

TABLE S1 Volatile compounds detected in fermented grains collected on initial day from the four fermentation batches ($\mu\text{g}/100\text{g}$)

	The 1 st liquor	The 2 nd liquor	The 3 rd liquor	The 4 th liquor
Ethyl tetradecanoate	33.28 \pm 1.32	36.07 \pm 0.01	33.05 \pm 4.25	26.59 \pm 3.59
Acetic acid	46.97 \pm 1.86	51.32 \pm 0.57	52.66 \pm 0.18	51.85 \pm 1.68
Ethyl hexadecanoate	36.84 \pm 2.87	31.94 \pm 1.69	34.51 \pm 1.45	32.28 \pm 1.19
Octanoic acid	9.08 \pm 0.73	10.53 \pm 0.14	11.59 \pm 1.92	14.15 \pm 2.14
Isoamyl lactate	10.15 \pm 0.88	9.70 \pm 2	12.45 \pm 2.11	8.36 \pm 0.55
Ethyl 3-phenylpropionate	4.90 \pm 0.55	5.99 \pm 0.11	5.31 \pm 0.65	4.27 \pm 0.48
Ethyl 9-hexadecenoate	108.31 \pm 3.17	109.16 \pm 10.71	134.89 \pm 4.27	134.48 \pm 13.39
Phenylethanol	416.09 \pm 47.5	509.99 \pm 9.84	501.69 \pm 17.79	517.05 \pm 31.72
2-Methoxy-4-methylphenol	7.75 \pm 0.7	7.27 \pm 1.43	10.69 \pm 0.55	10.70 \pm 1.63
Pentadecanoic acid ethyl ester	6.86 \pm 0.59	7.89 \pm 0.31	6.89 \pm 0.61	5.95 \pm 0.63
1-Octen-3-ol	8.97 \pm 0.25	8.88 \pm 0.74	10.54 \pm 0.11	10.26 \pm 0.73
2,3-Butanediol	34.95 \pm 1.88	40.18 \pm 1.76	39.39 \pm 6.39	28.45 \pm 3.69
Ethyl phenylacetate	19.42 \pm 1.63	21.32 \pm 2.2	16.29 \pm 0.52	16.52 \pm 1.91
Isopentyl acetate	35.05 \pm 0.57	33.40 \pm 0.62	35.28 \pm 4.52	42.31 \pm 3.61
2-Furanmethanol	7.99 \pm 0.84	7.27 \pm 1.49	9.80 \pm 0.9	7.76 \pm 0.17
2-Phenylethyl acetate	26.76 \pm 2.11	30.50 \pm 1.03	27.84 \pm 0.66	26.98 \pm 0.64
Hexanoic acid	32.22 \pm 2.17	36.92 \pm 0.14	37.42 \pm 0.28	36.95 \pm 1.51
Ethyl caprate	15.23 \pm 0.18	16.15 \pm 1.84	19.78 \pm 0.39	17.98 \pm 1.36
Ethyl hexanoate	22.82 \pm 0.83	27.24 \pm 3.76	35.61 \pm 0.56	33.45 \pm 4.73
Furfural	74.42 \pm 1.2	74.87 \pm 2.97	67.72 \pm 1.2	67.70 \pm 3.57
Ethyl acetate	603.07 \pm 31.3	633.02 \pm 51.46	540.74 \pm 23.88	599.85 \pm 11.94
Ethyl lactate	1900.27 \pm 77.2	1953.63 \pm 156.15	1677.59 \pm 78.08	1871.13 \pm 39.47
Ethyl octanoate	7.95 \pm 3.13	20.32 \pm 8.09	32.94 \pm 6.44	17.08 \pm 3.22
Isoamyl alcohol	74.81 \pm 2.18	58.93 \pm 15.93	27.69 \pm 3.63	44.86 \pm 13.39
Geranyl acetone	9.88 \pm 0.31	10.64 \pm 0.15	11.27 \pm 0.43	11.67 \pm 0.74
Ethyl isobutyrate	27.64 \pm 2.76	32.37 \pm 1.61	29.28 \pm 0.45	30.08 \pm 0.23
3-Hydroxy-butanoic acid ethyl ester	210.43 \pm 5.55	200.13 \pm 2.1	217.15 \pm 17.78	242.77 \pm 17.1
1-Nonanol	12.47 \pm 1.29	15.03 \pm 0.24	15.04 \pm 0.74	15.81 \pm 1.14
5-Heptyldihydro-2-(3H)-furanone	31.05 \pm 0.67	34.20 \pm 2.44	37.81 \pm 2.21	32.72 \pm 0.56
Isooctanol	53.64 \pm 1.88	49.06 \pm 0.82	49.43 \pm 2.99	54.90 \pm 1.22
Butanoic acid ethyl ester	23.53 \pm 0.56	23.38 \pm 1.9	20.17 \pm 1.16	22.95 \pm 0.46
Butanoic acid	30.98 \pm 0.56	31.54 \pm 0.87	30.18 \pm 0.69	31.58 \pm 0.1
Nonanoic acid	40.35 \pm 0.38	38.62 \pm 1.29	36.05 \pm 0.23	37.42 \pm 1.25
2-Heptanol	9.76 \pm 0.36	10.77 \pm 0.25	11.07 \pm 0.23	10.43 \pm 0.2
Ethyl dodecanoate	9.02 \pm 0.11	9.40 \pm 0.22	10.16 \pm 0.41	10.55 \pm 0.69
2-Propenyl phenylacetate	55.62 \pm 1.95	58.12 \pm 2.32	52.94 \pm 0.38	53.35 \pm 1.72
3-Hydroxy-2-butanone	43.24 \pm 2.81	48.44 \pm 1.09	45.57 \pm 0.8	44.21 \pm 0.48
γ -Nonalactone	26.36 \pm 1.47	28.82 \pm 0.92	27.22 \pm 0.49	28.05 \pm 0.31
2-Methyl-1-propanol	7.73 \pm 0.81	9.14 \pm 0.42	8.24 \pm 0.01	8.23 \pm 0.03

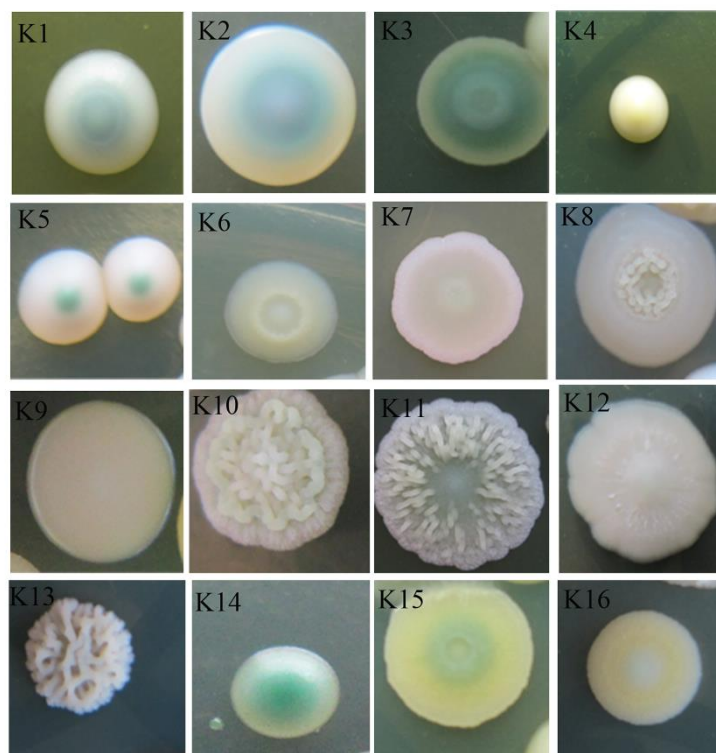


FIG S1 Morphology of yeasts colonies cultured on WL medium. Based on colony morphology and color, 16 representative colonies were observed in all the plates (K1-K16). Based on colony frequency, 160 representative colonies were proportionally isolated for sequencing analysis of the D1 /D2 domain of the 26S rDNA region.

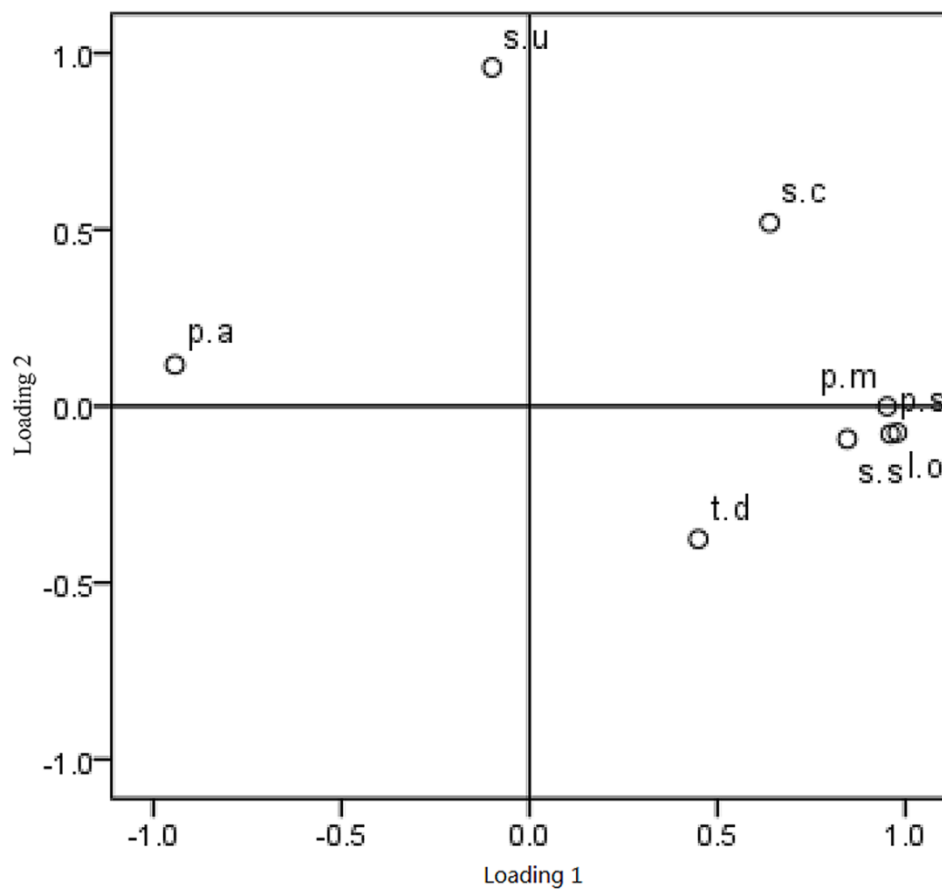


FIG S2 The loading plot of PCA based on the dynamics of the yeast community showed the characteristic yeast in different fermentation batches.