Practical experience with my Gbiota beds

Colin Austin 17 Sep 2018 © creative commons.

I continue to experiment with my Gbiota beds and wanted to pass on a few experiences (that's a euphemism for failures) to save you repeating the hassle.

Initially I used regular pond pumps which worked sort of OK but were a bit underpowered so I decided to swap over to a more industrial level sump pump. These are a quantum jump in power (there seems nothing in between I can buy easily). They are an open veined pump designed to handle seriously dirty water and claim to be able to handle dirt particles up to 20mm.

I have to report that they work fantastically and I have had no problem whatever with my pump clogging up or any other hitches.

But they are so much more powerful they have caused me problems with rubbish. The pump is so much more powerful than the pond pump that it sucked up any bit of yuck from the sump which would then block the 2mm orifices I use to regulate the flow out of each line and even block the 19mm distribution pipes.

The obvious answer was to fit a simple in line filter - they only cost about $6. But like many simple and obvious solution they did not work - blocking up within minutes.

Again the simple and obvious answer was to fit a much coarser filter which gave the momentous achievement of increasing the block up time from 2 to 10 minutes.

After spending a morning visiting the local irrigation specialists to find a more dirt tolerant filter - and failing miserably - I gave up and decided on a bit of a do it yourself approach.

I notice that I often make a rough and ready contraption and my readers then go an make some immaculate version which puts mine to shame so here is my rough and ready version.

I took a regular 20 litre bucket, drilled a ring of holes (8 50mm holes) in the side near the bottom of the bucket. (NOT in the base as this would suck extreme dirty water up). Then with super sophistication I got a chunk of shade cloth that my wife

had been using to shade her plants - it was quite course so I guess it would be no more than 50% shade) and gaffer taped it over the base and holes.

And crude as it was it has worked beautifully - but I was not out of the wood yet.

The pump was still far more powerful than needed so I need some way of reducing the flow to transform it from a high pressure washer to something a bit more like a gentle flow.

I therefore put a T in the line to create a bye pass filter. In hydraulics it is common to have a coarse in line filter and a much finer bye pass filter to generally clean up the oil. I am using exactly the same system with a course in line and a fine bye pass filter.

I am rather proud of my bye pass filter. The first step was a trip to the bank to organise an overdraft to buy a $9 sieve from my local reject store.

Bye this time I had come to accept that I had to learn to live with rubbish and wanted something that I could clean easily so the idea was to simply have the bye pass line sitting in the filter.

Now this is where the fun started. I am sure you have all had the experience of how a hose wishes around like a demented snake spraying water everywhere. While with the high pressure pump this happened at the extreme level.

So having gone inside and changed out of my dripping shirt I needed a solution to hold the pipe in place - or some other way.

I am rather proud of the other way - as I am an engineer I know all about thrust and reactions from pressure jets and rockets so came up with the super simple idea of just fitting a T piece in the end to split the flow into two equal and opposite flows which would balance each other out.

Now it is very rare that my ideas work first time but this was one such occasion - the pipe just sits there in perfect balance not needing any constraint - so to clean the filter all I have to do is lift up the pipe and remove the rubbish which accumulates remarkably fast.

I was so pleased how well it worked I went and got my granddaughter who is supposed to be studying science and showed her what I thought was a nice demonstration of mathematics in the real world.

I have to say she was singularly unimpressed but I have to be nice to her as without her I could never work my smart phone.

Just two more snags to go.

The next snag was the more powerful pumps was sucking water out to my sup at a great rate but my diversion back into the tank was not working as well as it should so the water was spilling around the outside of the tank and as soon as the sump was dry it floated up.

I always like neat solutions to a problem - buying a bag a concrete and sealing all the gaps around the sump tank is certainly not neat - but it works fine.

Last snag; - In my previous wicking beds I use PVC pipe and just cut a few generous slots in the base for the water to leak out. On these beds I used regular slotted drainage pipe for the non-technical reason that I happened to have a rolls of the stuff in that big pile in the back of my block which should be labelled ‘may come in useful some time’.

Now here is nothing wrong with the ag pipe but it does tend to get clogged up more than slotting a normal pipe. It is easy enough to clean by pushing hose down the pipe. When I did that it dislodged so much rubbish that it partially clogged up my bucket filter but that was not a problem, just flush it clean with a hose.

Just one final point; - If you are slotting a normal pipe you have two options - you can either make the slots so rough and ready that they are not in a nice straight line down the centre of the pipe or you need to raise the pipe of the plastic sheet to make sure there is clearance for the water to get out.

Compost bin

A few quick comments on compost; - for many years living in an eco-village I used a composting toilet and was not too happy about how to use the waste. I developed a system of two stage composting putting all the possibly toxic waste in a pile and surrounding this with vegetation. I harvested the vegetation which gave me green waste I used in my main compost assuming that the plants would filter out any harmful bacteria.

I would suggest that if you are have potentially toxic waste that this is a good system. Currently I am simply using a traditional compost bin and letting the water circulate through. I am not using the solid compost directly only the compost tea and now I have a good solid mass at the base which should be filtering out any possible toxins.

I would not put any highly toxic material in but I am layering with green waste then animal manure to give some nitrogen to help composting. For me I am happy with this solution - if you have any doubts I suggest you pre-compost.