

THE SEARCH FOR THE IDEAL VEGETABLE

We need trace elements from the food we eat. There are no fewer than 92 elements found in nature, ranging from aluminium to zirconium. Also, in the soil there are around 10,000 different compounds of those elements, for example calcium carbonate which combines calcium, carbon and oxygen. These elements and compounds are also present in the sea, and since we originated in the sea one could say that those elements and compounds form part of our natural environment – and form part of our natural diet.

Nutritionists have identified some of the 92 elements which are vital to human health. For example, a deficiency of selenium can trigger cancer, arterial disease and arthritis. There are no early warning signs. The recommended daily intake is 150 micrograms yet the average intake in Western countries is only 35 micrograms. Selenium is found in nuts, garlic, onions, tomatoes, broccoli, asparagus, horseradish, mushrooms, seeds, soya, wholemeal flour, lettuce, eggs and good quality vegetable oils, so there is plenty of scope for eating adequate amounts. Too much selenium however, as is the case with many trace elements, is a bad thing and can lead to selenium toxicity. So there lies a warning – if you believe you may be suffering from a deficiency of a trace element, consult your doctor rather than rush out for food supplements. Eating a balanced diet, including fruit and vegetables which contain the essential trace elements, is the best way to ensure you have the right balance between famine and feast of trace elements.

It should be mentioned here that the rôle of most trace elements and compounds in human health is not yet known. Beryllium, germanium and tungsten – what is their role? They are probably important but we simply do not know. With future advances in science we may come to regard some of them as very important. But nutritionists do know the importance of the following 12 essential trace elements which can be sourced from plants we can grow, and which I shall now dub the “Vital 12”. These are selenium, zinc, magnesium, copper, potassium, calcium, iron, manganese, chromium, molybdenum, phosphorus and boron. So is there an “ideal vegetable”, defined as one which contains all the “Vital 12”?

To find out, I went through the last 10 years’ issues of the Good Gardeners’ Association’s news journal, which contain a series of articles on trace elements, the health effects of deficiencies, and the sources of trace elements. I am therefore grateful to the GGA for the information in this article, and particularly to Helen Cranston, nutritional therapist (01453 755 483/07815 768 753) for her excellent articles in the GGA newsletter.

Well, is there an ideal vegetable which contains all the “Vital 12”? The answer is no, unfortunately. The best plant source is the nut, which provides 9 of the “Vital 12” – selenium, zinc, magnesium, copper, potassium, calcium, manganese, phosphorus and boron. The missing iron and molybdenum can be provided by beans and the missing chromium by parsnips – or apples.

I have a hazel nut tree in the garden, so that is my source of home-grown nuts – squirrels permitting. But what if one does not have a nut tree – what are the purely vegetable sources of the “Vital 12” trace elements?

I found that green leafy vegetables are the best vegetable source. They contain 6 of the “Vital 12” – magnesium, potassium, calcium, iron, manganese and boron. Beans can provide 4 of the remaining 6 – zinc, copper, molybdenum and phosphorus. Garlic can provide selenium and parsnips chromium.

So there you have it. As a minimum, to ensure you have all of the “Vital 12” trace elements, you should grow “the fab four” – green leafy vegetables, beans, garlic and parsnips. Of course, other vegetables and fruit contain many of the “Vital 12” trace elements, but if space permits the growing of only 4 vegetables, the “fab four” should be the ones to grow since they contain all of the “Vital 12” trace elements.

I should add that I have not included 7 other trace elements which nutritionists have identified as vital to our health. I have not included sodium and chlorine since most people eat too much salt from non-vegetable sources so there is no point in seeking yet more sodium chloride – and tap water is chlorinated anyway. (The only vegetable source of sodium appears to be dandelions and of chlorine couch grass.) I have not included silicon because it is present only in couch grass and nettles and not too many people in the UK eat those plants. I have not included nickel because we absorb it from our environment to a large degree (jewellery, coins, etc). I have not included cobalt, vanadium and fluorine because I could not find a vegetable source of those vital trace elements.

One can source many of the “Vital 12” from non-vegetable foods and food supplements but, to be sure that your diet includes all the “Vital 12”, the “fab four” of green leafy vegetables, beans, garlic and parsnips will provide what you need.

Health Warning

The above has been a light-hearted search for the minimum number of vegetable types which could supply the “Vital 12” trace elements (and 7 other vital trace elements were also mentioned). However, it must be remembered that there are 73 other trace elements which may be vital to human health but the scientists have not yet discovered their importance. Since they have formed part of our environment and diet since we were amoeba, it is likely that many of them are also vital for our health. Also, there are the vitamins and proteins which we need. Therefore, the only safe course of action is to eat a diet which is as wide as possible in order to have the maximum chance of eating all the trace elements, vitamins and proteins our bodies need. To give an idea, on the allotment and in the garden in 2007 I successfully grew 68 species of vegetables and 22 species of fruit, and for many of them several varieties. But if you have restricted space, and want to be certain of obtaining all the “Vital 12” trace elements which can be sourced from vegetables, then grow the “fab four” – green leafy vegetables, beans, garlic and parsnips.

Happy gardening!

MIKE MASON