

Diabetes and phytochemicals

You may say 'What a terrible name for the title to a paper on diabetes'. Give us a go and I will explain.



I met my wife over five years ago in China. She is a Chinese doctor, I was almost crippled with knee damaged from a car accident many years ago and was looking to see if Chinese medicine could provide an alternative cure.

It could not - but she came back to Australia with me to care for me while I had my knee replaced. She did such a good job that I asked her to marry me and so she settled in Australia with me.

In China she was fit and healthy but after a period on an Australian diet she was diagnosed with diabetes. I pretty soon learned what a terrible disease diabetes is. You can live with it quite well if you can control your blood sugars but if it gets out of control you easily lose your toes or legs or arms but perhaps the most frightening and the worse is a detached retina so you go blind.

Xiulan (my wife's name pronounced shoe-lan which means show flower in Chinese) was not coping. Her blood sugar levels were not under control, (despite taken the Australian medicines), often rising to the high teens or low twenties. This is not good but worse she was suffering from blackouts when she would lose her vision, maybe just temporarily but enough to scare the pants of me.

Her English was not that good (its better now) but she wanted to go back to China to talk to a Chinese diabetes specialist, in her own language. The Chinese diabetes specialist put her on Chinese pills which were based on Chinese herbs. South West China, like the province of Yunan, borders the Himalayan Mountains has the most profound range of herbs growing in young, highly fertile soil full of minerals.



While living in China, eating a Chinese diet she quickly got better with her blood sugar level dropping to normal levels and she was a normal healthy person again. When we returned to Australia the Chinese pills continued to do a good job but she was just not as healthy as when she was eating a Chinese diet.

In Australia most of our experience with Chinese food is based on Cantonese restaurant cooking modified to meet Australian tastes - it is not authentic Chinese food as they eat in China. The Chinese eat some three times the amount of vegetables that we eat here in Australia, the vegetables are not shipped and stored and stored and shipped before being

put on the supermarket shelves. Local farmers take their produce to the local markets where they are sold and eaten, in many cases going from the soil to the mouth in under eight hours.

The Chinese like their food fresh, they also like their vegetables cooked quickly, Ok they do fry in their woks but the woks are seriously hot and the vegetables are in and out in a flash. But they also cook with what Xiulan calls 'water cooking' but we may call blanching, just a quick steam.

I have a scientific background and well understand the double blind experiments used in medical research, but there was no way I was going to expose my wife to a scientific experiments when this meant exposing her to the risk of going blind.



I had to find the best way of caring for her health. I spent a lot of time on the web and read two very important books "Eat to Live" by Joel Fuhrman and "China Study" by T Colin Campbell. They, (and many health writers), argued the benefits of growing vegetables and herbs which could be eaten while they were fresh.

The picture shows my greenhouses used to grow a variety of vegetables. The pumpkins growing around the outside of the houses are self-set from an old compost heap. Every year they just appear by themselves with no help from me. Growing your own food it not difficult.

They use the word phytochemicals to describe chemical that are produces by plants (phyto is just a posh way of saying plants, but science wouldn't be science if you didn't hide a simple meaning with a complex word when a simple word would do).

They quote for example that science has isolated ten thousand phytochemicals in single tomato, (think how many they may have found if they analysed two tomatoes and how many they may have missed). What is the point? The simple fact is that science does not really understand all about our foods so the best thing is just to eat a range of fresh fruit, vegetables and herbs. We should simply let our body get on with it on the principle that our bodies have evolved to processes the incredible number of phytochemicals in a tomato let alone onions, lettuce and radish.

May I take one quote from Walter Willet, Chairman of the Department of Nutrition at Harvard 'While it still may take decades longer to understand how whole foods promote health, we must accept the fact that the foods found in nature are ideally suited to the biological needs of the species. The most compelling evidence of the last decade indicates the importance of protective factors, largely unidentified in fruits and vegetables. A diet in which fruits, vegetables and other natural plant foods supply the vast majority of our calories affords us powerful protection against disease.'

Science may not be able to identify every single chemical but people have learned the art of managing in ignorance. Don't think for one minute that engineers understand every force on an aeroplane, they manage by using what they call safety factors which are really ignorance factors. We have to manage our diet based on the best available evidence not wait for absolute proof.

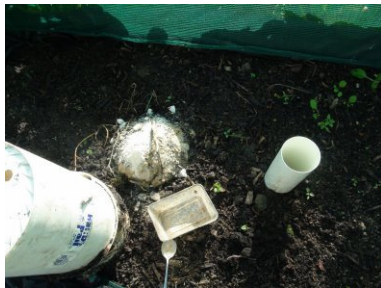
But in Xiulan's case, (and yours if you have diabetes) there is a very simple check to ensure that you are eating correctly, namely the blood sugar readings. Fortunately for scientific validity it is easy for us to measure the success or failure of my efforts in growing food. Xiulan like most diabetics measures her blood sugar every day which gives an immediate measure of how well our food is working.



Here I am growing beans, a good healthy food, again see the self-set pumpkins outside the green house.

But you may still have one question, how do you get hold of a regular supply of fresh nutritious vegetables. You may think you just go the supermarket every other day rather than once a week.

Now don't get me wrong, I am not against supermarkets. They have developed the most incredibly efficient way of providing you with sugary, fatty and refined carbohydrates that the world has ever seen. It all taste good, so good in fact that it keeps you wanting more, but if you have diabetes (or are just concerned about your health) that is not what your body wants. To be healthy your body needs a range of minerals and micronutrients and this is where the trap is.



Plants also need trace elements for the process of photosynthesis. In the natural world these trace elements would just be recycled as the plant dies and decomposes so there is very rarely a problem. Even in commercial agriculture there are enough trace elements already in the soil to keep the plants healthy and functioning for a very long time, even though they are steadily but slowly being removed in the produce.

The picture above shows mineral being added to the soil.

But in the food chain there is the law of concentrations. The level of micro nutrients in the plant is typically some ten times the level in the soil and the level of micro nutrients we need to be healthy with our much more complex chemistry is some ten times that in the plants and a hundred times that in the soil.

In your blood test you may find that there are reported deficiencies of certain elements, you may be low in iron or chromium or selenium. But if you doctor says you have an iron and chromium deficiency let me give you a piece of advice. Do not race out to the car park and start chewing on the first car you see with a flashy chrome radiator grill, for several reasons.

First the owner of the car might not like it, call the police so you spend the rest of your life in a strait jacket. Secondly modern radiator grill are not made out of steel but plastic which will not give you any iron for your blood and thirdly even if you could manage to chew it (you could also try a back of nuts and bolts) the elements iron and chromium or whatever are not soluble so will just pass straight though you with no benefit.

So this is where the phytochemicals come in, the plants create complex chemicals which your body can absorb and use. Not that the plants have it any easier. There may well be the much needed mineral in the soil but they are probably also in an insoluble form. Minerals are from rocks which have been around for millions of years. If they were soluble they would have been washed away years ago.



But this is where soil biology comes in, soil is not dead inert dirt, it is full of micro-organisms existing in what is called a food chain, one creature eating another in a never ending loop. But one part of the soil biology, the fungi, perform an incredible service to every other living creature, (including Xiulan and me). They have incredibly fine hyphae (like roots) which are so fine they develop very high pressures, just like a needle, they exude enzymes which help dissolve the rocks.

Some fungi, the mycorrhizal fungi pass these dissolved soluble micro elements directly to the plants, which we can then eat to get our micro-nutrients. Worms help distribute the fungi around the bed.

Now if all this sounds to complex don't worry. Tomatoes may have ten thousand different phytochemicals but we don't have to wait for some chemical company to synthesis these chemicals to create ten thousand pills which we spend all day swallowing. No - all we need to do is just go and eat a tomato or beetroot or whatever we fancy. But we would be much better off making sure that the tomato or beetroot was grown in a soil with a healthy soil biology and plenty of micro elements in the soil.

It is easy enough to add the micro-nutrients to the soil. But we need to ensure the soil biology is also healthy and active. This can be done by importing inoculators (just a small sample of soil and plants or bio-pack) with the needed biology. However the soil must be kept moist. The system I use is called the wicking bed which has a water reservoir below the root zone so water can wick up through the soil.



It is possible to produce bio-packs with herbs already growing, in effect a miniature balanced eco system. Two herbs which are favourites of mine are Gota kola (*Centella asiatica*), (shown left) which has a wide range of benefits including assisting with arthritis and Brahmi (*Bacopa monnari*) (shown below) which is well known as a memory herb.

Wicking beds can be small or large, even though I have large beds I still like to have a small wicking box nearby on the veranda so I can readily go and pick vegetables or herbs.



I am trying to persuade sufferers of diabetes (or anyone concerned about their health) that they can improve their health by growing fresh fruit, vegetables and herbs in biological active soil with abundant minerals and trace elements. They do not have to be fanatic gardeners, all they need is a wicking box on their veranda or patio.



All members of the spinach family have health benefits (ask Popeye he knew) Egyptian spinach is particularly beneficial and was supposed to have been eaten by Cleopatra who also gave it to her elicited lover to save his life from a fever, (lucky fellow).

It has one big advantage, it grows like a weed, this is another self-set.

However some people find it a bit bitter as a straight salad but it cooks fine.



Water spinach is also very easy to grow and can be eaten as a salad or in cooking.



These plants, senna alata are not grown for food but to feed the soil. (I call them soil trees) they have a very deep root system and are very efficient at extracting phosphorous from deep in the soil, they are also a legume so harvest nitrogen.



Wicking boxes are very simple and any experienced gardener would have no problems in setting one up.

They can be made from any waterproof box like this vegetable box, free from the local supermarket.



The big advantage of growing vegetables on a veranda is they are always there. No need to go in the rain or to the supermarket. Just open the door and there is your meal.



These are herb boxes, if you live in a small space then it may simply not be possible to grow all the vegetables you may like. But herbs take up very little space and can provide your basic mineral needs. Some herbs like guto kola have been subject to extensive scientific research and their medicinal benefits confirmed.



You can see a small cover in the centre of the box. Underneath this is the compost tube which is filled with compost and used to water the plants, this provides them with a rich compost tea.



This water level indicator shows when more water is needed. The water reservoir means that the box can go for significant time before extra water needs be added. This makes growing your own vegetables very easy.

However many diabetic sufferers who have never gardened may feel inhibited about starting to grow their own vegetables. I am therefore setting up a system of coaches, people trained in the wicking bed system who can teach, help set up or supply completed wicking boxes with plants already growing. If needed these coaches could also supply fruit, vegetables and herbs directly.

If you would like more information on the wicking bed system or may be are interested in becoming a coach please contact me at colinaustin@bigpond.com