

Table S3. Analysis of candidate polymorphisms using model: $\sim$ Latitude + FRI + X + $X \times$ Latitude.

Phenotype	Latitude	FRI	X			$X \times \text{Latitude}$		
			raw ^a	%SNP ^b	%HAP ^c	raw ^a	%SNP ^b	%HAP ^c
$X = \text{CRY2}$ [32]								
LD	6E-08	2E-07	2E-04	(0.07)	(0.21)	2E-03	(0.03)	(0.07)
LDV	6E-07	0.01	6E-04	(0.07)	(0.20)	0.01	(0.07)	(0.15)
SD	2E-04	6E-05	2E-03	(0.07)	(0.22)	0.04	(0.16)	(0.29)
SDV	3E-06	0.12	5E-04	(0.04)	(0.11)	0.14	(0.30)	(0.40)
JIC0W	0.05	5E-06	2E-03	(0.02)	(0.06)	0.02	(0.05)	(0.07)
JIC2W	2E-04	7E-06	3E-04	(0.05)	(0.12)	0.02	(0.10)	(0.16)
JIC4W	5E-05	5E-04	5E-04	(0.06)	(0.18)	0.04	(0.19)	(0.31)
JIC8W	0.16	0.01	1E-03	(0.03)	(0.07)	0.09	(0.19)	(0.27)
±V (LD)	1E-05	2E-07	4E-03	(0.12)	(0.27)	0.01	(0.07)	(0.12)
±V (SD)	0.03	3E-03	0.37	(0.45)	(0.52)	0.80	(0.81)	(0.84)
SD/LD (V)	0.07	0.44	0.12	(0.24)	(0.37)	0.40	(0.52)	(0.66)
VERN	0.08	2E-05	0.42	(0.56)	(0.66)	0.05	(0.11)	(0.17)
JIC/USC	0.02	0.61	0.15	(0.23)	(0.30)	0.39	(0.38)	(0.41)
JIC/USC (V)	7E-03	2E-03	0.01	(0.11)	(0.28)	0.24	(0.48)	(0.65)
FRI	0.21	1E-11	2E-03	(0.02)	(0.03)	0.34	(0.45)	(0.52)
FLC	0.90	8E-09	0.73	(0.80)	(0.86)	0.23	(0.29)	(0.32)
$X = \text{FLC}$ [33]								
LD	1E-08	2E-06	0.52	(0.77)	(0.89)	7E-02	(0.25)	(0.40)
LDV	1E-07	0.01	0.98	(0.99)	(1.00)	0.18	(0.38)	(0.52)
SD	1E-05	1E-04	0.06	(0.30)	(0.51)	0.09	(0.24)	(0.38)
SDV	5E-08	0.16	0.02	(0.18)	(0.34)	0.24	(0.40)	(0.53)
JIC0W	0.01	4E-05	0.21	(0.37)	(0.52)	0.42	(0.54)	(0.63)
JIC2W	2E-05	2E-05	0.17	(0.42)	(0.59)	0.07	(0.22)	(0.34)
JIC4W	3E-06	6E-04	0.11	(0.37)	(0.58)	0.04	(0.19)	(0.31)
JIC8W	0.05	0.02	0.17	(0.35)	(0.51)	0.57	(0.66)	(0.77)
±V (LD)	2E-06	1E-06	0.49	(0.71)	(0.83)	0.11	(0.28)	(0.42)
±V (SD)	0.01	3E-03	0.36	(0.44)	(0.51)	0.66	(0.70)	(0.73)
SD/LD (V)	0.01	0.28	1E-03	(0.01)	(0.02)	0.97	(0.97)	(0.98)
VERN	0.05	6E-05	0.29	(0.43)	(0.55)	0.46	(0.52)	(0.62)
JIC/USC	0.03	0.58	0.02	(0.06)	(0.08)	0.93	(0.92)	(0.93)
JIC/USC (V)	9E-04	1E-03	0.04	(0.16)	(0.35)	0.04	(0.21)	(0.35)
FRI	0.05	5E-10	0.35	(0.48)	(0.60)	0.60	(0.67)	(0.74)
FLC	0.69	3E-08	0.16	(0.27)	(0.35)	0.65	(0.69)	(0.70)
$X = \text{PHYC}$ [34]								
LD	1E-07	9E-07	0.01	(0.22)	(0.44)	0.07	(0.25)	(0.39)
LDV	9E-08	0.01	0.50	(0.72)	(0.86)	0.90	(0.95)	(0.97)
SD	1E-04	1E-04	0.11	(0.38)	(0.59)	0.16	(0.33)	(0.48)
SDV	1E-06	0.14	0.07	(0.29)	(0.49)	0.35	(0.50)	(0.62)
JIC0W	0.02	2E-05	0.15	(0.30)	(0.46)	0.06	(0.12)	(0.17)
JIC2W	8E-05	3E-05	0.07	(0.27)	(0.45)	0.08	(0.25)	(0.38)
JIC4W	7E-06	1E-03	0.36	(0.63)	(0.81)	0.29	(0.51)	(0.69)
JIC8W	0.04	0.02	0.94	(0.96)	(0.98)	0.35	(0.47)	(0.57)
±V (LD)	3E-05	3E-07	2E-03	(0.09)	(0.22)	0.01	(0.07)	(0.13)
±V (SD)	0.01	2E-03	0.66	(0.71)	(0.80)	5E-04	(2E-03)	(2E-03)
SD/LD (V)	0.08	0.44	0.09	(0.20)	(0.31)	0.13	(0.25)	(0.35)
VERN	0.15	1E-05	0.02	(0.07)	(0.13)	0.01	(0.04)	(0.08)
JIC/USC	0.03	0.62	0.68	(0.72)	(0.79)	0.24	(0.23)	(0.26)
JIC/USC (V)	2E-03	2E-03	0.31	(0.53)	(0.70)	0.14	(0.36)	(0.54)
FRI	0.09	9E-11	0.60	(0.69)	(0.77)	0.44	(0.54)	(0.60)
FLC	0.98	7E-09	0.32	(0.43)	(0.53)	0.32	(0.39)	(0.42)

^aNominal p-value.^bPercentile of p-value compared to genome-wide SNP-based tests.^cPercentile of p-value compared to genome-wide haplotype-based tests.