

BOOK REVIEW

**Research Methods in Plant Sciences Vol I:
Soil Allelochemicals.** By Narwal S.S., Szajdak L,
Sampietro D.A. (Eds.). 2011. Studium Press – LLC.
Houston, Texas USA. 440 pp. ISBN: 1-933699-65-5

This is the first volume of the serial edition "Research Methods in Plant Science". As indicated in the "Preface" the allelopathy is a new emerging multidisciplinary research field, which greatly contributed to the improvement in various fields of agriculture and plant sciences. Prof. S.S. Narwal from the International Allelopathy Foundation has invited the co-editors Prof. L. Szajdak (Poland) and Prof. D.S. Sampietro (Argentina) and over twenty other authors from several countries as contributors. The book contains eighteen chapters that cover all aspects concerning allelopathy phenomenon in soil and plant sciences.

The chapters are arranged in three sections.

Section I "Soil Preparation and Preliminary Analysis" (p. 3–85) contains the following chapters: Chapter 1 "Soil allelochemicals: sampling, handling and storage" (p. 3–24) is authored by D.A. Sampietro, J.S. Soberon and M.A. Vattuone. Chapter 2 "Colorimetric reactions in soil allelochemicals analysis" (p. 28–53) is authored by D.A. Sampietro, M.A. Sariglia, J.R. Soberon and M.A. Vattuone (p. 25–53). Chapter 3 "Thin layer chromatography and paper chromatography analysis" (p. 55–85) is authored by M.A. Sgariglia, D.A. Sampietro and M.M.A. Vattuone.

Section II "Analysis of Soil Allelochemicals" (p. 87–423) contains the following chapters: Chapter 4 "Amino acids in soils" (p. 89–113–124) by L.W. Szajdak; Chapter 5 "Soil enzymes" (p. 115–134) by H. Dahm, L.W. Szajdak and P. Golinska. Chapter 6 "Lipids" (p. 135–149) by B. Kieliszewska-Rokicka. Chapter 7 "Carbohydrates" (p. 151–169) by M.P. Recalde, H.J. Prado and M.C. Mat-

ulewicz. Chapter 8 "Nucleic acids" (p. 173–197) by B.E. Gomez-Luna, G. Vazque-Marrufo and V. Olalde. Chapter 9 "Phenolic compounds in soil" (p. 199–222) by C. Zacccone, C. Coccozza and T.M. Miano. Chapter 10 "Terpenoids" (p. 223–238) by N.C. Lobon, T.S. Diaz, C.V. Masa, J and C.A. Gallego. Chapter 11 "Alkaloids" (p. 239–282) by M. Wakszumdzka Hajnos, A. Petruczynik and M. Hajnos. Chapter 12 "Cyanogenic glycosides" (p. 283–310) by R. Gleadow, N. Bjarnholt, K. Jorensen, J. Fox, and R. Millert. Chapter 13 "Reactive oxygen species" (p. 312–325) by J.R. Soberon, M.A. Sgariglia, D.A. Sampietro, and M.A. Vattuone. Chapter 14 "Antioxidant capacity" (p. 227–246) by J. R. Soberon *et al.*; M.A. Sgariglia. Chapter 15 "Enzymatic antioxidant systems" (p. 348–368) by M.A. Vattuone, M.A. Sgariglia, J.R. Soberon, D. Sampietro. Chapter 16 "Adenine and pyridine nucleotides" (p. 369–393) by D. Boguszevska and B. Zagdańska. Chapter 17 "B-vitamins in soil" (p. 395–405) by H. Damm. Chapter 18 "Jasmonic acid and its related compounds" (p. 407–423).

Section III – Appendices : Appendix 1 – Abbreviations (p. 427–429); Appendix 2 – Chemical formulae and molecular weight of solvents and reagents. Appendix 3 Molecular weight organic compounds (p. 432–435). Subject Index (p. 437–439) Author's Index (p. 440).

The information provided in this book evidently indicates that this compendium contains extremely useful and interesting information on soil allelochemicals, which play a very important role in obtaining high yields and plant health based on resistance to abiotic factors and to plant pathogenic microorganisms.

I recommend this book to agronomists, plant protection specialists as well as to plant physiologists. The interested specialists will find basic and practical information regarding rational use of fertilizers as well as of herbicides and other pesticides applied to soil and voluminous literature on this subject.

Jerzy J. Lipa
Institute of Plant Protection – National Research Institute
Władysława Węgorka 20, 60-318 Poznań, Poland
J.J.Lipa@iorpib.poznan.pl

