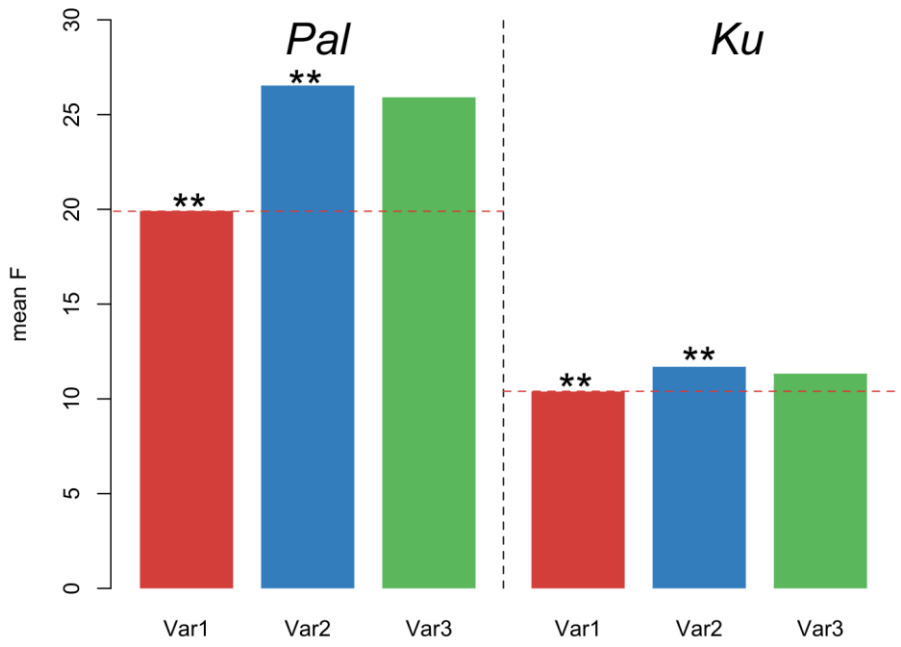
1. Supplementary Figures



Supplementary Figure S1. Dependence of the cost function values on parameter variation for different environmental conditions. Var 1-3 (variants 1-3) represent three different options for variation of parameters in Model 1 under 8 h photoperiod: Var 1: *c1* differed between vernalized and non-vernalized conditions; Var 2: c_1 differed between 9 A.M. and 3 P.M.; Var 3: c_1 did not differ between any conditions. In both *Pal* and *Ku* lines, Var 1 had the lowest value of the cost function. Asterisks indicate statistically significant differences in the mean F between Var 1 and 2 and Var 3 (* $p< 0.05$, ** $p<0.01$).

2. Supplementary Tables

Regulatory constant	Line	H0	H1	H2	H3	H4	H5
	Ku	2.397	2.382	2.602	2.382	2.002	2.607
c0 **,N9**	*Pal*	0.4492	0.497	0.3773	0.4746	0.8558	0.4289
	ku	0.001169	0.0008705	0.000953	0.0009365	0.001046	0.0009344
	Ku	0.3659	0.2756	0.6939	0.2802	3.403	0.6562
c0 **,N3**	*Pal*	0.1477	0.1736	0.1066	0.1593	0.4411	0.1331
	ku	0.001177	0.0008736	0.0009204	0.0009559	0.001049	0.0008986
	Ku	3.391	3.42	4.05	3.419	3.522	3.99
c0 **,V9**	*Pal*	0.04384	0.05069	0.04252	0.03259	0.81	0.02889
	ku	0.0007918	0.005291	0.002591	-0.002503	0.001421	0.01507
	Ku	-4.749	-4.668	-3.94	-4.726	1.475	-4.057
c0 **,V3**	*Pal*	-0.109	-0.1086	-0.08387	-0.1128	0.2854	-0.08985
	ku	-0.004392	-0.005443	0.0006515	-0.005418	-0.002895	0.01531
	Ku	0.3026	0.3076	0.2947	0.307	2.902	0.2978
c1 **,N**	*Pal*	0.01259	0.009162	0.01961	0.01103	-0.2959	0.01603
	ku	-0.0002681	0.0001591	0.0005285	5.137e-05	-7.302e-05	0.003742
	Ku	0.7229	0.7213	0.6933	0.7226	6.962	0.704
c1 **,V**	*Pal*	0.1145	0.1146	0.1191	0.1156	0.8735	0.1209
	ku	0.01662	0.0215	0.02604	0.0212	0.01635	-0.06648

Supplementary Table S1. Regulatory parameters for Model 1 under the hypotheses H0-H5 for the 8 h photoperiod. c_1 constant presents the regulatory input of *FT*-like genes, while c_0 reflects the regulation of *AGL8* by other factors. The values of each constant differ between vernalized (V) and non-vernalized (N) conditions. c_0 values also vary depending on the time of day: "9" corresponds to the data collected at 9 A.M. and "3" to the data collected at 3 P.M. [21].

Regulatory constant	Line	H0	H1	H2	H3	H4	H5
	Ku	0.3246	0.3154	0.258	0.3278	0.6296	0.258
c0 **,N7**	*Pal*	0.2073	0.2043	0.2861	0.2063	-0.0416	0.2831
	ku	-0.0009	-0.0008	0.004	-0.0009	-0.0009	0.0035
	Ku	1.8329	1.8169	1.3076	1.832	2.6148	1.3066
c0 **,N6**	*Pal*	0.0478	0.0401	0.015	0.0447	0.4846	0.0049
	ku	0.0011	0.0011	0.0085	0.0011	0.0011	0.0061
	Ku	0.5684	0.545	0.3751	0.5635	0.6202	0.3862
c0 **,V7**	*Pal*	0.8443	0.8405	0.8129	0.8407	-0.3328	0.8022
	ku	0.8489	0.8393	1.1559	0.8462	0.7423	1.1439
	Ku	-0.2448	-0.2844	-0.9892	-0.2556	0.9747	-0.9681
c0 **,V6**	*Pal*	5.1471	5.136	5.0013	5.1455	2.1051	4.9705
	ku	-0.238	-0.2334	0.0194	-0.2429	-0.1737	0.0207
	Ku	0.1227	0.1242	0.2156	0.1225	0.21	0.2159
c1 **,N**	*Pal*	0.0532	0.0534	0.0575	0.0533	0.4418	0.0577
	ku	0.0014	0.0014	-0.0804	0.0014	0.0014	-0.0646
	Ku	0.3061	0.3087	0.4472	0.3069	0.8917	0.4457
c1 **,V**	*Pal*	0.0138	0.0138	0.0143	0.0138	1.1217	0.0143
	ku	0.1432	0.1429	0.1956	0.1441	0.2433	0.1958

Supplementary Table S2. Regulatory parameters for Model 1 under the hypotheses H0-H5 for the 16 h photoperiod. c_1 constant presents the regulatory input of *FT*-like genes, while c_0 reflects the regulation of *AGL8* by other factors. The values of each constant differ between vernalized (V) and non-vernalized (N) conditions. c_0 values also vary depending on the time of day: "7" corresponds to the data collected at 7 A.M. and "6" to the data collected at 6 P.M. [21].