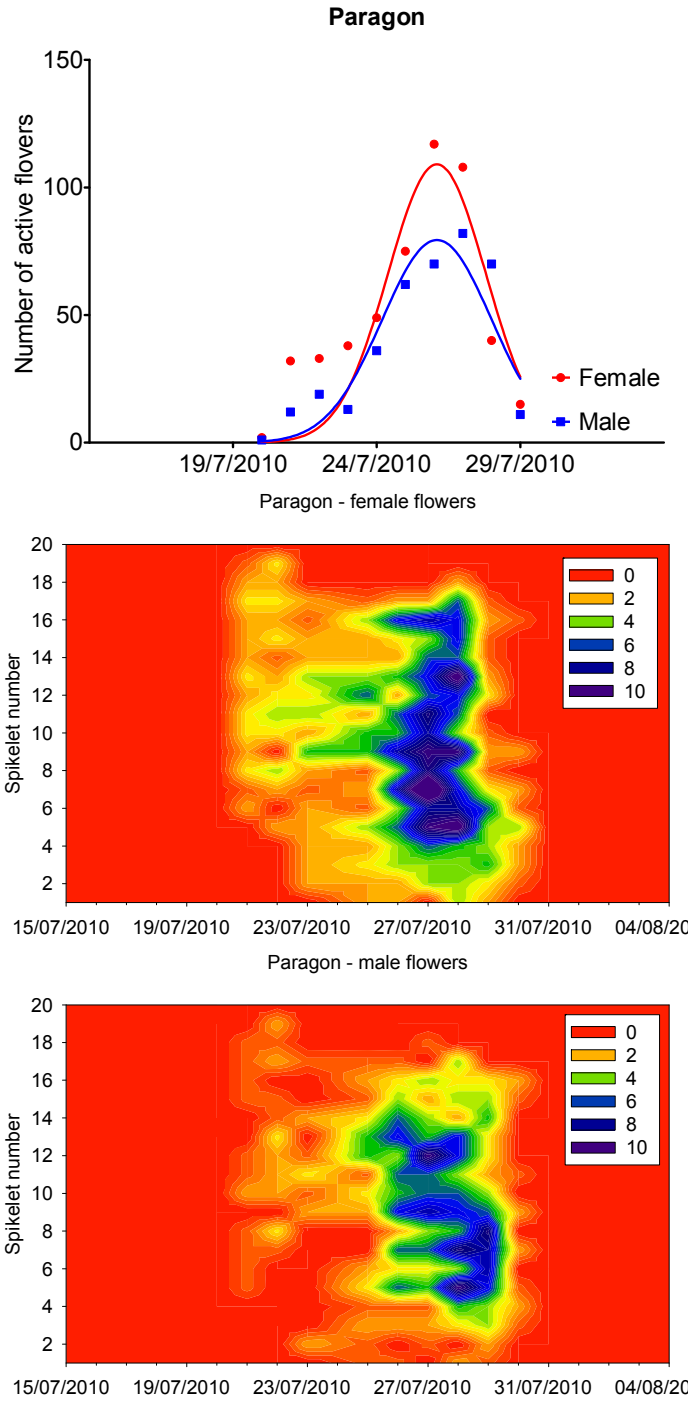
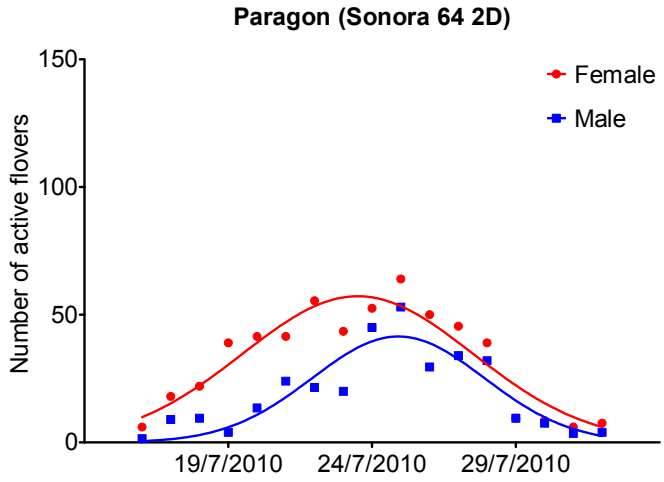
SUPPLEMENTARY DATA

FIG. S1. Flowering biology of three 'Paragon' lines depicted as numbers of active male and female flowers. The values represent daily sums of pollen-releasing anthers and receptive stigmas in each spikelet, aggregated for the first five tillers in a plant. The figures show contrasting flowering biology in the three selected lines; well-defined and synchronized peak of male and female flowering activity (A), a wide temporal spread of both male and female flowering (B), and spread-out but perfectly synchronized peaks of male and female active flowers (C).

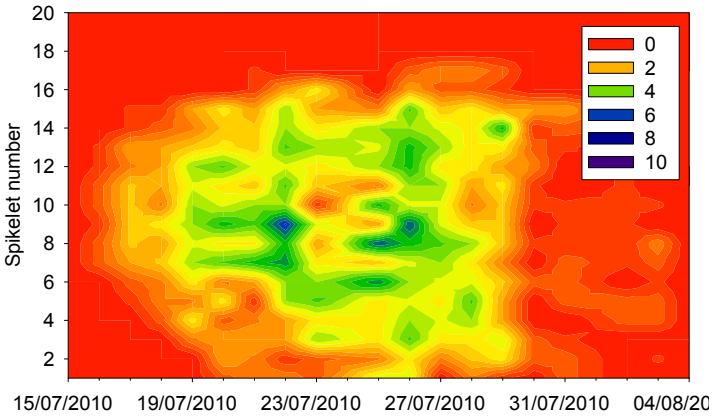
A



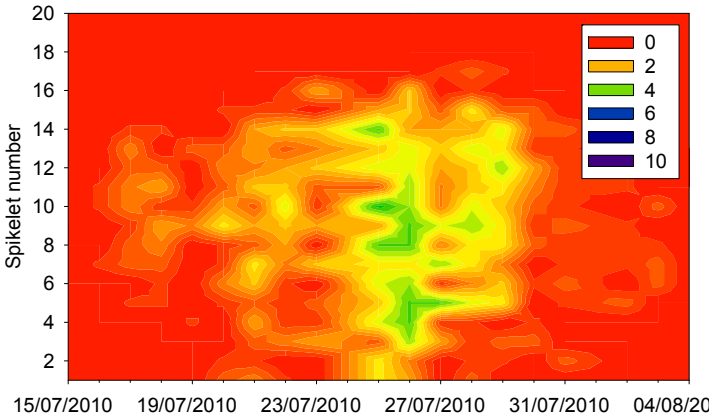
B



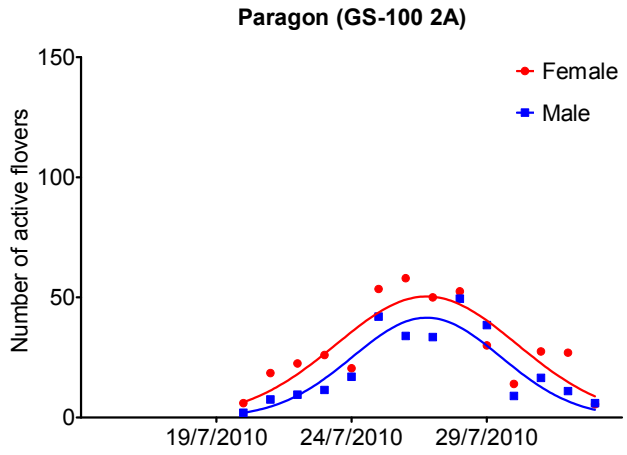
Paragon (Sonora 64 2D) - female flowers



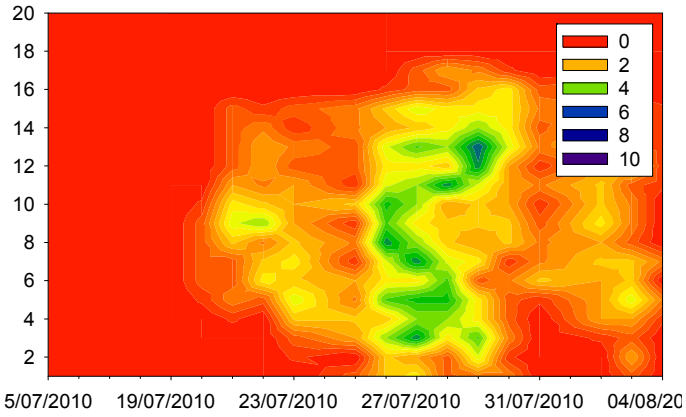
Paragon (Sonora 64 2D) - male flowers



C



Paragon (GS-100 2A) - female flowers



Paragon (GS-100 2A) - male flowers

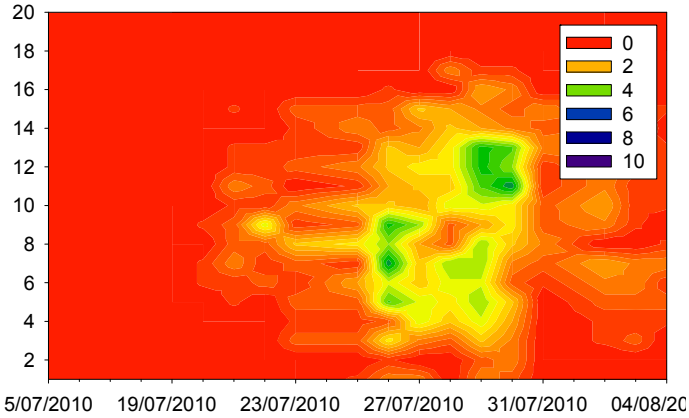
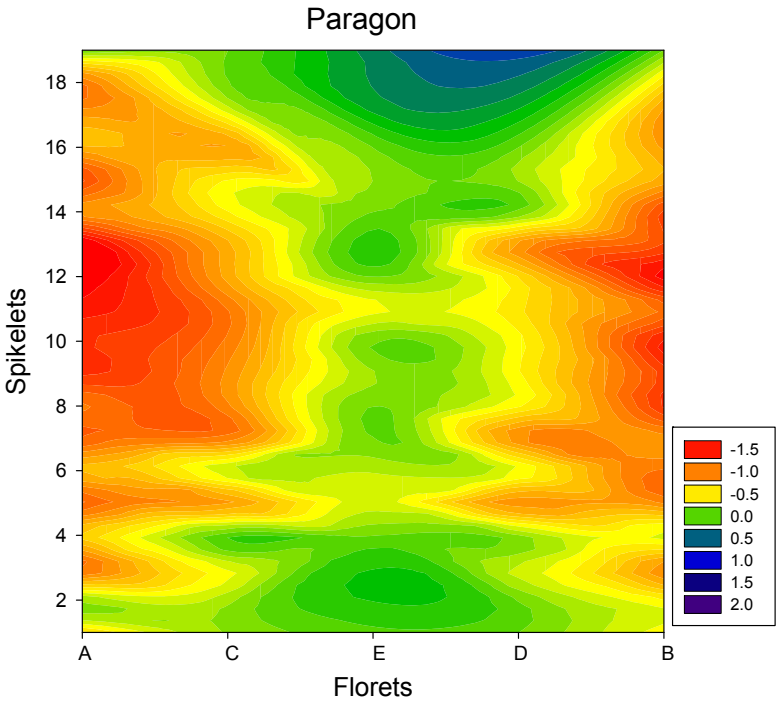
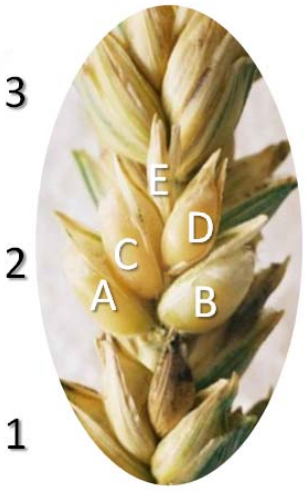


FIG. S2. Mean synchrony between male and female flowers of ‘Paragon’ (A) and ‘Spark-Rialto’ (B) varieties. Flower synchrony was calculated as the difference between the day of pollen dehiscence and the day of stigma collapse. Negative values denote stigma collapse after pollen release from the same flower.

A





B

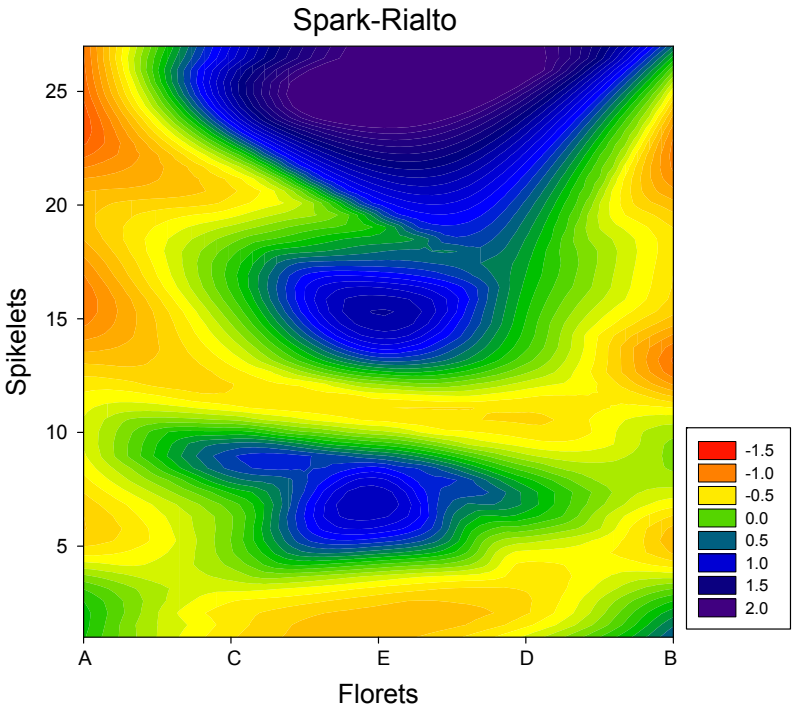


TABLE S1. Estimates of model parameters (± s.d.) describing the proportion of flowers in 'Paragon' and 'Spark-Rialto' varieties that escaped heat stress. Reverse cumulative Gaussian distribution models were fitted into calculated percentages of flowers that escaped heat stress of specific length. The following formula was applied:

$$Y = 100 \times [1 - zdist\left(\frac{X-Mean}{SD}\right)]$$

where *Y* is the % of flowers that escaped heat, *zdist* is one-tailed *P*-value, *X* is the length of heat stress in days and *Mean* and *SD* are the parameters to be fitted.

		Tiller 1	Tiller 2	Tiller 3	Tiller 4	Tiller 5
'Paragon'	*Mean*	4.121	5.607	7.694	6.926	5.999
		(0.0002662)	(2.000e-005)	(7.616e-005)	(2.762e-005)	(6.974e-005)
	SD	1.146	1.338	1.204	1.372	1.527
		(0.0003765)	(2.986e-005)	(9.566e-005)	(4.694e-005	(0.0001129
	R^2	1.000	1.000	1.000	1.000	1.000
'Spark-Rialto'	*Mean*	3.281	5.534	7.762	9.814	11.27
		(0.04933)	(3.161e-005)	(5.763e-005)	(6.667e-005)	(0.000)
	SD	1.759	1.263	1.292	1.286	1.232
		(0.07245)	(4.634e-005)	(7.042e-005)	(3.023e-005)	(0.000)
	R^2	0.9973	1.000	1.000	1.000	1.000

TABLE S2. Estimates of model parameters (± s.d.) describing the contribution of individual tillers to the total active male flower pool in 'Paragon' and 'Spark-Rialto' varieties. Gaussian distribution models were fitted, where *Peak* denotes the flowering intensity, *Mean* is the location of the peak and *Variance* is the width of the distribution.

		Tiller 1	Tiller 2	Tiller 3	Tiller 4	Tiller 5
'Paragon'	*Peak*	76.98	32.69	46.64	26.71	24.28
		(1.897)	(1.719)	(0.2292)	(0.2060)	(1.425)
	Mean	1.415	4.539	7.848	6.867	5.209
		(0.1658)	(0.1312)	(0.01641)	(0.05050)	(0.3448)
	Variance	2.065	2.067	1.500	1.824	3.004
		(0.1349)	(0.1565)	(0.007674)	(0.03792)	(0.4386)
	R^2	0.9954	0.9458	1.000	0.9997	0.8800
'Spark-Rialto'	*Peak*	99.98	61.06	44.83	39.24	39.32
		(1.214)	(0.5908)	(0.1644)	(0.5348)	(0.1348)
	Mean	1.444	5.054	7.274	9.337	11.14
		(0.08760)	(0.01552)	(0.01729)	(0.02222)	(0.008415)
	Variance	2.198	1.380	1.319	1.414	1.448
		(0.07085)	(0.01654)	(0.01080)	(0.02259)	(0.009111)
	R^2	0.9988	0.9993	1.000	0.9981	0.9999