References

Balashov, E. & Buchkina, N. (2011). Impact of short- and long-term agricultural use of chernozem on its quality indicators. *International Agrophysics*, 25, 1–5.

Brady, B. G. & Weil, R. R. (1999). *The Nature and Properties of Soils*. 12 ed. New Jersey: Prentice – Hall, Inc. Simons and & Schuster A viacon Company.

Buchkina, N. P. et al. (2017). Changes in biological and physical parameters of soils with different texture after biochar application. *Sel'skokhozyaistvennaya biologiya (Agricultural Biology)*, 52(3), 471–477. https://doi.org/10.15389/agrobiology.2017.3.471eng

Cheng, H. et al. (2016). Biochar stimulates the decomposition of simple organic matter and suppresses the decomposition of complex organic matter in a sandy loam soil. *GCB Bioenergy*, 9 n/a-n/a. https://doi.org/10.1111/gcbb.12402

Devine, S. et al. (2014). Soil aggregates and associated organic matter under conventional tillage, no-tillage, and forest succession after three decades. *PLoS One*, *9*(1), e84988. https://doi.org/10.1371/journal.pone.0084988

dissolved organic matter in soils. *Geoderma*, 113, 211–235. https://doi.org/10.1016/S0016-7061(02)00362-2

El-Naggar, A. et al. (2019). Biochar application to low fertility soils: A review of current status, and future prospects. *Geoderma*, 337, 536–554.

Fischer, D. & Glaser, B. (2012). Synergisms between compost and biochar for sustainable soil amelioration. In *Management of Organic Waste*. Rijeka: Tech Europe (pp. 167–198).

Gaida, A.M. et al. (2013). Changes in soil quality associated with tillage system applied. *International Agrophysics*, 27, 133–141. https://doi.org/10.2478/v10247-012-0078-7

Glaser, B. & Birk, J. J. (2012). State of the scientific knowledge on properties and genesis of Anthropogenic Dark Earths in Central Amazonia (terra preta de 'indio)," *Geochimica et Cosmochimica Acta*, 82, 39–51. https://doi.org/10.1016/j.gca.2010.11.029

Gondek, K. & Mierzwa-Hersztek, M. (2017). Effect of thermal conversion of municipal sewage sludge on the content of Cu, Cd, Pb and Zn and phytotoxicity of biochars. *Journal of Elementology*, 22(2), 427–435. https://dx.doi.org/10.5601/jelem.2016.21.1.1116

Grishina, L. G. (1986). Humus formation and humic state of soils. Moscow: MGU. In Russian. Horák, J. et al. (2017). Biochar and biochar with N-fertilizer affect soil N₂O emission in Haplic Luvisol. *Biologia*, 72(9), 995–1001. https://doi.org/10.1515/biolog-2017-0109

Horák, J. et al. (2020). Biochar - an Important Component Ameliorating the Productivity of Intensively Used Soils. *Polish Journal of Environmental Studies*, In print. https://doi.org/10.15244/pjoes/113128

Hrivňáková, K. et al. (2011). The uniform methods of soil analysis. Bratislava: VÚPOP. In Slovak

IUSS Working Group WRB. (2015). World Reference Base for Soil Resources 2014, update 2015. International soil classification system for naming soils and creating legends for soil maps. World Soil Resources Reports No. 106. Rome: FAO.

Jiang, X. et al. (2016). Interactions between biochar and soil organic carbon decomposition: Effects of nitrogen and low molecular weight carbon compound addition. *Soil Biology and Biochemistry*, 100, 92–101. https://doi.org/10.1016/j.soilbio.2016.05.020

Jindo, K. et al. (2016). Influence of biochar addition on the humic substances of composting manures. *Waste Management*, 49, 545–552. https://doi.org/10.1016/j.wasman.2016.01.007

Kobza, J. et al. (2017). Current state and development of land degradation processes based on soil monitoring in Slovakia. *Agriculture (Poľnohospodárstvo)*, 63(2), 74–85. https://doi.org/10.1515/agri-2017-0007

Li, H. et al. (2015). Effect of biochar on organic matter conservation and metabolic quotient of soil. *Environmental Progress & Sustainable Energy*, 34, 1467–1472. https://doi.org/10.1002/ep.12122

Loginow, W. et al. (1987). Fractionation of organic carbon based on susceptibility to oxidation. *Polish Journal of Soil Science*, 20, 47–52.

management practices in a productive vineyard. *Archives of Agronomy and Soil Science*, *59*(9), 1207–1214. https://dx.doi.org/10.1080/03650340.2012.708103

Marschner, A.D. & Kalbitz, K. (2003). Controls of bioavailability and biodegradability of Mierzwa-Hersztek, M. et al. (2018). Biochar changes in soil based on quantitative and qualitative humus compounds parameters. *Soil Science Annual*, *69*(4), 234–242 https://dx.doi.org/10.2478/ssa-2018-0024

Poláková, N. et al. (2018). The influence of soil organic matter fractions in aggregates stabilization in agricultural and forest soils of selected Slovak and Czech hilly lands. *Journal of Soils and Sediment*, 18(8), 2790–2800. https://doi.org/10.1007/s11368-017-1842-x

Rabbi, S. M. F. et al. (2014). Soil organic carbon mineralization rates in aggregates under contrasting land uses. *Geoderma*, *216*, 10–18. https://doi.org/10.1016/j.geoderma.2013.10.023 Shimizu, M. M. et al. (2009). The effect of manure application on carbon dynamics and budgets in a managed grassland of Southern Hokkaido, Japan. *Agriculture, Ecosystems and Environment*, *130*, 31–40. https://doi.org/10.1016/j.agee.2008.11.013

Šimanský, et al. (2008). Soil tillage and fertilization of Orthic Luvisol and their influence on chemical properties, soil structure stability and carbon distribution in water-stable macroaggregates, *Soil & Tillage Research*, *100*(1-2), 125–132. https://doi.org/10.1016/j.still.2008.05.008

Šimanský, V. & Jonczak, J. (2020). Aluminium and iron oxides affect the soil structure in a long-term mineral fertilised soil. Journal of Soils and Sediments, *20*, 2008–2018. https://doi.org/10.1007/s11368-019-02556-4

Šimanský, V. (2013). Soil organic matter in water-stable aggregates under different soil

Šimanský, V. et al. (2009). Particle-size distribution and land-use effects on quantity and quality of soil organic matter in selected localities of Slovakia and Poland. *Agriculture* (*Poľnohospodárstvo*), 55(3), 125–132.

Šimanský, V. et al. (2016). How dose of biochar and biochar with nitrogen can improve the parameters of soil organic matter and soil structure? *Biologia*, 71(9), 989–995. https://doi.org/10.1515/biolog-2016-0122

Šimanský, V. et al. (2017). Carbon sequestration in waterstable aggregates under biochar and biochar with nitrogen fertilization. *Bulgrian Journal of Agricultural Research*, 23(3), 429–435. Šimanský, V. et al. (2019a). Fertilization and Application of Different Biochar Types and their Mutual Interactions Influencing Changes of Soil Characteristics in Soils of Different Textures. *Journal of Ecological Engineering*, 20(5), 149–164. https://doi.org/10.12911/22998993/105362

Šimanský, V. et al. (2019). How relationships between soil organic matter parameters and soil structure characteristics are affected by the long-term fertilization of a sandy soil. *Geoderma*, 342, 75–84. https://doi.org/10.1016/j.geoderma.2019.02.020

Stevenson, J.F. (1994). Humus chemistry. John Wiley & Sons, New York

Szombathová, N. (1999). The comparison of soil carbon susceptibility to oxidation by KMnO4 solutions in different farming systems. *Humic Substances in Environment*, 1, 35–39.

Szombathová, N. (2010). Chemical and physico-chemical properties of soil humic hubstances as an indicator of anthropogenic changes in ecosystems (localities Báb and Dolná Malanta). Nitra: SUA. In Slovak.

Tian, K. et al. (2015). Effects of long-term fertilization and residue management on soil organic carbon changes in paddy soils of China: a meta-analysis. *Agriculture, Ecosystems and Environment*, 204, 40–50. https://doi.org/10.1016/j.agee.2015.02.008

Trupiano, D. et al. (2017). The Effects of Biochar and Its Combination with Compost on Lettuce (*Lactuca sativa* L.) Growth, Soil Properties, and Soil Microbial Activity and Abundance. *Hindawi International Journal of Agronomy*, 1–12. https://doi.org/10.1155/2017/3158207

Váchalová, R. Kolář, L. & Muchová, Z. (2016). *Primary soil organic matter and humus, two componets of soil organic matter*. Nitra: SUA. In Czech and Slovak.

Whitman, T. et al. (2015). Priming effects in biochar-amended soils: Implications of biochar-soil organic matter interactions for carbon storage. In Lehmann, J. & Joseph, S. (eds.) *Biochar for environmental management, science, technology and implementation*. London, New York: Routledge, Taylor and Francis Group (pp. 455-487).

Zaujec, A. & Šimanský, V. (2006). *Influence of Bio-stimulators on Soil Structure and Soil Organic Matter*. Nitra: SUA. In Slovak.