NDSU VETERINARY DIAGNOSTIC LABORATORY

Factors Impacting Urinalysis Results

Urinalysis results can provide valuable insight into the health of an animal. Here are some tips to get the most accurate results for a sample.

1. Testing non-preserved urine as soon as possible is ideal to prevent erroneous or misleading results.
2. Urine that has been held at room temperature or for extended periods of time prior to testing can cause the following urinalysis changes:

Analyte	Change
Color	Darkened
Clarity	Decreased
Odor	Increased
pH	Increased
Glucose	Decreased
Ketones	Decreased
Bilirubin	Decreased
Urobilinogen	Decreased
Nitrite	Increased
RBC's, WBC's, Casts	Decreased
Bacteria	Increased

3. Transport ≥10 mL of urine to lab at refrigerated temperatures.
4. A sample that has been held in the refrigerator causes amorphous phosphate and urates to precipitate out in the sample. This can also interfere with the clarity of the sample.
5. Refrigerated samples can also have a falsely elevated specific gravity when determined by hydrometer methods.
6. The longer an unpreserved sample is held before setting up a culture, the less useful the results.

VDL Criteria for Urinalysis

Time elapsed since collection	Storage Temp	Tests performed
< 8 hours	Refrigerator (2-6 °C)	Biochemical analysis and microscopic sediment Exam
8-24 hours	Refrigerator (2-6 °C)	Biochemical analysis and microscopic sediment Exam*
24-72 hours	Refrigerator (2-6 °C)	Biochemical Analysis*
>72 hours	Any	None. Sample rejected

*Interpret these results with caution. Sample may have erroneous results due to delayed sample submission.

References:
Mahon, C., & Lehman, D. (2019). Textbook of Diagnostic Microbiology (6th ed.). Saunders Elsevier.
Strasinger, S. K., & Schaub, D. L. M. (2001). Urinalysis and Body Fluids (4th ed.). F.A. Davis Company.