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Progress Report on Crocodile Farm Oct 2018

PROOF OF CONCEPT PROGRESS REPORT FOR CROCODILE FARM –
SOUTH AFRICA

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PURESAN – SOLVING MAN-MADE PROBLEMS WITH NATURE-MADE SOLUTIONS

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CROCODILE FARM – SOUTH AFRICA – 50,000 CROCODILES

Overview

We were contacted by one of our Distributors regarding a Crocodile farm with a problem with rejection of skins. This equates to large sums of money lost as the skins all exhibit marks that is still not identified, after extensive investigation by Onderstepoort and various other Reptile Specialists. Pox and Nile Virus has been ruled out, although Onderstepoort still thinks that these marks could possibly be the cause of the lower value of the skins.

After extensive investigation and tracking data on the effected skins, we are of the opinion that the damage seems more like an allergy than a virus, but this is still speculation.

Proof of Concept

We started the proof of concept three months ago, so I do not have a conclusive case study on our findings but will endeavor to give you a good overview of our findings, thus far. As the cause of the skin blemishes are still unknown, our task is therefore more odious as every aspect of the farming practice needs to be thoroughly investigated.

Water Source

The farm relies on the nearby river and the quality of the river water is poor and our first line defense here is to dose the incoming water with Puresan PBWT (Pro Bulk Water Treatment) a ratio of 1L PBWT to 60,000L.

Due to the high pathogen load present in the river water we decided to dose at a relatively high dosage to ensure that we kill all water borne pathogens. The active ingredients in PBWT are: Copper Nitrate; Silver Nitrate; Zink Nitrate; Gold Nitrate and Aliminium Nitrate. The higher the organic load or microbial load of the water, the quicker the active ingredients are depleted. Where the water quality is better, we can dose as much as 1L PBWT to 150,000L water.

The incoming water is stored in a 2,5 million L storage tank on the hill. This supply lasts this farm for four to six days. All the farm's water requirements are drawn from here. We had to ensure that all the active ingredients in PBWT are depleted by the time the reservoir water gets to be used in the Croc farming operation.

Grass Dams – Crocs about 18 months of age

Based on a water analysis of the river and used Crocodile dams, we decided to use Puresan Bio Sewer for keeping the dams clean and conducive to reptile life.

The water sanitizer used (PBWT) will negatively affect the live bacterial strains in Puresan Bio Sewer and therefore we did not want to dose incoming water with too high a dose.

These dams house between 600 to 1000 Crocs before they are isolated in their single pen for the last 6 months before slaughtered. There are always 2 x 250,000L dams in an enclosure. These dams are cleaned every three to four weeks. The water is drained into an effluent dam, the solid debris like chicken bones and feathers are removed once the water has been drained. They scrub these dams with a Chlorinated Alkali and disinfected with Virkon S.

The dams are then refilled with 250,000L of clean water and the past practice has been to add Copper Sulphate to the water at 125 ppm. The Copper Sulphate is mainly added to combat algae growth.

First Dam Trial using Puresan Bio Sewer:

Proof of Concept – Dam 1

One of the two dams, in the same enclosure, was drained and cleaned as per usual but we added 20L of Puresan Bio Sewer to the incoming water, instead of the copper sulphate.

Control Dam 2

The other dam was drained and cleaned as per usual and the 125 ppm copper sulphate was added to the second dam.

Observations over the first week and ongoing:

The Crocs did not enter the Copper sulphate filled dam (control dam 2). They all used the Puresan Bio Sewer dam. Initially it was thought that they would use the control dam as well, but over a period of 6 weeks, not one Croc ever used the control dam. This made our trial dam no longer comparable with the control dam (2) as all organic load was now added to our trial dam (chicken meat, bones, feathers and fecal matter from the Crocs) – our trial dam had to carry a double load.

However, after 6 weeks the trial dam water was still acceptable to the farmer. There were some algae growth, but floating small algae which Crocs quite like, no string algae which is not ideal in a Croc environment. The water turbidity was good, however, when a Croc would whip its tail, the biomass (bacteria) would cloud the water for a short while before it settled to the bottom again.

The control dam (2) water had heavy algae growth and had to be drained, cleaned and disinfected within 4 weeks – even though none of the Crocs used the dam during this period.

After 8 weeks, the Puresan Bio Sewer treated dam had to be drained, cleaned and disinfected as these Crocs had to be moved to their single pens. The farmer was still happy with the water quality, but for infection control purposes it had to be cleaned as the new Crocs could not be put into this area before everything was cleaned out.

The farmer normally would drain, clean and refill these dams every three to four weeks. The good result of the Puresan Bio Sewer will result in cost savings on water usage, labour and cleaning chemicals.

Conclusion

The two, side-by-side dams were drained, cleaned and filled with Puresan Bio Sewer with the same results as before, however, this time the Crocs used both dams equally, so the water had less organic load to deal with and the quality was better for longer.

Single Pens:

This is where the Croc spends its last 6 months before it is slaughtered. The pen has a water reservoir that holds 500L of water. These pens are cleaned daily when food debris is cleaned out. The water in the reservoir is emptied and refilled after the single pen is cleaned every two weeks. Mosquitos are a huge problem for the single pens.

We initially dosed the 500L of water with Puresan PBWT at 1:20,000L to try keep the water as sterile as possible and free from mosquito larva. However, the huge amount of organic load that entered the holding tank, rendered the PBWT useless to control mosquitos or the water sterile.

We switched to Puresan Bio Sewer for the treatment of the 500L of water in the single pen reservoir with amazing results. The water stayed fresh and clean, without malodor for four weeks. However, the mosquitos were alive and well in the single pens. We have now started dosing the 500L of water with our Mosquito larva killing bacteria to try control the mosquitos in the single pen.

Hatchery

Our next phase of testing will start soon on the hatchery as mortality and health of the baby Crocs needs attention.

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