

BEYOND ORGANIC

What is “Beyond Organic”? Before we go into that let us consider the problem.

It has been estimated that a third of the population of the UK is suffering from malnutrition. That may seem strange as about half of the population is overweight, with a quarter being distinctly obese. However, one can eat too much and still be suffering from malnutrition. What are often missing in modern diets are the essential minerals which we need in tiny amounts. It is one of my ideas that one of the reasons many people are overweight is that they are not obtaining enough of these trace elements in their food, so the body prompts them to eat more in order to obtain adequate quantities of those missing minerals. Let us look at a few examples:

Zinc. We need about 15 mg of zinc per day to be healthy. Zinc deficiency can lead to lack of energy, anaemia, increased blood pressure, lack of growth, depression, schizophrenia, enlarged prostate and lack of sexual drive

Calcium and Magnesium. The recommended daily allowance (RDA) for calcium is 800mg for an average person. However, magnesium deficiency prevents calcium from being incorporated into bone mass. The average daily intake of magnesium should be between 400 and 800mg. Because magnesium is involved in so many enzyme systems a deficiency has widespread metabolic consequences such as loss of appetite, nausea, apathy, weakness, tiredness, numbness, tingling, confusion, disorientation, learning disability, memory impairment, vertigo, convulsions, epilepsy, muscle cramps, grimaces, jerks, tremors, flicking eyes, muscular incoordination, insomnia, heart rhythm problems, hypoglycaemia, abnormal ECG, pre-menstrual symptoms, raised blood pressure, osteoporosis, kidney stones, diabetes and joint problems to mention a few

Selenium. The average person consumes 35 micro-grams of selenium per day whereas the recommended amount is 100 to 150 micro-grams per day. A person is only aware when the level of selenium has gone too low when chronic diseases such as cancer, arterial disease and arthritis are triggered.

There are many other ailments which can be caused by mineral deficiencies. People who have heart attacks are usually found to have extremely low levels of chromium. Levels of cobalt are low in hair samples taken from violent offenders. The list of trace elements which plants absorb for our use is very extensive and includes iron, tungsten, selenium, manganese, molybdenum, copper, sodium, potassium, phosphorus, nickel, boron, vanadium, silicon, fluorine, aluminium, arsenic, bromine, cadmium, mercury and lead.

By the way, if you are suffering from any of the abovementioned complaints you should go to your doctor rather than rush to the nearest health food shop and purchase food supplements – too much of some of these minerals can also lead to health problems.

THE COSTS

It has been estimated that poor diets are costing the NHS £6bn a year against £1.5bn for smoking. Unicef estimates that 740m people in the World are suffering from iodine deficiency. Children born to iodine-deficient mothers often have a lower IQ. The Mental Health Foundation has said there is growing evidence that good mental health is linked with good nutrition. An interesting study took place a few years ago in Aylesbury prison. Young offenders were given dietary supplements of 15 minerals. They then committed 40% fewer violent offences compared to a control group on a normal diet. There seems little doubt that a diet deficient in trace elements can lead to health problems and steep costs for society.

ARE FARMERS MINERS?

Are farmers miners? Yes. Do farmers extract from their soil zinc, molybdenum, selenium, etc, etc, etc? Yes. These trace elements are taken from the soil by their crops. Do farmers replenish the soil with what they have extracted? Largely, no. There is some spreading of farmyard manure but by no means enough. The Ministry of Agriculture (now DEFRA) has estimated that **between 1940 and 1991 the percentage of trace elements in agricultural soil has diminished by 40%**. When one considers the depletion of the soil that must have taken place before 1940 and the current ever-more intensifying methods of agricultural production it is clear that we are witnessing a rapid decline in the availability of trace elements essential for plant growth – and essential for our health.

This mining of the soil is akin to other ways in which our modern society is running through our assets. Most of the economically-extractable coal has already been mined. Oil and gas production in UK waters is now declining as the easy reserves have been exhausted and we are relying on marginal oil and gas fields. It may seem extremely pessimistic to say so, but we really are squandering the resources we have been gifted. And those resources include one of our most precious – our soil.

HUMUS

There is another way in which the resources of our farmland are being depleted. The amount of humus in the soil is declining. In England and Wales the percentage of soils classed as low in organic matter rose from 35% in 1980 to 42% in 1995. If farmers apply the fertilisers nitrogen, potash and phosphorous to the soil and extract the crops without returning to the soil an equivalent amount of compostable material the amount of humus in the soil declines. Soil consists largely of sand and humus. This decline in humus means that our farmland is turning into sand. Ultimately this will lead to desertification. Once soil has been degraded it takes thousands of years to regenerate. The problem is that these changes, of depletion of trace elements and humus, are occurring over such a long timescale that people do not notice. A problem that is not noticeable appears to be no problem.

As for contamination of farmland the figures are horrific. There are 31,000 tons of pesticides applied to UK farmland each year. Some farmers estimate that pesticides account for a third of their input costs. On average, crops are sprayed 5 times per year – potatoes up to 11 times and orchard fruits up to 13 times. Overseas, cotton is sprayed **daily** – what do you wear next to your skin? The Royal Commission on Environmental Pollution, in a report on the effects of crop spraying on bystanders concluded that “it is not implausible that there may be a link between pesticide spraying and chronic ill health”. And people still eat the crops!

WHAT CAN WE DO?

What can be done about these problems? On a national scale there are no easy answers. However, we can be selfish and help ourselves. What I do, and have done since 1973, is to import large quantities of farmyard manure from my friendly farmer to spread on my allotment and garden. In that way I am importing trace elements from his fields – as well as the more-obvious importing of humus.

“ORGANIC” FOOD

Now to that magic word organic. I am afraid that food labelled as organic found in shops is not truly organic. There are no tests for proving food is organic. Even where food is officially organic there are problems. The “organic” farmers are allowed to spray seven types of herbicide onto the crops and still retain the organic label. It is hard to see how they could do otherwise – weeding by hand would be economically impossible in this modern age. That applies to food imported from overseas just as much as it does to food grown in this country. As for genetically-modified organisms (GMOs), the European Union has authorised the label “organic” to be applied where the percentage of GMOs is less than 0.9%. Having a teeny-weeny bit of GMOs in organic food is like being a teeny-weeny bit pregnant. How many consumers, if they knew, would consider 0.9% GMO-contaminated food to be organic? Whether one is for or against GMOs this mis-labelling of food as organic seems wrong. The interests of the farming and food industries are being put first.

The European Union's rules on the inclusion of synthetic material in food are similar to those in the USA. There, "organic" food can contain up to 5% synthetic ingredients. Some 38 synthetics are allowed under current rules. The label "made with organic ingredients" requires just 70% of organic ingredients. In the UK, consumers are said to eat more than 4 kilogrammes per person per year of food additives such as colours and preservatives. Are people aware of all this? Generally no. These things are not publicised too well.

Contamination of food does not end just when the crops are picked. I am advised to eat the skin of potatoes as an excellent source of fibre. But when I sink my teeth occasionally into the skin of a potato I have not grown I am reminded of the dusting of chemicals the skin has received to prevent the potato sprouting in storage. Another example is that of salads, where they are washed in a chlorine solution for better supermarket shelf life.

PUT OURSELVES FIRST

Putting ourselves first, the only way we can have food that is truly organic is to grow it ourselves in our own gardens or on our allotments. By incorporating farmyard manure we can ensure that our soil has adequate amounts of trace elements and humus. But it does not end there. The crops need to access those trace elements, and that is where mycorrhizal fungi come in. If, say, a carrot needs some zinc and the zinc is some distance from the roots then the mycorrhizal fungi will fetch it. Mycorrhizal fungi are long, thin fungi which have symbiotic relationships with plant roots and bacteria etc. They obtain surplus carbohydrates from plants and, in return, supply the plants with trace elements which the plants need. The mycorrhizal fungi have an interest in maintaining healthy plants – healthy plants mean adequate amounts of carbohydrates for the mycorrhizal fungi. Unfortunately, digging and the application of chemicals destroy mycorrhizal fungi – which is what our farmers do. We can avoid that by not using chemicals and by using the no-dig method of gardening. One simply spreads compost or well-rotted manure on the surface of the soil and grows crops in it. There is no need to dig. Worms will provide adequate aeration of the soil. In nature nobody digs; everything grows quite well without it. It is nature's way. I have been a no-dig gardener since the year 2000 and everything is growing well. I am hoping that my mycorrhizal fungi have returned and are feeding my crops with the minerals which they – and I – need.

As for helping the rest of society, all one can do is to bring to the public's attention these problems in the hope that one day the politicians will do something about it and change fundamentally our approach to agriculture and the food we eat.

A word about freshness. It is difficult to measure freshness, but an apple from your own garden will taste much better than one of the same variety flown in from New Zealand. Intuitively it seems that vitamin levels will be higher the fresher the food.

CONCLUSION

So there you have it. "Beyond Organic" means growing food in a **completely** organic way, ensuring that the soil has adequate amounts of humus and trace elements - and plenty of mycorrhizal fungi to bring those trace elements to the plants. But, in this modern world, the only way of obtaining such truly organic fresh food is to grow it yourself. Nevertheless, it is vital that we understand and communicate to everyone about the degradation of human nutrition and counteract it by "good gardening" and looking after the soil.

I am grateful to the Good Gardeners' Association for some of the information given above. The Good Gardeners' Association spearheads the "Beyond Organic" movement. One of their slogans is "**We do not own the earth: we only borrow it from our children**". Those wishing to know more should ring the Association on 01453 520322 or visit www.goodgardeners.org.uk.