

## Looking at Bird Poo

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Amongst all of the jobs that we do as a wildlife rehabilitator; scatology, or looking at poo, is one of the less pleasant. However, there is a lot of information about the bird to be found in poo.

Let us begin by defining what we see when we look at bird poo. Like marsupials, birds have a cloaca – which means that there is a common opening for faecal and urinary waste. A dropping contains three portions: urine, a solid urate and the faeces.

1. **Urine:** in a parrot, this would just be visible outside the faeces. In other species, it may appear bigger. In a lorikeet, the entire dropping is watery and it is difficult to determine which part is urine. The urine should be clear in colour. If it is green, this may suggest liver disease. If the urine is red, the bird may have eaten red fruit or this may indicate lead poisoning (breakdown products of blood are filtered by the urine).
2. **Urate** should be white in colour. A stressed bird (i.e. after handling or capture) may produce droppings that are only white urates – this is equivalent to peeing in your pants. The urate portion should not be creamy yellow. This indicates starvation or malnutrition. A green coloured urate also suggests liver disease. Urates are produced by the liver and excreted by the kidneys. Urates are an adaptation to living in an arid environment and thus permit the bird to continue to excrete waste in the face of dehydration.
3. **Faeces** are the final component. The colour of the faeces is dependent upon the diet. For parrots, the normal colour of faeces varies from light brown to nearly black. The faeces should be tightly coiled. Magpies produce brown to black faeces as well, but not in a tubular form. Lorikeets often produce light brown coloured faeces in a liquid form.

Faeces should not be confused with the cast. **Casting** is the regurgitation of solid material from the first stomach. Casts usually contain beetle exoskeletons (magpies, tawny frogmouths, small owls and diurnal birds of prey) or fur and skeletons in the case of the larger birds of prey.

The **frequency** or amount of droppings produced is also worthy of noting. A bird that is not feeding (and thus requires force feeding) will produce droppings containing urates and urine only. If the faecal material is scant or absent, the bird is starving. If few droppings are produced, the bird is also not likely to be eating. A bird the size of a budgie (30g) should poo every 30 minutes (at least) – so about 60 in a day. Larger birds will defecate less often. Magpies (300g) appear to poo roughly hourly during the day (8 – 15 or so).

We can define diarrhoea as a change in the frequency or consistency of the faeces. It is worth noting the faeces seen on the first day, as they are more likely to be normal and reflect a normal, wild diet. With diarrhoea the frequency or amount of droppings increases. The consistency changes from 'normal' firm faeces for that species to more liquid faeces.

We can look at bird faeces in another way – under the microscope!

The first test that can be performed on bird faeces is a faecal floatation test. 1gram of faeces (where possible) is mixed with a Zinc Sulfate solution. This strong salt solution permits the eggs of worms to float to the surface where surface tension permits them to 'stick' to a slide. Examination for worm eggs can be done under a 10x objective lens. The entire slide should be examined. Examination for coccidia should be performed under a 40x objective lens as the oocysts of coccidia are easily missed at lower magnifications.

All birds have gut worms as normal parasites. Indications for treating worms include:

1. **Failure to thrive** – bird not doing well, despite eating a normal amount of food
2. In care for a prolonged period (such as **hand-rearing orphans**)
3. **Sick bird** (ie not traumatized) where we are looking for a problem. An example is a Magpie Lark I had earlier this year. Presented unable to fly (and able to be caught). No injuries. Assumption made that a bacterial infection might be present and treated for 5 days with antibiotics. Continued to lose weight over this time (shows the importance of daily weighing). Faecal flotation performed and presence of worm eggs and coccidia was noted. Wormed with ivermectin and treated for coccidia – at end of course began to gain weight and was released a month later once condition returned.

Worms are often treated with **Ivermectin**, however, be wary of the concentration as overdosing is likely. Other antiparasitic agents such as **Levamisole** are associated with causing feather defects in moulting birds and sudden death from aspiration. So its use is restricted to birds that are not moulting (i.e. precludes young birds).

Not all worms are picked up using faecal floatation. **Tapeworm** are very heavy and do not float in the salt. Tapeworm infections are common in all seabirds and waterbirds. It may be a sensible precaution to worm these birds upon arrival. There is a tapewormer as a tablet (**Droncit** by Bayer, or **Tapewormer** by Virbac), or use **Wormout Gel** (Vetafarm) which contains drugs to treat the gut worms and tapeworms.

The other test that can be performed on bird faeces is staining for bacteria. In the avian vet world the value of this is still currently fiercely debated. However, in the parrot species, we expect to see certain types of bacteria in the faeces (gram positive rods and cocci – the good guys). When an increase in proportion of other bacteria (rods that stain gram negative – the bad guys) is present, they are suggestive of disease. However, it is only parrots that this has been validated for. We would expect to see a greater percentage of gram negative rods in birds that eat meat and insects.

Staining bird faeces may also be used to diagnose fungal/yeast problems. The two that we would look for would include **Candida** – which may become a problem in hand-reared birds or birds that have had a course of antibiotics. The other is **Avian Gastric Yeast** which is prevalent in some populations of wild parrots in some states of Australia. And a final note, we cannot diagnose a problem based on smell alone!