

WHENCE MY MUCK?

I have been applying farmyard (ie cow) manure to my garden and allotment since 1979. A local friendly dairy farmer supplies a load weighing about 3.75 tons every winter. I used to believe that what the cows ate was grass, plus meadow plants such as buttercups from the farmer's fields. How wrong I was! Modern farming is done on a huge scale, with scientifically-calculated amounts of various types of feed to ensure the health of the animals and to maximise the production of milk.

I was given a guided tour of the operation by my friendly farmer. He has around 700 mouths to feed. The food is stored outdoors in a series of mountains. He feeds his cows with about 20 tons per day. I'll just repeat that, 20 tons per day. It is a huge operation.

When he showed me the various types of feed I was astonished. In winter months there are 13 types, as follows: silage made from his own maize; silage made from his own hay; imported soya beans; imported soya bean husks; oilseed rape meal; palm oil; wheat; urea; limestone flour; yeast and, finally, by-products from the food processing industry such as sugar beet shreds, biscuits and orange peel. The proportions of each are finely calculated to give the cattle just what they need in their diet for their health and milk production. In the summer months the cattle graze on fresh grass but are also fed the above list of ingredients when they come in for milking. The water used for the cattle's diet comes from the farmer's own 300-foot deep borehole in the Chilterns, and the water's content of trace elements is known. It seems unlikely that my farmer's cattle will be suffering from poor nutrition with such a carefully-controlled diet. Just as important, the manure I spread on my allotment probably contains a wide range of nutrients. I have carried out soil analysis. My allotment soil is now rich in trace elements, shows no deficiencies and no toxicity to plants.

Now to another aspect. In a handful of soil there are over 6,000,000,000 species of micro-organism. The above list of ingredients includes imported items such as soya beans, soya hulls, palm oil and orange peel. Some of the other ingredients may also have been imported. Now, with soil micro-organisms being so tiny and so numerous, it is inconceivable that all of them will have been washed off the imported ingredients. Thus soil micro-organisms from foreign lands will have been introduced into my allotment soil over a great many years. This is an extension of globalisation into unexpected areas. About 30 million tons of farmyard manure are produced in the UK every year, and most of that is spread on farmers' fields as fertiliser. Whilst one can only applaud that returning of vital trace elements and organic matter to the soil – and the consequent reduction in the use of man-made fertilisers – it does mean that foreign soil micro-organisms have been spread onto UK farmland for many, many years.

Now let us consider my compost heaps. All our kitchen vegetable and fruit waste goes into the compost heaps. Out-of-season French beans from Kenya, apples from New Zealand, South Africa and Chile, bananas from Africa, South America and the Caribbean – almost every continent has an input into my compost heaps and thus some foreign soil and soil micro-organisms are introduced into my soil. I don't know how they get on with the locals – maybe there is World War III going on down there. What I do know is that this mixing of soil micro-organisms from all over the planet is relatively new and there may be unavoidable consequences, whether good or bad.

So here I am on my allotment, practising no-dig gardening to help the soil micro-organisms flourish and, at the same time, introducing foreign interlopers and begetting unknown consequences. But the situation is even worse. At least 10,000 foreign plant species have been introduced into the UK in the past few hundred years, some edible, most decorative. Garden centres are full of them. In many cases they will have been brought in originally with soil round their roots – soil from all over the planet.

Thus foreign micro-organisms of all kinds will have invaded our soil. What damage will they be doing? We do not know, but we do know the dangers of introducing foreign animals and plants which have no natural enemies here. Muntjac deer from India are grazing freely in our gardens and on our allotments and multiplying rapidly. Japanese knotweed is an extremely vigorous and hardy weed.

Grey Squirrels from North America are out-competing our red squirrels. The worst example I have heard of comes from Australia. Not too long after the initial settlement of Europeans, someone had the bright idea of importing rabbits. The original 24 escaped and, well, bred like rabbits. With no predators the rabbits colonised all of Australia apart from the extreme north, where it was too hot for them. They ate everything – grass, weeds, bark of trees and bushes until there was little growing in much of that hot, dry land. The topsoil was only an inch deep, became like dust, and blew off into the sea! So most of Australia is now barren with no topsoil. It could take thousands of years to regenerate the departed topsoil. So, if a few rabbits can create such destruction what about foreign soil micro-organisms destroying domestic soil micro-organisms? Are we doing irreparable damage to a vital part of our environment? We simply do not know. The world of the soil micro-organism is so vast, with 6,000,000,000 species in a handful of soil; we may never understand the rôle of all of them in a vital part of our eco-system.

Are foreign soil micro-organisms not the same as our domestic ones? I do not know, but since the continents split from one landmass into six distinct continents, evolution has caused the plant and animal kingdoms to be significantly different. Logically, evolution may have caused the micro-organisms in those six continents to be different. Now, when we introduce foreign plants and animals into other continents we can cause havoc. Perhaps the same is true with soil micro-organisms. The equivalent of a sabre-toothed rabbit micro-organism might be gobbling up our poor defenceless domestic friends as you read this article.

Happy gardening!

MIKE MASON