

## **TEAMING WITH MICROBES**

### **The Organic Gardener's Guide to the Soil Food Web**

**By**

**Jeff Lowenfels & Wayne Lewis**

You have, of course, heard of the worldwideweb, but this is a very late comer to the world of webs. The soil food web (SFW) is the original web and pre-dates the electronic one by several hundred million years.

Lowenfels and Lewis (L&L), both from Alaska (so if they can do it we can too), cleverly pun the concept for their book and combine biological and scientific detail with practical organic gardening. Their book, written by gardeners for gardeners, has two parts - the first explains the structure and science of the SFW and the second describes how to apply the principles of the SFW to your yard and garden. If you don't care for the science you can always skip to the second part of the book.

The SFW has over a dozen constituent organisms – some in staggeringly large numbers - and the authors describe most of them, together with their role and interdependence within the SFW. Among the most familiar are bacteria and fungi, together with earthworms; but lesser known members include creatures such as archaea, protozoa and nematodes. At the top of the web are the more visible members – insects, birds and mammals.

L&L explain the natural plant succession – from grasses and annuals through to perennials, shrubs and forests – which is fundamental to an understanding of plant eco-systems. The lessons from this succession are used to develop ways of gardening which are consistent with those of nature. As the authors note “No one ever fertilized an old growth forest”.

Beneficial activities include the promotion of the acid conditions, which bacteria need to thrive, and the alkaline conditions, which fungi need. The dependence of many plant types either on bacteria (vegetables) or fungi (shrubs) are explained.

Especially fascinating is the description of how root systems actually work, symbiotically, to provide nutrients not only for the plant but also for members of the SFW.

The relative complexity of the bacteria/fungi balance is simplified in terms of the familiar green/brown composting model, for which different proportions are presented for different crops. Mulching and mycorrhizal fungi are reviewed in their respective chapters, as is the more contentious topic of compost teas.

A key element of organic gardening is the repeated storage and release of nutrients, such as nitrogen (the Nitrogen Cycle). The authors do an excellent job of explaining this within the framework of the SFW and contrasting it with the use of water soluble chemical nutrients.

L&L provide a very convenient and practical anchor in the book in the form of an appendix containing “The Soil Food Web Gardening Rules”, which are regularly referred to throughout the text, so the practical implications are never lost. The book is illustrated with many diagrams, tables and excellent photographs and has a good index.

The authors give us a compelling view of life below the soil surface – life hidden but so vital to mans’ well-being and long term survival - and teach us how we can foster and reinforce it.

Why don’t you read the book and learn how to team with the microbes in your garden.

Reviewed by David Broomhead