Table S2 The Ka/Ks ratio of MAPK-MAP4K gene pairs in wheat

TaMAPK-TaMAP4K Gene ID	Gene Name	*TaMAPK-TaMAP4K* Gene ID	Gene Name	Ka	Ks	Ka/Ks	EffectiveLen	AverageS-sites	AverageN-sites	Selection pressure	Mya
TraesCS1A02G003900	TaMAPKKK148	TraesCS1B02G004000	/	0.21	0.65	0.32	996.00	219.17	776.83	Purifying selection	49.63
TraesCS1A02G003900	TaMAPKKK148	TraesCS1B02G003200	/	0.21	0.46	0.44	978.00	217.83	760.17	Purifying selection	35.67
TraesCS1A02G025900	/	TraesCS1D02G026200	TaMAPKKK38	0.01	0.06	0.09	1845.00	421.33	1423.67	Purifying selection	4.75
TraesCS1A02G086500	TaMAPK11	TraesCS1B02G104900	TaMAPK27	0.01	0.10	0.06	1647.00	387.50	1259.50	Purifying selection	7.63
TraesCS1A02G086500	TaMAPK11	TraesCS1D02G088000	TaMAPK4	0.01	0.10	0.06	1647.00	386.67	1260.33	Purifying selection	7.65
TraesCS1A02G181900	TaMAPKKKK1	TraesCS1B02G199100	TaMAPKKKK2	0.00	0.05	0.08	2142.00	492.83	1649.17	Purifying selection	3.87
TraesCS1A02G181900	TaMAPKKKK1	TraesCS1D02G185000	TaMAPKKKK3	0.00	0.04	0.05	2142.00	493.08	1648.92	Purifying selection	2.71
TraesCS1A02G184500	TaMAPK14	TraesCS1B02G192600	TaMAPK28	0.00	0.07	0.03	1128.00	267.83	860.17	Purifying selection	5.42
TraesCS1A02G184500	TaMAPK14	TraesCS1D02G192200	/	0.00	0.03	0.03	1128.00	267.83	860.17	Purifying selection	2.64
TraesCS1A02G273600	/	TraesCS1D02G273600	TaMAPKKK104	0.08	0.15	0.53	2019.00	514.67	1504.33	Purifying selection	11.64
TraesCS1A02G273600	/	TraesCS1B02G283400	TaMAPKKK104-1	0.08	0.17	0.47	2025.00	516.33	1508.67	Purifying selection	12.70
TraesCS1A02G339600	/	TraesCS3A02G274000	TaMAPKKK100	0.33	1.29	0.26	1734.00	411.00	1323.00	Purifying selection	99.09
TraesCS1A02G339600	/	TraesCS3D02G273200	TaMAPKKK45	0.33	1.32	0.25	1740.00	412.83	1327.17	Purifying selection	101.42
TraesCS1A02G356300	/	TraesCS1B02G372400	TaMAPKKK53	0.03	0.14	0.23	2400.00	592.92	1807.08	Purifying selection	10.92
TraesCS1A02G366900	/	TraesCS3B02G288100	TaMAPKKK8	0.31	0.73	0.43	1338.00	337.83	1000.17	Purifying selection	56.52
TraesCS1A02G402400	TaMAPK41	TraesCS1B02G431400	TaMAPK29	0.02	0.15	0.11	1644.00	385.17	1258.83	Purifying selection	11.45

TraesCS1A02G402400	TaMAPK41	TraesCS1D02G410100	TaMAPK33	0.01	0.14	0.10	1644.00	385.33	1258.67	Purifying selection	10.48
TraesCS1A02G402400	TaMAPK41	TraesCS3A02G242100	TaMAPK39	0.12	1.02	0.12	1608.00	369.00	1239.00	Purifying selection	78.42
TraesCS1A02G402400	TaMAPK41	TraesCS3B02G270200	TaMAPK16	0.13	1.05	0.12	1620.00	371.17	1248.83	Purifying selection	80.72
TraesCS1A02G402400	TaMAPK41	TraesCS3D02G242200	TaMAPK24	0.13	1.03	0.12	1614.00	370.25	1243.75	Purifying selection	78.94
TraesCS1A02G415300	TaMAPK42	TraesCS1B02G445300	/	0.01	0.04	0.38	1812.00	424.33	1387.67	Purifying selection	2.79
TraesCS1A02G415300	TaMAPK42	TraesCS1D02G422800	TaMAPK5	0.01	0.03	0.38	1815.00	423.67	1391.33	Purifying selection	2.03
TraesCS1A02G415300	TaMAPK42	TraesCS3A02G231700	TaMAPK40	0.13	1.22	0.11	1440.00	327.83	1112.17	Purifying selection	93.60
TraesCS1A02G415300	TaMAPK42	TraesCS3B02G260900	/	0.12	1.28	0.09	1440.00	329.92	1110.08	Purifying selection	98.85
TraesCS1A02G415300	TaMAPK42	TraesCS3D02G221700	TaMAPK23	0.12	1.32	0.09	1425.00	326.25	1098.75	Purifying selection	101.76
TraesCS1A02G416200	/	TraesCS1B02G446500	TaMAPKK128	0.01	0.16	0.05	1113.00	265.00	848.00	Purifying selection	12.06
TraesCS1A02G416200	/	TraesCS3B02G259800	TaMAPKK58	0.10	0.70	0.15	1113.00	265.75	847.25	Purifying selection	53.77
TraesCS1A02G416200	/	TraesCS1D02G423800	TaMAPKK70	0.01	0.15	0.05	1119.00	266.00	853.00	Purifying selection	11.83
TraesCS1A02G421000	TaMAPK43	TraesCS1B02G452200	TaMAPK6	0.01	0.13	0.08	1794.00	434.42	1359.58	Purifying selection	10.03
TraesCS1A02G421000	TaMAPK43	TraesCS1D02G428900	TaMAPK34	0.01	0.10	0.08	1791.00	431.25	1359.75	Purifying selection	7.62
TraesCS1A02G421000	TaMAPK43	TraesCS3A02G228000	/	0.15	1.00	0.15	1767.00	419.92	1347.08	Purifying selection	76.63
TraesCS1A02G421000	TaMAPK43	TraesCS3B02G256700	TaMAPK38	0.15	1.01	0.15	1761.00	419.08	1341.92	Purifying selection	77.77
TraesCS1A02G421000	TaMAPK43	TraesCS3D02G225600	TaMAPK8	0.15	1.03	0.15	1767.00	420.25	1346.75	Purifying selection	78.97
TraesCS1B02G001500	/	TraesCS1D02G004300	TaMAPKK133	0.01	0.31	0.02	1077.00	254.50	822.50	Purifying selection	23.56

TraesCS1B02G032500	/	TraesCS1D02G026200	TaMAPKKK38	0.02	0.09	0.19	1845.00	423.58	1421.42	Purifying selection	7.25
TraesCS1B02G104900	TaMAPK27	TraesCS1D02G088000	TaMAPK4	0.00	0.11	0.04	1647.00	387.83	1259.17	Purifying selection	8.31
TraesCS1B02G192600	TaMAPK28	TraesCS1D02G192200	/	0.00	0.07	0.02	1128.00	268.17	859.83	Purifying selection	5.41
TraesCS1B02G199100	TaMAPKKK2	TraesCS1D02G185000	TaMAPKKK3	0.00	0.04	0.09	2142.00	492.42	1649.58	Purifying selection	3.05
TraesCS1B02G283400	TaMAPKK104-1	TraesCS1D02G273600	TaMAPKK104	0.07	0.16	0.42	2028.00	513.83	1514.17	Purifying selection	12.21
TraesCS1B02G351900	/	TraesCS3A02G274000	TaMAPKK100	0.33	1.29	0.26	1734.00	408.58	1325.42	Purifying selection	99.25
TraesCS1B02G351900	/	TraesCS3D02G273200	TaMAPKK45	0.33	1.31	0.25	1740.00	410.75	1329.25	Purifying selection	100.57
TraesCS1B02G372400	TaMAPKK53	TraesCS1D02G360300	/	0.13	0.22	0.61	1800.00	453.25	1346.75	Purifying selection	16.64
TraesCS1B02G372400	TaMAPKK53	TraesCS3A02G246100	TaMAPKK76	0.12	0.34	0.35	2391.00	591.00	1800.00	Purifying selection	26.40
TraesCS1B02G372400	TaMAPKK53	TraesCS3B02G273200	/	0.11	0.35	0.32	2406.00	596.25	1809.75	Purifying selection	26.92
TraesCS1B02G372400	TaMAPKK53	TraesCS3D02G245300	/	0.12	0.34	0.34	2406.00	594.75	1811.25	Purifying selection	26.15
TraesCS1B02G384700	/	TraesCS3B02G288100	TaMAPKK8	0.34	0.66	0.51	1314.00	330.58	983.42	Purifying selection	50.53
TraesCS1B02G431400	TaMAPK29	TraesCS1D02G410100	TaMAPK33	0.01	0.11	0.09	1665.00	391.33	1273.67	Purifying selection	8.45
TraesCS1B02G431400	TaMAPK29	TraesCS3A02G242100	TaMAPK39	0.12	1.19	0.10	1632.00	376.00	1256.00	Purifying selection	91.16
TraesCS1B02G431400	TaMAPK29	TraesCS3B02G270200	TaMAPK16	0.13	1.22	0.11	1644.00	378.17	1265.83	Purifying selection	93.90
TraesCS1B02G431400	TaMAPK29	TraesCS3D02G242200	TaMAPK24	0.13	1.22	0.11	1638.00	377.25	1260.75	Purifying selection	93.78
TraesCS1B02G445300	/	TraesCS3D02G221700	TaMAPK23	0.12	1.29	0.09	1425.00	326.25	1098.75	Purifying selection	98.85
TraesCS1B02G445300	/	TraesCS1D02G422800	TaMAPK5	0.01	0.04	0.28	1812.00	424.00	1388.00	Purifying selection	3.36

TraesCS1B02G445300	/	TraesCS3A02G231700	TaMAPK40	0.13	1.28	0.10	1440.00	327.50	1112.50	Purifying selection	98.29
TraesCS1B02G446500	TaMAPKK128	TraesCS1D02G423800	TaMAPKK70	0.01	0.14	0.05	1113.00	264.67	848.33	Purifying selection	10.84
TraesCS1B02G446500	TaMAPKK128	TraesCS3A02G230500	/	0.10	0.68	0.15	1107.00	263.50	843.50	Purifying selection	52.57
TraesCS1B02G446500	TaMAPKK128	TraesCS3B02G259800	TaMAPKK58	0.10	0.70	0.14	1107.00	263.25	843.75	Purifying selection	53.75
TraesCS1B02G446500	TaMAPKK128	TraesCS3D02G222800	/	0.10	0.69	0.15	1107.00	263.58	843.42	Purifying selection	52.90
TraesCS1B02G452200	TaMAPK6	TraesCS1D02G428900	TaMAPK34	0.01	0.10	0.06	1797.00	434.50	1362.50	Purifying selection	7.96
TraesCS1B02G452200	TaMAPK6	TraesCS3A02G228000	/	0.15	1.08	0.14	1770.00	423.08	1346.92	Purifying selection	82.85
TraesCS1B02G452200	TaMAPK6	TraesCS3B02G256700	TaMAPK38	0.15	1.11	0.13	1764.00	422.25	1341.75	Purifying selection	85.71
TraesCS1B02G452200	TaMAPK6	TraesCS3D02G225600	TaMAPK8	0.15	1.11	0.13	1770.00	423.42	1346.58	Purifying selection	85.43
TraesCS1B02G454000	TaMAPKK116	TraesCS1D02G430800	/	0.21	0.60	0.34	1932.00	473.17	1458.83	Purifying selection	45.88
TraesCS1D02G341600	/	TraesCS3A02G274000	TaMAPKK100	0.33	1.31	0.25	1725.00	407.25	1317.75	Purifying selection	100.66
TraesCS1D02G341600	/	TraesCS3D02G273200	TaMAPKK45	0.33	1.29	0.26	1731.00	409.08	1321.92	Purifying selection	98.93
TraesCS1D02G360400	/	TraesCS3A02G246100	TaMAPKK76	0.10	0.33	0.31	2373.00	590.67	1782.33	Purifying selection	25.33
TraesCS1D02G372900	/	TraesCS3B02G288100	TaMAPKK8	0.37	0.79	0.47	1308.00	329.58	978.42	Purifying selection	60.51
TraesCS1D02G410100	TaMAPK33	TraesCS3A02G242100	TaMAPK39	0.12	1.22	0.10	1632.00	375.83	1256.17	Purifying selection	93.80
TraesCS1D02G410100	TaMAPK33	TraesCS3B02G270200	TaMAPK16	0.13	1.27	0.10	1644.00	378.00	1266.00	Purifying selection	97.75
TraesCS1D02G410100	TaMAPK33	TraesCS3D02G242200	TaMAPK24	0.13	1.23	0.10	1638.00	377.08	1260.92	Purifying selection	94.40
TraesCS1D02G422800	TaMAPK5	TraesCS3A02G231700	TaMAPK40	0.13	1.25	0.11	1440.00	327.50	1112.50	Purifying selection	96.28

TraesCS1D02G422800	TaMAPK5	TraesCS3B02G260900	/	0.12	1.32	0.09	1440.00	329.58	1110.42	Purifying selection	101.77
TraesCS1D02G422800	TaMAPK5	TraesCS3D02G221700	TaMAPK23	0.12	1.36	0.09	1425.00	325.92	1099.08	Purifying selection	104.88
TraesCS1D02G423800	TaMAPKK70	TraesCS3A02G230500	/	0.10	0.69	0.15	1107.00	264.00	843.00	Purifying selection	53.25
TraesCS1D02G423800	TaMAPKK70	TraesCS3B02G259800	TaMAPKK58	0.10	0.71	0.14	1113.00	264.58	848.42	Purifying selection	54.54
TraesCS1D02G423800	TaMAPKK70	TraesCS3D02G222800	/	0.10	0.72	0.14	1113.00	264.92	848.08	Purifying selection	55.17
TraesCS1D02G428900	TaMAPK34	TraesCS3A02G228000	/	0.16	1.01	0.15	1770.00	420.33	1349.67	Purifying selection	77.75
TraesCS1D02G428900	TaMAPK34	TraesCS3B02G256700	TaMAPK38	0.15	1.02	0.15	1764.00	419.67	1344.33	Purifying selection	78.13
TraesCS1D02G428900	TaMAPK34	TraesCS3D02G225600	TaMAPK8	0.16	1.04	0.15	1770.00	420.67	1349.33	Purifying selection	80.13
TraesCS2A02G051000	/	TraesCS2D02G050700	TaMAPKK46	0.15	0.48	0.32	315.00	75.92	239.08	Purifying selection	36.77
TraesCS2A02G095300	TaMAPKK28	TraesCS2B02G110500	TaMAPKK27	0.01	0.07	0.11	3996.00	966.50	3029.50	Purifying selection	5.60
TraesCS2A02G095300	TaMAPKK28	TraesCS2D02G093700	TaMAPKK26	0.01	0.07	0.10	3996.00	965.42	3030.58	Purifying selection	5.69
TraesCS2A02G190200	/	TraesCS2D02G197600	TaMAPKK34	0.00	0.04	0.09	957.00	232.67	724.33	Purifying selection	3.40
TraesCS2A02G190200	/	TraesCS2B02G216800	TaMAPKK37	0.01	0.08	0.14	966.00	234.42	731.58	Purifying selection	6.23
TraesCS2A02G195900	TaMAPKK32	TraesCS2B02G223600	TaMAPKK36	0.01	0.08	0.09	2103.00	484.75	1618.25	Purifying selection	6.02
TraesCS2A02G195900	TaMAPKK32	TraesCS2D02G203900	/	0.01	0.08	0.07	2103.00	485.83	1617.17	Purifying selection	6.53
TraesCS2A02G199700	TaMAPKK5	TraesCS2B02G227000	/	0.00	0.06	0.06	1629.00	374.83	1254.17	Purifying selection	4.26
TraesCS2A02G199700	TaMAPKK5	TraesCS2D02G207400	/	0.00	0.06	0.07	1629.00	374.67	1254.33	Purifying selection	4.48
TraesCS2A02G214000	TaMAPKK122	TraesCS2D02G219800	TaMAPKK109	0.02	0.10	0.22	2043.00	510.92	1532.08	Purifying selection	7.72

TraesCS2A02G216300	/	TraesCS2B02G241400	TaMAPKK146	0.04	0.10	0.36	2001.00	489.92	1511.08	Purifying selection	7.81
TraesCS2A02G217000	TaMAPKK60	TraesCS2B02G242400	/	0.07	0.15	0.49	1128.00	275.17	852.83	Purifying selection	11.68
TraesCS2A02G217600	TaMAPKK80	TraesCS2B02G243100	/	0.01	0.09	0.09	1017.00	231.25	785.75	Purifying selection	6.69
TraesCS2A02G233400	TaMAPKKK4	TraesCS2B02G249900	TaMAPKKK5	0.00	0.05	0.08	2076.00	496.17	1579.83	Purifying selection	3.52
TraesCS2A02G233400	TaMAPKKK4	TraesCS2D02G232200	TaMAPKKK6	0.00	0.03	0.15	2076.00	495.92	1580.08	Purifying selection	2.13
TraesCS2A02G407600	TaMAPKK1	TraesCS2B02G425500	/	0.02	0.08	0.31	2460.00	586.50	1873.50	Purifying selection	6.08
TraesCS2A02G407600	TaMAPKK1	TraesCS2D02G404700	/	0.02	0.06	0.41	2481.00	591.58	1889.42	Purifying selection	4.48
TraesCS2A02G407600	TaMAPKK1	TraesCS6A02G245000	TaMAPKK4	0.15	0.91	0.17	2427.00	580.08	1846.92	Purifying selection	69.77
TraesCS2A02G407600	TaMAPKK1	TraesCS6B02G279300	TaMAPKK4-1	0.13	0.85	0.16	2343.00	561.42	1781.58	Purifying selection	65.46
TraesCS2A02G407600	TaMAPKK1	TraesCS6D02G227300	/	0.15	0.88	0.17	2427.00	581.92	1845.08	Purifying selection	67.69
TraesCS2A02G498000	TaMAPKK20	TraesCS2B02G526200	TaMAPKK18	0.01	0.08	0.10	3969.00	917.92	3051.08	Purifying selection	6.28
TraesCS2A02G498000	TaMAPKK20	TraesCS2D02G498100	/	0.01	0.07	0.10	3861.00	895.75	2965.25	Purifying selection	5.49
TraesCS2A02G578900	/	TraesCS2D02G598800	TaMAPKK135	0.36	1.10	0.33	1290.00	301.00	989.00	Purifying selection	84.89
TraesCS2B02G082200	/	TraesCS2D02G066900	TaMAPKK121	0.20	0.64	0.30	795.00	189.42	605.58	Purifying selection	49.51
TraesCS2B02G110500	TaMAPKK27	TraesCS2D02G093700	TaMAPKK26	0.00	0.04	0.11	4005.00	967.92	3037.08	Purifying selection	3.44
TraesCS2B02G216800	TaMAPKK37	TraesCS2D02G197600	TaMAPKK34	0.01	0.04	0.19	957.00	232.92	724.08	Purifying selection	3.40
TraesCS2B02G223600	TaMAPKK36	TraesCS2D02G203900	/	0.00	0.07	0.06	2109.00	486.75	1622.25	Purifying selection	5.64
TraesCS2B02G241400	TaMAPKK146	TraesCS2D02G221900	/	0.03	0.10	0.36	2001.00	491.33	1509.67	Purifying selection	7.34

TraesCS2B02G249900	TaMAPKKK5	TraesCS2D02G232200	TaMAPKKK6	0.01	0.05	0.09	2076.00	495.42	1580.58	Purifying selection	4.19
TraesCS2B02G425500	/	TraesCS6B02G279300	TaMAPKK4-1	0.14	0.85	0.16	2355.00	566.33	1788.67	Purifying selection	65.10
TraesCS2B02G425500	/	TraesCS6A02G245000	TaMAPKK4	0.16	0.86	0.18	2616.00	628.58	1987.42	Purifying selection	66.22
TraesCS2B02G526200	TaMAPKK18	TraesCS2D02G498100	/	0.01	0.05	0.10	3864.00	897.67	2966.33	Purifying selection	3.90
TraesCS2B02G606100	/	TraesCS2D02G598800	TaMAPKK135	0.25	1.21	0.21	1035.00	244.08	790.92	Purifying selection	92.80
TraesCS2B02G610200	/	TraesCS2D02G588200	TaMAPKK69	0.02	0.11	0.19	1638.00	389.92	1248.08	Purifying selection	8.30
TraesCS2D02G404700	/	TraesCS6A02G245000	TaMAPKK4	0.15	0.83	0.18	2616.00	627.92	1988.08	Purifying selection	64.01
TraesCS2D02G404700	/	TraesCS6B02G279300	TaMAPKK4-1	0.13	0.82	0.16	2355.00	566.00	1789.00	Purifying selection	62.71
TraesCS3A02G001500	TaMAPKK99	TraesCS3B02G000400	/	0.02	0.16	0.10	1095.00	268.17	826.83	Purifying selection	12.26
TraesCS3A02G001500	TaMAPKK99	TraesCS3D02G010000	/	0.01	0.17	0.07	1092.00	268.67	823.33	Purifying selection	12.77
TraesCS3A02G003900	TaMAPKK72	TraesCS3B02G008600	TaMAPKK150	0.03	0.16	0.20	2043.00	532.83	1510.17	Purifying selection	12.53
TraesCS3A02G003900	TaMAPKK72	TraesCS3D02G005400	/	0.02	0.14	0.18	1203.00	285.67	917.33	Purifying selection	10.61
TraesCS3A02G039100	TaMAPKK56	TraesCS3B02G043700	/	0.11	0.37	0.30	1440.00	339.33	1100.67	Purifying selection	28.76
TraesCS3A02G039100	TaMAPKK56	TraesCS3D02G040300	/	0.08	0.37	0.23	1284.00	297.75	986.25	Purifying selection	28.55
TraesCS3A02G039200	TaMAPKK73	TraesCS3B02G043600	/	0.12	0.34	0.36	2031.00	490.42	1540.58	Purifying selection	26.43
TraesCS3A02G039200	TaMAPKK73	TraesCS3D02G040400	/	0.02	0.14	0.14	540.00	119.67	420.33	Purifying selection	10.55
TraesCS3A02G045200	TaMAPKK105	TraesCS3B02G038900	/	0.01	0.13	0.12	1185.00	298.75	886.25	Purifying selection	9.80
TraesCS3A02G045200	TaMAPKK105	TraesCS3D02G036000	/	0.01	0.10	0.07	1197.00	302.25	894.75	Purifying selection	7.32

TraesCS3A02G094800	/	TraesCS3B02G110300	TaMAPKK43	0.04	0.11	0.36	435.00	92.58	342.42	Purifying selection	8.57
TraesCS3A02G096500	TaMAPKK75	TraesCS3B02G112300	/	0.01	0.11	0.11	1941.00	488.92	1452.08	Purifying selection	8.09
TraesCS3A02G096500	TaMAPKK75	TraesCS3D02G097000	TaMAPKK117	0.01	0.06	0.22	1944.00	488.92	1455.08	Purifying selection	4.75
TraesCS3A02G105400	/	TraesCS3B02G123800	TaMAPKK151	0.02	0.09	0.26	1731.00	425.25	1305.75	Purifying selection	6.57
TraesCS3A02G228000	/	TraesCS3D02G225600	TaMAPK8	0.00	0.05	0.02	1839.00	433.67	1405.33	Purifying selection	3.47
TraesCS3A02G228000	/	TraesCS3B02G256700	TaMAPK38	0.00	0.05	0.03	1806.00	425.67	1380.33	Purifying selection	3.54
TraesCS3A02G229800	TaMAPKK115	TraesCS3B02G259100	TaMAPKK152	0.04	0.10	0.41	2094.00	567.58	1526.42	Purifying selection	7.59
TraesCS3A02G230500	/	TraesCS3B02G259800	TaMAPKK58	0.00	0.08	0.04	1155.00	276.58	878.42	Purifying selection	6.47
TraesCS3A02G231700	TaMAPK40	TraesCS3B02G260900	/	0.02	0.08	0.25	1470.00	337.75	1132.25	Purifying selection	5.99
TraesCS3A02G231700	TaMAPK40	TraesCS3D02G221700	TaMAPK23	0.02	0.08	0.29	1464.00	336.58	1127.42	Purifying selection	6.02
TraesCS3A02G242100	TaMAPK39	TraesCS3B02G270200	TaMAPK16	0.00	0.03	0.09	1746.00	395.00	1351.00	Purifying selection	2.59
TraesCS3A02G242100	TaMAPK39	TraesCS3B02G256700	TaMAPK38	0.19	2.64	0.07	1692.00	389.83	1302.17	Purifying selection	202.72
TraesCS3A02G242100	TaMAPK39	TraesCS3D02G242200	TaMAPK24	0.00	0.02	0.11	1746.00	395.75	1350.25	Purifying selection	1.58
TraesCS3A02G242100	TaMAPK39	TraesCS3D02G225600	TaMAPK8	0.19	2.61	0.07	1722.00	397.08	1324.92	Purifying selection	200.95
TraesCS3A02G246100	TaMAPKK76	TraesCS3B02G273200	/	0.03	0.12	0.22	2439.00	603.00	1836.00	Purifying selection	9.25
TraesCS3A02G246100	TaMAPKK76	TraesCS3D02G245300	/	0.03	0.12	0.23	2439.00	601.50	1837.50	Purifying selection	9.05
TraesCS3A02G255600	/	TraesCS3B02G288100	TaMAPKK8	0.03	0.13	0.27	1383.00	343.58	1039.42	Purifying selection	10.00
TraesCS3A02G274000	TaMAPKK100	TraesCS3B02G307700	/	0.02	0.07	0.33	1800.00	417.00	1383.00	Purifying selection	5.01

TraesCS3A02G274000	TaMAPKK100	TraesCS3D02G273200	TaMAPKK45	0.02	0.09	0.20	1800.00	417.92	1382.08	Purifying selection	6.83
TraesCS3A02G315100	TaMAPKK111	TraesCS3B02G351800	TaMAPKK153	0.02	0.11	0.14	906.00	213.08	692.92	Purifying selection	8.54
TraesCS3A02G315100	TaMAPKK111	TraesCS3D02G316400	/	0.04	0.09	0.47	2418.00	553.00	1865.00	Purifying selection	6.55
TraesCS3A02G477300	/	TraesCS3D02G472000	TaMAPKK137	0.03	0.12	0.23	2235.00	537.83	1697.17	Purifying selection	8.96
TraesCS3A02G493500	TaMAPKK139	TraesCS3B02G555500	/	0.03	0.09	0.34	2121.00	492.83	1628.17	Purifying selection	6.87
TraesCS3A02G493800	/	TraesCS3D02G501100	TaMAPKK144	0.10	0.23	0.42	2106.00	489.75	1616.25	Purifying selection	17.69
TraesCS3B02G008600	TaMAPKK150	TraesCS3D02G005400	/	0.03	0.20	0.13	1197.00	284.92	912.08	Purifying selection	15.67
TraesCS3B02G022400	/	TraesCS3D02G023600	TaMAPKK108	0.03	0.10	0.26	2484.00	601.83	1882.17	Purifying selection	8.06
TraesCS3B02G110300	TaMAPKK43	TraesCS3D02G095000	/	0.04	0.11	0.36	435.00	92.75	342.25	Purifying selection	8.55
TraesCS3B02G112300	/	TraesCS3D02G097000	TaMAPKK117	0.01	0.10	0.11	1941.00	489.33	1451.67	Purifying selection	7.73
TraesCS3B02G123800	TaMAPKK151	TraesCS3D02G107500	/	0.02	0.05	0.32	1731.00	426.17	1304.83	Purifying selection	4.02
TraesCS3B02G256700	TaMAPK38	TraesCS3B02G270200	TaMAPK16	0.19	2.55	0.07	1692.00	389.17	1302.83	Purifying selection	196.35
TraesCS3B02G256700	TaMAPK38	TraesCS3D02G225600	TaMAPK8	0.00	0.03	0.05	1806.00	426.00	1380.00	Purifying selection	2.21
TraesCS3B02G256700	TaMAPK38	TraesCS3D02G242200	TaMAPK24	0.19	2.97	0.06	1692.00	389.92	1302.08	Purifying selection	228.16
TraesCS3B02G259800	TaMAPKK58	TraesCS3D02G222800	/	0.00	0.04	0.08	1155.00	276.67	878.33	Purifying selection	3.44
TraesCS3B02G260900	/	TraesCS3D02G221700	TaMAPK23	0.01	0.06	0.14	1464.00	338.67	1125.33	Purifying selection	4.49
TraesCS3B02G270200	TaMAPK16	TraesCS3D02G242200	TaMAPK24	0.00	0.05	0.03	1752.00	395.92	1356.08	Purifying selection	3.61
TraesCS3B02G270200	TaMAPK16	TraesCS3D02G225600	TaMAPK8	0.20	2.46	0.08	1722.00	396.42	1325.58	Purifying selection	189.45

TraesCS3B02G288100	TaMAPKK8	TraesCS3D02G256400	/	0.30	0.67	0.45	1329.00	331.25	997.75	Purifying selection	51.63
TraesCS3B02G307700	/	TraesCS3D02G273200	TaMAPKK45	0.01	0.07	0.19	1803.00	418.08	1384.92	Purifying selection	5.40
TraesCS3B02G351800	TaMAPKK153	TraesCS3D02G316400	/	0.01	0.12	0.09	906.00	212.50	693.50	Purifying selection	9.42
TraesCS3B02G555800	/	TraesCS3D02G501100	TaMAPKK144	0.09	0.22	0.41	2103.00	487.67	1615.33	Purifying selection	17.03
TraesCS3D02G225600	TaMAPK8	TraesCS3D02G242200	TaMAPK24	0.20	2.92	0.07	1722.00	397.17	1324.83	Purifying selection	224.88
TraesCS4A02G093800	TaMAPKK12	TraesCS4B02G210600	TaMAPKK3	0.01	0.07	0.11	2115.00	513.00	1602.00	Purifying selection	5.50
TraesCS4A02G093800	TaMAPKK12	TraesCS4D02G211300	TaMAPKK10	0.01	0.06	0.11	2130.00	516.33	1613.67	Purifying selection	4.65
TraesCS4A02G106400	TaMAPK30	TraesCS4B02G197800	/	0.00	0.08	0.00	1107.00	258.33	848.67	Purifying selection	6.29
TraesCS4A02G106400	TaMAPK30	TraesCS4D02G198600	TaMAPK25	0.00	0.06	0.02	1107.00	259.00	848.00	Purifying selection	4.64
TraesCS4A02G265900	TaMAPKK14	TraesCS4B02G048600	TaMAPKK7	0.23	0.62	0.38	975.00	265.42	709.58	Purifying selection	47.93
TraesCS4A02G265900	TaMAPKK14	TraesCS4D02G048800	TaMAPKK11	0.06	0.35	0.18	1002.00	271.92	730.08	Purifying selection	27.01
TraesCS4A02G266000	TaMAPKK15	TraesCS4B02G048100	TaMAPKK6	0.24	0.54	0.44	975.00	267.92	707.08	Purifying selection	41.27
TraesCS4A02G266000	TaMAPKK15	TraesCS4D02G047900	/	0.23	0.51	0.45	975.00	268.92	706.08	Purifying selection	38.90
TraesCS4A02G283400	/	TraesCS4D02G027600	TaMAPKK2	0.01	0.14	0.07	1704.00	431.00	1273.00	Purifying selection	10.76
TraesCS4A02G313900	TaMAPKK62	TraesCS5D02G547600	/	0.30	1.34	0.23	3252.00	779.92	2472.08	Purifying selection	102.76
TraesCS4A02G336800	TaMAPK2	TraesCS5B02G536500	TaMAPK50	0.02	0.08	0.24	1320.00	312.08	1007.92	Purifying selection	5.79
TraesCS4A02G336800	TaMAPK2	TraesCS5D02G534000	TaMAPK26	0.01	0.05	0.23	1320.00	311.17	1008.83	Purifying selection	4.19
TraesCS4A02G383000	TaMAPKK63	TraesCS7D02G079100	TaMAPKK48	0.13	0.35	0.36	1653.00	373.08	1279.92	Purifying selection	27.28

TraesCS4A02G434800	TaMAPK31	TraesCS7A02G049000	TaMAPK46	0.02	0.10	0.18	1449.00	344.75	1104.25	Purifying selection	7.62
TraesCS4A02G434800	TaMAPK31	TraesCS7D02G044100	TaMAPK18	0.01	0.08	0.16	1449.00	343.50	1105.50	Purifying selection	6.51
TraesCS4A02G456900	TaMAPKK106	TraesCS7A02G032700	TaMAPKK107	0.02	0.10	0.23	1440.00	332.92	1107.08	Purifying selection	7.65
TraesCS4A02G456900	TaMAPKK106	TraesCS7D02G029300	/	0.02	0.05	0.31	1437.00	332.42	1104.58	Purifying selection	3.83
TraesCS4A02G464700	TaMAPKK64-1	TraesCS7D02G020600	/	0.11	0.60	0.19	504.00	116.67	387.33	Purifying selection	45.88
TraesCS4A02G464700	TaMAPKK64-1	TraesCS7D02G022000	/	0.13	0.60	0.21	504.00	117.33	386.67	Purifying selection	45.97
TraesCS4A02G465000	TaMAPKK65	TraesCS7D02G022200	TaMAPKK47	0.44	1.04	0.43	1239.00	283.33	955.67	Purifying selection	80.30
TraesCS4A02G465900	TaMAPKK64	TraesCS7A02G023400	/	0.08	0.28	0.31	792.00	176.75	615.25	Purifying selection	21.24
TraesCS4B02G030100	/	TraesCS4D02G027600	TaMAPKK2	0.01	0.15	0.09	1704.00	430.83	1273.17	Purifying selection	11.41
TraesCS4B02G048100	TaMAPKK6	TraesCS4D02G047900	/	0.04	0.13	0.31	1029.00	284.50	744.50	Purifying selection	9.69
TraesCS4B02G048900	TaMAPKK8	TraesCS4D02G048800	TaMAPKK11	0.02	0.15	0.17	1002.00	273.50	728.50	Purifying selection	11.30
TraesCS4B02G210600	TaMAPKK3	TraesCS4D02G211300	TaMAPKK10	0.01	0.05	0.16	2115.00	513.67	1601.33	Purifying selection	4.19
TraesCS4B02G289100	TaMAPKK110	TraesCS4D02G288200	/	0.02	0.11	0.20	2004.00	526.50	1477.50	Purifying selection	8.12
TraesCS4B02G395600	TaMAPKKK7	TraesCS5A02G556400	TaMAPKKK11	0.11	0.18	0.58	1779.00	419.42	1359.58	Purifying selection	14.03
TraesCS4B02G398400	TaMAPKKK8	TraesCS5A02G556400	TaMAPKKK11	0.01	0.08	0.16	2187.00	511.25	1675.75	Purifying selection	5.94
TraesCS4B02G398400	TaMAPKKK8	TraesCSU02G115300	TaMAPKKK25	0.01	0.08	0.17	2223.00	519.08	1703.92	Purifying selection	6.25
TraesCS5A02G085900	/	TraesCS5D02G097900	TaMAPKK140	0.00	0.03	0.13	2259.00	531.83	1727.17	Purifying selection	2.66
TraesCS5A02G118200	TaMAPKK14	TraesCS5B02G112900	/	0.01	0.04	0.24	1638.00	383.33	1254.67	Purifying selection	3.09

TraesCS5A02G122700	TaMAPKK4	TraesCS5B02G122600	TaMAPKK18	0.02	0.06	0.36	897.00	213.17	683.83	Purifying selection	4.44
TraesCS5A02G122700	TaMAPKK4	TraesCS5D02G130900	TaMAPKK3	0.02	0.07	0.25	897.00	212.42	684.58	Purifying selection	5.64
TraesCS5A02G147500	/	TraesCS5D02G145100	TaMAPKK30	0.01	0.05	0.22	1908.00	478.83	1429.17	Purifying selection	3.48
TraesCS5A02G147500	/	TraesCS5B02G146100	TaMAPKK40	0.01	0.09	0.10	1908.00	477.75	1430.25	Purifying selection	6.65
TraesCS5A02G187400	TaMAPKK9	TraesCS5B02G196400	TaMAPKK25	0.02	0.09	0.17	1554.00	383.08	1170.92	Purifying selection	7.27
TraesCS5A02G187400	TaMAPKK9	TraesCS5D02G203600	TaMAPKKK13	0.02	0.09	0.17	1554.00	380.67	1173.33	Purifying selection	7.09
TraesCS5A02G200800	TaMAPKK17	TraesCS5B02G199400	TaMAPKK24	0.00	0.06	0.02	2040.00	474.92	1565.08	Purifying selection	4.37
TraesCS5A02G200800	TaMAPKK17	TraesCS5D02G206500	TaMAPKK29	0.00	0.03	0.04	2046.00	477.50	1568.50	Purifying selection	2.47
TraesCS5A02G206700	/	TraesCS5B02G204900	TaMAPKK95	0.01	0.07	0.20	1317.00	349.25	967.75	Purifying selection	5.54
TraesCS5A02G292500	TaMAPKK81	TraesCS5D02G299800	/	0.03	0.06	0.51	1047.00	228.58	818.42	Purifying selection	4.55
TraesCS5A02G338800	/	TraesCS5B02G337300	TaMAPKK92	0.00	0.08	0.05	1785.00	416.67	1368.33	Purifying selection	6.44
TraesCS5A02G351100	/	TraesCS5D02G358200	TaMAPKK123-1	0.10	0.30	0.34	1350.00	308.42	1041.58	Purifying selection	23.17
TraesCS5A02G392500	TaMAPKK22	TraesCS5B02G397300	TaMAPKKK12	0.01	0.06	0.10	2475.00	596.33	1878.67	Purifying selection	4.28
TraesCS5A02G392500	TaMAPKK22	TraesCS5D02G402300	TaMAPKKK14	0.01	0.05	0.11	2466.00	593.58	1872.42	Purifying selection	3.75
TraesCS5A02G463100	TaMAPKK15	TraesCS5B02G474500	TaMAPKK16	0.00	0.10	0.01	1602.00	371.42	1230.58	Purifying selection	7.75
TraesCS5A02G463100	TaMAPKK15	TraesCS5D02G475900	TaMAPKK11	0.00	0.07	0.06	1602.00	371.67	1230.33	Purifying selection	5.65
TraesCS5A02G469200	/	TraesCS5D02G482000	TaMAPKK98	0.01	0.05	0.14	1242.00	296.83	945.17	Purifying selection	4.02
TraesCS5A02G556400	TaMAPKKK11	TraesCSU02G115300	TaMAPKKK25	0.01	0.05	0.14	2187.00	508.50	1678.50	Purifying selection	4.15

TraesCS5B02G012000	TaMAPKK94	TraesCS5D02G019400	TaMAPKK101	0.03	0.12	0.25	3039.00	812.67	2226.33	Purifying selection	9.00
TraesCS5B02G091700	/	TraesCS5D02G097900	TaMAPKK140	0.01	0.07	0.08	2259.00	532.00	1727.00	Purifying selection	5.30
TraesCS5B02G122600	TaMAPKK18	TraesCS5D02G130900	TaMAPKK3	0.03	0.07	0.39	1386.00	322.33	1063.67	Purifying selection	5.03
TraesCS5B02G146100	TaMAPKK40	TraesCS5D02G145100	TaMAPKK30	0.01	0.08	0.13	1920.00	481.08	1438.92	Purifying selection	5.89
TraesCS5B02G196400	TaMAPKK25	TraesCS5D02G203600	TaMAPKKK13	0.01	0.07	0.20	1554.00	382.92	1171.08	Purifying selection	5.70
TraesCS5B02G199400	TaMAPKK24	TraesCS5D02G206500	TaMAPKK29	0.00	0.07	0.02	2040.00	475.58	1564.42	Purifying selection	5.25
TraesCS5B02G204900	TaMAPKK95	TraesCS5D02G212900	/	0.01	0.05	0.19	1317.00	349.17	967.83	Purifying selection	3.87
TraesCS5B02G292000	TaMAPKK96	TraesCS5D02G299800	/	0.12	0.35	0.35	1047.00	230.50	816.50	Purifying selection	26.85
TraesCS5B02G337300	TaMAPKK92	TraesCS5D02G343000	/	0.00	0.05	0.03	1788.00	416.83	1371.17	Purifying selection	4.21
TraesCS5B02G353600	TaMAPKK132	TraesCS5D02G357900	/	0.17	0.65	0.26	861.00	221.25	639.75	Purifying selection	50.33
TraesCS5B02G353800	TaMAPKK97	TraesCS5D02G358600	/	0.13	0.54	0.24	672.00	156.25	515.75	Purifying selection	41.39
TraesCS5B02G354400	/	TraesCS5D02G358200	TaMAPKK123-1	0.12	0.43	0.28	1362.00	310.58	1051.42	Purifying selection	32.94
TraesCS5B02G380400	/	TraesCS5D02G386800	TaMAPKK86	0.00	0.10	0.01	1119.00	263.50	855.50	Purifying selection	7.47
TraesCS5B02G397300	TaMAPKKK12	TraesCS5D02G402300	TaMAPKKK14	0.00	0.03	0.09	2466.00	593.42	1872.58	Purifying selection	2.58
TraesCS5B02G474500	TaMAPKK16	TraesCS5D02G475900	TaMAPKK11	0.00	0.08	0.04	1602.00	371.92	1230.08	Purifying selection	6.33
TraesCS5B02G481700	/	TraesCS5D02G482000	TaMAPKK98	0.01	0.07	0.10	1245.00	299.00	946.00	Purifying selection	5.67
TraesCS5B02G536500	TaMAPK50	TraesCS5D02G534000	TaMAPK26	0.01	0.06	0.17	1320.00	312.08	1007.92	Purifying selection	4.88
TraesCS5B02G565100	TaMAPKK2	TraesCS5D02G549600	TaMAPKK13	0.02	0.06	0.37	1164.00	271.42	892.58	Purifying selection	4.34

TraesCS6A02G004500	TaMAPKK71	TraesCS6B02G013900	/	0.20	0.26	0.74	420.00	93.50	326.50	Purifying selection	20.24
TraesCS6A02G099600	TaMAPK35	TraesCS6B02G127800	TaMAPK17	0.03	0.08	0.36	1494.00	350.42	1143.58	Purifying selection	6.25
TraesCS6A02G099600	TaMAPK35	TraesCS6D02G082900	TaMAPK44	0.01	0.06	0.19	1500.00	349.33	1150.67	Purifying selection	4.58
TraesCS6A02G118100	TaMAPK36	TraesCS6B02G146300	TaMAPK10	0.00	0.10	0.01	1107.00	254.83	852.17	Purifying selection	7.40
TraesCS6A02G118100	TaMAPK36	TraesCS6D02G108100	TaMAPK45	0.01	0.11	0.08	1140.00	263.17	876.83	Purifying selection	8.15
TraesCS6A02G118100	TaMAPK36	TraesCS7A02G422500	TaMAPK12	0.05	1.03	0.04	1107.00	254.92	852.08	Purifying selection	79.31
TraesCS6A02G118100	TaMAPK36	TraesCS7B02G322900	TaMAPK54	0.05	1.14	0.04	1107.00	254.58	852.42	Purifying selection	87.91
TraesCS6A02G118100	TaMAPK36	TraesCS7D02G414700	/	0.05	1.05	0.04	1107.00	254.92	852.08	Purifying selection	81.13
TraesCS6A02G149900	TaMAPKK21	TraesCS6B02G177800	TaMAPKKK18	0.01	0.12	0.10	1626.00	362.17	1263.83	Purifying selection	9.57
TraesCS6A02G149900	TaMAPKK21	TraesCS6D02G139200	TaMAPKK23	0.00	0.11	0.04	1527.00	338.33	1188.67	Purifying selection	8.56
TraesCS6A02G155200	/	TraesCS7D02G474700	TaMAPKK102	0.09	0.77	0.11	1254.00	292.42	961.58	Purifying selection	59.41
TraesCS6A02G172600	TaMAPKK41	TraesCS7A02G388800	/	0.19	0.60	0.32	1014.00	243.33	770.67	Purifying selection	46.04
TraesCS6A02G172600	TaMAPKK41	TraesCS7B02G290700	/	0.19	0.59	0.32	1014.00	243.67	770.33	Purifying selection	45.25
TraesCS6A02G172600	TaMAPKK41	TraesCS7D02G384700	TaMAPKK61	0.19	0.59	0.32	1014.00	243.67	770.33	Purifying selection	45.25
TraesCS6A02G186100	/	TraesCS6B02G215100	TaMAPKK131	0.01	0.03	0.28	2580.00	621.58	1958.42	Purifying selection	2.66
TraesCS6A02G187400	/	TraesCS6B02G217100	TaMAPKK155	0.07	0.09	0.72	909.00	217.67	691.33	Purifying selection	7.14
TraesCS6A02G245000	TaMAPKK4	TraesCS6B02G279300	TaMAPKK4-1	0.01	0.04	0.17	2358.00	568.58	1789.42	Purifying selection	3.06
TraesCS6A02G245000	TaMAPKK4	TraesCS6D02G227300	/	0.01	0.04	0.20	2634.00	635.83	1998.17	Purifying selection	2.72

TraesCS6A02G255100	TaMAPKK39	TraesCS6B02G270400	TaMAPKK33	0.03	0.08	0.39	1848.00	419.25	1428.75	Purifying selection	5.99
TraesCS6A02G255100	TaMAPKK39	TraesCS6D02G236400	TaMAPKK31	0.01	0.04	0.19	1845.00	418.83	1426.17	Purifying selection	3.40
TraesCS6A02G269400	TaMAPK37	TraesCS6B02G296700	TaMAPK1	0.01	0.05	0.13	1380.00	326.00	1054.00	Purifying selection	3.90
TraesCS6A02G269400	TaMAPK37	TraesCS6D02G245500	TaMAPK13	0.00	0.04	0.12	1380.00	326.17	1053.83	Purifying selection	3.15
TraesCS6A02G276300	/	TraesCS7D02G230200	TaMAPKK51	0.18	0.36	0.50	1206.00	295.58	910.42	Purifying selection	27.65
TraesCS6A02G290500	/	TraesCS6B02G320800	TaMAPKK129	0.08	0.12	0.61	2223.00	518.83	1704.17	Purifying selection	9.57
TraesCS6A02G353400	TaMAPKKK16	TraesCS6B02G386100	TaMAPKKK19	0.01	0.06	0.20	1044.00	243.17	800.83	Purifying selection	4.89
TraesCS6A02G353400	TaMAPKKK16	TraesCS6D02G335800	TaMAPKKK20	0.01	0.07	0.19	1044.00	242.83	801.17	Purifying selection	5.25
TraesCS6B02G127800	TaMAPK17	TraesCS6D02G082900	TaMAPK44	0.03	0.09	0.31	1494.00	349.50	1144.50	Purifying selection	6.76
TraesCS6B02G146300	TaMAPK10	TraesCS6D02G108100	TaMAPK45	0.00	0.07	0.02	1107.00	254.67	852.33	Purifying selection	5.05
TraesCS6B02G146300	TaMAPK10	TraesCS7A02G422500	TaMAPK12	0.04	0.98	0.05	1107.00	254.42	852.58	Purifying selection	75.03
TraesCS6B02G146300	TaMAPK10	TraesCS7B02G322900	TaMAPK54	0.05	1.03	0.04	1107.00	254.08	852.92	Purifying selection	79.27
TraesCS6B02G146300	TaMAPK10	TraesCS7D02G414700	/	0.05	1.03	0.04	1107.00	254.42	852.58	Purifying selection	79.05
TraesCS6B02G177800	TaMAPKKK18	TraesCS6D02G139200	TaMAPKK23	0.01	0.09	0.13	1527.00	339.00	1188.00	Purifying selection	7.12
TraesCS6B02G183300	/	TraesCS7D02G474700	TaMAPKK102	0.09	0.80	0.11	1254.00	292.25	961.75	Purifying selection	61.35
TraesCS6B02G200100	/	TraesCS7D02G384700	TaMAPKK61	0.19	0.59	0.31	1014.00	243.50	770.50	Purifying selection	45.64
TraesCS6B02G215100	TaMAPKK131	TraesCS6D02G173100	/	0.01	0.04	0.28	2577.00	620.17	1956.83	Purifying selection	2.80
TraesCS6B02G217100	TaMAPKK155	TraesCS6D02G174300	/	0.09	0.13	0.67	948.00	225.58	722.42	Purifying selection	9.79

TraesCS6B02G217100	TaMAPKK155	TraesCS7B02G270900	/	0.26	3.26	0.08	879.00	213.33	665.67	Purifying selection	250.45
TraesCS6B02G270400	TaMAPKK33	TraesCS6D02G236400	TaMAPKK31	0.03	0.07	0.41	1848.00	418.75	1429.25	Purifying selection	5.19
TraesCS6B02G279300	TaMAPKK4-1	TraesCS6D02G227300	/	0.01	0.02	0.27	2358.00	570.67	1787.33	Purifying selection	1.78
TraesCS6B02G296700	TaMAPK1	TraesCS6D02G245500	TaMAPK13	0.00	0.03	0.14	1380.00	326.17	1053.83	Purifying selection	2.16
TraesCS6B02G303800	/	TraesCS7D02G230200	TaMAPKK51	0.17	0.43	0.39	1218.00	297.92	920.08	Purifying selection	32.85
TraesCS6B02G320800	TaMAPKK129	TraesCS6D02G271500	/	0.07	0.15	0.49	2952.00	706.42	2245.58	Purifying selection	11.39
TraesCS6B02G379500	/	TraesCS6D02G328800	TaMAPKK1	0.01	0.10	0.07	1104.00	300.08	803.92	Purifying selection	7.81
TraesCS6B02G386100	TaMAPKKK19	TraesCS6D02G335800	TaMAPKKK20	0.00	0.04	0.09	2085.00	477.42	1607.58	Purifying selection	3.32
TraesCS6D02G108100	TaMAPK45	TraesCS7A02G422500	TaMAPK12	0.05	1.00	0.05	1107.00	254.75	852.25	Purifying selection	76.70
TraesCS6D02G108100	TaMAPK45	TraesCS7B02G322900	TaMAPK54	0.05	1.07	0.04	1107.00	254.42	852.58	Purifying selection	82.31
TraesCS6D02G108100	TaMAPK45	TraesCS7D02G414700	/	0.05	1.02	0.05	1107.00	254.75	852.25	Purifying selection	78.43
TraesCS6D02G145100	/	TraesCS7D02G474700	TaMAPKK102	0.09	0.77	0.11	1254.00	292.75	961.25	Purifying selection	59.29
TraesCS6D02G161600	/	TraesCS7D02G384700	TaMAPKK61	0.21	0.58	0.37	1098.00	267.67	830.33	Purifying selection	44.75
TraesCS6D02G256700	/	TraesCS7D02G230200	TaMAPKK51	0.18	0.36	0.49	1215.00	297.58	917.42	Purifying selection	27.76
TraesCS6D02G328800	TaMAPKK1	TraesCS7D02G155100	/	0.12	0.42	0.29	1035.00	278.50	756.50	Purifying selection	31.96
TraesCS7A02G032700	TaMAPKK107	TraesCS7D02G029300	/	0.01	0.06	0.22	1440.00	336.25	1103.75	Purifying selection	4.52
TraesCS7A02G049000	TaMAPK46	TraesCS7D02G044100	TaMAPK18	0.01	0.09	0.15	1452.00	345.42	1106.58	Purifying selection	6.85
TraesCS7A02G111300	TaMAPK19	TraesCS7B02G009200	/	0.00	0.09	0.04	1179.00	272.42	906.58	Purifying selection	7.21

TraesCS7A02G111300	TaMAPK19	TraesCS7D02G106400	/	0.00	0.06	0.05	1179.00	272.50	906.50	Purifying selection	4.70
TraesCS7A02G229600	/	TraesCS7D02G230200	TaMAPKK51	0.00	0.03	0.13	1233.00	304.50	928.50	Purifying selection	2.58
TraesCS7A02G232300	TaMAPKKK22	TraesCS7B02G130700	TaMAPKKK23	0.01	0.06	0.12	2100.00	482.33	1617.67	Purifying selection	4.48
TraesCS7A02G232300	TaMAPKKK22	TraesCS7D02G232400	TaMAPKKK24	0.02	0.05	0.37	2067.00	476.33	1590.67	Purifying selection	3.55
TraesCS7A02G326700	TaMAPKK103	TraesCS7B02G227300	/	0.56	1.01	0.55	537.00	127.08	409.92	Purifying selection	77.84
TraesCS7A02G326700	TaMAPKK103	TraesCS7D02G323500	/	0.02	0.06	0.28	1602.00	374.58	1227.42	Purifying selection	4.48
TraesCS7A02G335300	TaMAPK3	TraesCS7B02G246900	TaMAPK52	0.00	0.04	0.05	1263.00	287.50	975.50	Purifying selection	3.30
TraesCS7A02G335300	TaMAPK3	TraesCS7D02G342800	TaMAPK7	0.01	0.04	0.14	1263.00	287.67	975.33	Purifying selection	2.74
TraesCS7A02G388800	/	TraesCS7D02G384700	TaMAPKK61	0.00	0.03	0.03	1188.00	286.33	901.67	Purifying selection	2.47
TraesCS7A02G410700	TaMAPK49	TraesCS7B02G309900	TaMAPK53	0.00	0.10	0.03	1734.00	409.08	1324.92	Purifying selection	8.06
TraesCS7A02G410700	TaMAPK49	TraesCS7D02G403700	TaMAPK20	0.00	0.07	0.05	1734.00	409.83	1324.17	Purifying selection	5.72
TraesCS7A02G422500	TaMAPK12	TraesCS7B02G322900	TaMAPK54	0.01	0.12	0.10	1131.00	260.33	870.67	Purifying selection	8.93
TraesCS7A02G422500	TaMAPK12	TraesCS7D02G414700	/	0.00	0.08	0.04	1107.00	254.50	852.50	Purifying selection	5.88
TraesCS7A02G488200	/	TraesCS7D02G474700	TaMAPKK102	0.00	0.16	0.01	1275.00	299.08	975.92	Purifying selection	12.28
TraesCS7B02G130700	TaMAPKKK23	TraesCS7D02G232400	TaMAPKKK24	0.02	0.09	0.21	2067.00	476.50	1590.50	Purifying selection	6.55
TraesCS7B02G195500	/	TraesCS7D02G230200	TaMAPKK51	0.00	0.07	0.02	1233.00	303.83	929.17	Purifying selection	5.02
TraesCS7B02G246900	TaMAPK52	TraesCS7D02G342800	TaMAPK7	0.00	0.03	0.11	1263.00	287.67	975.33	Purifying selection	2.18
TraesCS7B02G290700	/	TraesCS7D02G384700	TaMAPKK61	0.00	0.05	0.05	1188.00	286.67	901.33	Purifying selection	3.60

TraesCS7B02G309900	TaMAPK53	TraesCS7D02G403700	TaMAPK20	0.01	0.09	0.06	1734.00	409.92	1324.08	Purifying selection	6.97
TraesCS7B02G322900	TaMAPK54	TraesCS7D02G414700	/	0.00	0.10	0.04	1107.00	254.17	852.83	Purifying selection	7.42
TraesCS7B02G391300	/	TraesCS7D02G474700	TaMAPKK102	0.00	0.09	0.02	1275.00	299.42	975.58	Purifying selection	6.81
TraesCS7B02G424500	/	TraesCS7D02G503600	TaMAPKK54	0.14	0.35	0.41	1350.00	304.25	1045.75	Purifying selection	26.78
TraesCS7B02G425200	/	TraesCS7D02G503600	TaMAPKK54	0.13	0.46	0.28	1269.00	295.83	973.17	Purifying selection	35.76
TraesCS7B02G427800	/	TraesCS7D02G503600	TaMAPKK54	0.14	0.42	0.34	1974.00	459.42	1514.58	Purifying selection	32.09
TraesCS7B02G430300	/	TraesCS7D02G503600	TaMAPKK54	0.14	0.40	0.34	2136.00	493.08	1642.92	Purifying selection	30.81