

## DAFTAR PUSTAKA

- Abdel-Aziez, M.S., W.E. Eweda, M.G.Z, Girgis, and B.F.A.Ghany. 2014. Improving the productivity and quality of black cumin (*Nigella sativa*) by using *Azotobacter* as N<sub>2</sub> biofertilizer. *Annals of Agricultural Sciences* 59: 95-108.
- Afrizal, A. and A. Bano. 2008. *Rhizobium* and phosphate solubilizing bacteria improve the yield and phosphorus uptake in wheat (*Triticum aestivum*). *International Journal of Agriculture and Biology* 10 : 85-88.
- Anonim. 1992. International Fertilizer Industry Association (IFA). World fertilizer use manual.
- Anonim. 2005. Petunjuk Teknis Analisis Kimia Tanah, Tanaman, Air dan Pupuk. Balai Penelitian Tanah.
- Anonim. 2012. Pemanfaatan Fosfat Alam untuk Lahan Kering Masam. Balai Penelitian Tanah.
- Alcamo, I.E. 2003. *Microbes and society ; An indtroduction to microbiology*. Jones and Bartlett. Canada.
- Ardhiani, C. 2014. Pelarutan fosfat dari batuan fosfat oleh *Aspergillus niger* yang diformulasikan dalam biofilm bakteri jamur bersama *Azotobacter*. Fakultas Pertanian. Universitas Gadjah Mada. Skripsi.
- Barker, A.V, and D.J. Pilbeam. 2006. *Handbook of Plant nutrition*. Tayllor and Francis group. London.
- Becking, J.H. 1981. *The famili Azotobacteraceae*. Springer. Berlin.
- Bolan, N.S., R. Naidu, S. Mahimairaja, and S.Baskaran. 1994. Influence of low-molekular weight organic acids on the solubilizing of phosphates. *Biology and Fertility of Soil*. 18 : 311-319.
- Buckman, H.O. and N.C. Brady. 1956. *The Nature and Properties of Soils*. 5th ed. Macmillan, New York.
- Brock, T.D. 1994. *Biology Of Microorganism*, seventh edition. New Jersey. Prentice Hall.
- Chen, Y.P., P.D. Rekha, A.B. Arun, F.T. Shen, W.A. Lai, and C.C. Young. 2006. Phosphate solubilizing bacteria from subtropical soil and their tricalcium phosphate solubilizing abilities. *Applied Soil Ecology* 34: 33-41.
- Chuang, C.C., Y.L. Kuo, C.C. Chao, and W.L. Chao. 2007. Solubilization of inorganic phosphates and plant growth promotion by *Aspergillus niger* 43 : 575 -584.

- Conalghi, R., A. Green, L. Hee, P. Rudnick, and C. Kennedy. 1997. Strategies for Increased Ammonium Production in Free-living or Plant Associated Nitrogen Fixing Bacteria. *Journal of Plant and Soil* 194 :145-154.
- David, H., M. Akesson, and J. Nielsen. 2003. Reconstruction of the central carbon metabolism of *Aspergillus niger*. *European Journal of Biochemistry* 270 : 4243- 4253.
- Garrity, G. M., D. J. Brenner, N.R. Krieg, and J.T. Staley. 2005. *Bergey's Manual of systematic bacteriology*. Springer, Michigan.
- Goldstein, A.H. 1986. Bacterial solubilization of mineral phosphates: historical perspectives and future prospects. *American Journal of Alternative Agriculture* 1 : 51-57.
- Hanafiah, K.A, 2005. *Dasar-Dasar Ilmu Tanah*. Raja Grafindo Persada. Jakarta.
- Halder, A.K., A.K. Mishra, and P.K. Chakarbarthy.1991. Solubilization of inorganic phosphate by *Bradyrhizobium*. *Indian Journal of Experimental Biology* 29: 28-31.
- Hall, A.L. and D.W. Denning. 1994. Oxygen requirements of *Aspergillus* species. *Clinik Micology* 41 : 313-315.
- Hua, G.W., J. Jian, X.M. Na, P.X. Wen, and C. Tang. 2007. Inoculation with phosphate solubilizing fungi diversifies the bacterial community in rhizospheres of maize and soybean. *Pedosphere* 17 : 191-199.
- Husein, M, Y. Kodradi, dan Kohlik. 1998. *Super Phosphate Fertilizer Plant Optimalization*. PT Petrokimia Gresik (Persero). Indonesia.
- Husnain, S.R, T. Sutriadi, A. Nassir, and M. Sarwani. 2013. Improvement of Soil fertility and crop production through direct application of phosphate rock on maize in Indonesia. *Procedia Engineering* 83 : 336-343.
- Hussaini, M.A., V.B. Ogunlela, A. A. Ramalan and M. Falaki. 2008. Mineral Composition of Dry Season Maize (*Zea mays* L.) in Response to Varying Levels of Nitrogen, Phosphorus and Irrigation at Kadawa, Nigeria. *World Journal of Agricultural Sciences*. 4 : 775-780
- Iltis, H.Hugh. and J.F. Doebley. 1980. Taxonomy of *Zea* (gramineae) subspecific catagories in *Zea mays* complex and a generic synopsis. *American Journal of Botany* 67 : 994-1004.
- Ismail dan Fadila. 2014. *Pengaruh Pupuk Fosfor Terhadap Pertumbuhan Jagung Hibrida Di Kelurahan Dulomo Utara Kecamatan Kota Utara Kota Gorontalo*. Thesis. Universitas Negri Gorontalo.

- Jasinski, S.M. 2013. Mineral Resource of the Month: Phosphate Rock. American geosciences institute. Earth Magazine.
- Jutono, J. S., Hartadi, S., Kabirun, S., Darmosuwito, dan S. Soesanto. 1973. Pedoman Pratikum Mikrobiologi Umum. Gajah Mada University Press. Yogyakarta.
- Kasno, A., dan M.T. Sutriadi. 2012. Indonesian rock phosphate efectivity for maize crop on ultisols soils. *Agrivita* 34 : 14-21.
- Kasno, A., S. Rochayati, dan B.H. Prasetyo. 2005. Deposit penyebaran dan karakteristik fosfat alam. Balai Penelitian Tanah.
- Katznelson, H and B. Bose. 1959. Metabolic activity And phosphate dissolving capability of bacteriology isolation from wheat root rhizosphere and non rhizosphere soil. *Canada Journal of Microbiology* 5:79-85.
- Khan, A.A, G. Jilani, M.S. Akhtar, S.M.S. Naqvi, and M. Rasheed. 2009. Phosphorus solubilizing bacteria : occurrence, mechanisms and their role in crop production. *Journal Agriculture Biology Science* 1 : 48-58.
- Klich, A.M. 2002. Biogeography of *Aspergillus* species in soil and litter. *The Mycological Society of America* 94 : 21-27.
- Kpombekou and Tabatabai. 1994. Effect of organic acids on release of phosphorus from phosphate rocks. *Soil Science* 158: 474-47.
- Kusdarto, 2005. Potensi Agromineral di Indonesia Salah Satu Alternatif Pengganti Pupuk buatan. Badan Geologi.
- Madison., S. Sogoe. 1982. Methods of soil analysis, part 2. Chemical and microbiological properties- Agronomy monograph. America society of agronomy, inc.
- Magnuson, J.K., and L. L. Lasure. 2014. Organic acid production by filamentous fungi. *Advances in Fungal Biotechnology for Agriculture* 307-340 (Abstr).
- Mega. M.I., I.N. Dibia, I.G.P. R. Adi, dan T.B. Kusmiyarti. 2010. Klasifikasi Tanah dan kesesuaian lahan. Universitas Udayana. Denpasar.
- Nahas, E. 2002. Phosphate solubilizing microorganisms: Effect of carbon, nitrogen and phosphorus sources. *Developments in Plant and Soil Sciences* 102 :111-115.
- Narsian, V. and H. H. Patel. 2000. *Aspergillus aculeatus* as a rock phosphate solubilizer. *Soil biology and biochemistry* 32: 559-565.

- Newton, W.J., P.W. Wilson, and R.H. Burris. 1953. Direct demonstration of ammonia as an intermediate in nitrogen fixation by *Azotobacter*. *Journal Biology Chemistry* 204: 445-451.
- Noor, A. 2003. Pengaruh fosfat alam dan kombinasi bakteri pelarut fosfat dengan pupuk kandang terhadap P tersedia dan pertumbuhan kedelai pada ultisol *Buletin Agronomi* 31 : 100-106.
- Ochsenreithet, C., C. Fischer, A. Neumann, and C. Sylstatk. 2014. Process characterization and influence of alternative carbon sources and carbon-to-nitrogen ratio on organic acid production by *Aspergillus oryzae* DSM1863. *Applied Microbiol Biotechno* 98 : 5449 – 5460.
- Oliveira, C.A., V.M.C. Alves, I.E. Marriel, E.A. Gomes, M.R. Scotti, N.P. Carneiro, C.T. Guimaraes, R.E. Schaffert, and N.M.H. Sa. 2009. Phosphate solubilizing microorganisms isolated from rhizosphere of maize cultivated in an oxisol of the Brazilian Cerrado Biome. *Soil Biology and Biochemistry* 41: 1782-1787.
- Papagianni, M., Wayman, F. & Matthey, M. 2005. Fate and role of ammonium ions during fermentation of citric acid by *Aspergillus niger*. *Applied and Environmental Microbiology* 71 :7178–7186.
- Peix, A., R. Rivas, I. Santa-Regina, P.F. Mateos, E. Martinez-Molina, C. Rodriguez-Barrueco, and E. Velazquez. 2004. *Pseudomonas lutea* sp. nov., a novel phosphate-solubilizing bacterium isolated from the rhizosphere of grasses. *International Journal of Systematic and Evolutionary Microbiology* 54 : 847-850.
- Perrone, G., A. Susca, G. Cozzi, K. Ehrlich, J. Varga, J.C. Frsvad, M. Meijer, P. Noonim, W. Mahakarnchanakul, and R.A. Samson. 2007. Biodiversity of *Aspergillus* species in some important agricultural products. *Micology* 59 : 53-66
- Pommerville, J. 2015. *Microbes and society*. Fourth edition. Jones & Barlett. United States of America.
- Pradhan, N. and L.B. Sukla. 2005. Solubilization of inorganic phosphates by fungi isolated from agriculture soil. *African Journal of Biotechnology* 5 : 850-854.
- Rajankar, P.N., D.H. Tambekar, and S.R. Wate. 2007. Study of Phosphate Solubilization Efficiencies of Fungi and Bacteria Isolated From Saline belt of Purna river basin. *Research Journal of Agriculture and Biological Sciences* 6: 701-703.
- Rajendra, P., K. Dinesh, and Shivay. 2005. Microbes and biological nitrogen fixation. *Indian Farming* 54: 16–18

- Ranganathan, S.B. and R.V. Norris. 1927. Nitrogen-fixation by *Azotobacter chroococcum*. Departemen of Bio Chemistry, Indian Institute of Science. Bangalore.
- Rashid, M., S. Khalil, N. Ayub, S. Alam, and F.Latif. 2004. Organic acids production and phosphate solubilization by phosphate solubilizing microorganism (PSM) under in vitro conditions. *Pakistan Journal of Biological Sciences* 7 : 187 -196.
- Reyes, I., A. Valery, and Z. Valduz. 2007. Phosphate solubilizing microorganisms isolated from rhizospheric and bulk soils of colonizer plants at an abandoned rock phosphate mine. *Developments in Plant and Soil Sciences* 102:69-75.
- Ridwan, I. 2011. Pembuatan pupuk super fosfat dengan variasi diameter partikel batuan fosfat dan variasi konsentrasi asam sulfat. *Jurnal Fluida* 7: 36-40.
- Rinu, K. and A. Pandey. 2011. Slow and steady phosphate solubilisation by a psychrotolerant strain of *Paecilomyces hepiali* (MTCC 9621). *World Journal of Microbiology Biotechnology* 27: 1055–1062.
- Rochani, S. 2007. Bercocok tanam jagung. Azka press. Bandung.
- Rosmarkam, A. dan N.W. Yuwono. 2002. Ilmu Kesuburan Tanah. Kanisius. Yogyakarta.
- Rukmana, R. 1998. Usaha tani jagung. Kanisius. Yogyakarta.
- Sastro, Y. 2001. Ketahanan hidup *Aspergillus niger* pada batuan fosfat yang dipeletkan serta kemampuan pelarutannya. Program Pasca Sarjana Ilmu Tanah. Universitas Gadjah Mada. Tesis.
- Sastro, Y., B. Radjagukguk., D. Widiyanto, D. Shiddieq, I.D. Prijambada, dan N.F.A. Andini. 2005. Kemampuan Pupuk bio-fosfat dalam menyediakan fosfor untuk tanaman. *Agrosains*. 7:72-177.
- Seneviratne, G. & Jayasinghearachchi, H.S. 2005. A rhizobial biofilm with nitrogenase activity alters nutrient availability in a soil. *Soil Biology and Biochemistry* 37: 1975– 1978.
- Seneviratne, G., K. Mihaly, and I. K. Ivan. 2006. Biofilmed biofertilizer: Novel inoculants for efficient nutrient use in plants. *Aciar Australia* 47: 126-130.
- Selim, M.H. 2015. Phosphate in soils: interction with micronutrients radionuclides and heavy metals. Taylor & Francis Group. New York.
- Singh, M.S., L.S. Yadav, S.K. Singh, P.Singh, P.N.Singh, and R. Ravindra. 2011. Phosphate solubilizing ability of two Arctic *Aspergillus niger* strains. *Polar Research* 30 : 15-18.

- Sukur, M. and D.H.U. Ningsih. 2013. Generator Model Keputusan Penentuan Wilayah yang Memiliki Potensi Nilai Ekonomis bagi Komoditas Perkebunan di Wilayah Kabupaten Semarang Berbasis Sistem Informasi Geografi. *Jurnal Teknologi Informasi Dinamik*. 18: 130-141.
- Sutriadi M.T., S. Rochayati, dan A. Rachman. 2010. Pemanfaatan Fosfat Alam Ditinjau Dari Aspek Lingkungan. Balai Penelitian Tanah. Bogor.
- Tejera, N., C. Lluch, M.V. M-Tpledo, and J. G-Lopez. 2005. Isolation and characterization of *Azotobacter* and *Azospirillum* strains from the sugarcane rhizosphere. *Plant and Soil*. 270: 223–232.
- Van Straaten, P. 2002. Rocks for crops : Agronominerals of sub-sahara Africa. ICRAF. Canada.
- Vyas, P, P. Rahi, A. Chauhan, and A. Gulati. 2007. Phosphate solubilization potential and stress tolerance of *Eupenicillium parvum* from tea soil. *Mycological Research*. 111 : 931-938.
- Vazquez, P, G. Holguin, M.E. Puente, A.L-Cortes, and Y.Bashan. 2000. Phosphate solubilizing microorganisms associated with the rhizosphere of mangroves in a semiarid coastal lagoon. *Biology and Fertility Soils* 30 :460-468.
- Waluyo, L. 2007. Mikrobiologi umum. Umm Press. Malang.
- Yadav, J., J. P Verma and K. N. Tiwari. 2011. Solubilization of Tricalcium Phosphate By Fungus *Aspergillus niger* at Different Carbon Source and Salinity. *Trends in Applied Science Research* 6: 606 – 613.
- Yasser, M.M, A.S.M. Mousa, O.N. Massound and S.H. Nasr. 2014. Solubilization of inorganic phosphate by phosphate solubilizing fungi isolated from Egyptian soils. *Journal of Biology and Earth Sciences*. 4: 83-90.
- Yu, X, X. Liu, T.Hzhu, G.H. Liu, and C. Mao. 2011. Co-inoculation with phosphate-solubilizing and nitrogen-fixing bacteria on solubilization of rock phosphate and their effect on growth promotion and nutrient uptake by walnut. *European Journal of Soil Biology* 50 : 112-117.