

Table S1. Diversity index of fungus in spontaneous fermentation of KFP

Samples	Coverage	Shannon index	Simpson index	Sobs index	Ace index	Chao1 index
SF1	1.00	0.89	0.53	57.67	54.58	50.69
SF3	1.00	1.76	0.25	56	67.66	63.33
SF5	1.00	1.67	0.33	41.33	59.10	58.02
SF15	1.00	0.39	0.87	36	42.07	40.58

Table S2 Yeast identification by comparing 26S rDNA D1/D2 domain sequences

Isolate No.	Picture No.	Morphotype	D1/ sequence/(identity %)/accession number	D2 domain	of	26S rDNA
1	A	<i>Metschnikowia</i>	<i>Metschnikowia</i>	<i>sinensis</i>		/99.01%/MN123984.1
2	B	<i>Wickerhamomyces</i>	<i>Wickerhamomyces</i>	<i>anomalus</i>		/100%/MG773362.1
3	C	<i>Hanseniaspora</i>	<i>Hanseniaspora</i>	<i>gulliermondii</i>		/100%/KJ794696.1
4	D	-	<i>Torulaspora</i>	<i>delbrueckii</i>		/99.66%/MN337239.1
5	E	<i>Pichia</i>	<i>Pichia kluyveri</i>			/99.48%/KT156709.1

Table S3 The OAV of the main aromatic compounds in KFP wine

No	Compounds	CAS	Odour descriptor	Odour threshold (mg/L)	Groups					
					X16	K4	K14	K19	K21	K26
A	Ethyl acetate	141-78-6	Fruity, sweet	15	1.12	1.25	1.08	1.8	1.13	1.83
B	Ethyl butyrate	105-54-4	Sweet, fruity	0.6	1.60	1.67	0.88	ND	ND	0.87
C	Ethyl octanoate	106-32-1	Sweet, musty, fruity	0.6	49.57	103.82	29.83	34.37	28.20	33.95
D	Ethyl caprate	110-38-3	Sweet, fruity	0.2	456.6	336.05	75.55	88.04	15.26	164
E	Ethyl laurate	106-33-2	Sweet, waxy, floral	0.5	3.34	25.26	0.74	4.78	0.4	0.66

			nuance							
F	Ethyl hexanoate	123-66-0	Sweet, fruity, pineapple	0.01	2091	1912	524	472	316	604
G	Ethyl propionate	105-37-3	Sweet, fruity	2.1	ND	ND	0.09	ND	ND	ND
H	Hexyl acetate	142-92-7	Fruity, green	1	1.25	0.27	0.11	0.41	0.94	ND
I	Isobutyl acetate	110-19-0	Sweet, fruity	3.4	0.02	0.1	ND	ND	0.04	0.005
J	Isoamyl acetate	123-92-2	Sweet, fruity, banana	0.03	ND	ND	ND	ND	160	ND
K	Phenethyl acetate	103-45-7	Sweet, honey, floral rosy	0.25	ND	ND	ND	4.24	118.64	ND
L	(R,R)-2,3-Butanediol	24347-58-	Buttery,	0.095	146.2	37.58	39.05	35.68	17.68	77.16

		8	Creamy, Fruity							
M	1-Hexanol	111-27-3	Pungent, fruity, alcoholic	8	0.78	0.67	0.47	0.08	0.44	0.31
N	Isoamylol	123-51-3	Alcoholic, fruity	40	0.45	0.39	0.06	0.14	0.58	0.14
O	Isobutanol	78-83-1	fusel whiskey	82	0.20	0.25	0.08	0.10	0.08	0.15
P	1-Nonanol	143-08-8	Fatty, flowery citrus,	0.05	41.2	8.6	4.6	60.2	18.2	63
Q	1-Octanol	111-87-5	Waxy, green, fatty	10	0.52	0.53	0.02	0.44	0.03	0.36
R	1-Pentanol	71-41-0	Fermente d, bready, fusel	0.15	1163.93	1291.47	626.47	593.67	423.8	685.53

S	Phenethyl alcohol	60-12-8	Sweet, floral	14	1.33	1.58	0.79	17.57	0.78	0.90
T	1-Propanol	71-23-8	Fusel, alcoholic	314	0.003	0.004	0.001	0.003	0.0005	0.003
U	Acetic acid	64-19-7	Vinegar	300	0.02	0.009	0.02	0.02	0.03	0.05
V	Octanoic acid	124-07-2	Vegetable, cheesy	10	0.40	0.01	0.41	0.36	0.06	0.34

Note: ND represents a compound that is not detected; OAV: odor activity value.