

## The changes of the assimilation pigments content of turf *Festuca* spp. leaves after application of different nutrition forms

Peter Hric\*, Ľuboš Vozár, Peter Kovár

Slovak University of Agriculture in Nitra, Slovak Republic

### References

- ALDOUS, D. E. (2011) International Turf Management. New York: REaPP.
- ALTISSIMO, A. and PESERICO, L. (2008) Effects of different n-sources on turf clippings fresh weight yield and turf quality. In *1<sup>st</sup> European turfgrass society conference*. Pisa (Italy), 19<sup>th</sup>–20<sup>th</sup> May 2008, Italy: Uliva Foa, pp. 41–42.
- BELL, G. E. et al. (2004) Optical sensing of turfgrass chlorophyll content and tissue nitrogen. In *HortScience*, vol. 39, no. 5, pp. 1130–1132. <http://hortsci.ashspublications.org/content/39/5/1130.full.pdf+html>
- Beard, J. B. (1973) Turfgrass: Science and culture. Prentice-Hall: New Jersey.
- BILGILI, U. and AÇIKGÖZ, E. (2007) Effect of nitrogen fertilization on quality characteristics of four turf mixtures under different wear treatments. In *Journal of Plant Nutrition*, vol. 30, no. 7, pp. 1139–1152. <http://www.tandfonline.com/doi/full/10.1080/01904160701394600>
- CAGAŠ, B. et al. (2011) Establishing and caring landscape turfs and grasses areas: certified methodology, 2011, Brno: Association of Planting and Maintenance of Green.
- GREGOROVÁ, H. and KOVÁR, P. (2010) Tall fescue – grass to dry conditions. In Proceedings of lectures VIII. Congress SPpLPaVv by SAV Nitra 16. June 2010, Nitra: SPU, pp. 28–35. (in Slovak)
- HEJDUK, S. (2012) Module Plant nutrition (Education for better greenery around us - Script course modules) [Online]. Rožňov pod Radhoštěm: SŠZaP. (in Czech) Retrieved 2018-15-1 from <http://docplayer.cz/2333203-Vzdelavani-pro-lepsi-zelen-kolem-nas.html>
- HRABĚ, F. et al. (2009) Turfs for garden, landscape and sport. Olomouc: Vydavatelství Ing. Petr Bašan. (in Czech)
- HRIC, P. et al. (2016a) The dynamics of the assimilation pigments content of turf fertilized by various forms of fertilizers. In *Agrochemistry*, vol. 20, no. 1, pp. 3–7. (in Slovak) <http://agrochemia.uniag.sk/pdf/agrochemia-2016-01.pdf>
- HRIC, P. et al. (2016b). The comparison of organic and inorganic fertilizers influence on selected indicators of turf growth-production process. In *Acta agriculturae Slovenica*, vol. 107, no. 2, pp. 373–383. DOI: [10.14720/aas.2016.107.2.10](https://doi.org/10.14720/aas.2016.107.2.10)
- KARCHER, E. and RICHARDSON, M. (2003) Quantifying turfgrass color using digital image analysis. In *Crop Science Society of America*, vol. 43, no. 3, pp. 943–951. doi:10.2135/cropsci2003.9430
- KOVÁR, P. and GREGOROVÁ, H. (2009) Impact of water stress on the assimilation pigment content of grass species grown under non-irrigated conditions. In *Influence of abiotic and biotic stressors on plant properties 2009*, Praha-Ruzyně: VÚRV, pp. 9.
- KUO, Y. J. (2015) Effects of fertilizer type on chlorophyll content and plant biomass in common Bermuda grass. In *African Journal of Agricultural Research*, vol. 10, no. 42, pp. 3997–4000. DOI: [10.5897/AJAR2015.10226](https://doi.org/10.5897/AJAR2015.10226)
- LARIMI, S. B. et al. (2014) Changes in nitrogen and chlorophyll density and leaf area of sweet basil (*Ocimum basilicum* L.) affected by biofertilizer and nitrogen application. In *International Journal of Biosciences*, vol. 5, no. 9, pp. 256–265. doi: <http://dx.doi.org/10.12692/ijb/5.9.256-265>
- LICHTENTALER, H. K. (1987). Chlorophylls and carotenoids: Pigments of photosynthetic biomembranes. In *Method in Enzymology*, vol. 148, pp. 350–382.

\* **Corresponding Author:** Peter Hric. Faculty of Agrobiology and Food Resources, Department of Grassland Ecosystems and Forage Crops, Tr. A. Hlinku 2, 979 76 Nitra, email.peter.hric@uniag.sk

MAHMOUD, A. W. M., EL-ATAR, A. B. and MAHMOUD, A. A. (2017) Economic evaluation of nano and organic fertilisers as an alternative source to chemical fertilisers on Carum Carvi L. plant yield and components. In *Agriculture*, vol. 63, no. 1, pp. 33–49. <https://doi.org/10.1515/agri-2017-0004>

MASAROVIČOVÁ, E. et al. (2000) Photosynthesis, biomass partitioning and peroxisomicne A<sub>1</sub> production of Karwinska species in response to nitrogen supply. In *Physiology Plant*, 108, pp. 300–306. <http://onlinelibrary.wiley.com/doi/10.1034/j.1399-3054.2000.108003300.x/pdf>

MOORE, R. W., CHRISTIANS, N. E. and AGNEW, M. L. (1996) Response of three Kentucky bluegrass cultivars to sprayable nitrogen fertilizer programs. In *Crop Science*, vol. 36, pp. 1296–1301. [http://agris.fao.org/agris-search/search.do?jsessionid=FA6446760D5751CF17ADC5B904D35403?request\\_locale=ru&recordID=US9716947&query=&sourceQuery=&sortField=&sortOrder=&agrovocString=&advQuery=&centerString=&enableField=](http://agris.fao.org/agris-search/search.do?jsessionid=FA6446760D5751CF17ADC5B904D35403?request_locale=ru&recordID=US9716947&query=&sourceQuery=&sortField=&sortOrder=&agrovocString=&advQuery=&centerString=&enableField=)

PESSARAKLI, M. (2007) Handbook of Turfgrass Management and Physiology. New York: CRC Press.

VAFADAR, F., AMOOAGHAIE, R. and OTROSHY, M. (2013) Effects of plants-growth promoting rhizobacteria and arbuscular mycorrhizal fungus on plant growth, stevioside, NPK, and chlorophyll content of Stevia rebaudiana. In *Journal of Plant Interactions*, vol. 9, no. 1, pp. 128–136. <http://dx.doi.org/10.1080/17429145.2013.779035>

WEHNER, D. J., HALEY, J. E. and MARTIN, D. L. (1988) Late fall fertilization of Kentucky bluegrass. In *Agronomy Journal*, vol. 80, no. 3, pp. 464–471. [http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1009&context=cafes\\_dean](http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1009&context=cafes_dean)

XU, Q. et al. (1995) Functional and structural injury to photosynthesis in wheat by high temperature during maturation. In *Environmental and Experimental Botany*, vol. 35, no. 1, pp. 43–54. [https://doi.org/10.1016/0098-8472\(94\)00030-9](https://doi.org/10.1016/0098-8472(94)00030-9)