

Nutrient analyses at the IZW

The Nutrition laboratory of the *Leibniz Institute for Zoo and Wildlife Research* (IZW) offers the following services **for co-operation partners only**:

- analysis of macronutrients and selected minerals from plant and faeces samples to estimate diet quality,
- analysis of tannin-binding-capacity from saliva as a measure for coping with the effects of plant secondary compounds,
- faecal particle size to estimate digestion physiology and/or diet quality.

All analyses offered and the costs of analyses are summarized below.

1. Requirements regarding sample collection and samples

1.1 Plant samples

Samples can be sent either frozen or dried. Dried material (drying temperature below 50°C) is suitable for all analyses except n-alkanes. For estimation of water content, please do not forget to weigh your samples before and after drying.

The sample amount needed depends on how many analyses are supposed to be done. For a complete analysis about 20g dry matter are required. Since many plants contain high amounts of water (in some fruits about 90 %), you should collect at least 100g of wet material.

1.2 Faecal samples

Samples can be sent either frozen or dried. Particle size is best determined from fresh/frozen material.

1.3 Prerequisites

The nutrient content of plants changes over the day and depends among other things on habitat (sunshine, soil etc.) and ripeness. Especially sugar amounts are highly variable, therefore all samples should be collected under same conditions if e.g. different sites are compared.

If different plant parts are to be analyzed separately, please separate them before drying and weigh them separately before and after drying.

Please add a sample list when shipping the samples and include the list as an *Excel* file.

2. Limitations

Sometimes it is difficult to collect enough material to perform all analyses. In this case please provide a priority list identifying the most important analyses.

3. Costs

See list below

4. Customer risks

None

5. Warranties

Delivery and handling time of samples varies and is estimated upon consultation. The time required for analyses depends on number of current projects and staff availability.

6. Quality management

We use state of the art methods and all analyses are performed in duplicate. Analyses are repeated in the case of significant discrepancy at no additional costs.

Internal house standards are calibrated against referenced standards and are used in each run.

7. Contact

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Costs for Nutrient Analyses at IZW

Analysis of plant/faeces nutrients (duplicate)

DM = dry matter (10 - 60 % of wet mass)

Item	Material		Costs	Processing Time		
	Amount needed (g DM)	recommended amount of wet material (g) - better more	Costs (Euro) for co-operation partners only	samples per day	time needed per 100 samples (days)	time needed per 100 samples (working weeks)
Sample preparation (mandatory)						
Freeze-drying			0.5	6	17	3.5
Grinding			0.5	20	5	1
Dry matter + crude ash	4	20	1	10	10	2
				less total time is needed because preparation steps can be staggered		
Macronutrients						
Protein	1	5	6	30	3.5	0.8
Starch/Glucose	1	5	8	10	10	2
Sucrose/Fructose	1	5	8	10	10	2
Fiber Analysis	2	10	7	10 per 3 days	30	6
Crude Fiber	2	10	4	10	10	2
Crude Fat	4	20	4	10	10	2
Energy	2	10	2	10	10	2
Minerals						
costs and time for complete mineral analysis						
Microwave digestion			1	30	3.5	0.8
Cr, Co, Mg, Fe, Ca, Cu, Na, K	1	5	8	8	12.5	2.5
Total	18	90	50		131.5	26.6
Additional Analyses						
Faeces particle size (fresh faeces recommended)	2	5-10	10	5	20	4
n-Alkanes	5	25	20	10	10	2
Tannin-Binding-Assay (saliva)		> 2ml	20	5	20	4