

Making the world a better place by Dodging Diabetes by Diet

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We have never has it so good



The food industry, the world's largest industry, provides us with cheap and abundant food which is clean, hygienic almost to the point of sterility; Government's spend billions of dollars employing our best and brightest medical researchers while the pharmaceutical industry risk billions of dollars bringing new drugs to market.



We have never has it so good. Or have we? Fifty year ago only 1 in a 100 people suffered from diabetes - a generic term covering a range of chronic long term diseases which include diabetes, obesity, heart attack, strokes, dementia and a range of gut based illnesses.



This has now risen to 1 in 3, the big question is why? It is a major epidemic which just keeps on growing. What has changed?

In my article [Dodging Diabetes](#) I lay out the arguments that the root cause is the degradation of our gut biome as a result of our changed diet.



In this article on Gbiota adoption I describe Gbiota beds which are a simple and inexpensive way of replenishing our gut biome. It is based on growing plants which are biologically active and full of mineral and phytonutrients.

I explain the basic thinking behind the Gbiota beds and how they have the potential to solve the diabetes epidemic. But having a technology - however good - is not enough - it has to be adopted.

It is no good saying if it is a good technology it needs to be adopted - there are lots of things in this world that should happen - but don't - and lots of things that shouldn't happen - but do. Just look at the news.

Here I reveal the plan to get this technology adopted.

Part 1 adoption plan for Gbiota gut biology

The big question

Fifty year ago only 1 in a 100 people suffered from diabetes now it is one in 3, the big question is why? What has changed?

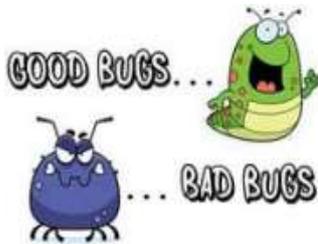


The answer is our gut biome, we know it has changed and we know that our gut biome is an intelligent system which controls our digestive system by hormones and nerve signals.

It is easy enough to get a short term once off change in gut biology - we know how to do that with diet and probiotics.

However gut bacteria has a short life - mainly eating and sex - so to get a long lasting change we need to feed them by making long term changes to our diet.

Good bug and bad bugs



There are good bugs and bad bugs and they prefer different foods. Give the good bugs food they like and they will expand while the bad bugs will wither. What we need is plenty of good-bug food (meaning food for good-bugs as opposed to good food for bad-bugs) and less bad-bug food.

But how much good-bug food do we need to eat? I can't find data I am really happy with so I have done some back of the envelope type calculations.



Mr Google tells me that the weight of bugs in our guts is about two kilograms and I guessed that they may eat their own body mass every ten days. That means we need to eat about 200 grams per day or a half of a cup of good-bug food per day per person. That does not sound much.

But let's take a global view; - there are some 7 billion people in the world so we would need to produce 1,400 million grams or 1,400 tonnes of good-bug food every day.

Now I well understand that there are many people reading my articles who just want to grow their own food so they stay healthy. You may be lucky enough to have a garden, the skills, time and energy to grow your own food and avoid the dreaded diabetes epidemic yourself. But this won't help the multi millions of people who aren't so fortunate.



The world would be a better place if you - and all the other people - could buy good-bug food at a reasonable price.

Even if you are the world's best gardener and avoid diabetes yourself diabetes is hurting you. The health costs of diabetes - which you are paying for via the Government - are staggering, billions of dollars without considering the costs of lost production and how do you account for the pain, suffering and misery?

The technology of growing good-bug food is simple and inexpensive - as I will show later. But just because the technology exists does not mean it is going to happen. We need a plan.

The plan to get Gbiota beds adopted widely

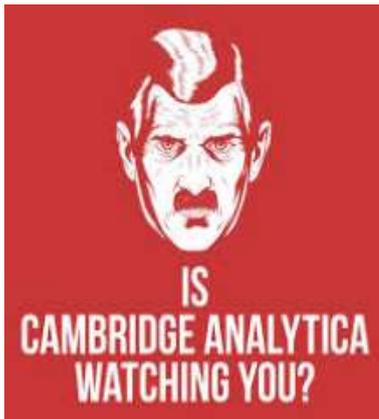
How do we get the technology accepted so everyone can benefit?

This article is about how to get this technology adopted - and there are some pretty massive obstacles to overcome.



There are major corporations who spend billions of dollars on advertising based on clever psychological analysis promoting current food as full of energy - which is true - but not necessarily good for us - in fact it is the opposite - generally we consume far more energy than we need - that is much of the problem.

How do we combat the massive advertising power of these mega corporations?



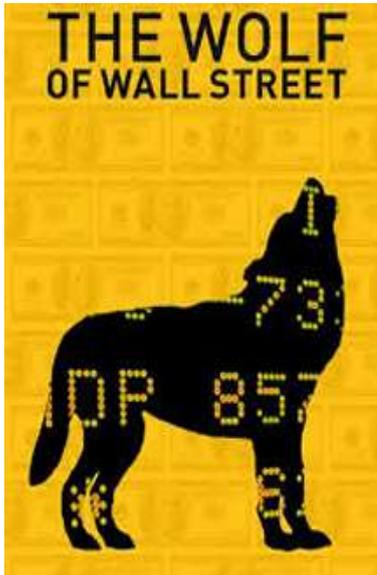
The internet is an incredible means of communicating information but is home to dishonest manipulation both by promoting quack remedies and the use of social media to profile people and target them with highly effective and targeted promotions.

The Gbiota bed is cheap and simple so there is no money to combat these powerful vested industries - so if the Gbiota beds are going to reach their potential in reversing diabetes we need a smart yet simple and cheap plan.

This article reveals this plan.

So let's take a bit of a detour and talk about a conversation between an economic rationalist and a social scientist.

The economic rationalist and the social scientist



The economic rationalist has as a very simple view of how people and societies work - they are selfish and will do what is best for them so if it is profitable to produce 1,400 tonnes of good-bug food per day someone will set up an operation to make it.

Sounds good - but is just plain wrong.

To find out what is wrong with this we have to turn to the social scientist - someone who studies how societies work.

There is a phenomenon that has puzzled social scientist for ages - altruism - which oddly enough explains why there are 7 billion people on the earth.

Despite all our failings we are undoubtedly the dominant species on earth. (OK I know that the mass of insects exceeds the mass of humans but that is a silly fact for quiz shows).



As an animal we do not come particularly well equipped, we don't have horns, claws, sharp teeth or really any good weapons, we can't run particularly fast or jump out and leap on prey, we can't eat grass or most leaves and have problems digesting raw meat

If you or I were stranded in a true wilderness we probably wouldn't last all that long - and we certainly would not be able to breed to create a sustainable population.



Whoever designed us - I want my money back - oh hang on a minute - they got one thing right.

So how come there are 7 billion of us?



Answer altruism. Most of us have learned the art of working together in a hierarchy of groups and are willing to make sacrifices for the benefit of the group. It is so strong in most people that we could say it has evolved to form part of our genetics

Way back in the hunter gatherer period there were just two groups - the close family and the tribe (which was typically an extended family anyway). We learned that there were benefits of being part of a group - like not being eaten by a lion.

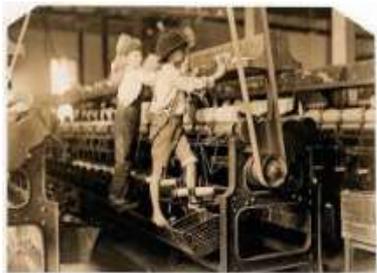


Most of us have learned that it is well worth making some personal sacrifices which aids the group and then we individually benefit.

We learned that standing in front of a charging Woolly Mammoth may not exactly be in our comfort zone but meant that maybe we could all eat that night. Let's hope the other guys with the spears were also altruistic - there is not much difference between altruism and cooperation.



Don't make the mistake of thinking that these altruism genes are a bit wimpy - humanity would simply have died out without them. Just wait for a bit when I talk about the goanna non people who promote the idea that humanity success comes from competition and discount cooperation - they just don't get it.



Then came the first revolution - as we adopted agriculture. The number of groups we were involved with grew into a hierarchy of groups, villages, shires - a collection of village led by a regional town, and countries.

Next came the second revolution - industrialisation - and we had another group - companies who provided employment and money - but made significant

demands on the workers.

The third revolution



Then came the biggest change of all which has challenged our thinking of how society does and should work. Some call it the third revolution.

We now live in the era of the mega - typically Multinational Corporation - which has unbelievable power and resources often surpassing those of national

governments.

It is not just coincidence that the rise of the mega corporation coincides with the diabetes epidemic.

Savage Chickens

by Doug Savage



How altruism fits into these revolutions really puzzles the social scientist.

Most people seem to have an altruistic gene. These people are perfectly willing to make some sacrifices for the benefit of the group. It is easy to understand how this works in a tribal community.

As we interacted with more groups it became clear that some people have defects in their altruistic gene and would only behave altruistically in certain conditions.

Genghis Kahn may have had a defective altruism gene.

If you gave him your women and food and worked like a slave he would reward you by letting you join his army and kill people - if not he would reward his army by letting them kill you - pretty clearly a defective altruism gene.



In our current third generation society where we belong to multiple groups our altruism genes are really put to the test.

I have worked in large companies and felt the conflict between doing what I thought was right in the sense of right for humanity and what is right for the company - the lot of the whistle blower is not a happy one.

The plight of the whistle blower



There are many examples of this conflict - the first one that comes to mind is the VW scandal of rigging emission results.

Were the entire team from the engineers at the coal face, through middle management and up to the Board directors corrupt? I doubt it - there would certainly be some people who thought what they were doing wrong but felt they had a loyalty to the company (and also their family should they be sacked).



But that is just one case - there are so many others. Ford had a similar case with fiddling emission results which was investigated and found to be the result of engineers doing what they thought was best for the company.

Think of Enron, the Tobacco and food industries. People working for these companies know that the company may be doing bad things but continue out a sense of false duty - the altruism gene under stress.



To my mind a classic case is McDonalds - not my favourite company - but when the super-sizing craze started the Directors (yes the big bosses) said no this is wrong - our job is to provide cheap wholesome food for the masses. (Good on them).



But the assorted collection of financial institutions which have a lot of money tied up in McDonalds paid a visit to the directors' and de-facto ordered them to take up supersizing - or else. The else being take up gardening because you are about to become unemployed and a lot poorer.

The poor old altruism gene is under a lot of stress in this third generation world we live in.

The food industry - testing the altruism gene



This may seem a long way from gut biology but is not. We have a food industry dominated by large and often multi-national companies who make a lot of money by selling food which looks (and tastes) good but is lacking in biology, minerals and phytonutrients.

But life is never simple - they are also helping feed the billions of people on the earth - they are supplying food which people consciously decide to buy - and earning good money for their investors. They see no incentive to provide good-bug food.



We have a pharmaceutical industry which would prefer to sell us multiple pills rather than tell us to change our diet.



We have a medical profession - which certainly at the local doctor level is overworked and stressed out and is not trained in the technology of changing the gut biome by diet.

And now the dilemma of the internet



Let me tell you I just love the internet, I Google something many times a day - it is like having a private University on my desk where I can learn about anything I want (from ancient tribes to Genghis Kahn to gut biology to artificial intelligence - what University has all those in one course?

But it does have a dark side. I am certainly worried about the likes of Cambridge Analytica but I have never really understood the attraction of social media.

But I do worry about the contortion of information.

You see I have first-hand experience of the contortion of the truth with my Wicking Bed experience.



The Wicking Bed story



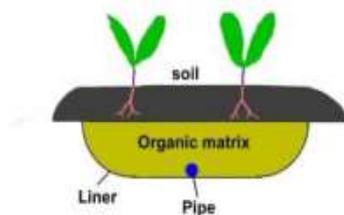
Some twenty years ago I was invited to go to Africa to see if I could develop a way of providing sustenance food when there was major draught.

Incomes were only a few dollars a day at best so high tech solutions were not a possibility but I thought back to the trips I had taken out into the Australian deserts.



From time to time I would see an oasis of luxurious vegetation - the reason was obvious a clay pan had been filled with wind-blown sand; any rain that happened to fall would flow into the sand filled pan forming a layer of subsurface water.

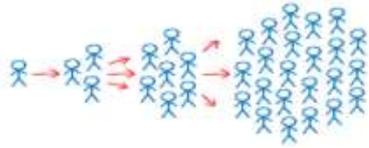
This led me to the development of the Wicking Bed system which is now universal.



I am not going to claim I invented Wicking Beds, nature invented Wicking Beds but certainly I was a pioneer and early promoter of the technology.

This is the first lesson from the Wicking bed story; - don't just look for high tech research often nature has the solution just waiting for someone to notice.

Wicking Beds took off exponentially but there was no control of the technology. They are just everywhere in most countries.



How did this happen? Well it certainly wasn't my superb marketing - it was much simpler. One person tried them and they worked - more productive with less water.



One user.

He tell a mate - she tries it and it works. Two users.

So she puts in on her web and before you know it ten users - then a hundred with web site all over the world.

There are two lessons to learn from this - first it has to work and be simple and cheap enough so people can try for themselves. Second - despite all the high powered psycho profiling nothing beats information from a person you know and trust.

But there is a dark side to this story which needs to be learned. I had absolutely no idea that Wicking Beds would take off the way they did - and took no steps to preserve the technology.



In Africa people needed water for the plants to grow - but they also needed nutrients and they had no money to buy fertiliser.

People and plants need nutrients and weeds are particularly effective at extracting nutrients form barren land - that is why they are so successful (and a pest).

So my idea was simply to dig a trench, line with a plastic film, collect up all the local weeds to provide a water reservoir and nutrients - then back fill with soil.



Now one smart person thought there was a snag - the weeds would decompose and the soil level would drop - true - but instead of simply collecting more weeds they replaced the weeds with stones.

The problems if that wicking depends on small pores and stones simply do not wick; neither do they provide the essential nutrients and biological life. Simply because the power of publicity this has now become the de-facto standard.



People have missed out on the one key essential of my work on Wicking Beds - the soil. So now most people use stones for the base when a properly formulated soil will hold more water, nutrients, biology and wicks better. Sad.

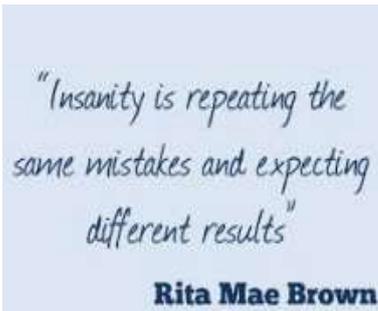
Gbiota beds have evolved from Wicking Beds



The Gbiota beds are simply an extension of Wicking Beds. They were developed using the same basic method of looking how nature solves a problem.

They are simpler and cheaper to make than Wicking Beds and are much more suitable for large scale commercial production. This is important if we are to produce the daily target of 1,400 tonnes per day.

They are even more dependent on the soil than Wicking Beds - that is where the biology comes from. I don't want to repeat the same mistake and let the technology become corrupted. Wicking Beds are a hobby - but people's health and lives could depend on Gbiota beds. I need to get it right.



7 billion people v a small group



I fully recognise that I - by myself - am not going to convince 7 billion people about the virtues of eating biologically active plants against the persuasive power and promotional skill of the giant corporations of the food industry.

It is much better to focus my energies on supporting a group of people who share my views on the benefits of Gbiota beds.

I can effectively support a community group to ensure Gbiota beds work for them - I can't support 7 billion.

The seesaw

But it takes two to seesaw - what am I looking for in return? Three things -



One

To verify that eating plants grown in biologically active soil with minerals and phytonutrients improves their health.

If there are enough people who can demonstrate they have improved their health then we may change public opinion, persuade growers to provide food in quantity even show the food giants that this is a viable business opportunity.

Two

To act as guardians of the technology ensuring it does not become corrupted and to safeguard the vast knowledge of health beneficial plants.

Three

To recruit new members to the club so we can build up a significant group and to promote the health benefits of Gbiota beds in improving health. This can be done by personal contact, social media, web site publications etc. using the creative commons system (as in the header) and safe guarding the integrity of the technology.

People power

I just hope there are enough people who have fully functioning altruism genes and realise this project is much more than just growing a few back yard vegetables - it could affect the health of millions - or billions - of people and reverse diabetes.

If they believe this they can tell their friends and get onto their favourite social media and tell the world how important gut biome is and how it can be changed by eating plants grown in Gbiota beds.

I would really feel I had achieved something then - not just in developing the technology - but showing that real people talking to real people is far more effective than all the phyco manipulation used by the unethical promotional wiz kids.

Part 2 How to Change our gut biology

Changing our gut biology

Now I get to the meat and talk about the principles underlying the Gbiota beds and how they change gut biology.

Let me start with a few introductory comments by exploding a few myths.

Myth 1 just take a pill

Don't think that changing gut biome is as simple as taking a probiotic pill or getting a faecal transplant?

Experience shows that probiotics pills are not really effective - faecal transplants are highly effective (but not exactly pleasant) but in any case just offer short term solutions.

Bacteria have short lives and quickly die so any long term solution must create the conditions where they can continuously breed - and that means changing how we feed them, which means changing diet.

We know that our diet has changed dramatically but what are the root causes?

Myth 2 we don't need to go back to the not so good old days

There has been a gradual change in our diets over the centuries as transport has improved with potatoes and tomatoes from South America, apples from the east and citrus from China - but surely increases in variety would improve our gut biome and anyway have occurred over a much longer time span than the diabetes explosion.

It is not so much the type of food but the way it is grown.

Myth 3 anti-biotics will save the day

There is no doubt that anti-biotics damage our gut biome. If taken sparingly as medication their use may not be so catastrophic - unfortunately excess use is common.

Anti-biotics used to speed the fattening of factory farming is far worse as it is ongoing (and should be banned as it is in many countries).

But would anti-biotics be the prime cause of the change from 1 in a 100 to 1 in 3 - maybe a factor but surely not the main factor.

So now to the real reason

It is all about how we grow our food

Look at the monumental change in the way we grow our food now in comparison with how plants grow in the wild and even in old style farming.



Plants need food to grow - and in the wild this comes largely from recycling, plants die and are decomposed by an army of decomposers, ants, worms and a variety of insects on the macro scale, mini creatures like nematodes on a smaller scale and on a micro scale bacteria, fungi and the other bugs.



Some food is created by fungi and the mosses dissolving rocks to add to the food supply but in the wild most of the plant food comes from recycling.

Highly effective and sustainable may be - but a slow process - but with a few billion years to spare - nature is in no hurry.



Apart from triffids, which we hope are confined to John Wyndam's fertile imagination plants do not walk about so for protection many plants have developed powerful chemicals to protect themselves from insect and animal attack.

Even more remarkable is the way a plant commune has evolved. Plants communicate with each other using the mycorrhizal internet sending out help signals to other plants. This has enabled plants with no natural defences to survive by messaging plants equipped with chemical defences - a plant version of the school yard 'my big

brother is over there and he will get you'.

The bug, plant animal triangle



This basic formula has been incredibly successful for millions of years and countless creatures. The bugs gobble up waste material and convert it to food for plants, the plants grow and some of the bugs decide that living in or on a plant is good. The animal comes along eat the plants, together with a good dose of bugs which enable it to digest the plants. A very happy triangle.



Take the Australian goanna - this is a creature which has such a well developed gut that it can and does eat almost anything, it is nothing more than a cylindrical fermentation vessel with scales.

I have yet to see a goanna with a packet of Mylanta ant-acids in its shirt pocket. The only negative is that it has a Guinness book of records level for bad breath.



This is particularly unfortunate if you happen to have a seat next to one on a long haul flight. Don't think this is unlikely - they watch too much Dr. Who and have developed the technique of adopting human form.



Don't think this is fantasy I have met quite a few people who are nothing more than transformed goannas. You can recognise them by a twinge of grey behind the ears where the transformation was not perfect.

These goanna people have no altruism gene and like to be in control where they do immense damage to the human

species.

The old fashioned farm



The old fashioned farm works pretty much on this principle with a few adaptations. The farmer will try his best to supply his soil with organic material for the bugs to convert to food for his crops.

Unfortunately the farmer is continuously removing nutrients from the soil leading to gradual depletion of the soil. With care - the soil can remain productive (see the EBook 'Farmers of Forty Centuries') but many regions have soil which is badly degraded.



In coastal area the nutrients can be replaced from the sea - by fish or seaweed making a truly sustainable system.



Farmers have tried all sorts of methods to keep the nutrient level up by crop rotation, fallow periods, green manures but unless there is some way of compensating for the nutrients taken away the nutrient level just slowly drops.



In the past it was difficult to do much about this and throughout the world there has been a history of slash and burn with farmers just cutting down forests to create new farmland. There is not a continent where this has not happened.

But the good news is that as long as the nutrients remain the bugs in the soil and our stomachs are healthy and so

are we.

Modern farming



At first sight modern farming seemed to have resolved this nutrient problem with the farmer conducting scientific soil analysis and replacing the nutrients as needed.

All sounds good but much of these nutrients are applied as inorganic chemicals so the soil microbes are left with nothing to eat.



Just to make matters worse the widespread use of insecticides and herbicides can decimate any biology that has not already died off.



For the farmers, food industry and supermarkets the situation looks good with attractive looking produce which customers are more than happy to buy.

Unfortunately it is good looking produce deficient in biology, phytonutrients and often trace minerals which we need but the plant does not. If that is not bad enough much of our food is heavily processed which removes any biology which has not already been killed off.

This is the prime cause why diabetes has jumped from 1 in 100 to 1 in 3 in a few decades.

Developing Gbiota beds

I set myself the job of developing the technology of how we can grow our food to restore our gut biome - and it is really simple and inexpensive.

I adopted the same basic thinking process that worked with Wicking Beds - study how nature has solved the problems then pinch those ideas. It is not a simple question of copying old farming systems rather understanding how the systems works and see how they can be applied to modern conditions.



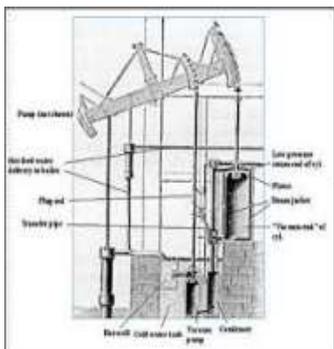
In the natural environment the soil is highly biologically active, the bugs are transferred to the plants and then to animals - a system which has been field trailed for a few billion years so maybe we can give it a tick.

But cost accountants are not part of nature which has adopted the rather laid back approach of just letting things rot away where they fall.

This rotting process releases a whole bunch of chemicals (like ethylene) which act as growth inhibitors so new plants don't grow until the rotting process is nearly complete - then everything springs into life.

Fine for nature which - while this process was evolving - had billions of hectares of land to play with. But this would not go down well with a modern farmer.

The fermentation chamber



James Watt faced a similar problem with steam engines where they would boil an entire tank of water to make the steam to push the piston then cool the entire tank down with cold water to create the vacuum to suck it back.

James realised that this heating and cooling of an entire tank was just so stupid so he hit on the idea of having separate chambers - one kept hot another kept cool - and a little system of valves to open and shut the containers.

And it not only worked - it worked so well it started the whole second revolution.



So why not pinch James's idea and have a separate chamber where organic material can decompose - leaving the plants free to grow without nasty chemicals - and pump water through the decomposing material then flush this solute containing biology and nutrients to the plants in their growing area as needed.

I call the chamber a fermentation chamber which may sound a bit posh and conjure up a high tech image of fermentation chambers in a brewery like shown. In practise it can be a simple compost pile or bin just like the one you probably have at home. The only difference is it needs to be on a water proof liner so the flushing water can drain back to the sump - which is the other key part of the system.

From the sump water - loaded with biology and nutrients - is pumped to the top of the growing beds where it drains - via leaky pipes - back into the sump.

That in a nut shell is the entire idea behind Gbiota beds - it is simple and it works incredibly well as a growing system.

Not just a growing system

But the aim of the Gbiota beds is not simply to grow plants - it is to replenish our gut biome. There is still a lot we still don't know about gut biology - it is more than knowing what species are in our guts, it is knowing how our guts work as an intelligent system which controls how our bodies work.

In Dodging Diabetes I talk about bottom up (reductionist) research and top down (system) research - one aim of the Gbiota club is to conduct system research to show that the system actually make people healthier.

This is complementary to the reductionist research which looks in details at specific part of the system - particularly the species in our guts. We know that there are species common to both our guts and the soil, but there are thousands of different species some of which come from other animals (people with dogs tend to have healthier gut biomes).



There are animals in the fermentation chamber (which is why we use cool fermentation) which will be contributing to the variety of biology in the system. This could be expanded further by breeding yabbies or fish in the sump.



So much more to research!

(I did experiment with yabbies but they moved onto the superior accommodation in the nearby swamp - I was highly successful with the cane toads however - without even trying)

Two stage fermentation

It does however require a continuous supply of material to feed into the fermentation chamber. This material is the fuel that drives the system. Getting this fuel would be no problem in a garden but where would all the fuel come from on a commercial scale operation?



There is actually no shortage of fuel - about 30% of the food we grow is actually wasted and just dumped into land fill. (I will spare you my thoughts on that).

There is also the waste that comes from animals - us and our farm animals. How can we reuse this?



Many countries use animals - particularly pigs and chickens to recycle much of the waste food - this is the norm in old style farming. But it only goes half way because we are still left with lots of animal manure which in our super clean modern (but wasteful) society we are reluctant to use because of the fear of bad bugs.

I have faced this problem before so for many years I used what I call two stage composting. I would collect up all this waste material (and all means all if you know what I mean) and let it go through a first stage composting process.

Then I would use this highly nutritious - but health wise dubious - compost to grow fast growing plants which basically acted as a filter.

I could then harvest these plants to make stage two compost to grow the plants I was going to eat.

This has major potential for making modern farming more sustainable.

What to grow?

Yet there is one critical issue I have yet to solve - what to grow.

My wife is a Chinese doctor - we frequently go to rural China - which is like stepping back in time - nothing like sophisticated modern urban China. I can't help noticing how fit and healthy the older Chinese are - diabetes is not an issue.



We go markets and see old ladies selling a wide variety of wild plants they collect from the local mountains. I have absolutely no idea what they are despite my wife telling me which plant cures what.



What do I believe - is this voodoo or for real? But I worry - if all these wild plants are really as good as what they say as all this knowledge could soon be lost. The rural young have no interest in learning about grandmas wild plants - they want to go to the city to earn money.

This potential loss of knowledge must be happening on every continent throughout the world.



Metformin the worlds must popular diabetes drug is based on French lilac (*Galega officinalis*). Do we just hope that the giant pharmaceutical industry manages to isolate the key ingredients in all these plants so they can patent them and make pills which they sell to us making mega profits?

How many plants will they miss and are lost for ever?

A reality check



Now here is a reality check - I am 78 and once was really quite good at mathematics so I can have a chat with my friend Mr Google and work out how long I might have left.

I used to earn my living by doing things like writing computer software to solve coupled non-linear partial differential equations (now there's a mouthful for you - but modern society thrives on giving long and impressive names to things that are really simple).

That was useful because thousands of engineers could then design better products without even knowing they were solving partial differential equations.

I reckon that was useful.

But now I have to spend my time avoiding the NLU syndrome (No Longer Useful) and I try and satisfy my altruism genes by solving diabetes by recycling all our waste food - I have always been into compost. Will I win or will the goanna people triumph?

I have developed a growing system of pumping biologically active solutes through the root zone to improve the gut biome.

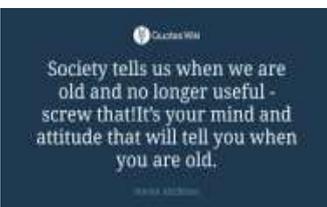
If we were able to recycle all that millions of tonnes of food and other stuff we are wasting and use it to reverse the world's greatest health problem - diabetes - that would be useful.

$$\frac{\partial u}{\partial t} = k \frac{\partial^2 u}{\partial x^2} + \frac{Q(x,t)}{c\rho}$$

$$\frac{\partial^2 u}{\partial t^2} = c^2 \frac{\partial^2 u}{\partial x^2}$$

$$\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} + \frac{\partial^2 u}{\partial z^2} = \nabla^2 u = 0$$

$$\frac{\partial u}{\partial t} - 4 \frac{\partial^2 u}{\partial t^2} = \frac{\partial^3 u}{\partial x^3} + 8u - g(x,t)$$



Can I do it myself - no I need help

I am happy to share this with the world and there is still time left for me to document all these ideas before I take my final resting place in my specially prepared composting Wicking Bed.

But does that make Gbiota beds useful? No. Any idea - whatever its theoretical potential - is useless until other people - many other people - have tried and tested it and shown that it works. Then it becomes useful. The classic test of any innovation - does it work and is it useful?

The roles of the Gbiota club

OK I know I can't do all this myself - that is why I need help from the Gbiota club.

This is how I see the roles for the Gbiota club.

First job is to trial and verify the Gbiota beds work as a system. The test is simple - do people feel better and are healthier if they eat food grown in Gbiota beds.

This does not need a specialised knowledge of gut biology - that is best done by the reductionist science process.

Second job is a collector and guardian of the information and technology.

Maybe I can document the core technology but learn about, document and create seeds banks for these potentially valuable plants - sorry I think Mr Google is giving me a thumb down that the clock will run out.

This role of preserving knowledge of all these plants I have to pass onto the Gbiota club.

Third job is a promoter of the technology - this needs thousands of people around the world who can show they have improved their health by eating food which improves their gut biome.

Absolutely nothing will happen until there are sufficient people demanding food that will make them healthy. Until we get the numbers we won't attract the interests of the farmers to grow food this way - nor the institutional investors who control the food industry nor the Government.

Someone in Government has to say - we are spending vast sums of money on health support for diabetes, we are spending significant money on managing (badly) tonnes of waste food (and creating greenhouse gases). We should get on with it and solve both problems simultaneously.

How do we get the numbers?

This has happened twice in my life before - first time with my computer aided engineering software and then with Wicking Beds

What was the process - one person tried them - they worked so they told a friend who told a friend then the communication power of the internet stepped in and now they are in every country around the world.

We need to repeat this for the Gbiota beds but in a controlled way to protect the knowledge from internet corruption.

So I urge you to join the Gbiota club, make your own bed (they are simpler and cheaper than Wicking Beds) and test if they work for you. If they do (and I will help

you to make sure they do) then recruit your friends to the club. Then all the friends can use the communication powers of the internet - web sites, emails, social media (if it still exists after Cambridge Analytica) so we can reverse this terrible epidemic of diabetes.

Back to the reality check - at 78 - I would like to see the Gbiota club to become self-supporting so when I fulfil my final role in life (or death) as compost in my custom Wicking Bed that the club can be taken over and run by dedicated people long after I am no longer here.

Final PS

I own some three acres of land in an eco-village - this is where I did all the pioneering work on Wicking Beds. It would make a perfect base to propagate plants and seeds for all Gbiota club members.

Much as I would like I simply cannot do this myself so I currently rent out the property to people who simply do not share my enthusiasm for health by diet. If there is anyone out there who may be looking for greater participation in the Gbiota project and would like to live in a pleasant rural environment in Queensland I would be more than happy to hear from them.