

Table S4. Three-year phenotypic data on linoleic and linolenic acids from 292 soybean germplasm resources.

Line	C18:2_2019	C18:3_2019	C18:2_2020	C18:3_2020	C18:2_2021	C18:3_2021
K001	59.68	4.68	61.02	9.71	64.69	9.75
K002	55.40	8.72	59.39	11.76	57.62	9.20
K003	53.64	10.64	57.16	8.92	51.89	7.35
K004	51.09	4.61	61.00	7.50	57.79	8.69
K005	58.36	4.90	53.29	8.42	55.51	5.27
K006	53.36	5.87	60.11	5.18	58.14	7.12
K007	61.27	8.60	59.11	6.60	61.87	5.68
K008	62.60	4.63	64.30	6.70	59.19	5.36
K009	63.08	9.22	52.52	9.31	56.05	8.53
K010	53.58	12.68	69.61	9.47	47.48	8.32
K011	58.46	6.46	60.87	7.64	57.17	7.42
K012	62.03	5.00	61.10	3.60	55.92	6.91
K013	58.21	7.00	54.78	9.45	53.19	2.79
K014	62.40	10.78	57.28	5.95	60.96	6.79
K015	58.12	8.11	56.97	6.55	57.21	5.67
K016	53.96	6.84	61.73	5.57	55.89	3.67
K017	55.48	12.54	69.43	9.11	60.86	7.21
K018	66.85	9.44	58.56	6.48	54.09	4.91
K019	55.20	7.04	53.12	3.28	58.83	6.06
K020	55.47	11.30	69.24	8.76	63.57	7.23
K021	55.12	9.77	67.04	9.40	50.30	4.16
K022	55.59	6.38	65.10	10.01	65.75	8.83
K023	58.95	10.51	67.30	4.08	59.83	4.90
K024	53.96	9.81	69.56	9.42	62.42	7.41
K025	68.64	11.73	67.63	9.35	65.94	6.85
K026	61.25	10.19	53.64	3.30	51.61	3.10
K027	57.39	9.22	63.09	9.37	57.31	5.82
K028	58.97	8.46	55.59	4.54	55.94	7.08
K029	56.80	5.47	60.89	7.12	58.14	4.77
K030	60.82	7.31	51.98	9.03	60.58	9.09
K031	58.39	9.35	54.72	9.66	55.10	8.95
K032	62.82	4.28	56.82	10.62	56.29	8.78
K033	52.24	8.70	63.44	7.17	64.36	8.83
K034	48.55	10.23	59.86	9.75	58.07	6.83
K035	63.22	6.93	60.04	6.64	57.30	6.97

K036	54.76	8.25	55.59	8.53	51.91	3.80
K037	53.97	12.59	54.97	11.59	57.86	8.90
K038	60.36	8.59	60.82	8.31	59.11	6.02
K039	61.04	7.48	62.74	5.35	61.51	8.44
K040	58.89	7.35	55.08	6.50	53.93	6.19
K041	57.59	2.97	59.42	9.35	58.43	4.43
K042	60.41	14.34	67.07	12.30	60.42	9.76
K043	61.74	9.53	64.40	7.64	60.54	7.82
K044	60.73	4.57	52.55	4.37	52.98	6.73
K045	60.41	11.27	65.51	9.79	61.95	8.73
K046	57.47	4.40	62.08	9.22	60.59	8.84
K047	51.68	7.31	58.23	9.97	57.89	4.83
K048	66.87	9.12	56.13	10.72	61.77	6.88
K049	57.73	10.27	66.04	6.86	59.63	5.50
K050	54.88	6.26	59.21	6.00	56.78	5.72
K051	54.53	4.70	60.69	3.05	57.86	4.10
K052	62.81	7.63	61.52	8.95	60.54	5.64
K053	58.43	7.56	64.24	7.66	58.13	4.33
K054	55.97	5.55	51.40	5.89	54.33	5.92
K055	65.24	6.66	54.91	6.61	53.57	6.54
K056	53.51	8.11	56.03	11.35	59.14	7.06
K057	59.98	6.84	63.44	9.68	56.44	7.32
K058	68.21	9.05	58.78	8.84	61.22	6.88
K059	52.98	10.03	51.29	4.31	52.71	5.43
K060	56.09	5.20	62.20	5.62	55.34	6.18
K061	56.88	7.62	58.93	8.59	56.99	7.59
K062	55.82	9.62	51.55	2.39	55.82	4.26
K063	51.28	4.60	57.19	3.81	55.83	4.00
K064	55.82	2.58	53.84	4.63	51.02	4.43
K065	58.38	12.95	67.55	7.20	64.12	6.03
K066	58.37	3.53	61.25	10.19	56.68	7.65
K067	60.85	4.40	61.84	9.55	57.71	7.48
K068	68.61	9.47	47.23	4.43	52.12	4.89
K069	53.91	5.61	55.03	7.76	54.53	5.49
K070	59.39	12.76	45.07	6.83	47.02	5.70
K071	51.15	4.75	60.83	9.43	59.74	7.29
K072	63.34	10.91	63.96	7.95	62.14	8.34
K073	59.13	9.52	59.89	8.43	56.84	8.15

K074	58.88	13.67	66.15	5.64	59.68	6.59
K075	63.29	5.83	55.28	8.80	59.57	7.21
K076	64.21	8.04	55.20	8.04	56.12	7.77
K077	69.56	10.42	52.64	11.64	51.49	7.09
K078	52.95	6.23	70.53	6.82	64.47	7.56
K079	56.36	11.83	59.14	8.74	58.23	7.78
K080	65.31	7.65	61.08	9.65	58.71	6.31
K081	54.16	11.09	57.36	5.90	54.67	4.84
K082	61.08	8.65	55.21	8.22	52.87	7.42
K083	61.43	7.35	61.46	9.45	58.87	8.17
K084	67.04	9.40	53.39	8.88	55.93	8.86
K085	51.52	9.31	49.84	9.72	54.02	3.00
K086	50.40	5.89	54.01	4.59	50.93	6.17
K087	56.37	6.69	59.46	8.91	57.37	4.57
K088	50.84	10.72	55.42	7.01	59.64	6.98
K089	66.30	9.33	56.67	6.78	59.00	8.17
K090	67.55	6.20	54.64	4.31	49.38	4.30
K091	68.17	9.71	59.36	8.53	56.54	5.86
K092	58.42	8.79	59.42	7.81	56.37	5.78
K093	58.86	9.45	57.18	6.49	58.62	7.35
K094	56.74	11.33	59.50	6.96	58.84	7.77
K095	55.03	12.35	56.12	7.75	54.29	7.08
K096	58.09	5.76	61.82	5.28	57.04	7.72
K097	60.93	6.35	55.82	3.58	56.46	6.30
K098	49.40	4.21	60.15	9.02	57.87	7.81
K099	47.23	5.43	54.79	3.31	58.67	4.66
K100	60.89	8.43	53.00	4.98	50.51	5.17
K101	67.65	10.52	59.12	7.11	50.28	3.94
K102	54.64	4.30	51.71	7.38	60.84	8.90
K103	56.70	6.47	58.42	6.70	57.33	6.02
K104	53.44	4.78	64.21	7.04	57.85	5.22
K105	59.11	7.60	49.74	11.42	53.57	6.00
K106	62.84	8.55	52.68	6.31	53.31	4.59
K107	57.12	6.31	63.29	5.83	62.14	5.82
K108	63.46	14.82	65.85	8.44	63.60	7.94
K109	56.48	3.66	62.97	10.78	60.36	8.96
K110	59.86	9.75	54.76	9.25	57.45	7.89
K111	53.46	3.22	55.85	6.52	50.38	3.51

K112	52.39	5.09	56.16	5.85	52.03	5.55
K113	70.73	15.46	57.39	8.35	55.30	4.10
K114	54.43	7.59	61.93	5.35	61.33	7.75
K115	55.90	4.87	61.52	9.14	58.93	7.56
K116	61.15	8.02	56.88	6.62	57.25	7.58
K117	61.97	9.74	58.76	9.70	56.07	5.20
K118	64.10	10.01	52.51	7.11	56.03	6.15
K119	61.91	7.66	58.14	7.00	58.24	8.90
K120	54.79	4.31	57.89	8.35	58.27	6.63
K121	57.15	12.01	63.97	9.42	60.15	7.43
K122	57.23	10.97	55.58	6.23	57.55	7.53
K123	55.75	4.31	59.86	8.45	59.44	8.46
K124	55.44	7.79	63.05	6.55	57.21	5.27
K125	50.84	7.78	69.73	15.46	65.75	10.36
K126	59.63	10.35	59.42	7.79	59.53	7.93
K127	47.88	8.32	60.44	11.44	47.81	2.16
K128	60.00	7.50	49.30	6.36	52.86	5.22
K129	63.31	8.00	57.14	8.79	53.38	5.56
K130	56.94	15.77	67.02	9.55	59.73	8.33
K131	60.26	7.72	59.97	9.46	51.29	6.51
K132	55.27	11.29	66.30	9.33	61.40	9.14
K133	47.62	4.75	64.91	7.98	61.54	7.79
K134	58.93	7.59	54.46	3.22	58.88	5.37
K135	59.50	7.96	54.75	3.31	54.19	2.60
K136	53.29	10.89	62.79	10.57	58.05	8.43
K137	56.14	9.79	57.56	4.96	57.65	6.02
K138	55.57	9.78	66.81	11.55	53.60	5.76
K139	59.56	14.55	65.87	10.12	55.88	5.69
K140	56.13	9.05	62.31	8.00	59.91	7.88
K141	54.21	7.22	53.39	4.09	48.70	6.38
K142	54.06	4.68	61.19	8.16	59.69	8.60
K143	67.23	12.02	59.51	5.90	58.72	8.03
K144	57.19	4.81	54.56	9.87	53.11	6.81
K145	57.56	5.48	53.16	10.09	55.59	7.81
K146	55.12	13.28	63.92	11.79	60.98	7.56
K147	60.46	9.45	55.39	8.64	60.25	5.71
K148	63.04	4.99	62.48	6.78	56.62	4.55
K149	57.16	6.85	56.70	5.47	61.73	8.66

K150	59.01	8.75	58.63	9.35	58.67	4.97
K151	46.57	3.30	60.64	6.59	58.11	5.21
K152	70.53	5.82	55.17	9.43	51.61	3.19
K153	58.74	7.68	63.36	4.63	64.18	4.39
K154	66.74	7.92	61.66	6.37	56.20	4.11
K155	56.88	5.47	63.39	7.48	60.77	7.46
K156	55.64	4.31	54.53	5.70	51.66	4.97
K157	54.03	8.76	56.80	6.64	54.91	3.64
K158	69.24	9.76	52.28	7.57	51.48	8.69
K159	56.96	6.40	64.23	10.53	56.79	6.79
K160	62.92	12.79	56.36	11.83	55.14	6.14
K161	56.59	3.54	52.28	4.60	49.66	4.63
K162	57.31	3.41	63.40	10.78	57.41	7.61
K163	49.32	4.06	64.43	8.54	58.74	8.10
K164	58.83	4.91	59.07	6.77	54.07	5.97
K165	53.39	7.88	54.40	9.72	51.94	8.53
K166	58.99	7.14	60.44	6.73	60.20	7.98
K167	55.34	7.43	61.88	5.51	64.29	8.31
K168	54.89	11.66	67.23	11.02	57.39	5.49
K169	56.42	6.01	53.46	10.80	49.80	7.77
K170	59.78	9.64	60.97	10.74	57.54	4.27
K171	57.09	10.46	67.21	9.05	58.54	7.93
K172	56.91	8.32	64.81	10.45	59.52	7.43
K173	63.44	7.17	53.60	8.68	52.18	8.12
K174	63.44	10.68	52.15	4.75	53.62	4.79
K175	52.61	9.88	58.38	4.04	54.73	4.91
K176	50.55	1.39	53.52	7.53	51.79	6.09
K177	52.55	5.37	54.43	8.59	53.18	8.48
K178	50.74	11.42	54.21	4.41	55.35	5.77
K179	63.91	6.98	59.78	8.64	58.08	8.79
K180	57.14	8.00	56.06	6.92	56.59	7.33
K181	48.30	6.36	58.50	8.04	56.39	5.75
K182	60.01	4.72	62.22	5.93	59.35	6.46
K183	53.73	10.69	64.31	8.65	55.43	6.41
K184	62.20	6.62	54.36	5.87	52.77	5.82
K185	59.51	6.90	60.27	8.60	57.27	7.05
K186	64.45	10.39	66.65	9.52	52.30	4.59
K187	56.21	5.06	63.79	7.18	55.89	5.95

K188	48.84	4.19	61.91	8.66	61.48	8.33
K189	65.03	11.20	61.34	9.73	59.10	8.45
K190	61.74	6.35	55.06	4.68	56.94	5.89
K191	58.31	8.95	65.03	10.20	60.61	8.06
K192	59.48	12.40	67.17	9.71	53.36	6.96
K193	59.36	8.53	53.61	9.88	57.17	7.84
K194	61.02	9.71	46.88	7.32	59.63	8.61
K195	64.05	6.55	56.37	5.69	51.70	5.15
K196	57.18	6.49	55.74	10.33	55.52	5.44
K197	60.52	9.14	55.90	3.87	61.43	8.54
K198	57.06	7.92	58.01	7.75	58.20	5.85
K199	57.16	8.92	45.57	4.30	47.74	2.84
K200	57.12	8.75	57.82	5.05	56.62	5.29
K201	54.28	7.80	57.09	5.76	59.54	7.20
K202	64.40	7.64	55.34	6.43	54.17	5.47
K203	63.79	8.18	58.13	8.52	54.83	7.58
K204	62.36	4.63	56.48	3.66	55.00	4.01
K205	48.89	13.54	66.71	7.58	60.40	7.48
K206	55.80	6.64	57.83	3.91	52.94	3.92
K207	61.87	7.64	48.30	5.64	47.12	3.47
K208	61.52	7.95	54.88	5.26	54.23	6.16
K209	55.39	9.64	58.37	3.53	54.51	4.50
K210	53.46	10.80	57.74	6.68	49.42	3.54
K211	46.07	6.83	56.88	6.47	56.08	6.16
K212	54.56	8.87	58.31	4.41	60.39	7.59
K213	63.39	6.48	56.68	5.96	57.14	4.55
K214	60.66	5.37	58.59	3.97	56.52	2.90
K215	63.09	9.37	52.13	8.21	59.21	7.59
K216	67.71	6.58	58.98	5.84	54.70	2.85
K217	53.13	9.21	62.43	7.35	53.53	4.04
K218	54.60	7.68	61.81	8.63	57.11	5.41
K219	59.08	6.48	65.59	7.44	58.72	6.82
K220	54.59	7.53	54.96	6.84	52.45	5.39
K221	65.27	13.06	60.36	9.59	48.68	3.92
K222	52.29	7.42	48.55	9.23	55.02	4.74
K223	59.69	4.05	55.80	5.47	53.20	7.01
K224	53.07	4.70	62.34	9.91	56.81	4.73
K225	61.19	7.16	59.26	6.72	58.22	8.67

K226	58.42	10.35	51.09	5.61	47.24	2.73
K227	60.07	6.77	59.36	8.13	58.19	5.42
K228	54.01	5.59	56.44	6.79	56.07	6.98
K229	59.44	12.44	58.47	5.40	57.12	7.50
K230	59.50	9.04	61.03	4.00	59.72	5.51
K231	60.10	4.60	50.40	3.21	55.09	7.16
K232	66.07	12.30	55.09	6.20	50.43	5.04
K233	55.72	8.66	54.44	4.78	57.16	6.68
K234	64.96	7.95	56.96	6.40	56.39	6.83
K235	55.08	6.50	54.07	3.70	54.20	5.03
K236	61.79	13.82	66.27	13.06	57.01	8.22
K237	58.82	6.05	61.74	8.53	66.12	5.44
K238	56.28	5.95	48.32	4.06	61.77	6.75
K239	63.79	11.57	59.99	6.14	56.22	4.27
K240	53.12	3.28	52.24	9.70	56.04	6.74
K241	58.36	7.13	62.04	5.99	55.31	4.82
K242	59.14	12.17	65.74	8.92	54.54	4.69
K243	57.78	7.84	55.21	5.06	54.01	5.04
K244	51.28	6.57	57.91	8.32	54.92	4.92
K245	59.38	4.04	60.85	5.40	53.42	5.52
K246	59.46	8.91	57.46	5.46	57.55	6.38
K247	55.85	7.52	58.68	5.68	54.18	6.42
K248	60.44	7.73	57.39	8.22	59.28	7.79
K249	53.84	5.63	56.59	6.38	47.68	3.57
K250	56.56	5.96	60.01	5.72	58.89	4.21
K251	68.63	8.35	53.70	9.35	48.57	4.06
K252	51.71	7.38	58.08	6.48	55.96	4.74
K253	65.81	12.55	60.04	6.48	56.10	7.31
K254	69.43	9.11	48.84	4.19	54.72	5.68
K255	59.11	4.18	46.62	3.75	58.45	6.05
K256	64.43	8.54	59.31	8.95	55.32	7.87
K257	61.64	6.59	58.43	7.56	53.66	7.65
K258	63.23	9.53	57.12	7.31	58.95	5.36
K259	64.59	7.44	61.60	4.63	48.60	5.31
K260	56.58	7.23	55.13	9.05	53.29	7.14
K261	59.14	7.74	54.20	10.86	54.03	8.90
K262	60.89	6.12	52.29	9.89	49.91	8.75
K263	61.34	10.73	58.15	12.01	58.92	9.51

K264	54.00	4.98	56.94	14.77	57.17	12.28
K265	58.42	8.81	56.73	10.27	54.75	9.19
K266	62.88	6.51	60.41	13.34	59.49	11.11
K267	60.04	7.64	53.89	11.66	53.91	8.84
K268	66.04	7.86	53.73	11.69	53.91	9.36
K269	63.48	7.78	58.38	11.95	57.74	9.97
K270	54.78	10.45	48.89	14.54	49.81	11.06
K271	47.30	4.64	60.14	12.17	59.00	9.43
K272	62.97	10.42	56.12	14.28	54.24	11.52
K273	54.70	9.35	64.45	10.39	63.60	8.71
K274	63.97	9.78	55.57	10.78	57.23	9.77
K275	53.20	9.86	62.46	14.82	63.61	10.10
K276	68.02	10.55	59.56	13.55	58.72	10.92
K277	58.42	6.70	56.12	10.77	56.01	9.09
K278	64.51	10.79	54.48	11.54	54.47	9.27
K279	55.68	6.96	60.41	12.27	61.28	9.85
K280	57.76	9.70	54.96	10.81	54.91	9.48
K281	53.60	11.55	67.64	12.73	67.98	10.01
K282	53.52	8.53	59.88	13.67	60.57	11.37
K283	56.17	10.43	60.48	12.40	59.60	8.93
K284	66.15	5.64	56.09	10.46	57.56	9.47
K285	63.81	10.45	61.79	12.82	62.33	10.73
K286	51.29	3.31	55.27	10.29	55.00	8.71
K287	56.13	10.72	53.60	10.55	55.09	9.11
K288	55.67	6.78	55.47	12.30	53.81	10.39
K289	55.21	3.41	57.95	10.51	58.57	10.01
K290	61.83	10.43	53.95	5.23	49.33	6.38
K291	66.30	3.08	52.58	12.68	54.68	8.91
K292	65.30	7.70	50.84	7.78	51.98	8.44

Note:C18:2: Linoleic acid C18:3: Linolenic acid.