

Supplementary Material

Table S1. Genetic, oenological, and growth rate characteristics of *S. cerevisiae* strains.

Strain ID	Genotype markers*			Oenological characteristics						Growth rate	
	ITS 1-4	FLO11	YDR 379C-A	Concentration				Flor growth **	Presence of "Sherry" Tones in Aroma and Taste ***	Lag phase duration, h	Exp. growth phase duration, h
				Sugars, g/l	Volatile acids, g/l	Aldehydes, mg/l	Alcohol, % vol.				
Flor collection strains											
229	F	F	F	2.5±0.06	0.66±0.01	286.0±5.9	11.3±0.1	+++	+	7	19
285	F	F	ND	1.3±0.06	0.48±0.03	211.0±9.4	11.3±0.1	+++	+	15	20
329	F	F	F	1.2±0.06	0.52±0.02	179.6±2.6	11.4±0.1	+++	+	5	30
566	W	F	F	0.8±0.15	0.60±0.02	352.0±8.4	11.1±0.1	+++	+	9	13
Wine collection strains											
271	W	F	F	3.7±0.15	0.10±0.01	343.2±20.8	9.5±0.1	+++	+	5	24
328	W	F	ND	4.2±0.10	0.46±0.01	132.0±6.8	11.4±0.1	+++	+	4	16
525	W	F	F	2.7±0.06	0.59±0.05	149.6±9.1	11.7±0.1	+	+	5	21
Environmental strains											
3	F/W	F	F	1.9±0.12	0.78±0.04	65.9±4.0	12.3±0.1	+++	+	7	13
23	F	F	F	2.3±0.15	0.46±0.03	105.6±6.4	11.9±0.1	+++	+	6	18
28	W	F	W	0.9±0.06	0.35±0.02	73.0±4.4	12.8±0.1	-	-	5	15
45	W	W	F	1.9±0.06	0.64±0.02	84.5±5.1	12.2±0.1	-	-	5	15

Table S1. *Cont.*

Strain ID	Genotype markers*			Oenological characteristics						Growth rate	
	ITS 1-4	FLO11	YDR 379C-A	Concentration				Flor growth **	Presence of "Sherry" Tones in Aroma and Taste ***	Lag phase duration, h	Exp. growth phase duration, h
				Sugars, g/l	Volatile acids, g/l	Aldehydes, mg/l	Alcohol, % vol.				
Environmental strains											
53	F/W	W	W	1.1±0.10	0.21±0.01	34.3±2.1	12.9±0.1	+	-	4	14
54	F/W	W	F	0.1±0.06	0.59±0.02	148.7±9.0	12.7±0.1	+++	+	9	15
78	W	W	F	0.6±0.06	0.75±0.03	154.9±9.4	12.6±0.1	+	+	6	18
79	W	W	F	0.2±0.10	0.66±0.02	91.5±5.5	12.3±0.1	-	-	5	20
90	F	W	W	1.3±0.06	0.30±0.02	74.5±4.5	12.7±0.1	-	-	7	13
98	W	W	W	1.3±0.06	1.10±0.10	183.9±6.6	13.0±0.1	-	-	2	15
109	F/W	F	F	0.3±0.06	0.72±0.03	283.4±17.2	12.7±0.1	+++	+	8	16
110	F	W	F	0.7±0.06	0.90±0.04	253.4±15.4	12.5±0.1	+	+	3	18
111	F/W	F	F	0.6±0.12	0.66±0.02	279.8±17.0	11.9±0.1	+++	+	ND	ND
112	W	W	F	1.6±0.06	0.54±0.03	176.0±10.7	12.3±0.1	-	-	4	17
113	F/W	F	F	1.2±0.10	0.87±0.03	176.0±10.7	12.6±0.1	+++	+	4	20

All data are measured three times and given in mean values with standard deviation; *The distribution of alleles characteristics: W – wine; F – flor; F/W – heterozygote; 329 flor – strain – control collection industrial strain; ND – no data. **Expert opinion based on the results of the tasting. ***Flor grown on the surface of fermented must: (-) no growth, (+) formation of few islands, (+++) flor covering the entire surface of the flask. Adapted from [1].

Table S2. Stress resistance, and adhesive characteristics of *S. cerevisiae* strains.

Strain ID	Stress resistance, %			Hydrophobisity, % (Isooctane test)	Adh. to polystyrene, OD ₆₀₀
	to Ethanole	to Acetaldehyde	to Hydrogen peroxide		
Flor collection strains					
229	60.0±16	12.1±10.0	53.8±9.2	61.5±26.6	1.15±0.26
285	70.0±16	26.7±15.0	78.6±15.4	54.0±26.6	1.75±0.50
329	45.0±12	21.7±15.0	68.0±9.2	76.0±30.0	2.05±0.50
566	88.6±16	35.4±10.0	59.1±9.2	45.5±23.3	1.18±0.26
Wine collection strains					
271	53.3±16	13.8±10.0	77.3±12.3	79.0±26.6	1.70±0.50
328	92.0±12	32.8±10.0	55.2±15.4	27.5±26.6	0.78±0.20
525	127.6±32	34.3±15.0	48.1±15.4	50.0±26.6	0.87±0.20
Environmental strains					
3	65.6±10	37.9±13.8	68.0±13.8	89.0±30.0	1.48±0.30
23	100.0±16	41.7±10.0	53.4±10.7	80.5±23.3	1.20±0.26
28	70.6±16	52.9±11.8	44.2±12.3	66.5±23.3	1.34±0.33
45	68.9±16	68.8±15.0	75.0±10.7	25.5±30.0	0.80±0.20
53	69.4±14	69.1±10.0	19.1±9.2	27.0±26.6	1.17±0.26
54	98.5±12	35.4±15.0	89.4±15.4	67.0±23.3	1.47±0.30
78	90.7±16	40.6±15.0	25.6±12.3	80.5±23.3	0.81±0.20
79	73.5±12	43.5±15.0	47.6±9.2	63.0±30.0	0.59±0.13
90	92.6±16	37.3±15.0	74.3±13.8	17.5±30.0	1.56±0.36
98	53.2±12	62.6±15.0	50.6±10.7	31.5±30.0	0.60±0.13
109	97.5±10	80.4±12.5	58.3±12.3	67.0±26.6	1.61±0.36
110	77.5±12	60.8±11.8	70.1±9.2	0.0	0.82±0.20
111	79.4±16	61.2±17.5	31.3±12.3	58.0±26.6	2.12±0.50
112	95.2±10	30.8±12.5	62.5±9.2	0.0	1.03±0.23
113	49.6±16	43.8±17.5	39.5±12.3	49.5±23.3	1.52±0.30

All data are measured three times and given in mean values with standard deviation; 329 flor strain – control collection industrial strain; ND – no data. Adapted from [1].

Table S3. Average iron concentration in *S. cerevisiae* cells with "sherry" and "wine" variants of the AFT1 and FRE-FIT loci during cultivation on media with different iron concentration.

Fe ²⁺ Conc. in Medium, mM	Fe ²⁺ Conc. in "sherry" yeast cells, µg/g	Fe ²⁺ Conc. in "wine" yeast cells, µg/g
0,1	570	270
3	2,2 x 10 ³	3,6 x 10 ³

Adapted from [2].

References

1. Eldarov, M.A.; Avdanina, D.A.; Ivanova, E.; Shalamitskiy, M.Y.; Tanashchuk, T.N.; Vybornaya, T.; Ravin, N. V.; Kishkovskaya, S.A.; Mardanov, A. V. Stress resistance and adhesive properties of commercial flor and wine strains, and environmental isolates of *saccharomyces cerevisiae*. *Fermentation* **2021**, *7*, doi:10.3390/FERMENTATION7030188.
2. El'darov, M.A.; Avdanina, D.A.; Shalamitskii, M.Y.; Ivanova, E. V.; Tanashchuk, T.N.; Kishkovskaya, S.A.; Ravin, N. V.; Mardanov, A. V. Polymorphism of the Iron Homeostasis Genes and Iron Sensitivity in *Saccharomyces cerevisiae* Flor and Wine Strains. *Microbiol. (Russian Fed.* **2019**, *88*, 200–205, doi:10.1134/S0026261719020036.