3.70%	3.78%
KBFood26.03.2008c	23.6743	5.0396	23.8658	0.1915	3.80%	3.88%
KBFood27.03.2008a	19.1406	5.0386	19.4589	0.3183	6.32%	6.45%
KBFood27.03.2008b	16.4755	5.0564	16.7950	0.3195	6.32%	6.45%
KBFood27.03.2008c	15.8149	5.0726	16.1387	0.3238	6.38%	6.51%
KBFood28.03.2008a	18.5522	5.0382	18.8001	0.2479	4.92%	5.05%
KBFood28.03.2008b	22.7456	5.0408	22.9891	0.2435	4.83%	4.96%
KBFood28.03.2008c	22.6172	5.0310	22.8563	0.2391	4.75%	4.88%
KBFood29.03.3008a	21.1182	5.0413	21.5927	0.4745	9.41%	9.71%
KBFood29.03.3008b	28.6085	5.0404	29.0848	0.4763	9.45%	9.75%
KBFood29.03.3008c	26.5031	5.0044	26.9678	0.4647	9.29%	9.58%
KBFood30.03.2008a	15.5023	5.0722	15.8461	0.3438	6.78%	6.94%
KBFood30.03.2008b	19.2847	5.0654	19.6314	0.3467	6.84%	7.01%
KBFood30.03.2008c	22.6087	5.0171	22.9490	0.3403	6.78%	6.95%
KBFood31.03.2008a	15.4930	5.3535	15.9596	0.4666	8.72%	8.96%
KBFood31.03.2008b	14.7248	5.1640	15.1650	0.4402	8.52%	8.76%
KBFood31.03.2008c	23.1296	5.0160	23.5485	0.4189	8.35%	8.59%

Id-code	a	b	c	Average %	Low -3% Average %	High +3% Average %	Absolute %	Deviation
KBFood25.03.2008	8.23%	7.99%	7.81%	8.01%	7.77%	8.25%	0.42%	1.05
KBFood26.03.2008	3.71%	3.78%	3.88%	3.79%	3.69%	3.88%	0.16%	1.04
KBFood27.03.2008	6.45%	6.45%	6.51%	6.47%	6.31%	6.63%	0.07%	1.01
KBFood28.03.2008	5.05%	4.96%	4.88%	4.96%	4.84%	5.09%	0.17%	1.04
KBFood29.03.3008	9.71%	9.75%	9.58%	9.68%	9.44%	9.93%	0.17%	1.02
KBFood30.03.2008	6.94%	7.01%	6.95%	6.97%	6.79%	7.14%	0.06%	1.01
KBFood31.03.2008	8.96%	8.76%	8.59%	8.77%	8.55%	8.99%	0.37%	1.04

Faeces

Id-code	Weight (g) crucible	Weight (g) Food sample	Weight (g) ashed crucible	Weight (g) ashed sample	% Ash AD	% Ash DM
KBFaeces26.03.2008a	21.5000	4.0009	22.5383	1.0383	25.95%	26.69%
KBFaeces26.03.2008b	18.6110	4.0046	19.6322	1.0212	25.50%	26.23%
KBFaeces26.03.2008c	23.5650	4.0857	24.6195	1.0545	25.81%	26.55%
KBFaeces27.03.2008a	22.4078	4.0006	23.2525	0.8447	21.11%	21.82%
KBFaeces27.03.2008b	17.1961	4.0160	18.0384	0.8423	20.97%	21.67%
KBFaeces27.03.2008c	21.3564	4.0021	22.2361	0.8797	21.98%	22.72%
KBFaeces28.03.2008a	15.7587	4.0812	16.4861	0.7274	17.82%	18.27%
KBFaeces28.03.2008b	18.2620	4.0234	18.9859	0.7239	17.99%	18.44%
KBFaeces28.03.2008c	15.4746	4.0165	16.1952	0.7206	17.94%	18.39%
KBFaeces29.03.2008a	22.9900	4.0152	24.1952	1.2052	30.02%	30.90%
KBFaeces29.03.2008b	22.7625	4.0178	23.9594	1.1969	29.79%	30.67%
KBFaeces29.03.2008c	23.2615	4.0148	24.4768	1.2153	30.27%	31.16%
KBFaeces30.03.2008a	24.2867	4.0202	25.6241	1.3374	33.27%	34.33%
KBFaeces30.03.2008b	23.2062	4.0151	24.5347	1.3285	33.09%	34.14%
KBFaeces30.03.2008c	17.7833	4.0023	19.1019	1.3186	32.95%	34.00%
KBFaeces31.03.2008a	17.4333	4.0372	18.6312	1.1979	29.67%	30.53%
KBFaeces31.03.2008b	23.5290	4.0058	24.7584	1.2294	30.69%	31.58%
KBFaeces31.03.2008c	15.1956	4.0223	16.4019	1.2063	29.99%	30.86%
KBFaeces01.04.2008a	16.0425	4.0035	17.2282	1.1857	29.62%	30.42%
KBFaeces01.04.2008b	17.7607	3.9998	18.9200	1.1593	28.98%	29.77%
KBFaeces01.04.2008c	23.0000	4.0310	24.1563	1.1563	28.69%	29.46%

Id-code	a	b	c	Average %	Low -3% Average %	High +3% Average %	Absolute %	Deviation
KBFaeces26.03.2008	26.69%	26.23%	26.55%	26.49%	25.70%	27.29%	0.46%	1.02
KBFaeces27.03.2008	21.82%	21.67%	22.72%	*22.07%	21.52%	22.62%	1.04%	1.05
KBFaeces28.03.2008	18.27%	18.44%	18.39%	18.36%	17.91%	18.82%	0.17%	1.01
KBFaeces29.03.2008	30.90%	30.67%	31.16%	30.91%	30.14%	31.68%	0.49%	1.02
KBFaeces30.03.2008	34.33%	34.14%	34.00%	34.16%	33.30%	35.01%	0.33%	1.01
KBFaeces31.03.2008	30.53%	31.58%	30.86%	30.99%	30.21%	31.76%	1.05%	1.03
KBFaeces01.04.2008	30.42%	29.77%	29.46%	29.88%	29.13%	30.63%	0.96%	1.03

**Bigger difference between the duplicates then the permitted ± 3% of the mean*

Appendix XIV – Sand analyses

Faeces

Id-code	Weight AS (g)	Weight (g) glass crucible	Weight (g) ashed glass crucible	Sand (g) AD	% sand / g Ash	% sand AD	% sand DM
KBFaeces26.03.2008a	0.3459	40.7345	40.7928	0.0583	16.85%	4.46%	4.59%
KBFaeces26.03.2008b	0.3460	42.9316	42.9863	0.0547	15.81%	4.19%	4.31%
KBFaeces27.03.2008a	0.4003	47.9547	48.0456	0.0909	22.71%	5.01%	5.18%
KBFaeces27.03.2008b	0.4002	40.3442	40.4386	0.0944	23.59%	5.21%	5.38%
KBFaeces28.03.2008a	0.3950	39.0235	39.0844	0.0609	15.42%	2.83%	2.90%
KBFaeces28.03.2008b	0.3950	39.6513	39.7120	0.0607	15.37%	2.82%	2.89%
KBFaeces29.03.2008a	0.4435	42.1553	42.1806	0.0253	5.70%	1.76%	1.82%
KBFaeces29.03.2008b	0.4436	38.3185	38.3391	0.0206	4.64%	1.44%	1.48%
KBFaeces30.03.2008a	0.2376	40.2892	40.2941	0.0049	2.06%	0.70%	0.73%
KBFaeces30.03.2008b	0.2378	47.7397	47.7496	0.0099	4.16%	1.42%	1.47%
KBFaeces31.03.2008a	0.3956	39.1449	39.1683	0.0234	5.92%	1.83%	1.89%
KBFaeces31.03.2008b	0.3956	41.0917	41.1149	0.0232	5.86%	1.82%	1.87%
KBFaeces01.04.2008a	0.2816	41.5391	41.5805	0.0414	14.70%	4.39%	4.51%
KBFaeces01.04.2008b	0.2815	48.1829	48.2300	0.0471	16.73%	5.00%	5.13%

Id-code	a	b	Average %	Low -3% Average %	High +3% Average %	Absolute %	Deviation
KBFaeces26.03.2008	4.59%	4.31%	*4.45%	4.32%	4.58%	0.28%	1.07
KBFaeces27.03.2008	5.18%	5.38%	5.28%	5.12%	5.44%	0.20%	1.04
KBFaeces28.03.2008	2.90%	2.89%	2.90%	2.81%	2.98%	0.01%	1.00
KBFaeces29.03.2008	1.82%	1.48%	*1.65%	1.60%	1.70%	0.34%	1.23
KBFaeces30.03.2008	0.73%	1.47%	*1.10%	1.06%	1.13%	0.74%	2.02
KBFaeces31.03.2008	1.89%	1.87%	1.88%	1.82%	1.93%	0.02%	1.01
KBFaeces01.04.2008	4.51%	5.13%	*4.82%	4.68%	4.97%	0.62%	1.14

**Bigger difference between the duplicates then the permitted ± 3% of the mean*

Appendix XV – Crude Protein analyses

Formula

6.25 x 14 x *v* x *N* / *p* x 100 *% = % raw protein*

6.25	conversion factor 100 / 16
14	atom weight N
v	amount ml HCL
N	norm HCL
p	weight mg sample

Blanco's

Blanco 1	0.22
Blanco 2	error
Blanco 3	0.23
Blanco 4	0.28
Blanco 5	0.26
Blanco 6	0.26
Blanco 7	0.35
Blanco 8	0.33
Blanco average	**0.28**

AD =	Air dry matter
P =	Crude Protein
DM =	Dry matter

Food

Id-code sample	p (mg)	V (ml)	V (ml) - Blanco correction	N	% CP in AD	% CP DM
KBFood25.03.2008a	1190.0	35.45	35.17	0.1	25.86%	26.77%
KBFood25.03.2008b	1176.3	37.15	36.87	0.1	27.43%	28.39%
KBFood26.03.2008a	1156.3	27.06	26.78	0.1	20.27%	20.67%
KBFood26.03.2008b	1118.4	26.50	26.22	0.1	20.52%	20.93%
KBFood27.03.2008a	1199.8	29.11	28.83	0.1	21.03%	21.46%
KBFood27.03.2008b	1168.2	28.64	28.36	0.1	21.25%	21.68%
KBFood28.03.2008a	1079.3	19.36	19.08	0.1	15.47%	15.88%
KBFood28.03.2008b	1172.9	20.29	20.01	0.1	14.93%	15.32%
KBFood29.03.2008a	1186.2	47.80	47.52	0.1	35.06%	36.18%
KBFood29.03.2008b	1165.5	45.77	45.49	0.1	34.15%	35.25%
KBFood30.03.2008a	1188.9	41.29	41.01	0.1	30.19%	30.92%
KBFood30.03.2008b	1170.5	41.80	41.52	0.1	31.04%	31.80%
KBFood31.03.2008a	1164.6	38.73	38.45	0.1	28.89%	29.70%
KBFood31.03.2008b	1170.3	39.55	39.27	0.1	29.36%	30.19%

Id-code	a	b	Average %	Low -3% Average %	High +3% Average %	Absolute %	Deviation
KBFood25.03.2008	26.77%	28.39%	27.58%	26.76%	28.41%	1.6%	1.06
KBFood26.03.2008	20.67%	20.93%	20.80%	20.18%	21.42%	0.3%	1.01
KBFood27.03.2008	21.46%	21.68%	21.57%	20.92%	22.22%	0.2%	1.01
KBFood28.03.2008	15.88%	15.32%	15.60%	15.13%	16.07%	0.6%	1.04
KBFood29.03.3008	36.18%	35.25%	35.72%	34.65%	36.79%	0.9%	1.03
KBFood30.03.2008	30.92%	31.80%	31.36%	30.42%	32.30%	0.9%	1.03
KBFood31.03.2008	29.70%	30.19%	29.94%	29.05%	30.84%	0.5%	1.02

Faeces

Id-code sample	p (mg)	V (ml)	V (ml) - Blanco correction	N	% CP in AD	% CP DM
KBFaeces26.03.2008a	812.2	16.17	15.89	0.1	17.12%	17.61%
KBFaeces26.03.2008b	803.4	15.61	15.33	0.1	16.70%	17.18%
KBFaeces27.03.2008a	800.4	18.86	18.58	0.1	20.32%	21.00%
KBFaeces27.03.2008b	816.5	19.14	18.86	0.1	20.22%	20.89%
KBFaeces28.03.2008a	824.1	17.88	17.60	0.1	18.69%	19.16%
KBFaeces28.03.2008b	818.1	17.07	16.79	0.1	17.96%	18.41%
KBFaeces29.03.2008a	812.7	15.80	15.52	0.1	16.71%	17.21%
KBFaeces29.03.2008b	813.5	15.75	15.47	0.1	16.64%	17.13%
KBFaeces30.03.2008a	816.7	19.14	18.86	0.1	20.21%	20.86%
KBFaeces30.03.2008b	812.7	17.56	17.28	0.1	18.61%	19.20%
KBFaeces31.03.2008a	812.6	16.8	16.56	0.1	17.84%	18.35%
KBFaeces31.03.2008b	809.2	15.8	15.48	0.1	16.74%	17.23%
KBFaeces01.04.2008a	812.2	14.50	14.22	0.1	15.32%	15.74%
KBFaeces01.04.2008b	805.6	15.19	14.91	0.1	16.20%	16.64%

Id-code	a	b	Average %	Low -3% Average %	High +3% Average %	Absolute %	Deviation
KBFaeces26.03.2008	17.61%	17.18%	17.40%	16.87%	17.92%	0.43%	1.03
KBFaeces27.03.2008	21.00%	20.89%	20.94%	20.32%	21.57%	0.10%	1.00
KBFaeces28.03.2008	19.16%	18.41%	18.78%	18.22%	19.35%	0.75%	1.04
KBFaeces29.03.2008	17.21%	16.64%	16.92%	16.42%	17.43%	0.56%	1.03
KBFaeces30.03.2008	20.86%	19.20%	*20.03%	19.43%	20.63%	1.65%	1.09
KBFaeces31.03.2008	18.35%	17.23%	17.79%	17.26%	18.32%	1.12%	1.07
KBFaeces01.04.2008	15.74%	16.64%	16.19%	15.70%	16.67%	0.90%	1.06

**Bigger difference between the duplicates then the permitted ± 3% of the mean*

Appendix XVI – Crude Fat analyses

Formula

Food samples	% CFat = (100*((W2-W4)-W3))/W1	AD =	Air dry matter
Faeces Samples	% CFat = (100*(W2-W3))/W1	CFat =	Crude fat
		DM =	Dry matter

W1 Original weight of sample.
W2 Weight of pre-dried sample with the Filter Bag.
W3 Weight of dried sample and Filter Bag after extraction.
W4 Weight of the weigh pan.

Food

Id-code sample	Initial weight (g) Food (W1)	Weight pan (g) (W4)	Weight (g) dried filter bags (W2)	Weight (g) extracted dried filter bags (W3)	% CFat AD	% CFat DM
KBFood25.03.2008a	1.2376	14.8738	1.6726	1.6155	4.61%	4.78%
KBFood25.03.2008b	1.0269	16.3678	1.4473	1.4016	4.45%	4.61%
KBFood26.03.2008a	1.4222	13.8907	15.7364	1.4198	29.95%	30.54%
KBFood26.03.2008b	1.6211	14.1939	16.2547	1.5643	30.63%	31.24%
KBFood27.03.2008a	1.2729	13.9503	15.6723	1.5285	15.20%	15.51%
KBFood27.03.2008b	1.8385	12.7452	15.0254	2.0035	15.05%	15.36%
KBFood28.03.2008a	1.8357	12.8984	2.2644	2.2268	2.05%	2.10%
KBFood28.03.2008b	1.0791	14.6181	1.5177	1.4973	1.89%	1.94%
KBFood29.03.2008a	1.4098	13.3471	1.8255	1.7270	6.99%	7.21%
KBFood29.03.2008b	1.0909	14.9297	1.5211	1.4475	6.75%	6.96%
KBFood30.03.2008a	1.4592	14.8027	16.6997	1.7174	12.31%	12.61%
KBFood30.03.2008b	1.2378	14.2186	15.8978	1.5252	12.44%	12.75%
KBFood31.03.2008a	1.0868	12.8726	1.5371	1.4941	3.96%	4.07%
KBFood31.03.2008b	1.0665	17.4249	1.5002	1.4594	3.83%	3.93%
Blanco a		16.1501	0.4352	0.4357	100.11%	
Blanco b		12.3976	0.4203	0.4207	100.10%	

Id-code	a	b	Average %	Low -3% Average %	High +3% Average %	Absolute %	Deviation
KBFood25.03.2008	4.78%	4.61%	4.69%	4.55%	4.83%	0.17%	1.04
KBFood26.03.2008	30.54%	31.24%	30.89%	29.96%	31.82%	0.69%	1.02
KBFood27.03.2008	15.51%	15.36%	15.44%	14.97%	15.90%	0.15%	1.01
KBFood28.03.2008	2.10%	1.94%	*2.02%	1.96%	2.08%	0.16%	1.08
KBFood29.03.3008	7.21%	6.96%	7.09%	6.87%	7.30%	0.25%	1.04
KBFood30.03.2008	12.61%	12.75%	12.68%	12.30%	13.06%	0.14%	1.01
KBFood31.03.2008	4.07%	3.93%	4.00%	3.88%	4.12%	0.13%	1.03
Blanco	100.11%	100.10%	100.11%	97.10%	103.11%	0.02%	1.00

Faeces

Id-code sample	Initial weight (g) Food (W1)	Weight (g) dried filter bags (W2)	Weight (g) extracted dried filter bags (W3)	% CFat AD	% CFat DM
KBFaeces26.03.2008a	1.0625	1.4855	1.4596	2.44%	2.51%
KBFaeces26.03.2008b	1.0598	1.4868	1.4636	2.19%	2.25%
KBFaeces27.03.2008a	1.4192	1.8249	1.7880	2.60%	2.69%
KBFaeces27.03.2008b	1.5576	1.9740	1.9332	2.62%	2.71%
KBFaeces28.03.2008a	1.5857	2.0172	1.9114	6.67%	6.84%
KBFaeces28.03.2008b	1.1216	1.5592	1.4854	6.58%	6.74%
KBFaeces29.03.2008a	1.5354	1.9681	1.9441	1.56%	1.61%
KBFaeces29.03.2008b	1.4060	1.8429	1.8169	1.85%	1.90%
KBFaeces30.03.2008a	1.1026	1.5260	1.5065	1.77%	1.82%
KBFaeces30.03.2008b	1.0395	1.4656	1.4477	1.72%	1.77%
KBFaeces31.03.2008a	1.3197	1.7428	1.7203	1.70%	1.75%
KBFaeces31.03.2008b	1.0525	1.4729	1.4573	1.48%	1.53%
KBFaeces01.04.2008a	1.0405	1.4866	1.4725	1.36%	1.39%
KBFaeces01.04.2008b	1.1903	1.5703	1.5531	1.45%	1.48%
Blanco c		0.4475	0.4473	99.96%	
Blanco d		0.4595	0.4592	99.93%	

Id-code	a	b	Average %	Low -3% Average %	High +3% Average %	Absolute %	Deviation
KBFaeces26.03.2008	2.51%	2.25%	*2.38%	2.31%	2.45%	0.26%	1.11
KBFaeces27.03.2008	2.69%	2.71%	2.70%	2.62%	2.78%	0.02%	1.01
KBFaeces28.03.2008	6.84%	6.74%	6.79%	6.59%	6.99%	0.09%	1.01
KBFaeces29.03.2008	1.61%	1.90%	*1.76%	1.70%	1.81%	0.29%	1.18
KBFaeces30.03.2008	1.82%	1.77%	1.80%	1.74%	1.85%	0.05%	1.03
KBFaeces31.03.2008	1.75%	1.53%	*1.64%	1.59%	1.69%	0.23%	1.15
KBFaeces01.04.2008	1.39%	1.48%	1.44%	1.39%	1.48%	0.09%	1.07
Blanco	99.96%	99.93%	99.95%	96.95%	102.94%	0.02%	1.00

**Bigger difference between the duplicates then the permitted ± 3% of the mean*

Appendix XVII – Crude Fibre analyses

Formula

100 * (W3 - (W1 * C1)) / W2 = % Crude Fibre

W1 = Bag tare weight
W2 = Sample weight
W3 = Weight of Organic Matter (Loss of weight on ignition of bag an fibre)
C1 = Ash corrected blank bag factor (Loss of weight on ignition of blank bag/original blank bag)

AD = Air dry matter
CFibre = Crude Fibre
DM = Dry matter

Food

Id-code sample	W1 (g)	W2 (g)	Weight (g) dried sample bags	Weight (g) crucible	Weight (g) ashed bags + crucible	Final weight (g) ashed sample	W3 (g)	% CFibre AD	% CFibre DM
KBFood25.03.2008a	0.5277	0.9955	0.5533	21.1175	21.1210	0.0035	0.5498	2.41%	2.50%
KBFood25.03.2008b	0.5057	0.9892	0.5373	28.6087	28.6132	0.0045	0.5328	2.92%	3.03%
KBFood26.03.2008a	0.5014	0.9722	0.5651	26.5016	26.5043	0.0027	0.5624	6.46%	6.59%
KBFood26.03.2008b	0.5025	0.9810	0.5776	18.5514	18.5538	0.0024	0.5752	7.60%	7.75%
KBFood27.03.2008a	0.4960	0.9561	0.5364	22.7450	22.7514	0.0064	0.5300	3.74%	3.82%
KBFood27.03.2008b	0.5104	0.9588	0.5473	22.6174	22.6238	0.0064	0.5409	3.37%	3.44%
KBFood28.03.2008a	0.5027	0.9927	0.5349	14.7253	14.7275	0.0022	0.5327	3.20%	3.29%
KBFood28.03.2008b	0.5035	0.9658	0.5379	21.4055	21.4079	0.0024	0.5355	3.50%	3.59%
KBFood29.03.2008a	0.5064	0.9844	0.5271	23.6742	23.6775	0.0033	0.5238	1.95%	2.02%
KBFood29.03.2008b	0.5000	0.9908	0.5194	19.1401	19.1437	0.0036	0.5158	1.78%	1.83%
KBFood30.03.2008a	0.5129	0.9595	0.5397	16.4758	16.4791	0.0033	0.5364	2.64%	2.71%
KBFood30.03.2008b	0.5152	0.9622	0.5425	23.4784	23.4817	0.0033	0.5392	2.69%	2.75%
KBFood31.03.2008a	0.4974	0.9548	0.5197	22.6516	22.6543	0.0027	0.5170	2.24%	2.30%
KBFood31.03.2008b	0.5026	0.9575	0.5213	15.2017	15.2040	0.0023	0.5190	1.90%	1.96%
Blanco a	0.5139		0.5114	19.2830	19.2847	0.0017	0.5097	99.67%	
Blanco b	0.5172		0.5153	22.6079	22.6099	0.0020	0.5133	99.61%	

Id-code	a	b	Average %	Low -3% Average %	High +3% Average %	Absolute %	Deviation
KBFood25.03.2008	2.50%	3.03%	*2.76%	2.68%	2.84%	0.53%	1.21
KBFood26.03.2008	6.59%	7.75%	*7.17%	6.95%	7.38%	1.16%	1.18
KBFood27.03.2008	3.82%	3.44%	*3.63%	3.52%	3.74%	0.38%	1.11
KBFood28.03.2008	3.29%	3.59%	*3.44%	3.34%	3.54%	0.30%	1.09
KBFood29.03.3008	2.02%	1.83%	*1.92%	1.87%	1.98%	0.18%	1.10
KBFood30.03.2008	2.71%	2.75%	2.73%	2.65%	2.81%	0.05%	1.02
KBFood31.03.2008	2.30%	1.96%	*2.13%	2.07%	2.19%	0.35%	1.18
Blanco (C1)	99.67%	99.61%	99.64%	96.65%	102.63%	0.06%	1.00

**Bigger difference between the duplicates then the permitted ± 3% of the mean*

Faeces

Id-code sample	W1 (g)	W2 (g)	Weight (g) dried sample bags	Weight (g) crucible	Weight (g) ashed bags + crucible	Final weight (g) ashed sample	W3 (g)	% CFibre AD	% CFibre DM
KBFaeces26.03.2008a	0.5193	0.9873	0.7152	21.4970	21.5384	0.0414	0.6738	15.86%	16.32%
KBFaeces26.03.2008b	0.5085	0.9621	0.6885	18.6105	18.6461	0.0356	0.6529	15.22%	15.66%
KBFaeces27.03.2008a	0.5167	0.9629	0.6976	23.5643	23.6177	0.0534	0.6442	13.46%	13.91%
KBFaeces27.03.2008b	0.5216	0.9520	0.7009	22.9883	23.0458	0.0575	0.6434	13.02%	13.45%
KBFaeces28.03.2008a	0.5192	0.9620	0.6788	22.7609	22.7949	0.0340	0.6448	13.28%	13.61%
KBFaeces28.03.2008b	0.5220	0.9521	0.6745	23.2606	23.2954	0.0348	0.6397	12.59%	12.90%
KBFaeces29.03.2008a	0.5124	0.9538	0.7033	16.0420	16.1033	0.0613	0.6420	13.81%	14.21%
KBFaeces29.03.2008b	0.5211	0.9877	0.6964	17.7613	17.8087	0.0474	0.6490	13.16%	13.55%
KBFaeces30.03.2008a	0.5183	0.9692	0.6407	22.9990	23.0345	0.0355	0.6052	9.18%	9.48%
KBFaeces30.03.2008b	0.5118	0.9928	0.6204	24.2860	24.3109	0.0249	0.5955	8.64%	8.92%
KBFaeces31.03.2008a	0.5191	0.9607	0.7191	23.2058	23.2673	0.0615	0.6576	14.64%	15.06%
KBFaeces31.03.2008b	0.5188	0.9663	0.6495	17.7837	17.8104	0.0267	0.6228	10.98%	11.30%
KBFaeces01.04.2008a	0.5155	0.9734	0.6710	15.7584	15.8088	0.0504	0.6206	11.01%	11.31%
KBFaeces01.04.2008b	0.5243	0.9553	0.6757	18.2614	18.3121	0.0507	0.6250	10.77%	11.06%
Blanco c	0.5218		0.5174	15.2258	15.2278	0.0020	0.5154	99.6135%	
Blanco d	0.5156		0.5106	23.1296	23.1318	0.0022	0.5084	99.5691%	

Id-code	a	b	Average %	Low -3% Average %	High +3% Average %	Absolute %	Deviation
KBFaeces26.03.2008	16.32%	15.66%	15.99%	15.51%	16.47%	0.66%	1.04
KBFaeces27.03.2008	13.91%	13.45%	13.68%	13.27%	14.09%	0.46%	1.03
KBFaeces28.03.2008	13.61%	12.90%	13.25%	12.86%	13.65%	0.71%	1.05
KBFaeces29.03.2008	14.21%	13.55%	13.88%	13.47%	14.30%	0.66%	1.05
KBFaeces30.03.2008	9.48%	8.92%	*9.20%	8.92%	9.47%	0.56%	1.06
KBFaeces31.03.2008	15.06%	11.30%	*13.18%	12.79%	13.58%	3.76%	1.33
KBFaeces01.04.2008	11.31%	11.06%	11.18%	10.85%	11.52%	0.25%	1.02
Blanco (C1)	99.61%	99.57%	99.59%	96.60%	102.58%	0.04%	1.00

**Bigger difference between the duplicates then the permitted ± 3% of the mean*

Appendix XVIII – Acid Detergent Fibre analyses

Formula

(W3 - (W1 * C1)) / W2 * 100 = % ADF

W1 = Bag tare weight
W2 = Sample weight
W3 = Dried weight of bag with fibre after extraction process
C1 = Blank bag correction (final oven dried weight divided by original blank bag weight)

AD = Air dry matter
ADF = Acid Detergent Fibre
DM = Dry matter

Food

Id-code sample	W1 (g)	W2 (g)	W3 (g)	% ADF AD	% ADF DM
KBFood25.03.2008a	0.5004	0.5300	0.5184	3.36%	3.48%
KBFood25.03.2008b	0.5292	0.4789	0.5461	3.49%	3.61%
KBFood26.03.2008a	0.4770	0.5331	0.5213	8.28%	8.44%
KBFood26.03.2008b	0.5075	0.4828	0.5619	11.23%	11.45%
KBFood26.03.2008c	0.5215	0.5221	0.5678	8.83%	9.01%
KBFood26.03.2008d	0.5114	0.5274	0.5581	8.82%	8.99%
KBFood27.03.2008a	0.4772	0.5076	0.4987	4.20%	4.29%
KBFood27.03.2008b	0.5256	0.4901	0.5502	4.98%	5.08%
KBFood27.03.2008c	0.5103	0.5058	0.5350	4.84%	4.94%
KBFood27.03.2008d	0.5108	0.5295	0.5391	5.31%	5.42%
KBFood28.03.2008a	0.5192	0.5155	0.5436	4.69%	4.82%
KBFood28.03.2008b	0.5181	0.4766	0.5434	5.27%	5.40%
KBFood28.03.2008c	0.5103	0.5483	0.5424	5.82%	5.97%
KBFood28.03.2008d	0.5132	0.5365	0.5474	6.34%	6.50%
KBFood29.03.2008a	0.5098	0.4616	0.5220	2.60%	2.68%
KBFood29.03.2008b	0.5008	0.4765	0.5251	5.06%	5.22%
KBFood29.03.2008c	0.5156	0.5263	0.5354	3.72%	3.84%
KBFood29.03.2008d	0.5117	0.5273	0.5321	3.83%	3.95%
KBFood30.03.2008a	0.4925	0.4961	0.5207	5.65%	5.78%
KBFood30.03.2008b	0.4766	0.4862	0.4988	4.53%	4.64%
KBFood30.03.2008c	0.5054	0.5415	0.5452	7.31%	7.49%

KBFood30.03.2008d	0.5130	0.5279	0.5414	5.34%	5.47%
KBFood31.03.2008a	0.4768	0.4746	0.4952	3.84%	3.95%
KBFood31.03.2008b	0.5019	0.4558	0.5201	3.95%	4.06%
Blanco a	0.4958		0.4946	99.76%	
Blanco b	0.4836		0.4870	100.70%	
Blanco c	0.5259		0.5250	99.83%	
Blanco d	0.5221		0.5214	99.87%	

Id-code	**a**	**b**	**c**	**d**	**Average %**	**Low -3% Average %**	**High +3% Average %**	**Absolute %**	**Deviation**
KBFood25.03.2008	3.48%	3.61%			3.54%	3.44%	3.65%	0.13%	1.04
KBFood26.03.2008	8.44%	9.01%	**11.45%	8.99%	*8.81%	8.55%	9.08%	0.57%	1.07
KBFood27.03.2008	4.29%	4.94%	5.08%	5.42%	*4.93%	4.78%	5.08%	1.13%	1.26
KBFood28.03.2008	4.82%	5.97%	5.40%	6.50%	*5.67%	5.50%	5.84%	1.69%	1.35
KBFood29.03.3008	2.68%	3.84%	5.22%	3.95%	*3.93%	3.81%	4.04%	2.54%	1.95
KBFood30.03.2008	5.78%	**7.49%	4.64%	5.47%	*5.85%	5.67%	6.02%	2.85%	1.25
KBFood31.03.2008	3.95%	4.06%			4.00%	3.88%	4.12%	0.12%	1.03
Blanco	99.76%	100.70%	99.83%	99.87%	100.04%	97.04%	103.04%	0.95%	1.01

**Bigger difference between the duplicates then the permitted ± 3% of the mean*

***Outlier not used in the calculation*

Faeces

Id-code sample	**W1 (g)**	**W2 (g)**	**W3 (g)**	**% ADF AD**	**% ADF DM**
KBFaeces26.03.2008a	0.4900	0.4564	0.6088	26.22%	26.97%
KBFaeces26.03.2008b	0.5301	0.5309	0.6580	24.27%	24.96%
KBFaeces27.03.2008a	0.5258	0.4658	0.6317	22.93%	23.70%
KBFaeces27.03.2008b	0.5195	0.5138	0.6558	26.71%	27.60%
KBFaeces28.03.2008a	0.5207	0.4789	0.6285	22.70%	23.27%
KBFaeces28.03.2008b	0.5299	0.5345	0.6550	23.58%	24.17%
KBFaeces29.03.2008a	0.5242	0.4753	0.5988	15.89%	16.36%
KBFaeces29.03.2008b	0.5324	0.4877	0.6051	15.10%	15.54%
KBFaeces30.03.2008a	0.5281	0.4845	0.5974	14.49%	14.96%
KBFaeces30.03.2008b	0.5221	0.5464	0.6038	15.12%	15.60%

KBFaeces31.03.2008a	0.5240	0.4785	0.6089	17.94%	18.45%
KBFaeces31.03.2008b	0.5240	0.4559	0.6052	18.01%	18.53%
KBFaeces01.04.2008a	0.5254	0.4809	0.6222	20.32%	20.87%
KBFaeces01.04.2008b	0.5031	0.5224	0.6067	20.00%	20.54%
Blank e	0.4833		0.4830	99.94%	
Blank f	0.5190		0.5175	99.71%	

Id-code	**a**	**b**	**Average %**	**Low -3% Average %**	**High +3% Average %**	**Absolute %**	**Deviation**
KBFaeces26.03.2008	26.22%	24.27%	*25.24%	24.49%	26.00%	1.95%	1.08
KBFaeces27.03.2008	22.93%	26.71%	*24.82%	24.07%	25.56%	3.77%	1.16
KBFaeces28.03.2008	22.70%	23.58%	23.14%	22.45%	23.83%	0.88%	1.04
KBFaeces29.03.2008	15.89%	15.10%	15.49%	15.03%	15.96%	0.79%	1.05
KBFaeces30.03.2008	14.49%	15.12%	14.81%	14.36%	15.25%	0.63%	1.04
KBFaeces31.03.2008	17.94%	18.01%	17.97%	17.43%	18.51%	0.08%	1.00
KBFaeces01.04.2008	20.32%	20.00%	20.16%	19.56%	20.77%	0.32%	1.02
Blanco	99.94%	99.71%	99.82%	96.83%	102.82%	0.23%	1.00

**Bigger difference between the duplicates then the permitted ± 3% of the mean*

Appendix XIX – Neutral Detergent Fibre analyses

Formula

(W3 - (W1 * C1)) / W2 * 100 = % ADF

W1 = Bag tare weight
W2 = Sample weight
W3 = Dried weight of bag with fibre after extraction process
C1 = Blank bag correction (final oven dried weight divided by original blank bag weight)

AD = Air dry matter
NDF = Neutral Detergent Fibre
DM = Dry matter

Food

Id-code sample	W1 (g)	W2 (g)	W3 (g)	% NDF AD	% NDF DM
KBFood25.03.2008a	0.5164	0.5238	0.6140	17.93%	18.56%
KBFood25.03.2008b	0.4918	0.4811	0.5956	20.85%	21.58%
KBFood26.03.2008a	0.4861	0.5070	0.6020	22.18%	22.62%
KBFood26.03.2008b	0.4848	0.4691	0.6032	24.51%	25.00%
KBFood27.03.2008a	0.4944	0.5430	0.6289	24.12%	24.62%
KBFood27.03.2008b	0.5018	0.5212	0.6413	26.08%	26.62%
KBFood28.03.2008a	0.4938	0.4676	0.5791	17.49%	17.95%
KBFood28.03.2008b	0.5023	0.4575	0.5966	19.83%	20.35%
KBFood29.03.2008a	0.5016	0.4628	0.5855	17.36%	17.92%
KBFood29.03.2008b	0.5008	0.5182	0.5878	16.10%	16.62%
KBFood30.03.2008a	0.5070	0.5360	0.6871	32.93%	33.74%
KBFood30.03.2008b	0.5106	0.5029	0.6713	31.23%	32.00%
KBFood31.03.2008a	0.4999	0.5241	0.5698	12.66%	13.02%
KBFood31.03.2008b	0.4952	0.4847	0.5568	11.98%	12.32%
Blanco a	0.4933		0.4966	100.67%	
Blanco b	0.4939		0.4976	100.75%	

Id-code	a	b	Average %	Low -3% Average %	High +3% Average %	Absolute %	Deviation
KBFood25.03.2008	18.56%	21.58%	*20.07%	19.47%	20.68%	3.02%	1.16
KBFood26.03.2008	22.62%	25.00%	*23.81%	23.09%	24.52%	2.37%	1.10
KBFood27.03.2008	24.62%	26.62%	*25.62%	24.85%	26.39%	2.00%	1.08
KBFood28.03.2008	17.95%	20.35%	*19.15%	18.58%	19.73%	2.40%	1.13
KBFood29.03.3008	17.92%	16.62%	*17.27%	16.75%	17.79%	1.30%	1.08
KBFood30.03.2008	33.74%	32.00%	32.87%	31.88%	33.85%	1.74%	1.05
KBFood31.03.2008	13.02%	12.32%	12.67%	12.29%	13.05%	0.70%	1.06
Blanco	100.67%	100.75%	100.71%	97.69%	103.73%	0.08%	1.00

**Bigger difference between the duplicates then the permitted ± 3% of the mean*

Faeces

Id-code sample	W1 (g)	W2 (g)	W3 (g)	% NDF AD	% NDF DM
KBFaeces26.03.2008a	0.4929	0.5215	0.7004	39.45%	40.58%
KBFaeces26.03.2008b	0.4966	0.4550	0.6734	38.46%	39.56%
KBFaeces27.03.2008a	0.4992	0.4664	0.6922	40.99%	42.37%
KBFaeces27.03.2008b	0.5039	0.4582	0.6839	38.89%	40.19%
KBFaeces28.03.2008a	0.5029	0.4704	0.6751	36.22%	37.12%
KBFaeces28.03.2008b	0.5001	0.4550	0.6672	36.33%	37.23%
KBFaeces29.03.2008a	0.5023	0.4918	0.6551	30.70%	31.60%
KBFaeces29.03.2008b	0.5077	0.4741	0.6494	29.50%	30.37%
KBFaeces30.03.2008a	0.5030	0.4838	0.6385	27.63%	28.51%
KBFaeces30.03.2008b	0.5022	0.4671	0.6199	24.81%	25.60%
KBFaeces31.03.2008a	0.4984	0.4638	0.6382	29.75%	30.62%
KBFaeces31.03.2008b	0.5030	0.5233	0.6600	29.66%	30.51%
KBFaeces01.04.2008a	0.5012	0.5433	0.7076	37.66%	38.67%
KBFaeces01.04.2008b	0.4985	0.4730	0.6695	35.77%	36.74%
Blank c	0.5211		0.5235	100.46%	
Blank d	0.4981		0.4994	100.26%	

Id-code	a	b	Average %	Low -3% Average %	High +3% Average %	Absolute %	Deviation
KBFaeces26.03.2008	40.58%	39.56%	40.07%	38.87%	41.27%	1.01%	1.03
KBFaeces27.03.2008	42.37%	40.19%	41.28%	40.04%	42.51%	2.18%	1.05
KBFaeces28.03.2008	37.12%	37.23%	37.18%	36.06%	38.29%	0.11%	1.00
KBFaeces29.03.2008	31.60%	30.37%	30.99%	30.06%	31.92%	1.23%	1.04
KBFaeces30.03.2008	28.51%	25.60%	*27.06%	26.25%	27.87%	2.91%	1.11
KBFaeces31.03.2008	30.62%	30.51%	30.56%	29.65%	31.48%	0.10%	1.00
KBFaeces01.04.2008	38.67%	36.74%	37.71%	36.57%	38.84%	1.94%	1.05
Blanco (C1)	100.46%	100.26%	100.36%	97.35%	103.37%	0.20%	1.00

**Bigger difference between the duplicates then the permitted ± 3% of the mean*

Appendix XX – Calcium analyses

Calibration line	For	After	Average	Regression	
Ca 0	0.003	0.015	0.0090	a =	0.010
Ca 2	0.015	0.026	0.0205	b =	0.005
Ca 4	0.026	0.036	0.0310	r =	1.000
Ca 8	0.046	0.059	0.0525		
Ca 15	0.080	0.098	0.0890		

AD = Air dry matter
Ca = Calcium
DM = Dry matter

Food

Id-code sample	Weight (g) sample	Weight (mg) sample = Y	Ca 1/2	(Y-b)/a = x	x*2 = mg	mg Sample / %AS = mg AD	% Ca AD	mg Ca / %DS
KBFood25.03.2008a	0.0980	98	0.061	5.60	11.20	1223	0.92%	0.95%
KBFood25.03.2008b	0.1013	101.3	0.058	5.30	10.60	1264	0.84%	0.87%
KBFood26.03.2008a	0.1025	102.5	0.042	3.70	7.40	2706	0.27%	0.28%
KBFood26.03.2008b	0.1019	101.9	0.043	3.80	7.60	2690	0.28%	0.29%
KBFood27.03.2008a	0.0985	98.5	0.044	3.90	7.80	1522	0.51%	0.52%
KBFood27.03.2008b	0.1002	100.2	0.047	4.20	8.40	1549	0.54%	0.55%
KBFood28.03.2008a	0.1006	100.6	0.041	3.60	7.20	2028	0.36%	0.36%
KBFood28.03.2008b	0.1000	100	0.038	3.30	6.60	2016	0.33%	0.34%
KBFood29.03.2008a	0.1000	100	0.063	5.80	11.60	1033	1.12%	1.16%
KBFood29.03.2008b	0.0987	98.7	0.066	6.10	12.20	1019	1.20%	1.24%
KBFood30.03.2008a	0.1025	102.5	0.047	4.20	8.40	1471	0.57%	0.59%
KBFood30.03.2008b	0.1011	101.1	0.045	4.00	8.00	1451	0.55%	0.56%
KBFood31.03.2008a	0.0998	99.8	0.064	5.90	11.80	1138	1.04%	1.07%
KBFood31.03.2008b	0.1009	100.9	0.065	6.00	12.00	1151	1.04%	1.07%

Id-code	a	b	Average %	Low -3% Average %	High +3% Average %	Absolute %	Deviation
KBFood25.03.2008	0.95%	0.87%	*0.91%	0.88%	0.94%	0.08%	1.09
KBFood26.03.2008	0.28%	0.29%	0.28%	0.28%	0.29%	0.01%	1.03
KBFood27.03.2008	0.52%	0.55%	0.54%	0.52%	0.55%	0.03%	1.06
KBFood28.03.2008	0.36%	0.34%	0.35%	0.34%	0.36%	0.03%	1.08

KBFood29.03.3008	1.16%	1.24%	*1.20%	1.16%	1.23%	0.08%	1.07
KBFood30.03.2008	0.59%	0.56%	0.57%	0.56%	0.59%	0.02%	1.04
KBFood31.03.2008	1.07%	1.07%	1.07%	1.04%	1.10%	0.01%	1.01

**Bigger difference between the duplicates then the permitted ± 3% of the mean*

Faeces

Id-code sample	Weight (g) sample	Weight (mg) sample = Y	Ca 1/2	(Y-b)/a = x	x*2=mg	mg Sample / %AS = mg AD	% Ca AD	mg Ca / %DS
KBFaeces26.03.2008a	0.0985	98.5	0.070	6.50	13.00	371.82	3.50%	3.60%
KBFaeces26.03.2008b	0.1026	102.6	0.073	6.80	13.60	387.30	3.51%	3.61%
KBFaeces27.03.2008a	0.1017	101.7	0.060	5.50	11.00	460.80	2.39%	2.47%
KBFaeces27.03.2008b	0.1003	100.3	0.059	5.40	10.80	454.46	2.38%	2.46%
KBFaeces28.03.2008a	0.0966	96.6	0.065	6.00	12.00	526.01	2.28%	2.34%
KBFaeces28.03.2008b	0.0978	97.8	0.069	6.40	12.80	532.54	2.40%	2.46%
KBFaeces29.03.2008a	0.0994	99.4	0.080	7.50	15.00	321.60	4.66%	4.80%
KBFaeces29.03.2008b	0.1033	103.3	0.083	7.80	15.60	334.21	4.67%	4.80%
KBFaeces30.03.2008a	0.0998	99.8	0.085	8.00	16.00	292.20	5.48%	5.65%
KBFaeces30.03.2008b	0.1022	102.2	0.085	8.00	16.00	299.22	5.35%	5.52%
KBFaeces31.03.2008a	0.1006	100.6	0.080	7.50	15.00	324.63	4.62%	4.75%
KBFaeces31.03.2008b	0.1010	101	0.086	8.10	16.20	325.92	4.97%	5.11%
KBFaeces01.04.2008a	0.0982	98.2	0.078	7.30	14.60	328.64	4.44%	4.56%
KBFaeces01.04.2008b	0.1029	102.9	0.081	7.60	15.20	344.37	4.41%	4.53%

Id-code	a	b	Average %	Low -3% Average %	High +3% Average %	Absolute %	Deviation
KBFaeces26.03.2008	3.60%	3.61%	3.60%	3.50%	3.71%	0.02%	1.00
KBFaeces27.03.2008	2.47%	2.46%	2.46%	2.39%	2.54%	0.01%	1.00
KBFaeces28.03.2008	2.34%	2.46%	2.40%	2.33%	2.47%	0.13%	1.05
KBFaeces29.03.2008	4.80%	4.80%	4.80%	4.66%	4.95%	0.00%	1.00
KBFaeces30.03.2008	5.65%	5.52%	5.58%	5.42%	5.75%	0.13%	1.02
KBFaeces31.03.2008	4.75%	5.11%	*4.93%	4.79%	5.08%	0.36%	1.08
KBFaeces01.04.2008	4.56%	4.53%	4.55%	4.41%	4.68%	0.03%	1.01

**Bigger difference between the duplicates then the permitted ± 3% of the mean*

Appendix XXI – Potassium

Calibration line round 1	For	After	Average	Regression	
K 0	0	4	2	a =	15290
K A	608	627	618	b =	28.6
K B	475	483	479	r =	0.991
K C	340	442	391		
K D	180	183	182		

AD = Air dry matter
DM = Dry matter
K = Potassium

Calibration line round 2	For	After	Average	Regression	
K 0	0	0	0	a =	17130
K A	672	705	689	b =	12.2
K B	525	526	526	r =	0.999
K C	365	371	368		
K D	188	193	191		

Solution	ppm	ug / ml
A	40	40.00
B	30	30.00
C	20	20.00
D	10	10.00

Food

Id-code sample	Weight (g) sample	Weight (mg) sample = Y	K	(Y-b) / a = x	x*1000 = mg	mg Sample / %AS = mg AD	% K AD	mg k / %DS
KBFood25.03.2008a	0.0980	98	141	0.007	7.35	1223	0.60%	0.62%
KBFood25.03.2008b	0.1013	101.3	150	0.008	7.94	1264	0.63%	0.65%
KBFood26.03.2008a	0.1025	102.5	280	0.016	16.44	2706	0.61%	0.62%
KBFood26.03.2008b	0.1019	101.9	276	0.016	16.18	2690	0.60%	0.61%
KBFood27.03.2008a	0.0985	98.5	236	0.014	13.56	1522	0.89%	0.91%
KBFood27.03.2008b	0.1002	100.2	237	0.014	13.63	1549	0.88%	0.90%
KBFood28.03.2008a	0.1006	100.6	239	0.014	13.76	2028	0.68%	0.70%
KBFood28.03.2008b	0.1000	100	241	0.014	13.89	2016	0.69%	0.71%
KBFood29.03.2008a	0.1000	100	147	0.008	7.74	1033	0.75%	0.77%
KBFood29.03.2008b	0.0987	98.7	133	0.007	6.83	1019	0.67%	0.69%
KBFood29.03.2008c	0.1000	100	148	0.008	7.93	1033	0.77%	0.79%
KBFood29.03.2008d	0.0987	98.7	142	0.008	7.58	1019	0.74%	0.77%
KBFood30.03.2008a	0.1025	102.5	212	0.012	11.99	1471	0.82%	0.84%
KBFood30.03.2008b	0.1011	101.1	203	0.011	11.41	1451	0.79%	0.81%
KBFood31.03.2008a	0.0998	99.8	141	0.007	7.35	1138	0.65%	0.66%
KBFood31.03.2008b	0.1009	100.9	145	0.008	7.61	1151	0.66%	0.68%

Id-code	a	b	c	d	Average %	Low -3% Average %	High +3% Average %	Absolute %	Deviation
KBFood25.03.2008	0.62%	0.65%			0.64%	0.62%	0.66%	0.03%	1.04
KBFood26.03.2008	0.62%	0.61%			0.62%	0.60%	0.64%	0.01%	1.01
KBFood27.03.2008	0.91%	0.90%			0.90%	0.88%	0.93%	0.01%	1.01
KBFood28.03.2008	0.70%	0.71%			0.70%	0.68%	0.72%	0.01%	1.02
KBFood29.03.3008	0.77%	0.69%	0.79%	0.77%	*0.76%	0.73%	0.78%	0.10%	1.15
KBFood30.03.2008	0.84%	0.81%			0.82%	0.80%	0.85%	0.03%	1.04
KBFood31.03.2008	0.66%	0.68%			0.67%	0.65%	0.69%	0.02%	1.02

**Bigger difference between the duplicates then the permitted ± 3% of the mean*

Faeces

Id-code sample	Weight (g) sample	Weight (mg) sample = Y	K	(Y-b) / a = x	x*1000 = mg	mg Sample / %AS = mg AD	% K AD	mg k / %DS
KBFaeces26.03.2008a	0.0985	98.5	65	0.005	4.57	371.82	1.23%	1.26%
KBFaeces26.03.2008b	0.1026	102.6	67	0.005	4.84	387.30	1.25%	1.29%
KBFaeces27.03.2008a	0.1017	101.7	119	0.005	4.78	460.80	1.04%	1.07%
KBFaeces27.03.2008b	0.1003	100.3	121	0.005	4.69	454.46	1.03%	1.07%
KBFaeces28.03.2008a	0.0966	96.6	84	0.004	4.45	526.01	0.85%	0.87%
KBFaeces28.03.2008b	0.0978	97.8	87	0.005	4.53	532.54	0.85%	0.87%
KBFaeces29.03.2008a	0.0994	99.4	63	0.005	4.63	321.60	1.44%	1.48%
KBFaeces29.03.2008b	0.1033	103.3	63	0.005	4.89	334.21	1.46%	1.50%
KBFaeces30.03.2008a	0.0998	99.8	56	0.005	4.66	292.20	1.59%	1.64%
KBFaeces30.03.2008b	0.1022	102.2	56	0.005	4.81	299.22	1.61%	1.66%
KBFaeces31.03.2008a	0.1006	100.6	60	0.005	4.71	324.63	1.45%	1.49%
KBFaeces31.03.2008b	0.1010	101.0	59	0.005	4.74	325.92	1.45%	1.49%
KBFaeces01.04.2008a	0.0982	98.2	59	0.005	4.55	328.64	1.39%	1.42%
KBFaeces01.04.2008b	0.1029	102.9	61	0.005	4.86	344.37	1.41%	1.45%

Id-code	a	b	Average %	Low -3% Average %	High +3% Average %	Absolute %	Deviation
KBFaeces26.03.2008	1.26%	1.29%	1.28%	1.24%	1.31%	0.02%	1.02
KBFaeces27.03.2008	1.07%	1.07%	1.07%	1.04%	1.10%	0.01%	1.01
KBFaeces28.03.2008	0.87%	0.87%	0.87%	0.84%	0.89%	0.00%	1.01
KBFaeces29.03.2008	1.48%	1.50%	1.49%	1.45%	1.54%	0.02%	1.02
KBFaeces30.03.2008	1.64%	1.66%	1.65%	1.60%	1.70%	0.02%	1.01
KBFaeces31.03.2008	1.49%	1.49%	1.49%	1.45%	1.54%	0.00%	1.00
KBFaeces01.04.2008	1.42%	1.45%	1.44%	1.39%	1.48%	0.03%	1.02

Appendix XXII – Magnesium analyses

Calibration line round 1	For	After	Average	Regression	
Mg 0	0.000	0.000	0.000	a =	0.0090
Mg 2	0.013	0.015	0.014	b =	-0.0070
Mg 8	0.048	0.045	0.047	r =	0.9900
Mg 20	0.180	0.169	0.175		

Solution	µg Mg / ml
Mg 2	0.2
Mg 4	0.4
Mg 8	0.8
Mg 20	2.0

AD = Air dry matter
DM = Dry matter
Mg = Magnesium

Food

Id-code sample	Weight (g) sample	Weight (mg) sample = Y	Mg 1/2	(Y-b) / a = x	x*2 = mg	mg Sample / %AS = mg AD	% Mg AD	mg Mg / %DS
KBFood25.03.2008a	0.0980	98.0	0.068	8.33	16.67	1223	1.36%	1.41%
KBFood25.03.2008b	0.1013	101.3	0.073	8.89	17.78	1264	1.41%	1.46%
KBFood26.03.2008a	0.1025	102.5	0.105	12.44	24.89	2706	0.92%	0.94%
KBFood26.03.2008b	0.1019	101.9	0.080	9.67	19.33	2690	0.72%	0.73%
KBFood27.03.2008a	0.0985	98.5	0.060	7.44	14.89	1522	0.98%	1.00%
KBFood27.03.2008b	0.1002	100.2	0.055	6.89	13.78	1549	0.89%	0.91%
KBFood28.03.2008a	0.1006	100.6	0.065	8.00	16.00	2028	0.79%	0.81%
KBFood28.03.2008b	0.1000	100.0	0.070	8.56	17.11	2016	0.85%	0.87%
KBFood29.03.2008a	0.1000	100.0	0.049	6.22	12.44	1033	1.21%	1.24%
KBFood29.03.2008b	0.0987	98.7	0.045	5.78	11.56	1019	1.13%	1.17%
KBFood30.03.2008a	0.1025	102.5	0.065	8.00	16.00	1471	1.09%	1.11%
KBFood30.03.2008b	0.1011	101.1	0.060	7.44	14.89	1451	1.03%	1.05%
KBFood31.03.2008a	0.0998	99.8	0.040	5.22	10.44	1138	0.92%	0.94%
KBFood31.03.2008b	0.1009	100.9	0.039	5.11	10.22	1151	0.89%	0.91%

Id-code	a	b	Average %	Low -3% Average %	High +3% Average %	Absolute %	Deviation
KBFood25.03.2008	1.41%	1.46%	1.43%	1.39%	1.48%	0.05%	1.03
KBFood26.03.2008	0.94%	0.73%	*0.84%	0.81%	0.86%	0.21%	1.28

KBFood27.03.2008	1.00%	0.91%	*0.95%	0.92%	0.98%	0.09%	1.10
KBFood28.03.2008	0.81%	0.87%	*0.84%	0.82%	0.87%	0.06%	1.08
KBFood29.03.3008	1.24%	1.17%	1.21%	1.17%	1.24%	0.07%	1.06
KBFood30.03.2008	1.11%	1.05%	1.08%	1.05%	1.12%	0.06%	1.06
KBFood31.03.2008	0.94%	0.91%	0.93%	0.90%	0.96%	0.03%	1.03

**Bigger difference between the duplicates then the permitted ± 3% of the mean*

Faeces

Id-code	Weight (g) sample	Weight (mg) sample = Y	Mg 1/2	(Y-b) / a = x	x*2 = mg	mg Sample / %AS = mg AD	% Mg AD	mg Mg / %DS
KBFaeces26.03.2008a	0.0985	98.5	0.038	5.00	10.00	371.82	2.69%	2.77%
KBFaeces26.03.2008b	0.1026	102.6	0.040	5.22	10.44	387.30	2.70%	2.77%
KBFaeces27.03.2008a	0.1017	101.7	0.063	7.78	15.56	460.80	3.38%	3.49%
KBFaeces27.03.2008b	0.1003	100.3	0.068	8.33	16.67	454.46	3.67%	3.79%
KBFaeces28.03.2008a	0.0966	96.6	0.075	9.11	18.22	526.01	3.46%	3.55%
KBFaeces28.03.2008b	0.0978	97.8	0.080	9.67	19.33	532.54	3.63%	3.72%
KBFaeces29.03.2008a	0.0994	99.4	0.040	5.22	10.44	321.60	3.25%	3.34%
KBFaeces29.03.2008b	0.1033	103.3	0.046	5.89	11.78	334.21	3.52%	3.63%
KBFaeces30.03.2008a	0.0998	99.8	0.055	6.89	13.78	292.20	4.72%	4.87%
KBFaeces30.03.2008b	0.1022	102.2	0.059	7.33	14.67	299.22	4.90%	5.06%
KBFaeces31.03.2008a	0.1006	100.6	0.053	6.67	13.33	324.63	4.11%	4.23%
KBFaeces31.03.2008b	0.1010	101	0.052	6.56	13.11	325.92	4.02%	4.14%
KBFaeces01.04.2008a	0.0982	98.2	0.039	5.11	10.22	328.64	3.11%	3.19%
KBFaeces01.04.2008b	0.1029	102.9	0.041	5.33	10.67	344.37	3.10%	3.18%

Id-code	a	b	Average %	Low -3% Average %	High +3% Average %	Absolute %	Deviation
KBFaeces26.03.2008	2.77%	2.77%	2.77%	2.69%	2.85%	0.01%	1.00
KBFaeces27.03.2008	3.49%	3.79%	*3.64%	3.53%	3.75%	0.30%	1.09
KBFaeces28.03.2008	3.55%	3.72%	3.64%	3.53%	3.74%	0.17%	1.05
KBFaeces29.03.2008	3.34%	3.63%	*3.49%	3.38%	3.59%	0.28%	1.09
KBFaeces30.03.2008	4.87%	5.06%	4.96%	4.81%	5.11%	0.19%	1.04
KBFaeces31.03.2008	4.23%	4.14%	4.18%	4.06%	4.31%	0.09%	1.02
KBFaeces01.04.2008	3.19%	3.18%	3.19%	3.09%	3.28%	0.01%	1.00

**Bigger difference between the duplicates then the permitted ± 3% of the mean*

Appendix XXIII – Sodium analyses

Calibration line round 1	For	After	Average	Regression	
Na 0	0	3	2	a =	1990
Na A	80	81	81	b =	4.2
Na B	69	65	67	r =	0.997
Na C	43	45	44		
Na D	23	28	26		

Calibration line round 2	For	After	Average	Regression	
Na 0	0	0	0	a =	2020
Na A	85	75	80	b =	2.4
Na B	65	64	65	r =	0.996
Na C	45	46	46		
Na D	24	21	23		

Calibration line round 3	For	After	Average	Regression	
Na 0	0	-16	-8	a =	9811
Na D	95	85	90	b =	-8.4
Na E	72	70	71	r =	1
Na F	50	54	52		

Calibration line round 4	For	After	Average	Regression	
Na 0	0	2	1	a =	6330
Na D	70	58	64	b =	1.5
Na E	51	52	52	r =	0.999
Na F	44	42	43		

Solution	ppm	ug / ml
A	40.00	40.00
B	30.00	30.00
C	20.00	20.00
D	10.00	10.00
E	8.00	8.00
F	6.33	6.33

AD = Air dry matter
DM = Dry matter
Na = Sodium

Food

Id-code sample	Weight (g) sample	Weight (mg) sample = Y	Na	(Y-b) / a = x	x * 100 = mg	mg Sample / %AS = mg AD	% Na AD	mg Na / %DS
KBFood25.03.2008a	0.0980	98.0	26	0.011	1.10	1223	0.09%	0.09%
KBFood25.03.2008b	0.1013	101.3	26	0.011	1.10	1264	0.09%	0.09%
KBFood26.03.2008a	0.1025	102.5	37	0.016	1.65	2706	0.06%	0.06%
KBFood26.03.2008b	0.1019	101.9	36	0.016	1.60	2690	0.06%	0.06%
KBFood27.03.2008a	0.0985	98.5	30	0.013	1.30	1522	0.09%	0.09%
KBFood27.03.2008b	0.1002	100.2	30	0.013	1.30	1549	0.08%	0.09%
KBFood28.03.2008a	0.1006	100.6	34	0.015	1.50	2028	0.07%	0.08%
KBFood28.03.2008b	0.1000	100.0	36	0.016	1.60	2016	0.08%	0.08%
KBFood29.03.2008a	0.1000	100.0	25	0.010	1.05	1033	0.10%	0.10%
KBFood29.03.2008b	0.0987	98.7	23	0.009	0.94	1019	0.09%	0.10%
KBFood30.03.2008a	0.1025	102.5	32	0.014	1.40	1471	0.09%	0.10%
KBFood30.03.2008b	0.1011	101.1	31	0.013	1.35	1451	0.09%	0.10%
KBFood31.03.2008a	0.0998	99.8	27	0.011	1.15	1138	0.10%	0.10%
KBFood31.03.2008b	0.1009	100.9	26	0.011	1.10	1151	0.10%	0.10%

Id-code	a	b	Average %	Low -3% Average %	High +3% Average %	Absolute %	Deviation
KBFood25.03.2008	0.09%	0.09%	0.09%	0.09%	0.09%	0.00%	1.03
KBFood26.03.2008	0.06%	0.06%	0.06%	0.06%	0.06%	0.00%	1.03
KBFood27.03.2008	0.09%	0.09%	0.09%	0.08%	0.09%	0.00%	1.02
KBFood28.03.2008	0.08%	0.08%	0.08%	0.08%	0.08%	0.01%	1.07
KBFood29.03.3008	0.10%	0.10%	0.10%	0.10%	0.10%	0.01%	1.09
KBFood30.03.2008	0.10%	0.10%	0.10%	0.09%	0.10%	0.00%	1.02
KBFood31.03.2008	0.10%	0.10%	0.10%	0.10%	0.10%	0.01%	1.06

Faeces

Id-code sample	Weight (g) sample	Weight (mg) sample = Y	Na	(Y-b) / a = x	x * 100 = mg	mg Sample / %AS = mg AD	% Na AD	mg Na / %DS
KBFaeces26.03.2008a	0.0985	98.5	17	0.006	0.64	371.82	0.17%	0.18%
KBFaeces26.03.2008b	0.1026	102.6	16	0.006	0.59	387.30	0.15%	0.16%
KBFaeces26.03.2008c	0.0985	98.5	15	0.006	0.62	371.82	0.17%	0.17%
KBFaeces26.03.2008d	0.1026	102.6	12	0.005	0.48	387.30	0.12%	0.13%
KBFaeces26.03.2008e	0.0985	98.5	40	0.005	0.49	371.82	0.13%	0.14%
KBFaeces26.03.2008f	0.1026	102.6	45	0.005	0.54	387.30	0.14%	0.14%
KBFaeces26.03.2008g	0.0985	98.5	40	0.006	0.61	371.82	0.16%	0.17%
KBFaeces26.03.2008h	0.1026	102.6	35	0.005	0.53	387.30	0.14%	0.14%
KBFaeces27.03.2008a	0.1017	101.7	20	0.008	0.79	460.80	0.17%	0.18%
KBFaeces27.03.2008b	0.1003	100.3	20	0.008	0.79	454.46	0.17%	0.18%
KBFaeces28.03.2008a	0.0966	96.6	16	0.006	0.59	526.01	0.11%	0.12%
KBFaeces28.03.2008b	0.0978	97.8	19	0.007	0.74	532.54	0.14%	0.14%
KBFaeces28.03.2008c	0.0966	96.6	12	0.005	0.48	526.01	0.09%	0.09%
KBFaeces28.03.2008d	0.0978	97.8	15	0.006	0.62	532.54	0.12%	0.12%
KBFaeces28.03.2008e	0.0966	96.6	60	0.007	0.70	526.01	0.13%	0.14%
KBFaeces28.03.2008f	0.0978	97.8	60	0.007	0.70	532.54	0.13%	0.13%
KBFaeces29.03.2008a	0.0994	99.4	16	0.006	0.59	321.60	0.18%	0.19%
KBFaeces29.03.2008b	0.1033	103.3	16	0.006	0.59	334.21	0.18%	0.18%
KBFaeces30.03.2008a	0.0998	99.8	20	0.008	0.79	292.20	0.27%	0.28%
KBFaeces30.03.2008b	0.1022	102.2	18	0.007	0.69	299.22	0.23%	0.24%
KBFaeces30.03.2008c	0.0998	99.8	12	0.005	0.48	292.20	0.16%	0.17%
KBFaeces30.03.2008d	0.1022	102.2	13	0.005	0.52	299.22	0.18%	0.18%
KBFaeces31.03.2008a	0.1006	100.6	15	0.005	0.54	324.63	0.17%	0.17%
KBFaeces31.03.2008b	0.1010	101.0	14	0.005	0.49	325.92	0.15%	0.16%
KBFaeces31.03.2008c	0.1006	100.6	14	0.006	0.57	324.63	0.18%	0.18%
KBFaeces31.03.2008d	0.1010	101.0	14	0.006	0.57	325.92	0.18%	0.18%
KBFaeces01.04.2008a	0.0982	98.2	15	0.005	0.54	328.64	0.17%	0.17%
KBFaeces01.04.2008b	0.1029	102.9	23	0.009	0.94	344.37	0.27%	0.28%
KBFaeces01.04.2008c	0.0982	98.2	11	0.004	0.43	328.64	0.13%	0.13%
KBFaeces01.04.2008d	0.1029	102.9	13	0.005	0.52	344.37	0.15%	0.16%
KBFaeces01.04.2008e	0.0982	98.2	46	0.006	0.55	328.64	0.17%	0.17%

KBFaeces01.04.2008f	0.1029	102.9	40	0.005	0.49	344.37	0.14%	0.15%
KBFaeces01.04.2008g	0.0982	98.2	37	0.006	0.56	328.64	0.17%	0.18%
KBFaeces01.04.2008h	0.1029	102.9	39	0.006	0.59	344.37	0.17%	0.18%

Id-code	**a**	**b**	**c**	**d**	**e**	**f**	**g**	**h**	**Average %**	**Low -3% Average %**	**High +3% Average %**	**Absolute %**	**Deviation**
KBFaeces26.03.2008	0.18%	0.16%	0.17%	0.13%	0.14%	0.14%	0.17%	0.14%	*0.15%	0.15%	0.16%	0.05%	1.41
KBFaeces27.03.2008	0.18%	0.18%							0.18%	0.17%	0.18%	0.00%	1.01
KBFaeces28.03.2008	0.12%	0.14%	0.09%	0.12%	0.14%	0.13%			*0.12%	0.12%	0.13%	0.05%	1.55
KBFaeces29.03.2008	0.19%	0.18%							0.19%	0.18%	0.19%	0.01%	1.04
KBFaeces30.03.2008	0.28%	0.24%	0.17%	0.18%					*0.22%	0.21%	0.22%	0.11%	1.67
KBFaeces31.03.2008	0.17%	0.16%	0.18%	0.18%					*0.17%	0.17%	0.18%	0.03%	1.17
KBFaeces01.04.2008	0.17%	**0.28 %	0.13%	0.16%	0.17%	0.15%	0.18%	0.18%	*0.16%	0.16%	0.17%	0.04%	1.33

**Bigger difference between the duplicates then the permitted ± 3% of the mean*
***Outlier not used in the calculation*

Appendix XXIV – Phosphorus analyses

Formula

E_s = E of the standard — mg P2O5 / 100 g food = Eb * 0.15 / Es * 50 / 2.5 * 100 / g Food

E_b = E of the definition — mg P / 100 g food = 0.437 * mg P2O5

AD = Air dry matter
DM = Dry matter
P = Phosphorus

Food

Id-code	Weight (g)	Solution	mg P_2O_5 / 100 g Food	mg P / 100 g Food AD	mg P / 100 g Food DM	% P DM
KBFood25.03.2008a	0.1043	0.922	2482	1085	1123	1.12%
KBFood25.03.2008b	0.1027	0.595	1627	711	736	0.74%
KBFood26.03.2008a	0.1031	0.373	1016	444	453	0.45%
KBFood26.03.2008b	0.1007	0.344	959	419	427	0.43%
KBFood27.03.2008a	0.1002	0.524	1468	642	655	0.65%
KBFood27.03.2008b	0.1019	0.532	1466	641	654	0.65%
KBFood28.03.2008a	0.1006	0.433	1208	528	542	0.54%
KBFood28.03.2008b	0.1009	0.401	1116	488	500	0.50%
KBFood29.03.2008a	0.1022	0.901	2475	1082	1116	1.12%
KBFood29.03.2008b	0.1007	0.981	2735	1195	1234	1.23%
KBFood30.03.2008a	0.1003	0.627	1755	767	786	0.79%
KBFood30.03.2008b	0.1005	0.649	1813	792	812	0.81%
KBFood31.03.2008a	0.1025	0.811	2221	971	998	1.00%
KBFood31.03.2008b	0.1011	0.905	2513	1098	1129	1.13%
Blanco a		1.066				
Blanco b		1.071				

Id-code	a	b	Average %	Low -3% Average %	High +3% Average %	Absolute %	Deviation
KBFood25.03.2008	1.12%	0.74%	*0.93%	0.90%	0.96%	0.39%	1.53
KBFood26.03.2008	0.45%	0.43%	0.44%	0.43%	0.45%	0.03%	1.06
KBFood27.03.2008	0.65%	0.65%	0.65%	0.63%	0.67%	0.00%	1.00
KBFood28.03.2008	0.54%	0.50%	*0.52%	0.51%	0.54%	0.04%	0.92
KBFood29.03.3008	1.12%	1.23%	*1.18%	1.14%	1.21%	0.12%	1.11
KBFood30.03.2008	0.79%	0.81%	0.80%	0.77%	0.82%	0.03%	1.03

KBFood31.03.2008	1.00%	1.13%	*1.06%	1.03%	1.10%	0.13%	1.13
Blanco	1.066	1.071	1.0685	1.036445	1.100555	-0.005	1.00

**Bigger difference between the duplicates then the permitted ± 3% of the mean*

Faeces

Id-code	Weight (g)	Solution	mg P_2O_5 / 100 g food	mg P / 100 g food AD	mg P / 100 g Food DM	% P DM
KBFaeces26.03.2008a	0.1017	2.252	6282	2745	2824	2.82%
KBFaeces26.03.2008b	0.1019	2.166	6030	2635	2711	2.71%
KBFaeces27.03.2008a	0.1013	1.476	4133	1806	1867	1.87%
KBFaeces27.03.2008b	0.1035	1.475	4043	1767	1826	1.83%
KBFaeces28.03.2008a	0.1005	1.272	3591	1569	1608	1.61%
KBFaeces28.03.2008b	0.1022	1.347	3739	1634	1675	1.67%
KBFaeces29.03.2008a	0.1029	2.929	8075	3529	3633	3.63%
KBFaeces29.03.2008b	0.1019	2.837	7898	3451	3553	3.55%
KBFaeces30.03.2008a	0.1011	3.442	9658	4221	4355	4.36%
KBFaeces30.03.2008b	0.1017	3.570	9958	4352	4490	4.49%
KBFaeces31.03.2008a	0.1022	2.935	8147	3560	3663	3.66%
KBFaeces31.03.2008b	0.1023	2.920	8097	3539	3641	3.64%
KBFaeces01.04.2008a	0.1034	2.045	5611	2452	2518	2.52%
KBFaeces01.04.2008b	0.1036	2.340	6408	2800	2876	2.88%
Blanco a		1.050				
Blanco b		1.065				

Id-code	a	b	Average %	Low -3% Average %	High +3% Average %	Absolute %	Deviation
KBFaeces26.03.2008	2.82%	2.71%	2.77%	2.68%	2.85%	0.11%	1.04
KBFaeces27.03.2008	1.87%	1.83%	1.85%	1.79%	1.90%	0.04%	1.02
KBFaeces28.03.2008	1.61%	1.67%	1.64%	1.59%	1.69%	0.07%	1.04
KBFaeces29.03.2008	3.63%	3.55%	3.59%	3.48%	3.70%	0.08%	1.02
KBFaeces30.03.2008	4.36%	4.49%	4.42%	4.29%	4.56%	0.14%	1.03
KBFaeces31.03.2008	3.66%	3.64%	3.65%	3.54%	3.76%	0.02%	1.01
KBFaeces01.04.2008	2.52%	2.88%	2.70%	2.62%	*2.78%	0.36%	1.14
Blanco	1.05	1.065	1.0575	1.025775	1.089225	0.015	1.01

**Bigger difference between the duplicates then the permitted ± 3% of the mean*

Appendix XXV – Digestion coefficient (DCFI)

Food

Total DM (g)	Food	CP	CFat	CFibre	ADF	NDF	NFC	Ash	Ca	K	Mg	Na	P	kJ
25.03.2008	4.46	1.23	0.21	0.12	0.16	0.89	1.77	0.36	0.04	0.03	0.06	0.00	0.04	51184.77
26.03.2008	6.78	1.41	2.09	0.49	0.60	1.61	1.40	0.26	0.02	0.04	0.06	0.00	0.03	76025.07
27.03.2009	4.63	1.00	0.71	0.17	0.23	1.19	1.43	0.30	0.02	0.04	0.04	0.00	0.03	58638.05
28.03.2009	3.09	0.48	0.06	0.11	0.18	0.59	1.80	0.15	0.01	0.02	0.03	0.00	0.02	51271.03
29.03.2010	5.97	2.13	0.42	0.11	0.23	1.03	1.81	0.58	0.07	0.05	0.07	0.01	0.07	54164.85
30.03.2010	5.32	1.67	0.68	0.15	0.31	1.75	0.86	0.37	0.03	0.04	0.06	0.01	0.04	51014.37
31.03.2011	4.61	1.38	0.18	0.10	0.18	0.58	2.06	0.40	0.05	0.03	0.04	0.00	0.05	54864.77
Average	**4.98**	**1.33**	**0.62**	**0.18**	**0.27**	**1.09**	**1.59**	**0.35**	**0.04**	**0.04**	**0.05**	**0.00**	**0.04**	**56737.56**

Faeces

Total DM (g)	Faeces	CP	CFat	CFibre	ADF	NDF	NFC	Ash-Sand	Sand	Ca	K	Mg	Na	P	kJ
26.03.2008	1.71	0.30	0.04	0.27	0.43	0.68	0.16	0.38	0.08	0.06	0.02	0.05	0.00	0.05	12616.13
27.03.2009	1.38	0.29	0.04	0.19	0.34	0.57	0.11	0.23	0.07	0.03	0.01	0.05	0.00	0.03	10923.05
28.03.2009	1.67	0.31	0.11	0.22	0.39	0.62	0.27	0.26	0.05	0.04	0.01	0.06	0.00	0.03	13742.13
29.03.2010	1.52	0.26	0.03	0.21	0.24	0.47	0.27	0.44	0.02	0.07	0.02	0.05	0.00	0.05	13315.93
30.03.2010	0.95	0.19	0.02	0.09	0.14	0.26	0.15	0.31	0.01	0.05	0.02	0.05	0.00	0.04	9999.28
31.03.2011	1.45	0.26	0.02	0.19	0.26	0.44	0.25	0.42	0.03	0.07	0.02	0.06	0.00	0.05	12700.33
01.04.2008	1.13	0.18	0.02	0.13	0.23	0.43	0.11	0.28	0.05	0.05	0.02	0.04	0.00	0.03	9646.43
Average	**1.40**	**0.26**	**0.04**	**0.19**	**0.29**	**0.50**	**0.19**	**0.33**	**0.04**	**0.05**	**0.02**	**0.05**	**0.00**	**0.04**	**11849.04**