

BOOK REVIEW - THE ONE-STRAW REVOLUTION

The One-Straw Revolution is the title of a book by Masanobu Fukuoka first published in 1978 under ISBN 81-85569-31-2. It is available at £4.60 including delivery on Amazon. A friend loaned me the book, I read it, thought about it then bought my own copy then read it again. It is that kind of book. There are not many gardening books which have the element of a thriller, but here is one. Many readers will have heard of the book, but for those who have not, here is a brief synopsis.

Mr Fukuoka was a microbiologist and a specialist in plant diseases. He abandoned his career at the age of 25 and went to a farming area in southern Japan to carry out experiments on the growing of rice, living like a hermit. He adopted, effectively, the no-dig method. After much trial and error he arrived at the following solution. He sowed rice seed (by broadcasting where it was to grow) in November rather than in spring – his first revolution. At the same time he sowed clover and either rye or barley seed. He covered the exposed seed with rice straw from a previous crop to protect the seed from birds. Prior to sowing he coated the rice grains with clay to protect the seed from moles, crickets, mice and slugs during the 6 months of dormancy. The rye or barley germinated, as did the clover which served as a mulch to keep down other weeds. The rye or barley crop was taken the following May, the straw from the rye or barley was spread over the field and the paddy field flooded for the first and only time for about a month. The flooding caused the dormant rice seed to germinate and also suppressed the growth of the clover and the weeds. After a month the water in the paddy field was released and the rice continued to grow, with the clover again providing a mulch to suppress other weeds. The rice was harvested in October and the cycle repeated. He used the no-dig method successfully for 25 years before writing his book. He grew the same crops in the same field year after year, ie no crop rotation.

The advantages of his method were that the following operations were avoided, believe it or not: tilling the paddy field; the laborious transplanting of young rice plants grown in a starter bed; the making of compost; adding expensive conventional fertilisers to the soil; weeding, and the use of herbicides. Yet his crop yield per acre was as good as that of farmers who used conventional techniques, and, because his crops were **completely** organic and full of nutrients, he obtained premium prices. The labour saving was massive. He just sowed and harvested, with the spreading of straw on two occasions. Just imagine if we could just sow and harvest!

I was surprised to learn that one does not need to grow rice in a flooded paddy field - rice grows perfectly well in ordinary soil. The other farmers used flooding as a means of weed control since few weeds thrive submerged (but three types of weeds did thrive in the water and had to be hand weeded a few times per year by those farmers). By returning the straw to the paddy field he ensured that the soil was not continually depleted of essential nutrients. He did add a little chicken manure to help break down the straw and that helped with soil fertility. He believed that weeds should be controlled, not eliminated, because the weeds helped the wildlife to prosper and then beneficial insects attacked the undesirable insects.

He came to the conclusion that the no-dig method was best. He was probably unaware at the time of the importance of soil mycorrhizal fungi and that the no-dig method was essential to avoid killing off the mycorrhizal fungi. Since paddy fields had been ploughed for centuries the mycorrhiza must have been considerably depleted in conventional paddy fields. (Can mycorrhiza survive in flooded paddy fields anyway? Could they have survived in Mr

Fukuoka's paddy fields which were flooded for only one month per year? Was the presence of mycorrhiza the real reason why his crops were so good?)

Another interesting fact to emerge from the book is that rice was grown in Japan using the no-dig method, without the use of flooded paddy fields, from time immemorial until about 400 years ago. Then Japanese farming was influenced by Western methods.....

Mr Fukuoka believed that "natural" farming proceeds from the spiritual health of the individual and a great deal of the book is devoted to such aspects. His teaching methods are strongly influenced by Zen Buddhism and Taoism. However, as I am not familiar with those religions I found such passages hard going. But his sincerity and strong beliefs were readily apparent. I can appreciate that man must be at one with nature.

He berated the vegetables most people eat: "Commercial vegetables are a watery combination of nitrogen, phosphorus and potash, with a little help from the seeds. And that is just how they taste". Hear hear!

He mentions that way back in the past farmers did not till the land. North American Indians planted corn, beans, squashes and other vegetables by dibbing the seed in. Where more civilised tribes had used the plough the soil had turned to sand. In ancient India the "rishis" grew their entire food without ploughing. They believed such food to be healthier, and that ploughing harmed the soil. So Mr Fukuoka produced his rice, barley, rye and clover without ploughing – and obtained premium prices in the markets because of the quality of his crops.

He did have an uphill struggle persuading other rice farmers in Japan to convert to his methods. There was opposition from the manufacturers of fertilisers, pesticides and machinery since if his methods were adopted they would have no market for their products. Nevertheless, there was a gradual increase in the number of farmers using his pioneering methods. He must have had tremendous guts to slog on in the face of all opposition, determined to put his theories into practice year after year.

His agricultural methods are not directly translatable to the UK. Firstly we do not grow rice and most of our crops need to be sown in spring for harvesting in the autumn. Not many of our crops are sown in the autumn for cropping in spring. Even garlic, overwintering onions, shallots, peas and broad beans sown in the autumn are not harvested until summer, so it is hard to find the equivalent to Mr Fukuoka's combination of rice and rye or barley at six month intervals. But the use of clover for weed-suppression amongst crops may have possibilities – and it does have the enormous benefit of "fixing" nitrogen from the air.

What the book teaches, above all, is that farming is possible on a **large** scale without ploughing and without the use of artificial chemicals. Organic matter should be returned to the soil to improve the soil structure and its fertility. The essential mycorrhizal fungi should be allowed back to carry on with their task of feeding the crops and improving the nutrient content of the food we eat. Weeds do not have to be eliminated completely – their presence helps wildlife, predatorial insects, etc. More thought and experimentation is clearly needed to make our farming "natural".

I shall retain my copy of this book and, when my memory has faded, read it once more to remind me of one of the giants of sustainable agriculture.

MIKE MASON