DESCRIPTION

The chemistry of heterocycles is an important branch of organic chemistry. This is due to the fact that a large number of natural products, e.g. hormones, antibiotics, vitamins, etc. are composed of heterocyclic structures. Often, these compounds show beneficial properties and are therefore applied as pharmaceuticals to treat diseases or as insecticides, herbicides or fungicides in crop protection. This volume presents important agrochemicals. Each of the 21 chapters covers in a concise manner one class of heterocycles, clearly structured as follows:

* Structural formulas of most important examples (market products)

* Short background of history or discovery

* Typical syntheses of important examples

* Mode of action

* Characteristic biological activity

* Structure-activity relationship

* Additional chemistry information (e.g. further transformations, alternative syntheses, metabolic pathways, etc.)
* References

A valuable one-stop reference source for researchers in academia and industry as well as for graduate students with career aspirations in the agrochemical chemistry.

ABOUT THE AUTHOR

Clemens Lamberth is a senior team leader in the crop protection research department of Syngenta AG, Switzerland. He studied chemistry at the Technical University of Darmstadt, Germany, where he obtained his Ph.D. under the supervision of Prof. Bernd Giese in 1990. Subsequently, he spent one and a half years as a postdoctoral fellow in the group of Prof. Mark Bednarski at the University of California at Berkeley, U.S.A. In 1992 Clemens Lamberth joined the agrochemical research department of Sandoz Agro AG, Switzerland, which is today, after two mergers, part of Syngenta Crop Protection AG. Since 20 years he is specialized in fungicide discovery. He was the organizer of the two-day session 'New Trends for Agrochemicals' at the 2nd EUCHEMS congress in Torino 2008. He is the author of 46 publications and 56 patents and the inventor of Syngenta's fungicide mandipropamid (Revus®, Pergado®).

Jürgen Dinges obtained his M.S. degree in organic chemistry at the Technical University in Darmstadt, Germany in 1988. He then joined the group of Prof. Frieder W. Lichtenthaler at the same University, where he received his Ph.D. degree in organic chemistry and chemical engineering in 1991. After being awarded a Feodor-Lynen scholarship from the Humboldt foundation, he spent 18 months as a postdoctoral fellow in the group of Prof. William G. Dauben at the University of California at Berkeley, U.S.A. In 1993, Jurgen Dinges joined the department for biochemistry at Syntex, U.S.A. and since 1995 he is working in the pharmaceutical research department at Abbott Laboratories, U.S.A. In 2009, he was a guest editor for Current Topics in Medicinal Chemistry for a special issue on Parkinson's disease. He is an author of 17 publications and 23 patents and a co-inventor of more than 10 clinical drug development candidates.