
EDITORIAL



Weeds, diseases, and infestations by insects have always been, and still are, major threats in agricultural production. Chemical crop protection has contributed in a decisive manner to secure the sustainable production of food, feed, and fibre for more than 60 years. Now at the beginning of the 21st century, chemical crop protection still represents over 90% of sales for inputs into the agribusiness and there is no doubt that agrochemicals will continue to be a vital component of crop protection, even in spite of the emergence of novel biotechnological solutions. There also remain many commercial opportunities for innovative new crop protection products. This is mainly due to the development of resistance by pests and diseases to current treatments, and customers' demand for solutions to newly evolving pest problems as well as regulatory pressure on current products.

The discovery and development of new agrochemicals has become a difficult and resource-intensive undertaking. A recent study by ECPA (European Crop Protection Association) shows that research and development costs for new crop protection products increased to 200 million Euro in the year 2000 and the period from discovery to product launch requires an average of nine years. These figures can be attributed to more rigorous regulatory standards and stricter criteria applied by companies to ensure protection of the environment and the consumer.

In the early days of crop protection research, new products were mainly a result of trial and error. Today, the task of inventing and developing novel compounds with useful biological activity demands a combination of many scientific disciplines and novel technologies. This includes, for example, high-throughput screening, combinatorial chemistry, molecular modelling, biochemistry, genomics, and bioinformatics. It is expected that the huge research efforts of the companies active in crop protection research will result in the discovery of a series of novel chemical classes and innovative products with excellent biological activity, novel mode of action, and favourable safety profile. Some recent examples of such innovative chemical classes are the strobilurin fungicides and the neonicotinoid insecticides.

This issue of CHIMIA is designated to inform the reader of some current trends in the search for safe and efficient agrochemicals. It presents a unique look into selected research activities of the leading crop protection companies and highlights the discovery, optimisation, and mode of action of new chemical classes in the field of modern fungicide, insecticide, and herbicide science. Overall, the papers of this issue serve to show that many novel and exciting innovations in chemical crop protection research have been made in recent years and that new compounds with advantages over existing products continue to be discovered and introduced.



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