

REFERENCES

- Ahmad, R. and Amirtharajah, A. (1998). Detachment of Particles during Biofilter Backwashing," *J. AWWA*, 90(12), 74.
- Aquaponics, B. (2013). Importance of Fish". Archived from the original on April 9, 2013. Retrieved April 24.
- Badan Klimatologi Geofisika and Analisis Iklim. (2017). Retrieved from <http://www.bmkg.go.id/iklim/indeks-presipitasi-terstandarisasi.bmkg>. October 5, 2017.
- Barnes, C. C., Smalley, M. K., Manfredi, K. P., Kindscher, K., Loring, H. and Sheeley, D. M. (2003). Characterization of an antituberculosis resin glycoside from the prairie medicinal plant *Ipomoea leptophylla*. *Journal of Natural Products*, 66, 1457–1462.
- Bouwer, E. J. and Crowe, P. B. (1988). Biological Processes in Drinking Water Treatment," *J. AWWA*, 80(9), 82 (1988).
- Brennan, R. F. (1992). The role of manganese and nitrogen nutrition in the susceptibility of wheat plants to take all in Western Australia. *Fertil. Res.* 31, 35–41.
- Carlson, K. H. and Amy, G. L. (1998). BOM Removal during Biofiltration," *J. AWWA*, 90(12), 42.
- Chaudhary, D. S., Vigneswaran, S., Ngo, H. H., Shim, W. G. and Moon, H. (2003). Biofilter in Water and Wastewater Treatment. *Korean J. Chem. Eng.*, 20(6), 1054-1065
- Diver and Steve. (2006). Aquaponics — integration of hydroponics with aquaculture. ATTRA - National Sustainable Agriculture Information Service. National Center for Appropriate Technology. Archived (PDF) from the original on March 2, 2013.
- Dontje, J. and Clanton, C. (1999). Nutrient fate in aquaculture systems for waste treatment. *Trans Am Soc Agric Eng* 42:1073–1085.
- Dushenkov, V., P.B.A.N. Kumar, H. Motto and L. Raskin. (1995). Rhizofiltration: the use of plants to remove heavy metals from aqueous streams. *Environ. Sci. Tech.*, 19 (1995) 1239–1245.
- Eastman, J. A. and Ferguson, J. F. (1981). Solubilization of particulate organic carbon during the acid phase of anaerobic digestion. *J. Water Pollut. Control Fed*, 53 (3), 352–366.

- Eli, R. (2013). "How does aquaponics work?". Archived from the original on May 25, 2013. Retrieved April 24, 2013.
- Estim, A., Saufie, S. and Mustafa, S. (2018). Water quality remediation using aquaponics sub-systems as biological and mechanical filters in aquaculture. *Journal of Water Process Engineering*.
- Flora. (2005). The editorial committee of the Administration Bureau of Flora of China. Beijing Science and Technology Press.
- Ghaly, A. E. and Snow, A. M. (2008). Use of barley for the purification of aquaculture wastewater in a hydroponics system. *Am. J. Environ. Sci.*, 4 (2008) 89–102.
- John, K. C., Lynn, G. and Lee, H. P. (1987). Dietary fiber and starch contents of some Southeast Asian vegetables. *J. Agric. Food Chem.*, 1987, 35 (3), pp 319–321.
- Kende, H. and Zeevaart, J. A. D. (1997). The five classical plant hormones. *Plant Cell* 9: 1197–1210.
- Langergraber, G., R. Haberl, J. Laber and A. Pressl. (2003). Evaluation of substrate clogging processes in vertical flow constructed wetland. *Water Sci. Technol.*, 48 (2003) 25–34.
- Lawler, D. F., Chung, Y. J., Hwang, S. J. and Hull, B. A. (1986). Anaerobic digestion: Effect on particle size and dewaterability. *J. Water Pollut. Control Fed.* 58 (12), 1107–1117.
- LeChevallier, M. W. and Lowry, C. D. (1990). Disinfecting Biofilms in a Model Distribution System," *J. AWWA*, 82(7), 87
- Lennard, W. A. and Leonard, B. V. (2006). A comparison of three different hydroponic subsystems (gravel bed, floating and nutrient film technique) in an Aquaponic test system. *Aquac. Int.* 14, 539–550.
- León-Rivera, I., Herrera-Ruiz, M., Estrada-Soto, S., Gutiérrez, M. D. C., Martínez-Duncker, I., Navarrete-Vázquez, G. and Aguirre-Moreno, A. (2011). Sedative, vasorelaxant, and cytotoxic effects of convolvulin from *Ipomoea tyrianthina*. *Journal of Ethnopharmacology*, 135, 434–439.
- León-Rivera, I., Mirón-López, G., Estrada-Soto, S., Aguirre-Crespo, F., Gutiérrez, M. D. C., Molina-Salinas, G. M. and Montiel, E. (2009). Glycolipid ester-type heterodimers from *Ipomoea*

tyrianthina and their pharmacological activity. *Bioorganic and Medicinal Chemistry Letters*, 19, 4652–4656.

- León-Rivera, I., Villeda-Hernández, J., Campos-Peña, V., Aguirre-Moreno, A., Estrada-Soto, S., Navarrete-Vázquez, G., . . . Rivera-Leyva, J. C. (2014). Evaluation of the neuroprotective activity of stansin 6, a resin glycoside from *Ipomoea stans*. *Bioorganic and Medicinal Chemistry Letters*, 24, 3541–3545.
- Lewis, W., Yopp, J., Schramm, H. and Brandenburg, A. (1978). Use of hydroponics to maintain quality of recirculated water in a fish culture system. *Trans Am Fish Soc*(197), 92–99.
- Losordo, T. M., Rakocy, J. E. and Masser, M. P. (2006). "Recirculating aquaculture tank production systems: Aquaponics — integrating fish and plant culture" (PDF) (454). Southern Regional Aquaculture Center. Archived (PDF) from the original on September 15, 2012.
- Luis, P. U., José, L. E., Rafael, F. and Víctor, M. F. (2019). Suitability and optimization of FAO's small-scale aquaponics systems for joint production of lettuce (*Lactuca sativa*) and fish (*Carassius auratus*). Departamento de Ciencias Agroforestales. Universidad de Sevilla. ETSIA, Ctra. Utrera km.1, 41013.
- Malalavidhane, T. S., Wickramasinghe, S. M. D. and Jansz, E. R. (2000). Oral hypoglycaemic activity of *Ipomoea aquatica*. *Journal of Ethnopharmacology*, 72, 293–298.
- Malalavidhane, T. S., Wickramasinghe, S. M. D. N., Perera, M. S. A. and Jansz, E. R. (2003). Oral hypoglycaemic activity of *Ipomoea aquatica* in streptozotocin-induced, diabetic wistar rat.
- Maucieri, C., Nicoletto, C., Junge, R., Schmutz, Z., Sambo, P. and Borin, M. (2017). Hydroponic systems and water management in aquaponics: a review. *Ital. J. Agron.* 11.
- McMurtry, M., Sanders, D., Cure, J., Hodson, R., Haning, B. S. and Amand, P. (1997). Efficiency of water use of an integrated fish/vegetable co-culture system. *J World Aquacult Soc* 28:420–428.
- McMurtry, M., Sanders, D., Patterson, R. and Nash, A. (1993). Yield of tomato irrigated with recirculating aquaculture water. *J Prod Agric* 6:429–432.

- Metcalf and Eddy. (1991). Wastewater Engineering: Treatment, Disposal and Reuse," 3rd edition, Revised by Tchobanoglous, G. and Burton, F., McGraw-Hill, Inc., Singapore
- Nidal, M., Grietje, Z., Huub, G. and Gatze, L. (2003). Solids removal in upflow anaerobic reactors, a review. . *Bioresource Technology* 90, 1–9.
- Ono, M., Takigawa, A., Kanemaru, Y., Kawakami, G., Kabata, K., Okawa, M., Nohara, T. (2014). Calycolins V–IX, resin glycosides from *Calystegia soldanella* and their antiviral activity toward Herpes. *Chemical and Pharmaceutical Bulletin*, 62, 97–105.
- Parker, D., Anouti, A. and Dickenson, G. (1990). Integrated fish/plant production system: experimental results. ERL report 90-34. University of Arizona, Tucson, Arizona.
- Pavlostathis, S. G. and Giraldo. (1991). Kinetic of anaerobic treatment. . *Water Sci. Technol.* , 24 (8), 35–59.
- Pereda-Miranda, R., Kaatz, G. W. and Gibbons, S. (2006). Polyacylated oligosaccharides from medicinal Mexican morning glory species as antibacterials and inhibitors of multidrug resistance in *Staphylococcus aureus*. *Journal of Natural Products*, 69, 406–409.
- Prasad, K. N., Ashok, G., Raghu, C., Shivamurthy, G. R., Vijayan, P. and Aradhya, S. M. (2005). In vitro cytotoxic properties of *Ipomoea aquatica* leaf. *Indian Journal of Pharmacology*, 37, 397.
- Rakocy. (1988). Hydroponic lettuce production in a recirculating fish culture system. *Island Perspectives, Agri. Exp. Sta., Univ. of the Virgin Islands*. 3:4-10.
- Rakocy. (2002). Aquaponics: vegetable hydroponics in recirculating systems. p 631- 672. In: M.B. Timmons, J.M. Ebeling, F.W. Wheaton, S.T. Summerfelt and B.J. Vinci, *Recirculating Aquaculture Systems*, 2nd Ed. Cayuga Aqua Ventures, Ithaca, New York.
- Rakocy, Bailey, Shultz and Thoman. (2013). "Update on Tilapia and Vegetable Production in the UVI Aquaponic System" (PDF). University of the Virgin Islands Agricultural Experiment Station. Archived (PDF) from the original on 2 March 2013.

- Rakocy, Bailey, D. S., Martin, J. M. and Shultz, R. C. (2000). Tilapia production systems for the Lesser Antilles and other resource-limited, tropical areas. pp. 651-662. In: K. Fitzsimmons and J. Carvalho Filho (Eds.). *Tilapia Aquaculture in the 21st Century: Proceedings from the Fifth International Symposium on Tilapia in Aquaculture*, Rio de Janeiro, Brazil.
- Rakocy, D.S. Bailey, K.A. Shultz and W.M. Cole. (1997). Evaluation of a commercial- scale aquaponic unit for the production of tilapia and lettuce. pp. 357-372. In: K. Fitzsimmons (ed.). *Tilapia Aquaculture: Proceedings of the Fourth International Symposium on Tilapia in Aquaculture*, Orlando, Florida.
- Rakocy, Hargreaves, J. A. and Bailey, O. S. (1989). Effects of hydroponic vegetable production on water quality in a closed recirculating system. *J. World Aquacul. Soc.*, 20 (1989) 64A.
- Rakocy, Masser, M. P. and Losordo, T. M. (2006). *Recirculating Aquaculture Tank Production Systems: Aquaponics—Integrating Fish and Plant Culture*. SRAC Publication No. 454.
- Rakocy, Shultz and Bailey. (2004). Aquaponic production of tilapia and basil: comparing a batch and staggered cropping system. *Acta Horticulturae (ISHS)* 648:63-69.
- Rakocy, Shultz, R. C., Bailey, D. S., Thoman, E. S. and Nichols, M. A. (2004). Aquaponic production of tilapia and basil: Comparing a batch and staggered cropping system. *Acta Horticulturae*. International Society for Horticultural Science (648). Archived from the original (PDF) on June 12, 2013.
- Rao, K. S., Rangan, D., Singh, K., Kaluwin, C., Donals, E., Rivett, G. and Jones, P. (1990). Lipid, fatty acid, amino acid and mineral composition of five edible plant leaves. *Journal of Agricultural and Food Chemistry*, 38 (1990), pp. 2137-2139.
- Reynolds W. F., Yu M., Enriquez R. G., Gonzalez H., Leon I., Magos G. and Villareal M. L. (1995). Isolation and characterization of cytotoxic and antibacterial tetrasaccharide glycosides from *Ipomoea stans*. *Journal of Natural Products*, 58, 1730–1734.
- Seawright D., Stickney R. and Walker R. (1998). Nutrient dynamics in integrated aquaculturehydroponic systems. *Aquaculture* 160:215–237.

- Sieh, Kerry, Natawidjaja and Danny. (2000). Neotectonics of the Sumatran fault, Indonesia. *Journal of Geophysical Research*. (105 (B12): 28295–28326. doi:10.1029/2000JB900120).
- Somerville C., Cohen M., Pantanella E., Stankus A. and Lovatelli A. (2014). Small-scale aquaponic food production. Integrated fish and plant farming. (PDF). Food and Agriculture Organization of the United Nations. ISBN 978-92-5-108532-5. ISSN 2070-7010.
- Statistik B. P. (2018). "Statistik Indonesia 2018". Retrieved July 24, 2018.
- Takei K., Takahashi T., Sugiyama T., Yamaya T. and Sakakibara H. (2002). Multiple routes communicating nitrogen availability from roots to shoots: a signal transduction pathway mediated by cytokinin. *J. Exp. Bot.* 53: 971–977.
- Van D., Visser A. and Hijnen W. A. M. (1982). Determining the Concentration of Easily Assimilable Organic Carbon in Drinking Water," *J. AWWA*, 74(10), 540
- Waten B. and Busch R. (1984). Tropical production of Tilapia (*Sarotherodon aurea*) and tomatoes (*Lycopersicon esculentum*) in a small-scale recirculating water system. *Aquaculture* 41:271–283.
- Wilson A. L. and Brian V. L. (2006). A comparison of three different hydroponic sub-systems (gravel bed, floating and nutrient film technique) in an Aquaponic test system. *Aquaculture International*. 14 (6): 539–550. doi:10.1007/s10499-006-9053-2.
- Yan L., Xu X. and Xia J. (2019). Different impacts of external ammonium and nitrate addition on plant growth in terrestrial ecosystems: A meta-analysis. *Science of The Total Environment*. doi:10.1016/j.scitotenv.2019.05.448
- Yoshikawa K., Yagi C., Hama H., Tanaka M., Arihara S. and Hashimoto T. (2010). Ipomotaosides A-D, resin glycosides from the aerial parts of *Ipomoea batatas* and their inhibitory activity against COX-1 and COX-2. *Journal of Natural Products*, 73, 1763–1766.