

# **HERBIVORE NUTRITION SUPPLEMENTS**

## **Helping Wildlife in Care**

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### **RATIONALE FOR THE STUDY**

Over many years we have experienced frustration in finding effective methods to treat a range of problems in young possums in care; conditions such as malnourishment, poor appetite and feeding, failure to thrive, Caecal Stasis, low immunity diseases (bacterial and fungal), and diarrhoea. In some cases of course, there is a known reason for the condition but response to the usual treatment methods has often been disappointing. Records of all baby Ringtails coming into care over 8 years (some 3000 possums) show that, despite using known preventative measures and many medications and methods to treat these conditions our results – the numbers surviving - have not improved. This particularly applies to Caecal Stasis.

In May 2009 we set up a means of recording the history, symptoms and treatment for all 'in care' babies exhibiting early signs of poor development and malnourishment – symptoms we had come to recognise as invariably the precursors of Caecal Stasis, as well as other conditions such as susceptibility to bacterial and fungal infections for instance. We wanted to look at the effectiveness of the different treatment methods available to us. We believe our results show a very positive story.

### **THE INITIAL STUDY**

Carers of baby Ringtails were asked to watch particularly for at least two of three emerging signs and report in immediately these were noted. The signs were:

- Thin face, tail and limbs.
- Poor, sparse fur development
- A large or 'pudgy' abdomen, out of proportion to the rest of the body.

These were considered with all the known data on the animal's history – reason for rescue, early feeding history and weight gain. If the possum was considered to be 'at risk' in terms of this study, the carer was asked to follow a regime of treatment and make records daily, covering such areas as: weight, abdomen (measurement, feel and noise), any medications (prescribed by Vet), supplements ( eg. fibre, High Protein Supplement, Oxbow Critical Care), normal diet ( formula, leaves), fluids (extra?), urine and faeces condition and output, behaviour (stress, backriding?), housing (space for exercise, compatible buddies?), fur growth, independence.

In the short period of this study we have the progress of seven young possums recorded in detail. Here we will have a quick look at two of these:

**Tommy** – a case history.

Rescue weight 43g. In cat's mouth but no marks.

Always thin, poor weight gain, poor fur development.

Several formula changes, trying to improve appetite and nutritional absorption.

Happily buddied, but buddies growing and developing better.

Nibbling leaves, but not as much as buddies.

Pudgy tummy noted at 120g.

Recording commenced.

Continued normal diet (feeding self formula and leaves at night).

Given three extra feeds through the day – extra fluids (weak lectade) with ¼ tsp.

OxbowCC sprinkled over, kept up for 3 weeks.

Monitored toileting for 10 days – all normal, including soft caecal pellets, so not continued.

### **Results for Tommy:**

After 3 weeks, abdomen decreased, face and tail filling out, fur thickening.

OxbowCC now added to formula only (self feeding at night).

Supplements - extra protein and vegetables given over the weaning period (as we normally do).

All ‘supplements’ (including OxbowCC) ceased about three weeks before release.

Soft released fit and wild.

The ultimate survival measure – Tommy is now a father! (He was soft released in the garden of his carer, he nested with one of his ‘buddies’ and the following year both are still around – with joeys).

### **Lucky – a case history**

Rescue weight 54g.

Emaciated and several deep wounds from bird pecks on face and shoulder.

Poor weight gain.

Poor fur development.

Pudgy tummy noted at 80g. Records and treatment commenced.

Hand feeding formula four times daily – OxbowCC added to milk.

From 160g. normally feeding self at night only – still taken out twice daily for extra fluids and OxbowCC.

240g. abdomen normal, fur thickening, face and tail fatter. OxbowCC added to milk and water in cage only (night feed).

420g. released fit and wild, with buddies.

In both cases, comparing with past records, Oxbow was the only new treatment used.

We have to believe OxbowCC made the difference – survival.

### **OXBOW Critical Care and VETAFARM Critta Care Herbivore**

We will now look at the two products in this study. We started trialling Oxbow first – we had heard about it just before starting the study. Later we heard there was an Australian product made by Vetafarm, and we are including this in our discussion although we have not had sufficient time to study results from its use. Basically both products are nutrition supplements for herbivores, though in the case of Oxbow, not specifically for Australian wildlife. We have been very pleased to see just how effective OxbowCC has been for possums – and there is further discussion on its benefits for other wildlife. The products have very similar contents.

#### **BROAD ANALYSIS**

Natural fibre

Protein

Minerals

Vitamins – (the higher level of Vitamin D in Vetafarm was an initial concern as Vitamin D can be toxic to possums. However we have confirmed its safety).  
Probiotics (though, in Oxbow these are negated by quarantine ‘zapping’ on entry to this country)

#### **BENEFITS**

Digestive balance  
Promotion of micro-flora  
Essential nutriment  
Fibre for gut health

#### **CONCLUSIONS FROM THE INITIAL STUDY**

Results using OxbowCC versus previous treatments showed very positive results.

- Seven treated – seven successful, all now released fit and wild. We must assume that at least some of these would have gone on to develop Caecal Stasis.
- Statistics from previous 5 years – an average of six died from Caecal Stasis per year.
- This year, using OxbowCC – only one, not in the controlled study, died from Caecal Stasis.

#### **ONE DEATH FROM CAECAL STASIS – WHAT WENT WRONG?**

This possum was not in the original controlled study but the carer had used OxbowCC and had kept records of her own so we investigated to see if there was an explanation for Oxbow appearing not to help in this case. The possum died late in care – just 3 weeks before it was due to be released. The history:

Baby rescued at 62g., always a poor feeder, poor weight gain and ‘sticky’ faeces. Started on Oxbow at 70g, because baby was malnourished, thin, had poor sparse fur, and was falling well behind his buddies of the same age, in development. Oxbow was added to the milk feeds, but ceased when possum was 123g. because the appetite had improved.

Continued to develop, but well behind the buddies. A new carer took them at aviary stage and she noted he looked thin, and was often ‘rejected’ by the buddies (pushed out of the drey).

He died eight days after weaning ceased. When found on the floor he had all the signs of Caecal Stasis – very distended abdomen, very thin, and poor fur cover. He was only 268g. Several important points stood out:

- Oxbow should have been continued through to at least after weaning – ie. it was stopped too soon.
- Weaning was too early and not supported with extra nutrition.
- His system was so compromised he could not survive on leaves alone, after weaning, so he quickly lost weight and died in typical Caecal Stasis condition.

#### **OTHER RINGTAIL CONDITIONS – responding well to Oxbow.**

##### **THRUSH**

Five severe cases were recorded, three of these with additional bacterial skin infections. Oxbow was used as a milk substitute for three days. This was in addition to the usual treatment for Thrush – Nilstat, and Baytril for the bacterial infection.

In each case recovery was quicker than in the past, there was no weight loss and there were no side effects from the medications. Where diarrhoea was present it cleared up quicker than usual.

We believe OxbowCC worked because it gave essential nutrition to boost the general condition and immunity, and stimulated micro flora in the gut. We know these infections typically strike when you have a body in low condition – Oxbow helps the body to fight off infection, by building up general health.

Other conditions treated successfully with Oxbow:

- Poor appetite, poor weight gain – add to regular feeds
- Diarrhoea – Oxbow used as a supplement or substitute for milk.
- Weaning stresses – additional nutriment as milk is withdrawn. Vetafarm being used through weaning in current trials.

### **OTHER WILDLIFE BENEFITTING – in Sydney Wildlife**

#### **BRUSHTAIL POSSUMS**

Excellent results in cases of poor appetite/underweight problems and diarrhoea.

- Case #1 – severe diarrhoea for 5 weeks. When milk was stopped the diarrhoea stopped. However this young joey needed his milk so Oxbow was added to the milk – this made the difference - there was no more diarrhoea and he started to put on weight normally.
- Case #2 – this joey, rescued at 40g. had had constant diarrhoea for 10 weeks! He had been treated with antibiotics and probiotics, with no effect. His very experienced carer had tried everything known. We started him on Oxbow in his milk and his faeces immediately started to firm up – the first pellets appearing 4 days later! He is now 400g. and doing very well.
- Case #3 – 350g. joey came in with mother dying from poisoning. This joey would not take formula, ate only a few leaves and went downhill for two weeks. At this stage Oxbow was added to the formula and he immediately took 15mls. Over the next few days his appetite and intake increased to normal for his age. Once normal feeding was established Oxbow was discontinued (after one week) and he has progressed to develop normally.

We have had reports of success with Oxbow with other herbivore marsupials – wombats, koalas and kangaroos. There is a lot to learn but certainly the possibilities are encouraging.

Dr. Anne Fowler has given us some '**Potential Uses for OxbowCC**'

- Give around caecal colonisation time in healthy orphan possums. *We are currently trialling Vetafarm with two joeys at this stage.*
- Give when macropod/wombat joeys are starting to mouth and chew solid food.
- Give to sick orphans to assist with normalising gut flora and provide easily digestible energy. *Successful trials as described.*
- Give to sick/injured adults to supplement energy intake or wean back on to solid food. *Currently using Vetafarm with a severely injured adult – it is making a good recovery.*

## **CONCLUSIONS**

OxbowCC has been proved to assist in helping sick and malnourished wildlife.  
OxbowCC saved every potential Caecal Stasis victim in the controlled study.  
No negative effects have been noted with the use of OxbowCC or Vetafarm Critta Care Herbivore.  
The supplements are readily available and easy to feed.

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