

**Vetpath** is a specialist veterinary laboratory dedicated to providing our clients with the finest laboratory diagnostic service. A team of veterinary pathologists and medical scientists with extensive experience in veterinary diagnostic pathology forms the core of the Vetpath team.

# VN News

## NOVEMBER 2020

### Unlabeled samples

All specimens submitted to Vetpath must be labelled with the patient's name. This is a requirement we must adhere to as a NATA accredited laboratory.

If samples are submitted unlabeled, our laboratory staff must phone the submitting veterinary clinic to verify the identity of the patient. A phone call is also required if there are no clinic details, no tests requested or if the name of the submission form does not match the name on the sample.

Unfortunately, these non-conformances occur every day. This delays processing and testing of samples while our lab staff phone the clinic. Please take the time to label all samples submitted to the laboratory and ensure that the submission form is filled out correctly.



**Lab technician Daniel phoning a clinic instead of processing samples!**

### Urine SG with panels and profiles

Always remember to submit a urine sample with your blood samples.

Vetpath provides a urine SG at no extra cost when the sample is submitted with blood for profiles and panels. This allows you to interpret urea and creatinine accurately without the full cost of urinalysis or urine wet microscopy.

### Red Priority bags

Vetpath is implementing red priority bags for clinically urgent samples.

The red bags will make urgent samples easily identifiable, minimizing delays in processing once they have arrived at the lab. These bags should be used for **clinically urgent** tests that have less than a 24 hour turnaround time (eg blood, urine and cytology), and not for tests that require longer processing such as swabs, PCR testing and histopathology. **Please ensure that submission forms are still marked urgent.**



## Poisons affecting the liver

The liver is the first organ after the gastrointestinal system to receive ingested toxins and is at particular risk of toxicity both directly and secondary to metabolism of foreign substances.

A **Companion Animal CPD** article entitled “*Poisons affecting the liver*” discussed several causes of liver toxicity involving various mechanisms. A summary is below:

### Xylitol

The sugar substitute xylitol has been identified as a cause of liver failure in dogs, however the mechanism of toxicity is unknown. Hypoglycaemia can also occur after xylitol ingestion (independent to liver damage) due to stimulation of insulin release. Signs of liver damage can occur within 2 – 72 hours of ingestion, with an associated increase in liver enzymes within 4 – 24 hours.

### Blue green algae

Blue green algae (Cyanobacteria) are a group of bacteria found in fresh, brackish or marine bodies of water. These organisms are not always blue green and can be floating or bottom-dwelling.

Cyanobacteria contain or produce one or more hepatotoxic substances (cyanotoxins). These toxins generally disrupt cell structure causing massive hepatic necrosis and failure. Liver enzymes increase within 24 hours of exposure, and dogs often present with gastrointestinal clinical signs.

### Mushroom toxins

Several types of mushrooms contain toxic substances, however the deadliest is the *Amanita* group (including the Death Cap mushroom). These mushrooms are found in the southern parts of Australia from WA to NSW. The amatoxins prevent cellular protein synthesis and result in hepatocellular death and necrosis. Gastrointestinal clinical signs are seen initially, followed by elevated liver enzymes within 24 to 48 hours.



**Marbled Death cap mushroom**

<https://healthywa.wa.gov.au>

### Paracetamol

Also known as acetaminophen, paracetamol is metabolized by the liver via several pathways. Oxidation of paracetamol

produces a highly reactive compound that results in cell death. In most species, oxidation of paracetamol is minimal unless large amounts are ingested. However, cats and ferrets have reduced ability to metabolise paracetamol and are therefore more susceptible to toxicity.

In addition to hepatocellular death, Heinz body formation, methaemaglobinaemia and anaemia may occur. Liver enzyme elevations and production of Heinz bodies can occur within 24 hours of ingestion.

### Cycads

Cycad ferns and palms contain compounds that are metabolized into hepatotoxins. Like other hepatotoxins, liver enzyme elevations occur 24 – 36 hours after ingestion and clinical disease often begin with gastrointestinal signs.

Diagnosis of hepatotoxicity is based on clinical signs, history of exposure to potential toxins and evaluation of CBC and biochemistry data. Paracetamol can also be measured on a serum sample to confirm ingestion has occurred.

### Reference:

Bates, N. Poisons affecting the liver. Companion Animal CPD article, December/January 2019/2020. Volume 24 No 11.

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