

Book Review

Gurr et al. 2004. *Ecological Engineering for Pest Management: Habitat Manipulation for Arthropods*. CSIRO Publishing, Collingwood, Australia.

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The use of genetic engineering is expanding, especially in agriculture, with about 60 x 10⁶ ha of transgenic cotton, corn, soybean, canola, and potato planted worldwide. Although this approach offers considerable promise, at least in some agricultural systems, it is the subject of considerable debate and poor public acceptance. The subject of *Ecological Engineering for Pest Management: Habitat Manipulation for Arthropods* is genetic engineering's less controversial cousin, ecological engineering. Despite the fact that this approach has been the subject of far less research attention and funding, the authors show that the use of ecological rather than biotechnological approaches offers great scope in the management of the arthropod pests that threaten agroecosystems.

The central idea fostered by Gurr et al. (2004) is that ecological engineering is a viable mainstream option for achieving agricultural sustainability in a range of temperate and tropical production systems. Habitat manipulation and conservation via biological control are key aspects of the theoretical, methodological, and case study contributions to this edited volume on ecological engineering, a discipline that is characterized by the purposeful use of selected components of biodiversity as opposed to the shotgun approach of simply increasing farm biodiversity. Several chapters consider the benefits that can be derived from the introduction of the right kinds of diversity to promote key predators or parasitoids and suppress pests. Beetle banks, field margins, ribbon crops, wildflower strips, trap crops, repellent plants, and refuge crops are among the approaches discussed. Plants such as buckwheat and *Phacelia* have also been widely investigated as attractants of beneficials that can improve biological control in nearby crops. However, it is clear that

more research attention needs to be given to the effects of native vegetation, especially its effects at the landscape scale.

The chapters are well designed to provide the best available information on ecological engineering today, and the book includes a detailed consideration of possible positive and negative interactions with genetically engineered crops. The example from Australia in which cotton demonstrated lower damage from key pests when interplanted with alfalfa is a good element to link with the use of Bt cotton, which contains a foreign gene obtained from *Bacillus thuringiensis*.

The sustainability of many farming systems is low, and more guidance is required for farmers and advisors to help them develop and implement more ecologically sound pest management approaches. This book is, therefore, welcome and timely.

Book Information

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