

## **9 References**

**Adriano D.C. 1986.** Trace elements in the terrestrial environment. *Springer-Verlag*, New York.

**Agrochemical atlas of Bulgaria. 1992.** Hidrology and meteorology, Sofia (Bg).

**Alder L., Beck H., Kandker S. Karl H. & Lehmann I. 1997.** Levels of toxaphene indicator compounds in fish. *Chemosphere*, 34: 1389-1400.

**Alexander M. 1995.** How toxic are toxic chemicals in soil? *Environ. Sci. Technol.*, 29: 2713-2717.

**Alloway B.J. 1995.** Cadmium. In: B.J. Alloway (Ed.): Heavy metals in soils, 2<sup>nd</sup> Ed. *Blackie Academic and Professional*, London, 122-151.

**Andersson A. 1977.** Heavy metals in Swedish soils: On their retention, distribution, and amounts. *Swed. J Agric. Res.*, 7: 7-20.

**Angelova I. 1994.** Accumulation in the soil and distribution of Lead, Zinc, Cadmium and Copper in the region of the “D. Blagoev” PNFM – Plovdiv, Ph.D. Thesis (Bg).

**Atanassov I., Tchuldjian H., Bojinova P. & Dimitrova K. 1994.** An assessment system of the kind and degree of the agricultural land pollution with heavy metals, radionuclides, oil products and soil salinization for the purposes of land restitution in polluted regions in relation to the execution of the degree of Ministers’ Council No 50/10.03.1993.

**Atanassov I. & Angelova I. 1995.** Profile differentiation of Pb, Zn, Cd and Cu in soils surrounding Lead and Zinc smelter near Plovdiv (Bulgaria), *Bulg. J. of Agricultural Science*, 1: 343-348.

**Atanassov I., Terytze K., König M. & Atanassov A. 1999.** Determination of threshold concentrations for persistent organic pollutants (POPs) in the soil of Bulgaria and proposal for monitoring. Part I., Project No 535/983/98, MEW.

**Atanassov I., Terytze K., Kuikin S., Atanassov A., Christova U. & Christov D. 2000.** Development of precautionary values for heavy metals in the soils of Bulgaria. Report No. 874-2234. Institute of the Ministry of Environment and Water. Bulgaria.

## REFERENCES

---

- ATSDR 1996.** Toxicological profile for polychlorinated biphenyls. Draft. Atlanta, Georgia: Agency for Toxic Substances and Disease Registry, US Department of Health and Human Services.
- Baize D. 1994.** Teneurs totales en métaux lourds dans les sols français. Premiers résultats du programme ASPITET. *Le Courrier de l'Environnement de l'INRA* 22: 37-46.
- Ballschmiter K., Pachur H.J., Buchert H. & Schmidt J. 1985.** Die Belastung limnischer Sedimente durch persistente Umweltchemikalien. Umweltforschungsplan des Bundesministers des Innern in Auftrag des UBA (Forschungsbericht 106 050 27/1+2).
- Bäulke N. 1994.** Zur Einschätzung der Konzentrationsprofile Polyzyklischer aromatischer Kohlenwasserstoffe (PAK) in Böden des Biosphärenreservates Spreewald. Diplomarbeit Geowissenschaften, FU Berlin.
- Bergkvist B. 1986.** Metal fluxes in spruce and beech forest ecosystems of south Sweden, PhD Thesis, Univ. of Lund, Lund.
- Berset J.D. & Holzer R. 1995.** Organic micro-pollutants in Swiss agriculture: distribution of polynuclear aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs) in soil, liquid manure, sewage sludge and compost samples: a comparative study. *Intern. J. Environ. Anal. Chem.*, 59: 145-165.
- Berset J.D., Ejem M., Holzer R. & Lischer P. 1999.** Comparison of different drying, extraction and detection techniques for the determination of priority polycyclic aromatic hydrocarbons in background contaminated soil samples. *Analytica Chimica Acta.*, 383:263-275.
- BGS 17.4.4.02-80:** A preservation of environment. soil, Soil quality, Methods for the determination of the total content of lead. Sofia.
- BGS 17.4.4.02-80:** A preservation of environment. soil, Soil quality, Methods for the determination of the content of zinc. Sofia.
- BGS 17.4.4.03-80:** A preservation of environment. soil, Soil quality, Methods for the determination of the common content of copper. Sofia.

## REFERENCES

---

- BGS 17.4.4.04-80:** A preservation of environment. soil, Soil quality, Methods for the determination of the content of cadmium. Sofia.
- Bloomfield C. 1981.** The translocation of metals in soils, in the chemistry of soil processes, Greenland D.J. & Hayes M.H.B. (Ed.), *John Wiley & Sons*, New York, 463.
- Bojinova P., Georgiev B., kabakchiev I., Krasteva V., Stanislavova L., Tchuldjian H., Welp G. & Brümmer G.W. 1996.** Harmonization of the methods for the investigation of heavy metal pollution of soils and the standartization of the assessment criteria for soil protection. Report No: 96-071, UBA, Berlin.
- Boldrin B., Tiehm A. & Fritzsche C. 1993.** Degradation of phenanthrene, fluorene, fluoranthene, and pyrene by *Mycobacterium sp.* *Appl. Environ. Microbiology*, 59: 1927-1930.
- Bolton K.A. & Evans L.J. 1991.** Elemental composition and speciation of some landfill leachates with particular reference to cadmium. *Water, Air & Soil Poll.*, 60: 43-53.
- Boneva K. 1984.** Specific characteristics of Copper content and the relationship in Copper distribution in the main soil types of some parts of Northern Bulgaria. *Soil Science and Agrochemistry*, 5:3-11 (Bg).
- Boul M.L., Garnham M.L., Hucker D., Barid D. & Aislabie J. 1994.** Influence of agricultural practices on the levels of DDT and its residues in soil. *Environ. Sci. Technol.*, 28: 1397-1402.
- Boyadgiev T. 1997.** Soil map of Bulgaria according to the FAO-Unesco-ISRIC Revized Legend. *Bulg. J. of Agricultural Science*, 3 (1).
- Brashnarova A. & Stanislavova L. 1982.** Third national soil science conference. Part I, p. 106-107, Sofia.
- Brashnarova A. 1978.** Investigations and elaboration of Flame Atomic Absorption methods for determination of some important atmospheric elements in main Bulgarian soil types. Ph.D. Thesis, Sofia. (Bg)
- Brashnarova A. 1980.** Content and distribution of Copper, Zinc, Lead, Cobalt, Nickel, Chromium, Manganese, Iron and Aluminium in some soils of North Bulgaria. *Soil Science and Agrochemistry*, 6:20-27 (Bg)

- Brashnarova A. 1981.** Content and distribution of Copper, Zinc, Lead, Cobalt, Nickel, Chromium, Manganese, Iron and Aluminium in some soils of South Bulgaria. *Soil Science and Agrochemistry*, 1:39-47 (Bg)
- Breivik K., Pacyna J.M. & Münch J. 1999.** Use of  $\alpha$ ,  $\beta$ , and  $\gamma$ -hexachlorocyclohexane in Europe 1970-1996. *Sci. Tot. Environ.*, 239: 151-163
- Cerniglia C.E. 1992.** Biodegradation of polycyclic aromatic hydrocarbons. *Biodegradation*, 3: 351-368.
- Chiou C.T., McGroddy S.E. & Kile D.E. 1998.** Partition characteristics of polycyclic aromatic hydrocarbons on soils and sediments. *Environ. Sci. Technol.*, 32: 264-269.
- Cholakov N., Brunkin K. & Atalavchiev B. 1975.** Geology of central parts of alluvial cones of the River Chaya (Assenovgrad) and its crystalline base. *Plovdiv University science book*, vol.3., Plovdiv. (Bg)
- Chuang J.C., Callahan P.J., Menton R.G. & Gordon C.M. 1995.** Monitoring methods for polycyclic aromatic hydrocarbons and their distribution in house dust and track-in soil. *Environ. Sci. Technol.*, 29: 494-500.
- Clark R.B. 1992.** Marine pollution. *Clarendon Press*, Oxford.
- Council of the European Union 1996.** Council directive 2406/96 EG of 26 November 1996. Laying down common marketing standards for certain fishery products. *Off. J. European Communities* L334.
- Crommentuijn T., Doornekamp A. & Van Gestel C.A.M. 1997.** Bioavailability and ecological effects of cadmium on *Folsomia candida* (willem) in an artificial soil substrate as influenced by pH and organic matter. *Applied Soil Ecology*, 5: 261-271.
- Curlik et al. 2000.** Proceedings of the Ad Hoc International expert group of effect-based critical limits for heavy metals. Bratislava, Slovak Republik, 11-13<sup>th</sup> October, 2000.

## REFERENCES

---

- Dancheva N., Atanassov I., Raykov L., Tulupov P., Vertinsky C., Angelova I. & Andassorov A. 1990.** Distribution of the heavy metals in the soils in the vicinity of lead and zinc smelter near Plovdiv. Scientific Conference, Sofia.
- Davis B.E., 1989.** Lead in soils: its sources and typical concentration. *Environmental Geochemistry and Health*, (suppl.) 3: 65-72.
- Davis W.M., Coates J.A., García K.L., Signorella L.L. & Delfino J.J. 1993.** *J. Chromatogr.* 643, p. 341.
- De Vries W. & Bakker D. J. 1998.** Manual for calculating critical loads of heavy metals for terrestrial ecosystems – Guidelines for critical limits, calculation methods and input data. Report 166, DLO Winand Staring Centre, Wageningen, The Netherlands, TNO Institute of Environmental Sciences, Energy Research and Process Innovation, Den Helder, The Netherlands.
- De Vries W., Bakker D.J., Groenenberg J.E., Reinds G.J., Bril J. & Van Jaarsveld J.A. 1998.** Calculation and mapping of critical loads for heavy metals and persistent organic pollutants for Dutch forest soils. *J. of Hazardous materials*, 61:99-106.
- Delschen T. & Leisner-Saaber J. 1998.** Selbstversorgung mit Gemüse aus Schwermetallbelasteten Gärten: eine Gefährdungsabschätzung auf toxikologischer Basis. *Bodenschutz*, 1:17-20.
- Dimitrov D. 1979.** Climate of Bulgaria, Science and Art, Sofia. (Bg)
- Dimitrov D.N. 1998.** Assessment of background value and technogenic deposition of Cu in the soils. *Bulg. J. of Agricultural Science*, 4: 793-799.
- Dimond H. & Owen R.B. 1996.** Long-term residue of DDT compounds in forest soils in Maine. *Environ. Poll.*, 92: 227-230.
- DIN 19735** (Pre-norm DIN 19735) Soil quality – Derivation of element concentrations in soil water from ammoniumnitrate extractable contents or eluate contents.
- DIN EN ISO 11885:04.98.** Wasserbeschaffenheit – Bestimmung von 33 Elementen durch induktiv gekoppelte Plasma-Atom-Emissionsspektrometrie (ISO 11885: 1996); Deutsche Fassung EN ISO 11885: 1997.

- DVWK 1996.** Ermittlung von Verdunstung von Land- und Wasserflächen. DVWK-Merkblätter zur Wasserwirtschaft, No. 238, Bonn.
- E DIN ISO 10382: 02.98.** Bodenbeschaffenheit – Gaschromatographische Bestimmung des gehaltens an polychlorierten Biphenylen (PCB) und Organopestiziden (OCP) (ISO/CD 10382: 1995).
- E DIN ISO 13877: 06.95.** Bodenbeschaffenheit – Bestimmung von polycyclischen aromatischen Kohlenwasserstoffen (PAK)– Hochleistungs–Flüssigkeitschromatographie- (HPLC) Verfahren (ISO/DIS 13877).
- Edwards N.T.J. 1983.** Polycyclic aromatic hydrocarbons (PAHs) in the terrestrial environment-a review. *J Environ. Qual.*.. 12: 427-441.
- Eikmann T. & Klok A. 1995.** Ableitungskriterien für die EIKMANN-KLOKE-Werte. In: Kreysa G. & Wiesner J. (Eds.): Beurteilung von Schwermetallen in Böden von Ballungsgebieten: Arsen, Blei und Cadmium. Internationale Expertenbeiträge und Resümee der DECHEMA-Arbeitsgruppe “Bewertung von Gefährdungspotentialen im Bodenschutz”.
- Etropolsky H. & Atanassov I. 1976.** Using of ultrasonic in dispergation of soil samples. *Soil Scence and Agrochemistry*, 2. (Bg)
- FAO-UNESCO 1997.** Soil map of the world – Revised legend with corrections and updates. ISRIC, Wageningen, Netherlands.
- Federal Soil Protection Law. 1998.** Federal Law Gazette, p.52.
- Federov L.A. 1997.** Officially banned, unofficially used: DDT use in the Soviet Union. *Global Campaign World Wildlife Fund*. 7(4), 11.
- Ferguson J.E. 1990.** The heavy elements chemistry, *Pergamon Press*.
- Galabov G, Mishev K. & Vanzarov I. 1970.** Morphostructural development of north Rhodopa slope between valleys of the rivers Jadenitza and Chepelarska. In: Problems of geography in Bulgaria, vol. 3, Sofia. (Bg)
- Galabov G., Ivanov I., Penchev P., Mitev M. & Nedelcheva V. 1977.** Physical geography of Bulgaria, Sofia. (Bg)

- Garrison A.W., Nzengung V.A., Avants J.K., Ellington J.J., Jones W.J., Rennels D. & Wolfe N.L. 2000.** Phytodegradation of p,p'-DDT and the enantiomers of o,p'-DDT. *Environ. Sci. Technol.*, 34: 1663-1670.
- Geography of Bulgaria 1989.** Physic-geographical and social-economy regions of Bulgaria. BAN, Sofia. (Bg)
- Gibson D.T. & Subramanian V. 1984.** Microbial degradation of aromatic hydrocarbons. In: D.T. Gibson (Ed.): Microbial Degradation of Organic Compounds. *Marcel Dekker*, NY, 181-252.
- Gregor H.-D., Mohaupt - Jahr B. & Hönerbach F. 1999.** Workshop on Effects-based Approaches for Heavy Metals, Schwerin, Germany, 12-15 October 1999, Proceeding, UBA texte 87/99, Umweltbundesamt, Berlin.
- Gregor H.-D., Nagel H.-D. & Schütze G. 2000.** Short guidance for the calculation of Critical Loads for Cadmium, Lead and mercury from effect based Critical Limits. In: Curiak et al. (Eds.): Ad Hoc International expert group of effect based critical limits for heavy metals. Bratislava, slovak republik, 11-13<sup>th</sup> October, 2000.
- Harrad S.J., Stewart A.P., Alcock R., Boumphrey R., Burnett V., Duarbe-Davidson R., Halsall C., Sanders G., Waterhouse K., Wild S.R. & Jones K.C. 1994.** Polychlorinated biphenyls (PCBs) in the British environment: sinks, sources and temporal trends. *Environ. Pollut.*, 85: 131-146.
- Hartung J., elpelt B. & Klösener K.-H. 1987.** Statistik – Lehr- und Handbuch der angewandten Statistik. R. Oldenbourg Verlag München Wien.
- Hellou J., Mackay D. & Fowler B. 1995.** Bioconcentration of polycyclic aromatic hydrocarbons from sediments to muscle of fish. *Environ. Sci. Technol.* 29:2555-2560.
- Hinov G. & Faitondjiev L. 1977.** Heavy metal contents in the soil in the area of the D. Blagoev non-ferrous metal plant. *Soil Science and Agrochemistry*, 5: 59-65 (Bg)
- Hitch R.K. & Day H.R. 1992.** Unusual persistence of DDT in some western USA soils. *Bull. Environ. Contamin. Toxicol.*, 48: 259-264.

## REFERENCES

---

- Iimura K., Ito H., Chino M., Morishita T. & Hirata H. 1977.** Behavior of contaminant heavy metals in soil-plant system. In: Proc. Inst. Sem. SEFMIA, Tokyo.
- Instruction No 0011/1994/** of the Ministry of Agriculture and Forest, Sofia, Bulgaria. (Bg)
- Jensen J., Adare K. & Shearer R. 1997.** Canadian arctic contaminants assessment report. *Indian and Northern Affairs Canada*, Ottawa.
- John M.K., Chuah H.H. & van Laerhoven C.J. 1972.** Cadmium contamination of soil and its uptake by oats. *Environ. Sci. Technol.* 6: 555-557.
- Jokova M. 1998.** Relationship between distribution of Manganese and Cobalt or Lead along depth of some Bulgarian soils. *Bulg. J. Agric. Sci.*, 4: 37-42.
- Jones K.C., Alcock R.E., Johnson D.L., Nothcott G.L., Semple K.T. & Woolgar P.J. 1996.** Organic chemicals in contaminated land: analysis, significance and research priorities. *Land Contamination and Reclamation*, 3: 189-197.
- Kabata-Pendias A. & Pendias H. 1984.** Trace elements in soils and plants. *CRC Press*, Boca Raton, FL.
- Kamburova E. et al. 1991.** Background values for Plovdiv region. In: Contents of Pb, Zn, Cd, Cu and As in soils and underdround water. *Report. Ecopublicity*.
- Keilen K. 1978.** Spurenelementverteilung und Bodenentwicklung im Bärhaldegranitgebiet (Südschwarzwald). *Freiburger Bodenkundliche Abhandlungen*, 8: 278.
- Keith L.H. & Tellier W.A. 1979.** Priority pollutants. *Environ. Sci. Technol.*, 22: 416-423.
- Kobayashi J. 1979.** Pollution by cadmium and the itai-itai disease in Japan. In: F.W.Oehme (ed.): Toxicity of heavy metals in the environment. Part I., *Marcel Dekker*, NY, 199-260.
- Koinov V. 1986.** Soil map of Bulgaria. Sofia.
- Koinov V., Kabakchiev I. & Boneva K. 1998.** Atlas of the Bulgarian soils. *Zemizdat*, Sofia, pp. 1-321. (Bg)

## REFERENCES

---

- Kononova M.** 1963. Organic matter in soils, its nature, properties and methods of investigation. Academy of Science, USSR, Moskow.
- Korte F.** 1992. Lehrbuch der Ökologischen Chemie. Grundlagen und Konzepte für die ökologische Benutzung von Chemikalien, 3. Auflage. *Georg Thieme Verlag Stuttgart*, New York.
- Krahn M.M., Ylitalo G.M., Buzitis J., Chan S.L. & Varanasi U.** 1993. *J. Chromatogr.*, 642: 15.
- Kuikin S., Atanassov I., Christova U. & Christov D.** 2001. Background contents of heavy metals and Arsenic in the parent soil-forming rocks in Bulgaria. *Soil Science, Agrochemistry and Ecology*, 1. (Bg)
- LABO** 1995. Soil background and reference values in Germany. Report LABO, FEA, pp. 1-106.
- Laflamme R.E. & Hites R.A.** 1978. The global distribution of polycyclic aromatic hydrocarbons in recent sediments. *Geochim. Cosmochim. Acta.*, 42: 289-303.
- Li Y.-F.** 1999. Global technical hexachlorocyclohexane usage and its contamination consequences in the environment: from 1948 to 1997. *Sci. Tot. Environ.*, 232: 121-158.
- Li Z. & Shuman L.M.** 1996. Mobility of Zn, Cd, and Pb in soils as affected by poultry litter extract: I. Leaching in soil columns. *Environ. Pollut.*, 95: 219-226.
- Liebe F.** 1999. Spurenelemente in Böden und Pflanzen Nordrhein – Westfalens – Gehalte verschiedener chemischer Fraktionen in Böden und deren Beziehungen zur Bodenreaktion und den gehaltenen in Pflanzen, Inaugural-Dissertation, Rheinische Friedrich – Wilhelms – Universität, Bonner Bodenkundliche Abhandlungen, Bonn.
- Linberg S.E., Harriss R.C., Hoffman Jr W.A., Lovett G.M. & Turner R.R.** 1989. Atmospheric chemistry, deposition and canopy interactions. In: Johnson D.W. & Van Hook R.I. (ed.): Analysis of biogeochemical cycling processes in Walker Branch Watershed. *Springer-Verlag*, New York, Berlin, Heidelberg.
- Livet E.A.** 1988. Geochemical monitoring of atmospheric heavy metal pollution: Theory and applications. *Advances in Ecological Research*, 18: 65-178.

## REFERENCES

---

- Lockhart W.L., Wagemann R., Tracey B., Sutherland D. & Thomas D.J. 1992.** Presence and implications of chemical contaminants in the freshwaters of the Canadian Arctic. *Sci. Tot. Environ.*, 122:165-243.
- LUA NRW 1996.** Daten zum Schwermetallgehalt landwirtschaftlicher kulturpflanzen aus Erhebungsumsuntersuchungen in Nordrhein-Westfalen (Kontrollflächen).
- Macdonald R.W. et al. 2000.** Contaminants in the Canadian arctic: 5 years of progress in understanding sources, occurrence and pathways. *Sci. Tot. Environ.*, 254: 93-234.
- Mackay D., Shui W.Y. & Ma K.C. 1992.** Illustrated Handbook of Physical – Chemical Properties and Environmental Fate of Organic Chemicals. *Lewis, Boca Raton, FL*.
- Manual for soil survey and maintaining digital soil map of Bulgaria. 1995.** Ministry of environmental and water. Sofia.
- Massart D.L., Vandeginste B.G.M, Deming S.N., Michotte Y. & Kaufman L. 1988.** Chemometrics: a textbook. *Elsevier*. Amsterdam–Oxford–New York–Tokio.
- McBride M.B. 1994.** Environmental chemistry of soils. *Oxford University Press*, Oxford.
- McLean J.E. & Bledsoe B.E. 1995.** Behaviour of metals in soils. EPA environmental assessment sourcebook De Russell boulding. Michigan. *J Ann. Arbor. Press Inc.*
- Metodo Ufficiale no. 13, 1994.** Determinazione dei metalli pesanti solubili in acqua regia, in: Metodi Ufficiali di Analisi Chimica del Suolo, p. 89.
- Ministry of Environmental and Water 1997.** Annual Report, Sofia, Bulgaria. (Bg)
- Mirchev S. 1979.** Chemical composition of the soils in Bulgaria. BAN, Sofia. (Bg)
- Mirchev S. 1995.** Retention and tendency of some trace elements to minerals in soils. *Soil Science, Agrochemistry and Ecology*, 1-6: 125-127 (Bg)
- Müller J., Böhmer W., Kölln A., Knoche H. & Todorova I. 1998.** Schulung benötiglich proben-nahme und Analytik zur Bestimmung von Schadstoffen in Böden der Republik Bulgarien. Fraunhofer IUÖ, Prij. No Z 2.4-081122/94.

**Munsell soil color charts 1973.** *Macbeth Color & Photometry Division*, Baltimore.

**Nagel H.-D. & Schütze G. 1997.** Kriterien für die Erarbeitung von Immissionsminderungszeilen zum Schutz der Böden und Abschätzung der langfristigen räumlichen auswirkungen anthropogener Stoffeinträge auf die Bodenfunktionen, Abschlußbericht UBA-F/E FKZ 10402 825, UBA-Texte 19/1998.

**Naumann K. 1994.** Natürlich vorkommende Organohalogene. *Nachr. Chem. Tech. Lab.*, 42: 389-392.

**NEN 6465, 1981.** Water and air-sample preparation of sludge, water-containing sludge and air dust for the determination of elements by atomic absorption spectrometry-destruction with nitric acid and hydrochloric acid, Netherlands Normalization Institute, Delft.

**Nilsson J. & Grennfelt P. (eds.): 1988.** Critical loads for Sulfur and Nitrogen, Report from a Workshop at Skokloster, Sweden, March 1988, Miljo rapport 198815, Nordic Council of Ministers, Copenhagen.

**Nriagu J.O. & Pacyna J.M. 1988.** Quantitative assessment of worldwide contamination of air, water and soils with trace metals. *Nature*, 333: 134-139.

**Nriagu J.O. 1989.** A global assessment of natural sources of atmospheric trace metals. *Nature*, 338: 47-49.

**Oehlenschläger J. 1986.** Eine universell verwendbare Methode zur Bestimmung des Fettgehaltes in Fischer und anderen Meerestieren. *Infn Fischw*, 33: 188-190.

**Pacyna J.M. & Oehme M. 1988.** Long-range transport of some organic compounds to the Norwegian Arctic. *Atmos. Environ.*, 22: 243-257.

**Pacyna J.M. 1996.** Atmospheric emissions of heavy metals for Europe. (Improvements, Updates, Historical data and Projections). Report prepared for the International Institute for Applied Systems Analysis (IIASA), Hagan, Norway.

## REFERENCES

---

- Park K.S., Sims R.S., Dupont R.R., Doucette W.J. & Mathews J.E. 1990.** Fate of polycyclic aromatic hydrocarbon compounds in two soil types: influence of volatilisation, abiotic loss and biological activity. *Environ. Toxicol. Chem.*, 9: 187-195.
- Petrov I. 1979.** Ph.D. Thesis. ISA "N. Pushkarov", Sofia. (Bg)
- Pierard C., Budzinski H. & Garrigues P. 1996.** Grain-size distribution of polychlorobiphenyls in coastal sediments. *Environ. Sci. Technol.*, 30: 2776-2783.
- Pierzynski G.M., Sims J.T. & Vance G.F. 2000.** Soils and environmental quality. 2<sup>nd</sup> Ed., CRC Press, LLC
- Popandova S. & Raikov L. 1982.** Contents and distribution of some trace-elements, Iron and Aluminium in saline and solonetz soils. *Soil Science and Agrochemistry*, 2: 89-98 (Bg)
- Queralt I. & Plana F. 1993.** Partitioning of heavy metals in particle-size fractions: a tool to predict metal mobility and distribution in the environment. In: H.J.P. Eijssen and T. Hamers (eds.): Integrated Soil and Sediment Research: A Basis for Proper Protection, *Kluwer Acad. Publ.*, 276-278.
- Raikov L., Tchuldjian H. & Faitondjiev L. 1984.** Assessment of soil contamination with heavy metals. *Soil Science and Agrochemistry*, 18(1): 42-47. (Bg)
- Reiley K.A., Banks M.K. & Schwab A.P. 1996.** Dissipation of polycyclic aromatic hydrocarbons in the rhizosphere. *J. Environ. Quality*, 25: 212-219.
- Reimann C., De Caritat P., Niskavaara H., Finne T.E., Kashulina G. & Pavlov V.A. 1998.** Comparison of the elemental contents in O- and C-horizon soils from the surroundings of Nikel, Kola Peninsula, using different grain size fractions and extractions. *Geoderma*, 84: 65-87.
- Riffaldi R., Levi-Minzi R. & Soldatini G.F. 1976.** Pb adsorption by soils: II. Specific adsorption. *Water, Air and soil Pollut.*, 6: 119-128.
- Sanz-Medel A. 1997.** *Tec. Lab.*, 218: 17.
- Sauerbeck D. & Styperek P. 1998.** Schadstoffe im Boden, insbesondere Schwermetalle und organische Schadstoffe aus landjähriger Anwendung von Siedlungsabfällen, UBA-Texte 16/88.

- Schärpenseel H.W., Stephan S., Kruse E. & Lay A. 1977.** Infiltration und Translokation von polychlorierten Biphenylen in natürlich gelagerten Bodenprofilen, biotischer und abiotischer Abbau. II. Verteilung und Abbau polychlorierter Biphenyle (PCB) im Boden. *Z. Pflanzenernähr. Bodenkd.*, 140: 303-316.
- Schlutow A. & Schütze G. 1999.** Modelling the removal of nutrients and heavy metals by biomass at different land use classes. Poster presentation at the 10<sup>th</sup> Workshop of the UN/ECE Co-ordination Centre for Effects in Prague, 15-19 May 1999.
- Schlutow A. 1994.** Die pflanzensoziologische Biotoptkartierung als ein Instrument der Landschaftsplanung. *ÖNU-Verlag Prädikow*.
- Schütze G. & Nagel H.-D. 2000.** Ad Hoc International Expert Group on Effect-Based Critical Limits for Heavy Metals. Bratislava, Slovak Republic, 11-13 October, 2000.
- Seiler H.G., Sigel H. & Sigel A. 1988.** Handbook on toxicity of inorganic compounds. *Marcel Dekker Inc.*
- Shabad L.M. & Ilnitskii A.P. 1979.** Carcinogens in the Human Environment. Szabvanykido, Budapest.
- Sims R.S. & Overcash M.R. 1983.** Fate of polynuclear compounds (PNAs) in soil – plant system. *Residue Review*, 88: 1-68.
- Soldatini G.F., Riffaldi R. & Levi-Minzi R. 1976.** Pb adsorption by soils: I. Adsorption as measure by the Langmuir and Freundlich isotherms. *Water, Air & Soil Poll.*, 6: 111-118.
- Strek H.J. & Weber J.B. 1982.** Behaviour of polychlorinated biphenyls (PCBs) in soils and plants. *Environ. Poll.*, 28: 291-312.
- Suess M.J. 1976.** The environmental load and cycle of polycyclic aromatic hydrocarbons. *Sci. Tot. Environ.*, 6: 239-250.
- Takada H., Onda T. & Ogura N. 1990.** Determination of polycyclic aromatic hydrocarbons in urban street dust and their source material by capillary gas chromatography. *Environ. Sci. Technol.*, 24: 1179-1186.

- Tanabe S. 1988.** PCB problems in the future: foresight from current knowledge. *Environ. Poll.*, 50: 5-28.
- Tchuldjian H. 1989.** Pollution of soils. In: Lectures on Soil Science. FAO Project, TSP, (Bul/4502(T)), Sofia. (Bg)
- Tomlin C. 1994.** The pesticide manual, 10<sup>th</sup> ed., The Royal Society of Chemistry, Cambridge.
- Totev T., Gribachev P., Nechev H. & Artinova N. 1987.** Guidebook for soil analysis, Sofia. (Bg)
- Trapido M. 1999.** Polycyclic aromatic hydrocarbons in Estonian soil: contamination and profiles. *Environmental Pollution*, 105, 67-74.
- Van Brummelen T.C., Verweij R.A., Wedzinga S.A. & Van Gestel C.A.M. 1996.** Enrichment of polycyclic aromatic hydrocarbons in forest soil near a blast furnace plant. *Chemosphere*, 32: 293-314.
- Van der Salm C., Köhlenberg L. & de Vries W. 1998.** Assessment of weathering rates in Dutch loess and clay soils at pH 3.5, using laboratory experiments. *Geoderma*, 85:41-62.
- Van Jaarsveld J.A., Van Pul W.A.J. & De Leeuw F.A.A.M. 1997.** Modeling transport and deposition of persistent organic pollutants in the European region. *Atmos. Environ.*, 31: 1011-1024.
- Vinogradov A.P. 1957.** Geochemistry of the trace chemical elements. 2<sup>nd</sup> added ed., USSR Academy of Science, Moscow.
- Vogt N.B., Brakstad F., Thrane K., Nordenson S., Krane J., Aamot E., Kolset K., Esbensen K. & Steinnes E. 1987.** Polycyclic aromatic hydrocarbons in soil and air: statistical analysis and classification by the SIMCA method. *Environ. Sci Technol.*, 21: 35-44.
- Vrubel J. & Paces T. 1996.** Critical loads of heavy metals for soils in the Czech Republic. Ekotoxa Opava, Environmental Monitoring Center, Report.
- Wang D.T. & Merez O. 1982.** Occurrence and potential uptake of polynuclear aromatic hydrocarbons of highway traffic origin by proximal grown food crops. In: M. Cooke & A.J. Dennis

## REFERENCES

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- (Ed.): Polynuclear Aromatic Hydrocarbons: Physical and Biological Chemistry. *Batelle Press*, Columbus, NY, 885-896.
- Wania F. & Mackay D. 1995.** A global distribution model for persistent organic chemicals. *Sci.Tot. Environ.*, 160/161: 211-232.
- White P.A., Rasmussen J.B. & Blaise C. 1998.** Genotoxic substances in the St. Lawrence system I: industrial genotoxins sorbed to particulate matter in the St. Lawrence, St. Maurice and Saguenay Rivers, Canada. *Environ. Toxicological Chemistry*, 17: 286-303.
- Wickström K. & Tolonen K. 1987.** The history of airborne polycyclic aromatic hydrocarbons (PAH) and perylene as recorded in dated lake sediments. *Water, Air Soil Poll.*, 32: 155-175.
- Wild S.R., Waterhouse K.S., McGrath S.P. & Jones K.C. 1990.** Organic contaminants in an agricultural soil with a known history of sewage sludge amendments: polycyclic aromatic hydrocarbons. *Environ. Sci. Technol.*, 24: 1706-1711.
- You G., Sayles G.D., Kupferle M.J., Kim I.S. & Bishop P.L. 1996.** Anaerobic DDT biotransformation: enhancement by application of surfactants and low oxidation reduction potential. *Chemosphere*, 32: 2269-2284.
- Yunker M.B., Macdonald R.W., Cretney W.J., Fowler B.R. & McLaughlin F.A. 1993.** Alkane, terpene and polycyclic aromatic hydrocarbon geochemistry of the Mackenzie river and Mackenzie shelf: Riverine contribution to Beaufort Sea coastal sediment. *Geochim. Cosmochim. Acta*. 57: 3041-3061.
- Yunker M.B. & Macdonald R.W. 1995.** Composition and origins of polycyclic aromatic hydrocarbons in the Mackenzie river and on the Beaufort sea shelf. *Arctic*, 48:118-129.
- Zimdahl R.L. & Skogerboe R.K. 1977.** Behaviour of lead in soil. *Environ. Sci. Technol.*, 11: 1201-1207.