

References

- ABRAMS, M.M. & JARELL, W.M., 1992. Bio-availability index for phosphorus using ion exchange resin impregnated membranes. *Soil Science Society of America Journal*. **56**, 1532 – 1537.
- ALEXANDER, M., 1961. Introduction to Soil Microbiology. John Wiley and Sons, Inc. New York.
- AMER, F., BOULDIN, D.R., BLACK, C.A. & DUKE, F.R., 1955. Characterisation of soil phosphorus by anion exchange resin adsorption and ^{32}P equilibrium. *Plant and Soil*. **6**, 391 – 408.
- ANDERSON, G., 1975. Organic phosphorus compounds. In J.E. Gieseking (ed.). *Soil Components*, Vol. 1. Springer-Verlag, New York.
- APPELT, H., COLEMAN, N.T. & PRATT, P.F., 1975. Interaction between organic compounds, minerals and ions in volcanic-ash-derived soils **II**. Effects of organic compounds on the adsorption of phosphate. *Proceedings of the Soil Science Society of America* **39**, 628 – 630.
- ARMSTRONG, R.D. & HELYAR, 1992. Changes in the soil phosphate fractions in the rhizosphere of semi-arid pasture grasses. *Australian Journal of Soil Research*. **30**, 131 – 143.
- ATKINS, P.W., 1999. Physical Chemistry. Oxford University Press, Oxford
- ATKINSON, R.J., PARFITT, R.L. & SMART, R.C., 1974. Infrared study of phosphate adsorption on goethite. *Journal of the Chemical Society Faraday Transaction*. 1. **70**, 1472 – 1479.

- BAINBRIDGE, S.H., MILES, N. & PRAAN, R., 1995. Phosphorus sorption in Natal soils. *South African Journal of Plant and Soil*. **12**, 59 – 64.
- BALL-COELHO, B., SALCEDO, I.H., 1993. Short-and long-term phosphorus dynamics in a fertilised ultisol under sugarcane. *Soil Science Society of America Journal*. **57**, 1027 – 1034.
- BALDOCK, J.A. & SKJEMSTAD, J.O., 1999. Soil carbon/Soil organic matter.
In: Peveerill, K.I., Sparrow, L.A. & Reuter, D.J., (ed.). Soil Analysis and Interpretation Manual. CSIRO publishing
- BARROW, N.J., 1974. Effects of previous addition of phosphorus on phosphate adsorption by soil. *Soil Science*. **118**, 82 – 89.
- BARROW, N.J., 1979. The description of desorption of phosphate from soil. *Journal of Soil Science*. **30**, 259 – 270.
- BARROW, N.J. & SHAW, T.C., 1975a. The slow reactions between soil and anions.
1 Effects of time and temperature on the decrease in phosphate concentration in the soil solution. *Soil Science*. **119**, 167 – 177.
- BARROW, N.J. & SHAW, T.C., 1975b. The slow reactions between soil and anions.
2. Effects of period of prior contact on the desorption of phosphate from soils. *Soil Science*. **119**, 311 – 320.
- BARROW, N.J. & SHAW, T.C., 1977. Factors affecting the amount of phosphate extracted from soil by anion exchange resin. *Geoderma*. **18**, 309 – 323.
- BLAIR, G.J. & BOLAND, O.W., 1978. The release of phosphorus from plant material added to the soil. *Australian Journal of Soil Research*. **16**, 101 – 111.

- BOHN, H.L., MCNEAL, B.L., O'CONNOR, G.A., 1979. Soil Chemistry. John Wiley and Sons, Inc. New York.
- BOWMAN, R.A. & COLE, C.V., 1978. Transformation of organic phosphorus substrates in soils as evaluated by NaHCO_3 extraction. *Soil Science*. 125, 49 – 54.
- BREWSTER, A., GANCHEVA, A.N., & NYE, P.H., 1975b. The determination of desorption isotherms for soil phosphate using low volumes of solution and an anion exchange resin. *Journal of Soil Science*. 26, 264 – 377.
- CABRERA, F., DE ABRAMBARRI, P., MADRID, L., & TOCA, C.G., 1981. Desorption of phosphate from ferric oxides in relation to equilibrium pH and porosity. *Geoderma*. 26, 203 – 216.
- CAMPBELL, L.B & RACZ, G.J., 1975. Organic and inorganic P content, movement and mineralisation of P beneath a Feed lot. *Canadian Journal of Soil Science*. 55, 457 – 466.
- CHANG, S.C. & JACKSON, M.L., 1957. Solubility product of ferric phosphate. *Proceedings of the Soil Science Society of America*. 21, 265 – 269.
- CHANG, S.C. & JACKSON, M.L, 1958. Soil phosphorus fractions in some representative soils. *Journal of Soil Science*. 9 (1), 109 – 119.
- COOPERBAND, L.R. & LOGAN, T.J., 1994. Measuring *in situ* changes in labile soil phosphorus with anion-Exchange Membranes. *Soil Science Society of America Journal*. 58, 105 – 114.
- CROSS, A.F. & SCHLESINGER, W.H., 1995. A literature review and evaluation of the Hedley fractionation: Application to the biogeochemical cycle of soil phosphorus in natural ecosystems. *Geoderma*. 64, 197 – 214.

- DEVINE, J.R., GUNARY, D. & LARSEN, S., 1968. Availability of phosphate as affected by duration of fertiliser contact with soil. *Journal of Agricultural Science*. **71**, 359 – 364.
- DU PREEZ, H.G., 1997. Die dinamika van P-fraksies onder langtermyn mielie verbouing. MSc. Verhandelings, Universiteit van Pretoria.
- DOULA, M., IOANNOU, A., & DIMIRKOU, A., 1996. Thermodynamics of phosphate adsorption and desorption by alfisols, entisols, vertisols, and inceptisols. *Communications in Soil Science and Plant Analysis*. **27**, 1749 – 1764.
- ESTERMAN, E.F. & MCLAREN, A.D., 1961. Contribution of rhizosphere organisms to the total capacity of plants to utilise organic nutrients. *Plant and Soil*. **15**, 243 – 260.
- FREESE, D., LOOKMAN, R, MERCKX, R & RIEMSDIJK, W.H., 1995. New method for long-term phosphate desorption from soils. *Soil Science Society of America Journal* **59**, 1295 – 1300.
- GANGAIYA, P. & MORRISON, R.J., 1987. A review of the problems associated with applying the terms surface charge and zero point of charge to soils. *Communications in Soil Science and Plant Analysis* **18** (12), 1431 - 1451.
- GARCIA-RODEJA, I. & GILL-SOTRES, F., 1995. Laboratory study of phosphate desorption kinetics in soils of Galicia (NW Spain). *Communications in Soil Science and Plant Analysis* **26** (13 & 14), 2023 – 2040.
- GOLDBERG, S., & SPOSITO, G., 1985. On the mechanism of specific phosphate Adsorption by hydroxylated mineral surfaces; a review. *Communications in Soil Science and Plant Analysis* **16** (8), 801 - 821.

- GREAVES, M.P. & WEBLEY, D.M., 1965. A study of the breakdown of organic phosphates by microorganisms from the root of certain pasture grasses. *Journal of applied Bacteriology* **28**, 454 – 465.
- GREENLAND, D.J. & MOTT, J.B., 1978. Surfaces of soil particles. In: Greenland, D.J. & Hayes, M.H.B. (ed.). *The Chemistry of Soil Constituents* John Wiley and Sons, Inc. New York.
- HEDLEY, M.J., STEWART, J.W.D. & CHAUNHAN, B.S., 1982. Changes in inorganic and organic soil phosphorus fractions induced by cultivation practices and laboratory incubations. *Soil Science Society of the America Journal* 970 – 976.
- HESSE, P.R., 1971. *A Textbook of Soil Chemical Analysis*. William Clowes and Sons Ltd., London.
- HOLFORD, I.C.R. & PARTRICK, W.H., 1981. Effects of duration of anaerobiosis and re-oxidation on phosphate sorption characteristics of an acid soil. *Australian Journal of Soil Research* **19**, 69 – 78.
- HOLFORD, I.C.R., 1991. Comments on Intensity-Quantity aspects of soil phosphorus. *Australian Journal of Soil Research* **29**, 11 – 14.
- HINGSTON, F.J., POSNER, A.M. & QUIRK, J.P., 1974. Anion adsorption by goethite and gibbsite. **II**. Desorption of anions from hydrous oxide surfaces. *Journal of Soil Science* **25**, 16 – 26.
- ILMER, P., BARBATO, A. & SCHINNER, F., 1995. Solubilization of hardly-soluble $AlPO_4$ with P-solubilizing microorganisms. *Soil Biology and Biochemistry* **27** (3), 265 – 270.

- IYAMUREMYE, F. & DICK, R.P., 1996. Organic amendments and phosphorus sorption by soil. *Advances in Agronomy* 56, 139 – 185.
- ISLAM, A & AHMED, B., 1973. Distribution of inositol phosphates, phospholipids and nucleic acids and the mineralisation of inositol phosphates in some Bangladesh soils. *Journal of Soil Science* 24, 193 – 198.
- JACKSON, M.L., 1958. Soil Chemical Analysis. Constable and Company, Ltd., London.
- JACKSON, M.L., 1962. Soil Chemical Analysis. Constable and Company, Ltd., London.
- JASZBERENYI, I. & LOCH, J., 1996. Soil phosphate adsorption and desorption in 0.01M calcium chloride electrolyte. *Communication in Soil Science and Plant Analyses*. 27 (5-8), 211 – 1225.
- LOOKMAN, R., FREESE, D., MERCKX, R., VLASSAK, K., & RIEMSDIJK, W.H., 1995. Long-term kinetics of phosphate release from soils. *Environmental Science and Technology* 29, 1569 – 1575
- LINDSAY, W.L., 1979. Chemical Equilibria in Soils. John Wiley and Sons, Inc., New York.
- MATTINGLY, G.E.G, 1975. Labile phosphates in soils. *Soil Science*. 119, 369 – 373
- McKEAN, S.J. & WARREN, G.P., 1996. Determination of phosphate desorption characteristics in soils using successive resin extractions. *Communications in Soil Science and Plant Analyses* 27, 2397 – 2417.
- McKERCHER, R.B. & TOLLEFSON, T.S., 1978. Barley response to phosphorus from phospholipids and nucleic acid. *Canadian Journal of Soil Science*. 58, 103 – 105.

- McMURRY, J. & FAY, R.C., 1995. Chemistry. Prentice Hall Inc. Englewood Cliffs, New Jersey.
- MOODY, P.W. & BOLLAND, M.D.A., 1999. Phosphorus. In: Peveerill, K.I., Sparrow, L.A. & Reuter, D.J., (ed.). Soil Analysis and Interpretation Manual CSIRO Publishing.
- MURPHY, J. & RILEY, P., 1962. A modified single solution method for the determination of phosphate in natural waters. *Analytica Chimica Acta*. **27**, 31 – 36.
- MYERS, R.G., PIERZYNSKI, G.M., & THIEN, S.J., 1997. Ferric oxide sink for extracting soil phosphorus: Paper preparation and use. *Soil Science of America Journal*. **61**, 1400 –1407.
- OLSEN, S.R. & DEAN, L.A., 1965. Phosphorus. In: Black, C.A. (ed.). Methods of Soil Analysis: Part II. American Society of Agronomy, Inc. Publishers. Madison, Wisconsin, U.S.A.
- OLSEN, D.L. & SHUMAN, M.S., 1985. Copper dissociation from estuarine humic materials. *Geochimica et Cosmochimica Acta* **49**, 1371 – 1375.
- OLSEN, S.R. & SUMMERS, L.E., 1982. Phosphorus. In: Page, A.L., Miller, R.H., Keeney, D.R., (ed.). Soil Analysis: Part II Chemical and Microbiological Properties. American Society of Agronomy Inc Publishers, Madison, Wisconsin, U.S.A.
- OLSEN, S.R. & WATANABE, F.S., 1957. A method to determine a phosphate adsorption maximum of soils as measured by the Langmuir isotherm. *Proceedings of the Soils Science Society of America* **21**, 144 – 149.

- ORLOV, D.S., 1992. Soil chemistry. A.A. Balkema Publishers. Brookfield, U.S.A
- PARFITT, R.L., 1978. Anion adsorption by soils and soil materials.
Advances in Agronomy **30**, 601 – 612.
- PARKHURST, D.L. & APELLO, C.A.J., 1999. User's guide to Phreeqc Version 2.4,
computer program for speciation, batch-reaction, one-dimensional transport and
inverse geochemical calculations. *Water-Resources Investigations Report 99-
4259*. US Geological Survey, Denver, Colorado.
- PONNAMPERUMA, F.N., 1972. The chemistry of submerged soils. *Advances in
Agronomy* **24**, 29 – 96.
- RACZ, G.J., 1979. Release of P in organic soils under aerobic and anaerobic conditions.
Canadian Journal of Soil Science **59**, 337 – 339.
- RAVEN, K.P. & HOSSNER, L.R., 1994. Sorption and desorption quantity – intensity
parameters to plant-available soil phosphorus. *Soil Science Society of America
Journal* **58**, 405 – 410.
- RYDEN, J.C. & SYERS, J.K., 1977. Desorption and isotopic exchange relationships
of phosphate sorbed by soils and hydrous ferric oxide gel. *Journal of Soil
Science* **28**, 596 – 609.
- SAVANT, N.K., & ELLIS, R., 1964. Changes in redox potential and phosphorus
availability in submerged soils. *Soil Science* **98**, 388 – 394.
- SCHULTHESS, C.P. & DEY, D.K., 1996. Estimation of Langmuir constants using linear
and nonlinear least squares regression analysis. *Soil Science Society of America
Journal* **60**, 433 – 442.

- SCHULTHESS, C.P. & SPARKS, D.L., 1991. Equilibrium-based modelling of chemical sorption on soils and soil constituents. *Advances in Soil Science*. **16**, 121 – 163.
- SHRIVER, D.F. & ATKINS, P.W., 1999. Inorganic Chemistry. Oxford University Press, Oxford
- SNOEYINK, L.V. & JENKINS, D., 1980. Water Chemistry. John Wiley and Sons, Inc., New York.
- SPOSITO, G., 1989. The Chemistry of Soils. Oxford University Press, New York.
- STEVENSON, F. J., 1982. Humus Chemistry: genesis, composition, reactions. John Wiley and Sons, Inc., New York.
- STUCKI, J.W. & BANWART, W.L., 1979. Advanced chemical methods for soil and clay mineral research. D Reidel Publishing Company, Dordrecht.
- SZEMBER, A., 1960b. Influence on plant growth of the breakdown of organic phosphorus compounds by microorganisms. *Plant and Soil*. **13**, 147 – 158.
- TAN, K.H., 1998. Principles of Soil Chemistry. Marcel Dekker Inc., Basel, Switzerland
- TAITE, R.L., 1987. Soil organic matter: Biological and ecological effects. Krieger Publishing Company, Malabar, Florida.
- TARAFDAR, J. & CLAASSEN, N., 1988. Organic phosphorus compounds as a phosphate source for higher plants through the activity of phosphatases produced by plant root and microorganisms. *Biological Fertilisers of Soils* **5** 308 – 312.
- THOMPSON, E.J. & BLACK, C.A., 1970. Changes in extractable organic phosphorus in the presence and absence of plants. *Plant and Soil*. **32**, 161 – 168.

- TIESSEN, H. & MOIR, J.O., 1993. Characterisation of available P by sequential extraction. *In: Soil Sampling and Methods of Analysis*. M.R. Carter (ed.) Canadian Society of Soils Science, Lewis Publishers, U.S.A.
- TURNER, D.P. & LAKER, M.C., 1999. Natural range in textural properties for a selection of red apedal soils of Mapumalanga and Kwazulu- Natal. Proceedings of the 22th National Congress of the Soil Science Society of South Africa, 27 – 29.
- WHITE, R.E., 1980. Retention and release of phosphate by soil. *In* P.B. Tinker (ed.). Soils and Agriculture. Blackwell Scientific Publications, Oxford.
- WILLIAMS, J.D.H., SYERS, J.K., HARRIS, R.F. & ARMSTRONG, D.E., 1970. Fractionation of inorganic phosphate in calcareous lake sediments. *Soil Science Society of America Proceedings*. **35**, 250 - 255.
- WILLIAMS, J.D.H., MAYERS, T, NRIAGU, J.O., 1970. Extractability of phosphorus from phosphate minerals common in soils and sediments. *Soil Science Society of America Proceedings*. **44**, 462 - 465.