

Preface

Evolution of herbicide resistance in weeds has severely impacted the sustainability of weed control systems all across the globe. Pesticide residue in both food and the environment is an important concern of humanity. Further, there has been a demand for organically grown food in various parts of the world. These three facts stress the need for achieving sustainable weed control with methods other than herbicides. Allelopathy is an attractive option to control weeds naturally under field conditions. This book straightforwardly defines the ways of exploiting the allelopathic potential of important field crops for controlling weeds, either in the same crops or other ones. This means that the crops normally grown are exploited for their allelopathic activity to suppress weeds naturally under field conditions. The book highlights the allelopathic potential of several important cereals (wheat, maize, rice, barley, sorghum, rye) and two oilseed crops [sunflower and canola (as well as some other members of *Brassicaceae* family)]. Further, the book explains how the allelopathic potential of these crops can be manipulated under field conditions to suppress weeds, for example, by growing allelopathic crop cultivars, using mulches from allelopathic crops, intercropping an allelopathic crop with a non-allelopathic crop, including allelopathic crops in crop rotation, and using these as cover crops.

Competition and allelopathy are always difficult to separate. The literature used in this book has been selected carefully in order to quote only the examples from allelopathy, and not the competition. The cases with possible involvement of competition (along with allelopathic effect) have been mentioned clearly.

The researchers in the field of allelopathy will be able to benefit from this book by using it as a ready reference. This book will be of great importance and interest to graduate and post-graduate students who can benefit from it as a first source of information regarding the concepts of allelopathy and allelopathic crops capable of suppressing weeds. Undoubtedly, the farmers aiming to achieve a non-chemical weed control in their fields can also benefit from this book.

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