

SUPPLEMENTARY

to the article A.A. Kryukov, A.O. Gorbunova, E.M. Machs, Y.V. Mikhaylova, A.V. Rodionov, P.M. Zhurbenko, A.P. Yurkov
 “Perspectives of using Illumina MiSeq for identification of arbuscular mycorrhizal fungi”

Morphological characteristics of arbuscular mycorrhiza fungi (AMF) isolates with different origin

Number of AMF strain	Spore color in the air in CMYK standard**	Shape of spores	Size of spores, μm	Layers of spores	Thickness of spore layers, μm	Color of spore layers in Melzer's reagent in CMYK standard	Shape of subtending hypha	Thickness of subtending hypha, μm	Thickness of subtending hypha wall, μm	Presence of occlusion (septum) in subtending hypha	$F, \%^{***}$
01-053	from 19-5-54-0 to 26-17-66-0	globose (~75 %), oblong or irregular (~15 %), subglobose (~10 %)	39.2–95.2 × 55.6–202.8	micilaginous L1; semiflexible L2; laminate L3	0.5–1.3; 1.3–4.2; 1.9–5.1	Hyaline; from hyaline to 24-41-99-3; from 13-54-99-1 to 30-80-99-30	cylindrical, more rare slightly flared	7.1–15.3	1.9–5.7	No	> 80
01-056a*	from 23-4-43-0 to 29-25-58-0	globose (~80 %), subglobose (~15 %), oblong or irregular (~5 %)	40.3–94.1 × 57.7–198.3	micilaginous L1; semiflexible L2; laminate L3	0.6–1.2; 1.4–4.4; 2.0–5.3	Hyaline; from hyaline to 28-43-95-4; from 26-52-97-2 to 32-78-99-25	cylindrical, more rare slightly flared	7.3–14.4	2.0–5.4	»	»
01-056b*	from hyaline to 4-4-0-0	globose (~95 %), oblong or elliptic (~5 %)	70.3–87.2 × 110.7–132.5	evanescent L1; laminate L2	0.6–1.1; 5.7–7.8 (up to 10 sublayers)	Hyaline; hyaline	cylindrical, more rare slightly flared	7.3–12.7	2.4–3.8	No septum, but with narrowing of the channel	< 10
02-060	from hyaline to 16-11-70-0	globose (~75 %), oblong or irregular (~15 %), subglobose (~10 %)	49.2–86.7 × 56.8–125.8	micilaginous L1; semiflexible L2; laminate L3	0.5–1.4; 2.3–4.1; 1.9–4.9	hyaline; from hyaline to 9-2-98-0; from 10-37-99-10 to 17-48-99-2	cylindrical, more rare slightly flared	9.7–17.0	1.9–5.7	No	> 80
03-097	from 30-52-88-51 to 59-67-63-72	globose (~95 %), drop-shaped, irregular or subglobose (~5 %)	43.6–87.2	laminate L1; inflexible L2	0.9–2.9; 2.4–4.9	Hyaline; from 37-77-90-38 to 42-73-81-62	cylindrical	8.7–13.5	2.9–6.4	»	»
04-067	from 5-5-0-0 to 2-10-62-5	globose (90 %), subglobose (10 %)	62.5–88.7 × 111.7–137.4	mucilagenous L1; laminate L2	0.6–1.7; 4.8–6.8	Hyaline; from 2-15-60-2 to 3-35-92-5	cylindrical, more rare slightly flared	6.8–11.2	2.2–3.7	Rarely	> 60
04-068	from 1-10-45-0 to 2-11-51-21	globose (~80 %), subglobose (~10 %), elliptic (~10 %)	45.7–62.4 × 60.3–99.3	micilaginous L1; semiflexible L2; laminate L3	0.7–1.5; 2.3–5.0; 1.6–3.0	Hyaline; from 1-25-91-21 to 2-55-91-30; from 1-45-91-25 to 2-67-82-58	cylindrical, more rare slightly flared	7.2–12.6	2.3–3.4	No	> 80
05-077	from 4-2-15-0 to 5-18-65-0	globose (~85 %), subglobose (~10 %), drop-shaped (~5 %)	29.0–82.7 × 70.9–112.2	micilaginous L1; semiflexible L2; laminate L3	0.5–1.7; 2.7–5.1; 0.5–1.3	Hyaline; from 12-55-98-1 to 17-64-99-4; from 10-53-98-0 to 15-62-98-0	cylindrical	5.2–8.9	1.2–1.8	»	»
05-104	from hyaline to 3-15-70-4	globose (> 80 %), subglobose	58.2–71.5 × 62.1–86.7	evanescent L1; laminate L2; flexible L3****	0.5–0.7; 2.7–5.1; 0.3–0.6	Hyaline; from hyaline to 2-10-45-5; hyaline	sporiferous saccule neck	6.2–8.2	1.2–5.3	»	< 10

* 01-056a and 01-056b isolates were isolated from one sample by replanting AMF spores characterized by different morphology.

** CMYK standard is based on subtractive color model: cyan, magenta, yellow, and key (black).

*** Mycorrhization parameter – F (frequency of mycorrhization) see in the text.

**** Only the layers of spore walls were analyzed, and flexible germinal walls (GW1, GW2) are not analyzed.