The Battle for a Sustainable Food Supply

Unsworth J., Nakagawa Y., Harris C., Kleter G. (2019) in Vaz Jr. S. (eds)
Sustainable Agrochemistry. Springer, Cham;

Since the time that *Homo sapiens* took up farming, a battle has been waged against pests and diseases which can cause significant losses in crop yield and threaten a sustainable food supply. Initially, early control techniques included religious practices or folk magic, hand removal of weeds and insects, and "chemical" techniques such as smokes, easily available minerals, oils, and plant extracts known to have pesticidal activity. But it was not until the early twentieth century that real progress was made when a large number of compounds became available for testing as pesticides due to the upsurge in organic chemistry. The period after the 1940s saw the introduction of important families of chemicals, such as the phenoxy acid herbicides, the organochlorine insecticides and the dithiocarbamate fungicides. The introduction of new pesticides led to significant yield increases, but concern arose over their possible negative effects on human health and the environment. In time, resistance started to occur, making these pesticides less effective. This led agrochemical companies putting in place research looking for new modes of action and giving less toxic and more environmentally friendly products. These research programmes gave rise to new pesticide families, such as the sulfonylurea herbicides, the strobilurin fungicides and the neonicotinoid insecticide classes.

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IUPAC Provisional Recommendations

Provisional Recommendations are preliminary drafts of IUPAC recommendations on terminology, nomenclature, and symbols, made widely available to allow interested parties to comment before the recommendations are finalized and published in IUPAC's journal *Pure and Applied Chemistry* (*PAC*). Full text is available online.

Glossary and tutorial of xenobiotic metabolism terms used during small molecule drug discovery and development

This project originated nearly 15 years ago with the intent to produce a glossary of drug metabolism terms having definitions especially applicable for use by practicing medicinal chemists. A first-draft version underwent extensive beta-testing that, fortuitously, engaged international audiences having a wide range of disciplines involved in drug discovery and development. It became clear that inclusion of information to enhance discussions among this mix of participants would be even more valuable. The glossary's present version retains a chemical structure theme, while expanding tutorial comments directed toward bridging various perspectives that may arise for a given term during interdisciplinary communications. It is intended to be educational for early stage researchers, as well as being a useful resource for investigators at various levels who participate on today's highly multidisciplinary, collaborative drug discovery teams.

Comments by 31 December 2019.

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https://iupac.org/project/2000-009-1-700

Terminology of electrochemical methods of analysis

Recommendations are given concerning the terminology of methods used in electroanalytical chemistry. Fundamental terms in electrochemistry are reproduced from previous PAC Recommendations, and new and updated material is added for terms in electroanalytical chemistry, classification of electrode systems, and eletroanalytical techniques.

Comments by 30 November 2019.

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https://iupac.org/project/2010-052-1-500