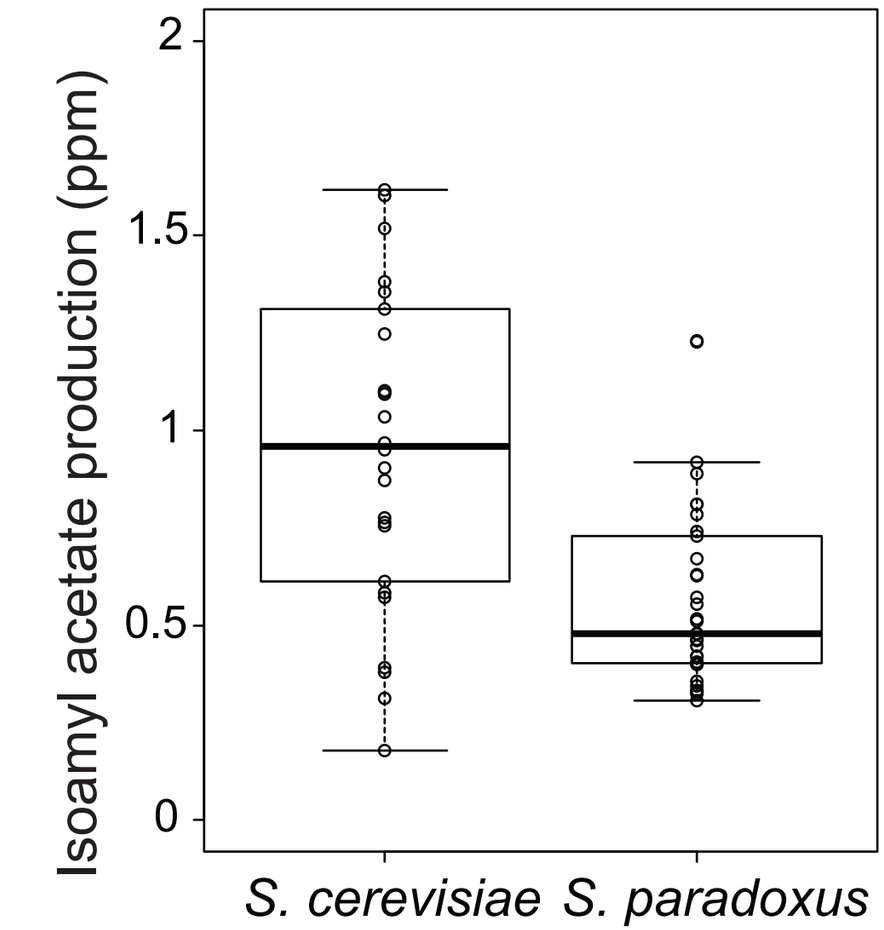
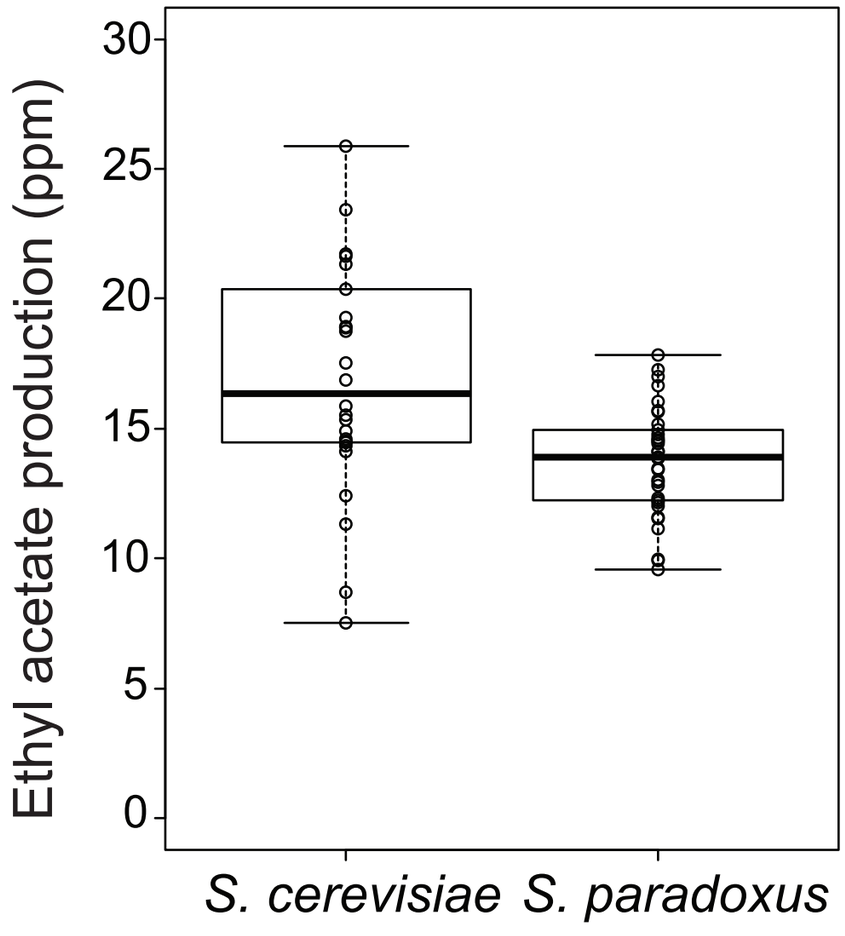
a



Average**	
1.010	0.570
Trait variability**	
0.546	0.422

b



Average**	
17.838	13.747
Trait variatbility**	
0.398	0.151

FIG. S1. Comparison of (a) isoamy acetate and (b) ethyl acetate production in *Saccharomyces cerevisiae* and *Saccharomyces paradoxus*. The coefficient of variation was calculated as a measure of the trait variability. The asterisks determine the level of significance (* if $p<0.05$, ** if $p<0.01$).

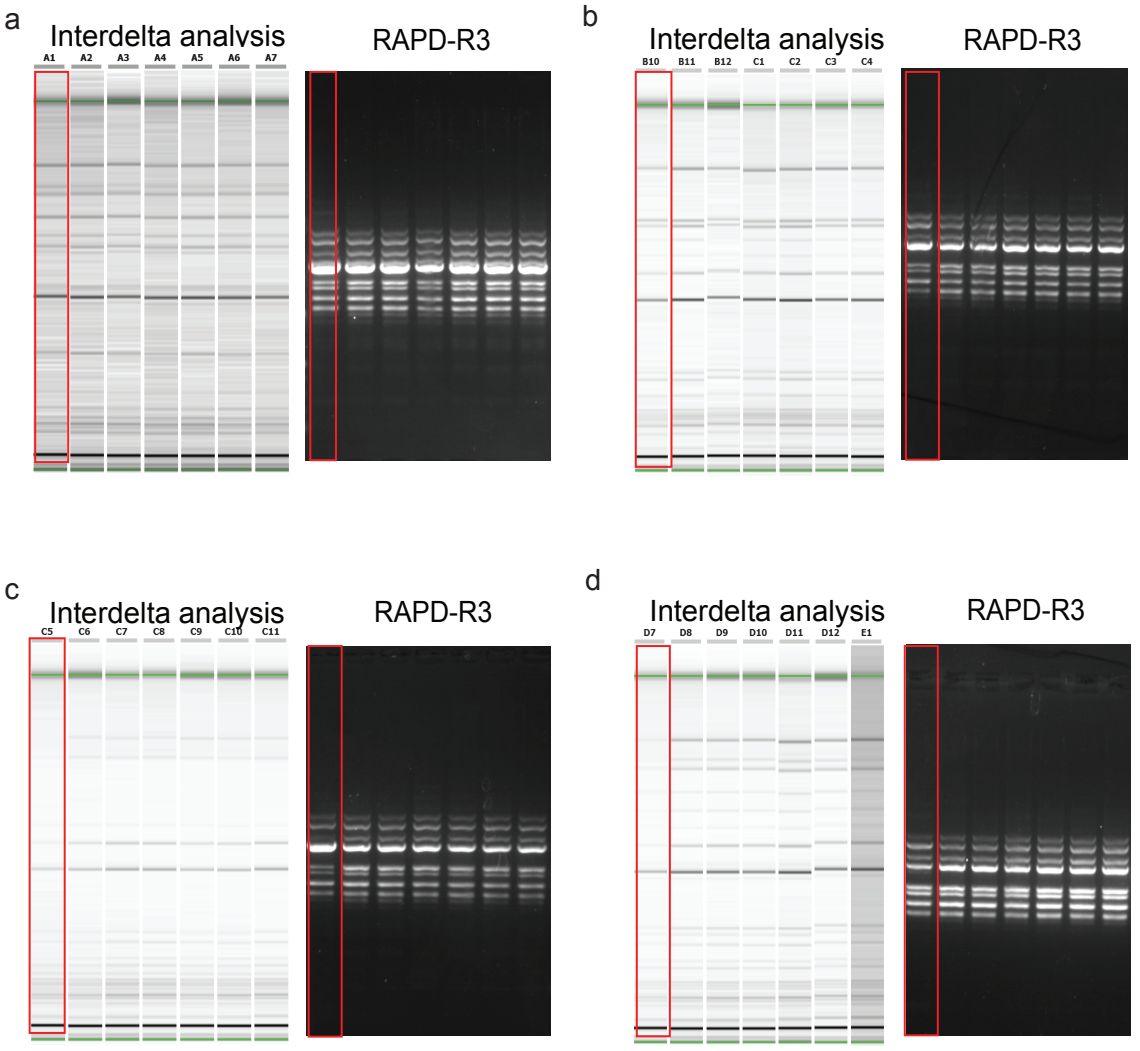


FIG. S2. Stability check of the developed hybrids. Two fingerprints were performed right before and after 6 consecutive wort fermentations: interdelta analysis and RAPD-R3 (see materials and methods for details). No differences in the fingerprint profile of the initial hybrid (lane 1; red rectangle) and hybrids after the stabilization protocol (lanes 2-7) could be detected, nor was any heterogeneity in the stabilized population detected. This indicates that the newly developed hybrids are stable, and that during the stabilization phase, no huge genetic rearrangements took place. A=H20, B=H46, C=H12, D=H41.

TABLE S2. Overview of the developed hybrids. Parental strains are indicated with their Y code, while different segregants of the same parent were given a S code.

	Parent 1		Parent 2	Measured ploidy	Fermentation efficiency (a.u.)	IA (ppm)	EA (ppm)
H1	Y141 (S8)	X	Y141 (S2)	2	1.03	1.440	11.814
H2	Y141 (S6)	X	Y141 (S7)	2	1.00	1.136	10.639
H3	Y141 (S8)	X	Y141 (S7)	1	0.97	1.684	14.284
H4	Y141 (S3)	X	Y141 (S4)	2	0.98	0.921	9.960
H5	Y141 (S8)	X	Y141 (S1)	2	1.04	1.295	11.652
H6	H1 (S6)	X	H1 (S1)	2	1.00	1.296	12.101
H7	H1 (S2)	X	Y141 (S2)	2	0.97	1.517	12.422
H8	H1 (S1)	X	Y141 (S2)	2	1.02	1.359	11.962
H9	H1 (S3)	X	H1 (S4)	1-2	1.01	1.486	12.786
H10	H1 (S4)	X	Y141 (S2)	1-2	0.99	0.452	5.741
H11	Y354 (S1)	X	Y354 (S4)	2	1.06	1.802	11.248
H12	Y354 (S6)	X	Y354 (S2)	2	1.17	1.967	14.503
H13	Y141 (S6)	X	Y354 (S2)	2	0.95	1.035	10.665
H14	Y141 (S5)	X	Y354 (S2)	2	0.98	0.982	10.901
H15	Y141 (S6)	X	Y354 (S3)	2	0.96	1.064	10.547
H16	Y141 (S5)	X	Y354 (S3)	2	0.97	0.901	11.118
H17	Y141 (S8)	X	Y354 (S3)	2	0.94	1.163	11.084
H18	Y141 (S8)	X	Y354 (S4)	2	0.94	1.136	10.496
H19	Y141 (S1)	X	Y354 (S1)	2	0.92	0.937	11.161
H20	Y141 (S4)	X	Y354 (S1)	2	0.96	1.063	10.324
H21	Y141 (S7)	X	Y354 (S1)	2	0.96	0.966	11.146
H22	Y141 (S7)	X	Y354 (S6)	2	0.96	1.338	12.926
H23	Y141 (S5)	X	Y354 (S4)	2	0.94	1.523	13.068
H24	Y141 (S9)	X	Y354 (S2)	2	0.92	0.878	9.492
H25	H1 (S6)	X	Y354 (S6)	1-2	0.98	1.656	13.396

H26	H17 (S1)	X	H1 (S4)	2	0.93	1.578	11.669
H27	H1 (S5)	X	Y354 (S6)	1-2	0.98	1.353	12.370
H28	H1 (S3)	X	Y354 (S6)	2	0.94	1.288	10.237
H29	H17 (S2)	X	H1 (S4)	2	0.90	1.953	13.477
H30	Y141 (S7)	X	Y354 (S5)	1-2	0.97	1.041	11.619
H31	Y141 (S8)	X	Y397 (S2)	2	0.90	2.134	15.821
H32	Y397 (S1)	X	Y141 (S5)	2	0.95	1.216	11.484
H33	H1 (S1)	X	Y397 (S1)	2	1.05	1.643	15.964
H34	H1 (S4)	X	Y397 (S1)	2	1.05	1.328	12.886
H35	H1 (S2)	X	Y397 (S1)	2	1.06	1.556	16.727
H36	H1 (S2)	X	Y397 (S2)	2	0.97	2.028	15.543
H37	H1 (S4)	X	Y397 (S2)	2	1.00	2.030	14.377
H38	H1 (S1)	X	Y397 (S2)	2	1.01	2.278	16.641
H39	Y141 (S6)	X	Y397 (S1)	3	0.98	0.822	8.458
H40	Y141 (S8)	X	Y397 (S1)	2	1.04	1.334	14.732
H41	Y354 (S1)	X	Y397 (S2)	2	0.97	12.274	2.000
H42	Y354 (S5)	X	Y397 (S1)	3	0.96	14.690	2.516
H43	Y354 (S5)	X	Y397 (S2)	2	0.91	17.387	2.746
H44	Y354 (S6)	X	Y397 (S2)	2	0.95	16.545	2.654
H45	Y354 (S1)	X	Y397 (S1)	3	0.98	16.082	2.158
H46	Y354 (S6)	X	Y397 (S1)	2	0.93	16.195	2.389