



DAFTAR PUSTAKA

- Aak, 1995. Berbudidaya Tanaman Padi. Kanisius, Yogyakarta.
- Alam, T., P. Suryanto, S. Handayani, D. Kastono, B. Kurniasih. Optimizing application of *biochar* compost and nitrogen fertilizer in soybean intercropping with kayu putih (*melaleuca cajuputi*). Revista Brasileira Ciencia do Solo 44
- Amanullah. 2015. Specific leaf area and specific leaf weight in small grain crops wheat, rye, barley, and oats differ at various growth stages and npk source. Journal of Plant Nutrition 38: 1694-1708
- Anhar, R., E. Hayati, Efendi. 2016. Pengaruh dosis pupuk urea terhadap pertumbuhan dan produksi plasma nutrional padi lokal asal aceh. Jurnal Kawista 1(1): 30-36.
- Arsyad, M., 2013. Produktivitas Beberapa Varietas Padi Hibrida (*Oryza sativa L.*) Pada Berbagai Jarak Tanam dengan Sistem Legowo 2:1. Fakultas Pertanian Universitas Hassanuddin. Skripsi.
- Asai, H., B.K. Samson, H.M. Stephan, K. Songyikhangsuthor, K. Homma, Y. Kiyono, Y. Inoue, T. Shiraiwa, T. Horie. 2009. *Biochar* amendment technique for upland rice production in northern Laos 1. Soil physical properties, leaf spad, and grain yield. Journal Field Crops Research 111: 81-84.
- Badan Ketahanan Pangan dan Penyuluhan Pertanian Aceh. 2009. Budidaya Tanaman Padi. Artikel
- Badan Pusat Statistik. 2019. Luas panen dan produksi padi di indonesia 2019. Berita Resmi Statistik 16(02):1-12.
- Balittanah. 2005. Petunjuk Teknis: Analisis Kimia, Tanah, Tanaman, Air, dan Pupuk. Balai Penelitian Tanah, Bogor
- Biederman, L.A., W.S. Harpole. 2013. *Biochar* and its effects in plant productivity and nutrient cycling, a meta-analysis. Journal GCB Bioenergy 5:202-214
- Datcu, A.D., N. Ianovici, F. Sala. 2020. A method for estimating nitrogen supply index in crop plants: case study on wheat. Journal of Central European Agriculture 21(3): 569-576.
- Dariah, A., N. Heryani. 2014. Pemberdayaan lahan kering suboptimal untuk mendukung kebijakan diversifikasi dan ketahanan pangan. Jurnal Jenisdaya Lahan Edisi Khusus: 1-14
- Dinas Kehutanan dan Perkebunan DIY. 2014. Rencana Pengelolaan Hutan Jangka Panjang Kesatuan Pengelolaan Hutan Produksi (RPHJP KPHP) Model Yogyakarta Daerah Istimewa Yogyakarta.
- Faozi, K., B.R. Wijonarko. 2010. Serapan nitrogen dan beberapa sifat fisiologi tanaman padi sawah dari berbagai umur pemindahan bibit. Jurnal Pembangunan Pedesaan 10(2): 93-101.
- Fitrianti, B.N., T. Turmuktini, M.I.K. Sudana, D. Yogaswara, R. Nugraha. 2020. Efisiensi pupuk dan peningkatan hasil padi gogo dengan aplikasi pupuk hayati dan arang tempurung kelapa. Jurnal Soilrens 18(1): 57-62.



Gardner, F.P., R.B. Pearce, R.L Michell. 1991. Physiology of Crop Plants (Fisiologi Tanaman Budidaya, alih bahasa Herawati Susilo). UI-Press, Jakarta

Indrawan, R.R., A.Suryanto, R. Soelistyono. 2017. Kajian iklim mikro terhadap berbagai sistem tanam dan populasi tanaman jagung manis (*Zea mays saccharata* Sturt.). Jurnal Produksi Tanaman 5(1): 92-99.

Kakangan, C.J.R., N.S. Ai, P. Siahaan. 2017. Rasio akar:tajuk tanaman padi lokal sulawesi utara yang mengalami cekaman banjir dan kekeringan pada fase vegetatif. Jurnal Bioslogos 7(1):17-21

Kamara, A., H.S. Kamara, M.S. Kamara. 2015. Effect of rice straw *biochar* on soil quality ans the early growth and biomass yield if two rice varieties. Journal Agricultural Science 6:798-806.

Kartikawati, N.K., A. RIimbawanto, M. Susanto, L. Baskorowati. Prastyono. 2014. Budidaya dan Prospek Pengembangan Kayuputih (*Melaleuca cajuputi*). IPB Press, Bogor.

Kementerian Lingkungan Hidup dan Kehutanan Republik Indonesia. 2018. Status Hutan dan Kehutanan Indonesia. Jakarta

Lai Lai, M.R. Ismail, F.M. Muhamram, M.M Yusuf, R. Ismail, N.M. Jaafar. 2017. Effect of rice straw *biochar* and nitrogen fertilizer on rice growth and yield. Asian Journal of Crop Science 9(4): 159-166.

Laghari, M., M.S. Mirjat, Z. Hu, S. Fazal, B. Xiao, M. Hu, Z. Chen, D. Guo. 2015. Effect of *biochar* application rate on sandy desert soil properties and sorgum growth. Journal Catena 135: 313-320.

Lakitan, B., A. Alberto, L. Lindiana, K. Kartika, S. Herlinda, A. Kurnianingsih. 2018. The benefits of *biochar* in rice growth and yield in tropical riparian wetland, south sumatra, indonesia. Journal Natural Science 17(2): 111-126.

Lehmann J., J.P. da Silva, C. Steiner, T. Nehls, W. Zech, B. Glaser. 2003. Nutrient avaibility and leaching in an archaeological anthrosol and a ferralsol of the central amazon basin: fertilizer, manure and charcoal amandements. Plant and Soil 249: 343-357.

Lehmann, J., 2007. Bio-energy in the black. Journal Ecology Environment 5:381-387

Limbongan, Y., F. Djufry. 2015. Karakterisasi dan observasi lima aksesi padi lokal dataran tinggi toraja, sulawesi selatan. Buletin Plasma Nutfah 21(2): 61-70

Liu, X., Y. Li. 2016. Varietal difference in the cprrelation between leaf nitrogen content and photosynthesis in rice (*Oryza sativa L.*) plants is related to specific leaf weight. Journal of Integrative Agriculture 15(9): 2002-2011.

Mae, T. 1997. Physiological nitrogen efficiency in rice: nitrogen utilization, photosynthesis, amd yield potential. Journal Plant Soil 196: 201-210.

MacCarthy, D.S., E. Darko, E.K. Nartey, S.G.K. Adiku, A. Tettey. 2020. Integrating *biochar* and inorganic fertilizer mproves productivity and profitability of irrigated rice in ghana, west africa. Journal Agronomy 10: 1-23



Makarim, A.K., E. Suhartatik. 2009. Morfologi dan Fisiologi TanamanPadi. Balai Besar Penelitian Tanaman Padi. Sukabumi. Subang.

Made, U. 2010. Respons berbagai populasi tanaman jagung manis (*zea mays saccharta* Sturt.) terhadap pemberian pupuk urea. Jurnal Agroland 17(2):138-143.

Masulili, A., W.H. Utomo, M.S. Syechfani. 2010. Rice husk *biochar* for rice based cropping system in acid soil 1. The characteristic odf rice husk *biochar* and its influence on the properties of acid sulfate soils and rice growth in west kalimantan, indonesia. Journal of Agricultural Science 2(1):39-47.

Miranda, N.D., A.S. Pimenta, G.G.C. Da Silva, E.M.M. Oliviera, M.A.B. De Carvalho. 2017. *Biochar* as soil conditioner in the succession of upland rice and cowpea fertilized with nitrogen. Revista Caatinga 30(2): 313-323.

Mulyani A., Nursyamsi D, Syakir M. 2017. Strategi pemanfaatan jenisdaya lahan untuk pencapaian swasembada beras berkelanjutan. Jurnal Jenisdaya Lahan 11(1): 11-22

Naggar, A., S.S. Lee, J. Rinklebe, M. Farooq, H. Song, A.K. Sarmah, A.R. Zimmerman, M. Ahmad, S.M. Shaheen, Y.S. Ok. 2019. *Biochar* application to low fertility soils: A review of current status, and future prospects. Geoderma 337:536-554.

Nurmalasari, A.I., Supriyono, P. Suryanto, T. Alam. 2020. Effectiveness of melaleuca cajuputi *biochar* as a leaching loss for nitrogen fertilier and intercropping in maize. Indian Journal of Agricultural Research 54(4):506-510.

Ogawa, T., S. Oikawa, T. Hirose. 2016. Nitrogen-utilization efficiency in rice: an analysis at leaf, shoot, and whole-plant level. Journal Plant Soil 404: 321-344.

Oladele, S., A. Adeyemo, M. Awodun, A. Ajayi, A. Fasina. 2019. Effect of *biochar* and nitrogen fertilizer on soil physicochemical properties, nitrogen use efficiency and upland rice (*oryza sativa*) yield grown on an alfisol on southwestern nigeria. International Journal of Recycling of Organic Waste in Agriculture.

Pranata, M., B. Kurniasih. 2019. Pengaruh pemberian pupuk kompos jerami padi terhadap pertumbuhan dan hasil padi (*oryza sativa L.*) pada kondisi salin. Jurnal Vegetalika 8(2): 95-107.

Perhutani. 2012. Laporan tahunan perhutani tahun 2012. Perhutani.

Purwono, L dan Purnamawati. 2007. Budidaya Tanaman Pangan. Penerbit Agromedia, Jakarta.

Rahmawati A, Alberto E, Soemarno. 2016. Pengaruh kompos limbah daun minyak kayu putih untuk pertumbuhan semai tanaman kayu putih. Jurnal Tanah dan Jenisdaya Lahan (3):293-30.

Reneck, A., J. Lehmann. 2004. Rapid water flow and transport of inorganic and organic nitrogen in a highly aggregated tropical soil. Soil Science 169:330-341.

Roy, B., A.K. Basu, A.B. Mandal. 2013. Breeding Biotechnology & Seed Production of Field Crops. New India Publishing Agency, New Delhi.



- Senjaya, N., N. Wijayanto, D. Wirnas, Achmad. 2018. Evaluasi sistem agroforestri sengon dengan padi gogo terhadap serangan cendawan *Rhizoctonia sp.* Jurnal Silvikultur Tropika 9(2): 120-126
- Sigunga, D.O., O. Oenema, B.H. Janssen. 1997. Fertilizer nitrogen use efficiency and nutrient uptake by maize (*zea mays* L) in vertisols in kenya. Proefschrift. Landbouwuniversiteit Wageningen.
- Sinfield, J.V., D. Eagerman, O. Colic. 2010. Evaluation of sensing technologies for on-the-go detection of macro-nutrients in cultivated soils. Journal Computers and Electronics of Agriculture 70: 1–18.
- Siregar, H. 1981. Budidaya Tanaman Padi di Indonesia. P.T. Sastra Hudaya. Jakarta
- Si, L., Y. Xie, Q. Ma, L. Wu. 2017. The short term effects of rice straw *biochar*, nitrogen and phosphorus fertilizer on rice yield and soil properties in a cold waterlogged paddy field. Journal Sustainability 10: 1-17.
- Spears,S. 2018. What is *biochar*. <<https://regenerationinternational.org/2018/05/16/what-is-biochar/>>. Diakses pada 09 Januari 2021 pukul 21.35 WIB.
- Sunarminto, B.H., H. Santosa. 2008. Daya mengembang dan mengerut montmorilonot 1: pengaruh intensitas curah-embun terhadap pengolahan tanah vertisol di kecamatan tepsus dan playen, pegunungan seribu wonosari-riset laboratorium. Jurnal Agritech 28(1): 1-8.
- Suryanto, P., Tohari, E.T.S. Putra, T. Alam. 2017. Minimum soil quality determinant for rice and ‘*kayu putih*’ yield under hilly areas. Journal of Agronomy 16: 115-123.
- Suryanto, P., Tohari, E. Sulistyaningsih, E. K. S. Putra, D. Kastono, T. Alam. 2017. Estimation of critical period for weed control in soybean on agro-forestry system with *kayu putih*. Asian Journal of Crop Science 9(3) : 82-91.
- Suryanto, P., B. Kurniasih, E.Faridah, H.H. Nurjanto, R. Rogomulyo, S.Handayani, D.Kastono, A.S.Muttaqien, T.Alam. 2020. Influence of furrow with organic material and *chromolaena odorata* compost on upland rice productivity in an agroforestry system with *melaleuca cajuputi*. Biodiversitas 21(2):780-791
- Suryanto, P., Taryono, Supriyanta, D. Kastono, E.T.S.Putra, S. Handayani, M.H. Widyan, T. Alam. 2020. Assessment of soil quality parameters and yield of rice cultivars in *melaleuca cajuputi* agroforestry system. Biodiversitas 21(8):3463-3470.
- Tayefe, M., A. Gerayzade, E.Amiri, N.Z. Azin. 2014. Effect if nitrogen on rice yield, yield components and quality parameters. African Journal of Biotechnology 13(1): 91-105.
- van Noordwijk, M. 2019. Sustainable Development Through Trees on Farms: Agroforestry in its fifth decade. Bogor.
- Wahyuni, S., U. Trisnaningsih, M. Prasetyo. 2018. Pertumbuhan dan hasil sembilan kultivar kedelai (*Glycine max* (L.,) Merrill) di lahan sawah. Jurnal Agrosintesa 1(2): 96-102.



UNIVERSITAS
GADJAH MADA

Pengaruh Sumber Biochar dan Dosis Pupuk Urea terhadap Pertumbuhan dan Hasil Padi (*Oryza sativa L.*)

pada Sistem Agroforestri kayu Putih

RAHMAD CATUR LATHIF, Dr. Dyah Weny Respatie, S.P., M.Si.; Taufan Alam, S.P., M.Sc.

Universitas Gadjah Mada, 2021 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Wang, J., M. Zhang, Z. Xiong, P. Liu, G. Pan. 2011. Effects of *biochar* addition on n_{20} and co_2 emmission from two paddy soils. Journal Biology and Fertility of Soils 47:887-896.

Yoshida, S. 1981. Fundamental of Rice Crop Science. International Rice Research Institutue, Phillipines.

Zhang, A., R. Bian, G. Pan, L. Cui, Q. Hussain, L. Li, J. Zheng, J. Zheng, X. Zhang, X. Han, X. Yu. 2012. Effects of *biochar* amandment on soil quality, crop yield and greenhouse gas emission in a chinese rice paddy: a field study of 2 consecutive rice growing circles. Field Crops Research 127: 153-160.

Zhao, X., J.W. Wang, H.J. Cu, C.J. Zhou, S.Q. Wang, G.X. Xing. 2014. Effect of crop-straw *biochar* on vrop growth and soil fertility over wheat-millet rotation in soils of china. Journal Soil Use Management 30: 311-319.