KWAZULU-NATAL PROVINCE
AGRICULTURE AND RURAL DEVELOPMENT
REPUBLIC OF SOUTH AFRICA

DIRECTORATE: VETERINARY SERVICES

Allerton P.V.L., 458 Town Bush Road, Pietermaritzburg, 3201
KZN Department of Agriculture & Rural Development
**Tel**: 033 347 6200

# TOXICOLOGY / BIOCHEMISTRY SECTION

## Services rendered by the section

The purpose of the biochemistry/toxicology section is to analyse samples for the presence of various toxins and poisons which may cause serious illness or even death in animals and humans.

## Various analyses, analytes and sample quality for submission

| Test/s Required | Sample Type & Size | Assay | Suitable Sample | Unsuitable Sample | Delivery Time | Transport Requirements |
|---|---|---|---|---|---|---|
| Mycotoxins viz. aflatoxin, Ochratoxin, Zearalenone, Fumonisin, T2, Citrinin, Deoxynivalenol (DON) | Feed 100g | ELISA<br><br>Affinity Chromatography | Sample in dry sterile container / paper bag. | Wet, badly packed. | Within 48 hrs. | Below 22°C |
| Arsenic | Rumen content 100g, Abomasal content 100g, Feed 100g | Wet chemistry | Samples in separate sterile containers. | Decomposed samples. | Within 24 hrs. | Frozen or 4ºC-8ºC |
| Nitrate/Nitrite | Fresh rumen content 100g, Intra ocular fluid, Fresh plant material 100g, Water 100ml | Dipstick method | Samples in separate sterile containers. | Decomposed samples. Clotted blood samples. | Within 8 hrs. | 4ºC-8ºC |

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|---|---|---|---|---|---|---|
| Prussic Acid | Fresh rumen content 100g, Muscle 100g, Forage 100g | Wet Chemistry | Organs & forage frozen or in 1% $HgCl_2$ (mercuric chloride). | Samples that are NOT deep frozen or in $HgCl_2$ preservative. | Within 24 hrs. | Frozen or 4ºC-8ºC |
| Strychnine | Stomach content 100g, Crop content 100g, Bait: 20-30g | Thin Layer Chromatography | Samples in separate sterile containers. | Decomposed samples. Small sample sizes. | Within 24 hrs. | Frozen or 4ºC-8ºC |
| Water Mineral analysis – Full mineral analysis, pH, and total hardness | 2L | UV/VIS Spectroscopy | A clean plastic/ glass container | Small sample size (less than a liter) | Same day | Below 4°C |
| Whole Blood: haematocrit (PCV) | 7-10 ml | Micro Haematocrit reader | Heparin tube | Haemolyzed and clotted samples | Within 24 hrs. | Keep between 4 – 8°C |

**Collection and sending of samples**

- **All** samples submitted **must** be clearly marked with an identification number or Farm name.
- The laboratory's current submission form **must** be comprehensively completed and submitted with samples.

**Important notes when submitting samples**

- **Feed** should be a representative sample i.e. must be well mixed and taken from varying portions of the batch and placed in a clean & dry plastic container or bag.
- When testing for pesticides in deceased animals, samples must be fresh as most pesticides are volatile and may not be detected if the time elapsed since sampling is too long. Stomach/ rumen contents are the best source for isolating pesticides.
- **Blood** – **Please note that haemolysed and clotted samples will not be accepted!**

## Test Fees

Please refer to the current test and fees list or contact the laboratory for fees on tests requested.

## Section Contact Details

Director Vet Services: Dr. Lethiwe Mthembu
Tel: +27 033 347 6284
Email: lethiwe.mthembu@kzndard.gov.za

Veterinary Technologist: Ms Zethu Mkhungo
Tel: +27 033 347 6227
Email: zethu.mkhungo@kzndard.gov.za