

## Book review

**Chirality in Agrochemicals**

N. Kurihara, J. Miyamoto (Eds.), John Wiley & Sons, Chichester, UK, 1998, Xi + 269 pp., £ 110.00/€ 165.00, ISBN: 0-471-98121-4

Although this book was published in 1998, it is considered one of the few monographs available that discusses the topic of chirality in agrochemicals. Several books have been published on the impact of chirality on pharmaceuticals, yet this book is completely devoted to the topic of chirality in agrochemicals, discussing the synthesis, activity and toxicology of these agrochemicals. So, I congratulate the editors for a job well done in presenting this book to scientists who are working in the field of agrochemicals.

It is essential nowadays to know the pharmacodynamic and metabolic pharmacokinetics of the enantiomeric pair of an agrochemical and its impact on plants, insects, and mammals, including humans. This information is now required by many environmental agencies to be available from the agrochemical industries.

The book is written by experts from academia and the agrochemical industry and consists of six chapters. Chapter 1 provides a short introduction to the impact of chirality on agrochemicals. Chapter 2 focuses on pyretheroids, which represents one of the major agrochemical classes. Chapter 3 discusses the importance of chirality in organophosphorus agrochemicals, since these compounds have two possible chiral centers, namely, the phosphorus chiral centre and the carbon chiral centre. This is a well-written chapter and gives details on the synthesis of enantiopure phosphorus compounds, methods of measurement of enantiomeric

excess and assignment of absolute configuration, metabolism and environmental aspects among other topics. Chapters 4 and 5 describe the chiral acylanilides, chiral triazoles-related fungicides and aryloxy phenoxypropanoate herbicides, respectively. These two chapters present the synthesis analysis and biological activity of these classes. It is of interest to mention that most aryloxypropionic acids have one chiral centre in the 2-position of the propionic acid moiety and usually the *R*-isomer has a higher herbicidal activity. Therefore, the syntheses of enantiopure aryloxypropanates are simple compared to other agrochemicals. Finally, Chapter 6 deals with the impact of chirality in insect juvenile hormones and pheromones. The chapter consists of a detailed description of a complicated synthesis for some of these pheromones along with their interesting stereospecific biological activities. Each chapter ends with a list of references related to the topic discussed.

In summary, this book is a valuable reference and is a must have for environmentalists, organic chemists and analytical chemists working in this field.

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Available online 10 June 2004