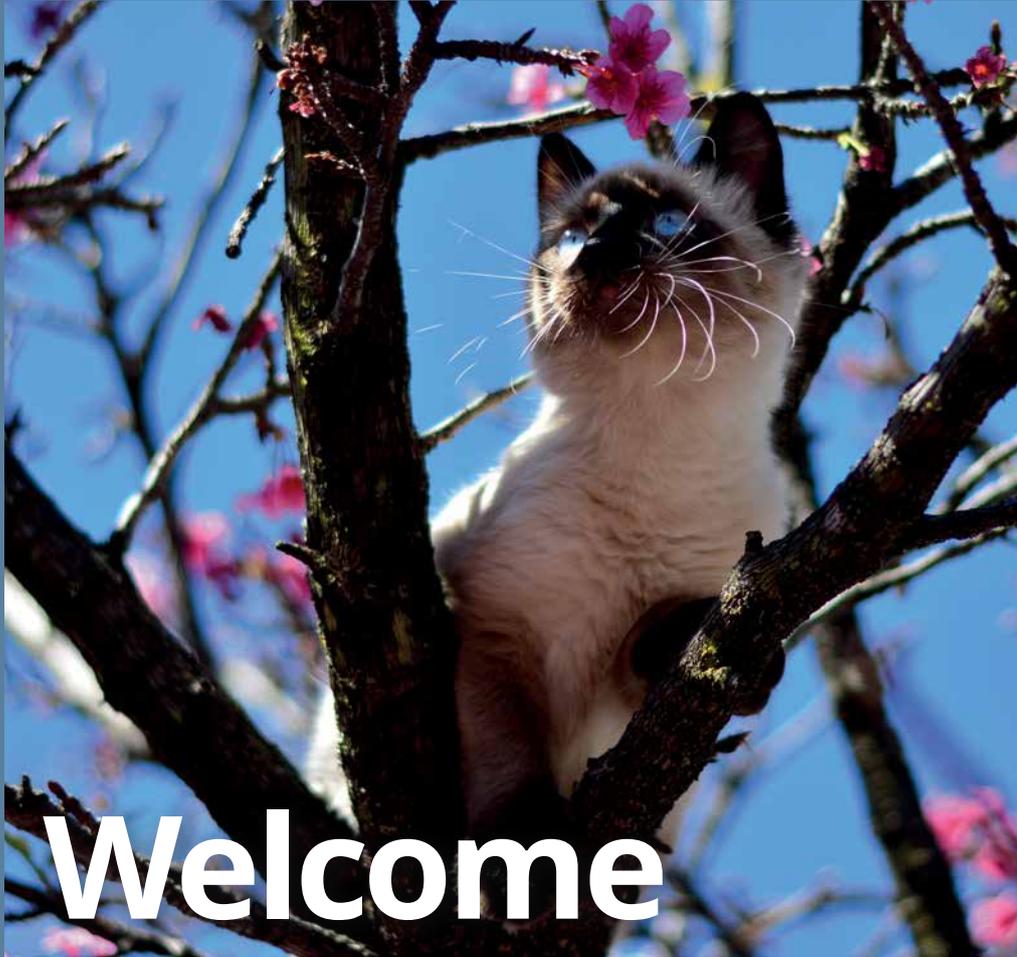
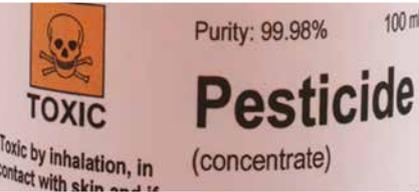


Toxic Times

SPRING/SUMMER 2018 ISSUE



Welcome

Welcome to the Spring/Summer edition of Toxic Times.

Now that we can put thoughts of ice, snow and travel chaos behind us, it's time to look ahead to the warmer months, which for many, means gardening and for others, dieting.

In the garden, we'll discuss slug bait and how it is vital that it be kept away from pets and we'll also look at xylitol, the sugar replacement, and how it too must be kept securely away from animals.

The less commonly seen rodenticide, alphachloralose is also discussed. Case Corner highlights some recent cases involving all these agents.

Our Key Points to Preventing Poisoning is a reminder and aid to keep our pets safe in the home and garden, and although mostly common sense, is worth reiterating.

Finally, the regular update of forthcoming CPD courses, which this year are proving extremely popular- possibly due in part to the provision of homemade cakes.

2018 CPD COURSES

Key Areas Covered (six hours of CPD)

- Case histories for potential poisons cases
- Decontamination for poisons cases
- Toxicology information resources
- Common or tricky poisonings in cats and dogs

Cost and Bookings

Standard fee: £295 + VAT
Early bird fee: £250 + VAT*

Each delegate will receive course notes and a CPD certificate (equates to 6 hours CPD training). Lunch and refreshments are provided.

Bookings: To reserve a place, please visit the link below and download the booking form.

<https://vpisglobal.com/class-based-courses-2018/>

| Date | Location |
|----------------|------------|
| May 24th | Liverpool |
| June 8th | Winchester |
| July 19th | Glasgow |
| September 13th | London |
| October 18th | Exeter |
| November 29th | Birmingham |

* Early bird discount applies to bookings made up to 8 weeks prior to the course date or for all customers booking additional places on an annual contract



CASE CORNER



convulsions and tremors but she remained twitching for 2 hours. The propofol was continued for 6 hours and was then weaned down. It took 12 hours for her to recover from the general anaesthesia and she recovered fully.

A 24 kg boxer developed tremor 1.5 hours after ingestion of metaldehyde.

He was given an emetic and vomited lots of pellets. He developed convulsions at about 2 hours and was given 3 bolus doses of diazepam but the effect was short-lived. Pentobarbital was ineffective and a propofol infusion was started. An attempt was made to wean him off propofol after 24 hours but he continued to tremor and the infusion was continued for another 24 hours. He had recovered by 48 hours post-ingestion but liver enzymes were elevated.



Alphachloralose in a dog

A 5 year old 30 kg Labrador was allowed to wander loose on an industrial site. An hour later the dog had constricted pupils and hypersalivation with severe seizures at 2 hours. The owner found a packaging of alphachloralose mouse poison on the site. The dog was given 3 doses of diazepam which was ineffective and then phenobarbital which controlled the seizures. The dog was given a gastric lavage and two doses of activated charcoal. There was rapid and full recovery following profound sedation for severe seizures and the dog was well by 18 hours.

Xylitol in dogs

An owner baked a cake with 450 g of Total Sweet (xylitol) but found it too sweet and threw it away. A 11.4 kg cocker spaniel raided the bin and ate the entire cake. Within 1 hour he began vomiting and then collapsed. On admission he had severe hypoglycaemia. He was unstable for the first 12 hours and the glucose had to be monitored every 5-10 minutes using a continuous monitor. He was treated with glucose boluses but then required a CRI with required at least one addition bolus whilst on the drip. The liver enzymes were elevated when tested at 4 hours and he was started on SAME. He was discharged at 72 hours. When retested on day 3 the liver enzymes were improving and had halved.

A 27 kg Labrador chewed a bag of pure xylitol that was delivered through the post. Within 15 minutes he was vomiting and a few minutes later developed severe convulsions. On admission soon after he was found to have severe hypoglycaemia. He responded to IV glucose (5 ml of 50% solution started at 20 minutes post-ingestion, repeated 5 times at 10-15 minute intervals). He was also given IV fluids, activated charcoal and SAME. Blood tests showed elevated ALT but this was normal within 10 days

A 5 year 7 month old 16.9 kg Labradoodle ate 30 pieces of Wrigley's Strawberry gum containing xylitol (so 795.3 mg/kg).

The blood glucose on arrival about 1 hours later was very low (only 1 mmol/l) and he was panting and shaking with mild arrhythmia. He was given 3 tubes of oral glucose gel and then IV glucose as bolus and infusion. Activated charcoal was offered and eaten every 15 minutes. He was started on SAME. Blood glucose was 4 mmol/L and 4.6 mmol/L 40 minutes later. Further oral glucose was given 2 hours later and arrhythmia resolved. The blood glucose was 7 mmol/L 15 minutes later. Monitoring was continued but he remained well.

Metaldehyde in a dogs

A 2 year old 24 kg Labrador ripped open a sack of agricultural metaldehyde. The owner noticed almost immediately and took the dog to hospital within 45 minutes. She was given an emetic and vomited lots of slug pellets. She developed tremors and twitching and these progressed to convulsions. She was given diazepam three times but the final dose was ineffective. She vomited twice more during tremors and convulsions and was given propofol to anaesthetise and facilitate a gastric lavage. The propofol settled the



KEY POINTS IN POISONING PREVENTION

Safeguard your home for pets - accidents will happen, many can be prevented.



- **Store medicines safely.** Never give medication intended for human use to your pet. Keep **handbags and rucksacks** well away from animals and keep medicine chests and boxes out of the reach of inquisitive paws.
- **Medicines applied dermally** to humans such as NSAID creams, minoxidil alopecia products and opioid analgesic patches represent a risk if animals lick their owner's skin.

- Never feed **grapes, raisins or onions** to animals and ensure **chocolate** supplies, including drinking chocolate and cocoa powder, are out of reach.
- Dispose of **leftovers or take-way** food promptly and securely.
- Ensure that any kitchen caddy for organic recycling is securely closed to prevent animals accessing **mouldy food** which can lead to toxicity from tremorgenic mycotoxins. This would also apply to dustbins
- **Lilies** can kill cats- don't mix the two!
- Store **cleaning and DIY** products well away from pets, mop up any spills quickly and never decant in different containers
- The newer **laundry capsules** are highly concentrated and can cause problems when ingested or spilt on the fur.
- **Fit letter boxes** with a cages or guards, so that any samples, edible or inedible, delivered to the home are not swiftly ingested by pets; there have been some tragic cases of xylitol-containing chewing gums, delivered as mail-shot samples, causing fatalities in animals.
- **Metaldehyde** slug and snail killers are highly toxic to animals.
- Do not leave diluted **gardening products** in unattended watering cans or buckets, and always dispose safely of any left- over preparations.
- **Antifreeze**-tiny amounts can kill cats and dogs.



DIETS AND XYLITOL

Watching our sugar intake is becoming a national past-time, which, whilst undoubtedly giving health benefits (assuming we watch it and actually do something about decreasing it), may lead to an increase in the amount of xylitol-containing foods in our homes.

Xylitol is a 5-carbon sugar alcohol. It exists naturally in low concentrations in fruit and vegetables and is a normal intermediary metabolite in glucose metabolism. It is used as an artificial sweetener and is frequently found in sugar-free chewing gums and sweets. It is also sold in bags for home baking.

Xylitol is a potent stimulator of insulin release in dogs and is absorbed more quickly and extensively in these animals than in humans.

Hypoglycaemia and liver damage are the main concerns and close monitoring is required in these cases.

The onset of clinical effect may be less than an hour post ingestion, although in some cases, particularly those with subsequent liver damage hypoglycaemia can be delayed 24-48 hours. Liver failure can occur in the absence of hypoglycaemia and signs occur 9-72 hours after ingestion.

Treatment is recommended for anything over 0.05 g/kg (50 mg/kg). Many chewing gums may contain 290-490 mg per piece, which means that relatively few pieces may cause serious problems in dogs.



It is vital to obtain baseline glucose, potassium, phosphorus, total bilirubin, liver enzymes and clotting parameters.

Monitor glucose concentrations every 1-2 hours for at least 12 hours and recheck the other tests every 24 hours for at least 72 hours.



METALDEHYDE SLUG AND SNAIL BAITS

Metaldehyde in the form of slug and snail killers, represents the biggest cause of fatalities reported to the Veterinary Poisons Information Service. In 2017, although less than 1% of enquiries related to metaldehyde, there were 3 deaths and 4 animals euthanised.

Gardeners may apply these products incorrectly, clumping the product rather than scattering it over a wide area.



Given the small amount of metaldehyde required to cause clinical effects, 66.7 mg per kg body weight for a bait of 3% w/w strength, it is no surprise that dogs are easily able to ingest sufficient amounts to cause severe issues.

The reason for the high incidence of mortality is due to the rapid onset of clinical effects, often within 30 minutes, which include convulsions, their severity and the difficulty in treating them, and the downstream effects resulting from uncontrolled or prolonged seizures.

Common signs are hypersalivation, vomiting, diarrhoea (may be discoloured greeny-blue), ataxia, panting, tremor, twitching, muscle spasms or fasciculation, convulsions or opisthotonus with hyperthermia.

Unless the animal presents at the surgery quickly, it may not be safe to induce emesis or give activated charcoal; in these cases, gastric lavage would be indicated.

The mainstay of treatment is the control of convulsions and thus the prevention of complications of prolonged seizure activity.

Several different drugs are used in the control of convulsions. In a VPIS review of cases almost half the dogs requiring anticonvulsant therapy required more than one sedative or anaesthetic.

Metaldehyde is not lipophilic and unfortunately not a candidate for lipid infusion.

RODENTICIDES



IMPORTANT NEWS:

Anticoagulant rodenticides available to the general public have typically been of 0.005% strength but from 1 March 2018 baits will be half this strength, so 0.0025% or 25 ppm to reduce the risk to non-target species such as owls, stoats and foxes.

In addition, pack sizes are also changing.

- For **consumer baits**:
 - For bait blocks the maximum pack size will be 300 g for rats and 150 g for mice.
 - Grain, pasta or pellet baits will have a maximum pack size of 150 g for rats and 100 g for mice.
- **Professional baits** will still be available as 0.005% but under strict rules for sellers and buyers. The maximum pack size will be 3 kg.

The next issue of Toxic Times will discuss in greater depth the anticoagulant rodenticides, but there is another rodenticide, alpha-chloralose, which works by depressing the central nervous system.

Alpha-chloralose

Alpha-chloralose causes selective depression of neurones in the ascending reticular formation, and so suppresses the normal arousal response, resulting in slowing of the heart and respiration which results in lowered body temperature. This is especially seen in mice, because of the large surface area in relation to weight.

In low doses alpha-chloralose, causes increased motor activity but in an acute

overdose the lethal action of alpha-chloralose is due to depression of the central nervous system (Lees, 1972).

Alpha-chloralose appears to be readily and rapidly absorbed. Unlike most of the anticoagulant rodenticides, alpha-chloralose does not have a cumulative action.

Cats are more susceptible to the toxic effects of alpha-chloralose because they are deficient in glucuronidation compared to dogs, in the same way that cats are more susceptible to paracetamol toxicity.

The onset of clinical effects may be very rapid and are expected within 15 minutes but commonly within 1-2 hours. There have been cases with effects lasting 12-36 hours.

Ataxia, hyperaesthesia with loss of sensitivity to pain and aggression may occur within the first few hours. Then drowsiness, weakness, pale mucous membranes, hypersalivation, constricted or dilated pupils, lethargy, tremor, twitching, collapse, shallow respiration, coma (more common than in dogs) and convulsions. Hypothermia is common in cats, although hyperpyrexia can occur from repeated convulsions. The cardiovascular system is usually unaffected.

The mainstay of treatment is maintenance of the vital functions, stabilization and decontamination with anticonvulsant therapy, if required.

Treatment is recommended for ingestion of >5 mg/kg, which is equivalent to 0.25 g (250 mg) bait/kg for a 2% w/w product.