Supplementary Materials

Foliar application of the humics-stabilized nanoferrihydrite yielded increased content of iron in the wheat leaves

Mariya M. Zimbovskaya,[1] Alexander Yu. Polyakov,[2,3] Dmitry S. Volkov,[1,4] Natalia A. Kulikova[1,5,6] Vasily A. Lebedev,[1] Denis A. Pankratov,[1] Andrey I. Konstantinov,[1] Aksana M. Parfenova,[1] Irina V. Perminova[1]*

[1] Department of Chemistry, Lomonosov Moscow State University, Leninskiye gory 1-3, Moscow 119991, Russia

[2] Department of Materials Science, Lomonosov Moscow State University, Leninskiye gory 1-73, Moscow 119991, Russia

[3] Industrial Focus Group XUV Optics, MESA+ Institute of Nanotechnology, University of Twente, Drienerlolaan 5, 7522 NB Enschede, The Netherlands

[4] Department of Chemistry and Physical Chemistry of Soils, V.V. Dokuchaev Soil Science Institute, Pyzhyovskiy lane 7 build. 2, 119017, Moscow, Russia

[5] Department of Soil Science, Lomonosov Moscow State University, Leninskiye gory 1-12, 119991, Moscow, Russia

[6] Bach Institute of Biochemistry, Fundamentals of Biotechnology Federal Research Center, Russian Academy of Sciences, pr. Leninskiy 33, 119071 Moscow, Russia

* – Corresponding author (**E-mail:** iperm@org.chem.msu.ru; **Tel/Fax:** +7 495 939 55 46

Table S1. Iron content in the solutions used to wash the wheat shoots after foliar treatments with humics-based nanofertilizer and control/blank preparations (μg L^{-1})

Treatment / Washing solution	Blank	HS	Fe-EDTA	FH	Blank	HS	Fe-EDTA	FH
	1 мМ				10 мМ			
Brij 35+HCl	< 10	< 10	55 ±13	12 ±1	< 10	< 10	400 ±150	100 ±30
Triple-distilled water (1)	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Triple-distilled water (2)	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10

A short description of the wheat cultivar used in the study

The L15 cultivar (breeding company is Russian State Agrarian University – Moscow Timiryazev Agricultural Academy) derived from cv. Zvezda (breeding company is Russian State Agrarian University – Moscow Timiryazev Agricultural Academy) by individual plant selection. Wheat plants of cv. L15 possess high frost resistance, high resistance to lodging, a stable level of yield regardless of weather conditions and high adaptive properties. A special feature of L15 plants is a low stem (72-85 cm), erectoid arrangement of leaves, and high amounts of grains in ea. Ear is spinous, cylindrical, with an increased number of grains in spikelets (up to 5-7 grains). Maturation occurs from top to bottom.