Gut biology from food

Colin Austin 9 Oct 2017

Risks of experimentation

For some time I have been promising to write an article on how to improve gut biology by eating vegetables grown in biologically active soils.

I now have what appears to be a really nice system which 'hydraulically' is working well. I have a small pond pump which takes water from a lower reservoir pumps it to a compost container where the biology is growing and slowly trickles back as compost tea through an open wicking bed.

I am using water weeds, as a source of both minerals and organic matter and pumping the nutrient and organically active tea directly to the root zone.

In my new beds - which I may call GBiota beds - I aim to provide minerals and gut biology - which modern research recognises as critical to health - in a natural system

But life is never smooth and I have moved house and am starting fresh with a soil which is basically sandy silt on top of a layer of deep clay. The soil is 'dead' with very little organic matter which has taught me that you really need a good soil with plenty of organic matter for the system to work as intended.

This is not really a problem as I know how to regenerate soil - what I don't know is how to do it quickly - it just takes time so my article is coming - but not yet.

Experimentation is always a risky business but this is just an extension of a proven technology so I am confident that it will work as we sort out these teething problems.

But there is a big question which is worrying me and it may sound a bit silly at first - and that is what to do with the technology when I am confident enough to write about it.

Mineral deficiency

One feature of my early Wicking Beds was to use weeds to make the water reservoir.

There was a simple logic behind this. Our modern diets are deficient in minerals. Before the advent of modern high productivity fertilisers there was plenty of minerals in the soil but now with the high productivity fertilisers we have been progressively extracting minerals but not replacing them so our soils are becoming deficient in these minerals which are essential for human health.

Food plants are generally not very efficient in extracting minerals from the soil but weeds can be extraordinarily good - that what makes them such a pest - so using weeds in the base of my original Wicking Beds was a cheap and effective way of adding minerals to our diet. This was important for me as I was looking for ways of producing sustenance food in Africa.

The importance of biology

Experienced growers understand the need for minerals and these are easily added to the soil - volcanic rock dust is readily available at low cost. Generally these contain a broad spectrum of minerals including trace minerals which are important for human health (but not so for plants). For example chromium is essential to remove sugar from the blood and is part of the battle to fight diabetes.

Just adding the minerals to the soil is not enough - soil biology is needed to break down these minerals and make them available to the plants - again this is a well understood technology.

But the process of improving gut biology by growing plants in biologically active soil is a technology in its infancy.

There is a great deal of research on gut biology and how it produces hormones which control how our bodies work. Modern research has identified the thousands of species of gut biology and has a pretty clear idea on which ones are beneficial and which ones are harmful. But scientist studying gut biology fully recognise that gut biology works as an integrated system with the different species interacting so the benefits come from the system rather than one of two isolated species.

Developing this integrated beneficial but complex gut biology by growing food is very much work in progress.

Food to make us healthy

There classic outcome from the great deal of research currently underway is to develop dietary supplements to provide the missing minerals and vitamins in our diet together with pre and probiotics to improve gut biology. Typically the commercially available pro-biotics only contain one or two species of gut bacteria - not the thousands of species found in nature.

Is this synthetic approach the right way to go? For millennia we have been getting all the minerals and biology we need purely from our diet by natural means. Is it not more sensible and pragmatic to focus on restoring the nutrient and biological content by improving our diet to make us healthy?

The massive food, pharmaceuticals and supplement industries are focused on profits rather than the health of the population. But we cannot simply blame the corporate giants - we seem addicted to buying processed food from the supermarkets.

I recognise the benefit of pill popping when needed but should that not be a second line of defence and our focus should be on diet as a first line of defence for our health.

But what would happen if there was a social change and people wanted to change and get there nutrients and biology from natural food.

Of course they can buy organically grown produce but I really wonder if organic goes far enough - no one dispute the benefits of eating toxin free food but incorporating the needed nutrients and biology into our food needs a further step.

That’s what I am trying to achieve with my GBiota beds.

I am sure I will never finish this in my life time but hopefully I can get the process working for younger and more talented people to take over. But this requires us to manage the technology so it does not become corrupted.

Going feral and technical corruption

When I first starting experimenting with Wicking Beds some twenty years ago I had no idea they would catch on as a worldwide phenomenon so I innocently put details up on the web and it went viral quite independently of me as the message spread from web site to web site.

Corruption of the web

Unfortunately the technology got corrupted in the process with the various web sites promoted stones as a replacement for the weeds. There are not a lot of nutrients in stones (not much blood either) but this is not a serious problem for the health of an amateur gardener as they can easily buy trace minerals from the local gardening shop and in any case home gardeners are probably eating healthy food anyway.

There has been no serious damage and many benefits from the way Wicking Beds went viral but we should learn from past experiences and learn to protect the GBiota technology.

But unfortunately the web is becoming a corrupt place. I believe the corruption of the original Wicking Bed was not dishonest - people just did not understand the technology in depth - it was a genuine misunderstanding.

But the era of innocence has passed - the web is now full of promotion purely for profit and often just plain dishonest. All those promotions for superfood and supplements offering unbelievable benefits are just what they are unbelievable - just someone trying to make a shady buck.

Goodies and badies

There is no doubt that there is harmful biology - every few months we hear of some outbreak of E-Coli in some vegetable crop which causes outbreaks of diarrhoea - or worse. It is just a fact of life.

The commercial approach is to use powerful chemicals to kill of the harmful biology and in general that works - but it also kills of the beneficial biology which is important for our health. This is why the study of gut bacteria has reached such proportions - and no doubt the thought that gut bacteria can be restored by pills.

Those with an interest in ecology recognise that in a natural working system there is a balance between beneficial and harmful biology and try and generate conditions where the beneficial biology will outperform the harmful biology.

Humans have been doing this for years - I have visited a farm in rural China where someone (probably the farmer's kids) had carefully laid out human turds radiating out like daisy petals from every plant. (I wish I had taken a photo). A food hygienist would have had a heart attack on the spot and I am certainly not suggesting anything like that.

But the fact is that Chinese farmers have been able to do this for centuries without harm - simply because they have learned how to manage risks.

Nearer home I have been using two stage composting system for human waste for years. Being a natural wimp I do not use human waste directly - I put it through a first phase composting process which I use to fertilise leafy green plants. I then use the leaves in a second stage compost to fertilise my food plants. I am using plants to acts a barrier or filter and have been doing this for years with no health issues.

In my Gbiota beds I am using labile (young) compost and 'swamp' vegetation to grow the biology and at harvest time I am using minimal washing with no cleansing chemicals for washing before eating. I am sure these are perfectly safe if done properly but it does make me nervous about the technology becoming corrupted and people adopting unsafe practices.

Commercial growers

Let's say I found a way of getting the technology to hobby gardeners - that would only satisfy a small proportion of the market - to reach as many people as possible they would need to buy from commercial growers - who in turn would need to be recompensed for the extra effort they put in.

They need to have a Brand name to promote and also they would not want unscrupulous growers selling inferior, copy-cat products at low prices.

So what do I do?

Let be optimistic and the GBiota beds I am developing turn out to be a solid technology which really does improve people's health.

Should I simply put in up on the web with all the other wonder health product and hope that other web sites don't copy it inaccurately - accidently or deliberately. I think not.

We are dealing with people health here and although there is overwhelming evidence that our health depends on beneficial biology it is equally clear that malevolent biology can be hazardous.

One of my failures with Wicking Beds was to fail to get them adopted by the commercial growers, probably because they could only sell produce based on price with no product differentiation.

But produce grown using the GBiota principles could offer major health benefits over conventionally grown produce but to attract commercial growers they need some way they can differentiate their products. It would be far cheaper and more effective to get the nutrients and biology by buying food grown using the Gbiota system rather than buying expensive pills and supplements but the buyer would want evidence that this is a better way.

I really don't have an answer to these questions at the moment so I am throwing it open to see if other people have a solution. But here is an idea.

GBiota club

In the short term I can see how the process can at least move onto the next stage by forming a club - the GBiota club.

In this GBiota club I would share what I have learned about the GBiota system on a confidential basis so members of the club could set up their own experimental projects and also indulge in testing the produce to evaluate the actual health benefits - maybe not in the way a scientist would conduct a double blind test over large numbers of people but to monitor specific improvements but by observation on a case by case basis.

This would accelerate the development process and introduce a lot of bright ideas from other people. There is a real need for multiple brains - one person can only know so much.

For example I feel pretty comfortable with my skill on hydraulics and minerals but the GBiota system as I am operating it has a major problem. I am not using any herbicide of insecticide and with all that labile compost insects are major problems. I am experimenting with companion planting but I am sure there are many people more skilled than me in this area.

Also I know that there are many specialist plants and herbs which are reputed to have significant health benefits. But to become an expert in just one specialist area such as herbs is almost a life time work.

So it seems to me that forming a club to protect the technology, share expertise and provide a brand name for commercial growers may not be such a bad idea. There is also that horrible question of money.

I do this work and experimentation because I believe in the health benefits - not to make money. The reality is it cost me a lot of money and a club, with a membership fee may provide a way of offsetting the costs of experimentation - not just for me but for other club members who are making a serious contribution to the technology.

It seems a good way to go for me so if interested please let me know with your comments and suggestions.

Colin