Kiss, S., Simihăian, M.: **Improving Efficiency of Urea Fertilizers by Inhibition of Soil Urease Activity.** - Kluwer Academic Publishers, Dordrecht - Boston - London 2002. 417 pp. EUR 180.00. ISBN 1-4020-0493-1.

Long since, urea has been used to increase growth and primary production. Therefore, its activities have been studied from different points of view. One of them, the role and functioning of a hydrolytic enzyme, the urease, in soil is dealt with in this book.

The authors of the book, Romanian specialists in the field, Stefan Kiss (Babeş-Bolyai University, Department of Plant Physiology) and M. Simihăian (Environmental Protection Agency, Department of Environmental Management), brought together the most significant literature and fundamental data on basic research in this topic, scattered throughout many diverse sources. The literature presented in full detail covers 65 years (patent literature 40 years).

The compounds tested include heavy, light and alkali metals, fluorides, boron, arsenic and sulfur compounds, organic mercury and organo boron acid compounds, formaldehyde, hexa-methylenetetramine, urea derivatives, dithiocarbamates, thiuram disulfides and sulfides, xanthanes, hydroxamic acids, maleimides, maleic hydrazine, mucochloride acid, bromo-nitro compounds, heterocyclic sulfur compounds, mono- and polyhydric phenols, quinones, thiopyridines and thiopyrimidines, N,N'-dihalo-2-imidazolidinones and N-halo-2-oxazolidinones, γ-L-glutamyl nitroanilides, phosphoroamidates and thiophosphorodiamidates, polyphosphorodiamides, phosphoric and thiophosphoric tri-amides, cyclotriphosphazatriene derivatives, phosphorylated 2-oximinophenylacetonitrile and 2-thiono 5,5-di-methyl-1,3,2-dioxaphosphorinane compounds, antimetabolites, different natural products (coal, peat, humic substances, lignins, tannins, saponins), *etc.*

The book contains 10 chapters. The first two chapters deal with the inorganic (Chapter 1), and organic (Chapter 2) compounds tested for evaluation of their inhibiting effect on soil urease activity, urea hydrolysis, ammonia volatilization, and nitrous oxide emission.

The next four chapters deal with combined use of inhibitors of soil urease activity, with comparative studies of the efficiency of different inhibitors on soil urease activity, with compounds tested for evaluation of their inhibiting effect on both soil urease activity and nitrification, and with soil urease inhibitors used in combination with nitrification and/or algal inhibitors.

The readers of Biologia Plantarum can find useful information also in Chapter 7 devoted to the effect of soil urease inhibitors on germination, growth and yield of plants [barley, cotton, cucumber, geranium, grasses (*Botriochloa caucasica, Bromus inermis, Cymbopogon flexuosus, Cynodon dactylon, Dactylis glomerata, Eragrostis curvula, Festuca arundinacea, Lolium multiflorum, L. perenne, Poa pratensis, Stenotaphrum secundatum*), Japanese mint, leguminous plants (*Glycine max, Lupinus luteus, Medicago sativa, Phaseolus vulgaris, Pisum sativum, Trifolium pratense, Vicia faba*), lettuce, maize, oat, oilseed-rape, onion, potato, pumpkin, radish, rice, rye, sorghum, sugarbeet, sugarcane, sweet potato, tobacco, and wheat].

The chapters 8 and 9 summarize information on the effect of urease inhibitors on other enzyme activities, microbial counts and biomass as well as on respiration and other microbial processes in soils, and on the use of urease inhititors in the analysis of urea and/or ammonium from urea-treated soils. Chapter 10 deals with urease inhibitors used with another purpose than inhibition of soil urease activity (urease inhibitors as fertilizers, for preventing toxicity of urea-amended fodders, for control of ammonia and odour emission from livestock wastes, for treatment and prevention of some human diseases, for preventing acid mine drainage, *etc.*).

Generally, the book is a good source of information on the topics. It contains a detailed subject index, and a list of 830 references. It is a pity, that some units, dimensions, and nomenclature are irrelevant to SI (Système International d'Unités), generally used in recent scientific papers and books. Although the space for the manuscript has been limited, the amount of data from the literature presented is enormous. On several places, this has led to a bad legibility of the text. Arrangement of some comprehensive data in summarizing tables, *e.g.* such as in chapters 9 and 10, may help to better understanding of information presented.

The book is addressed to a broad readership, interested in plant physiology, environmental sciences, soil biology and biochemistry, agronomy and forestry, and relative sciences.

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