

Datasets accompanying the paper entitled J. Bishop, *et al.*, Susceptibility of faba bean (*Vicia faba* L.) to heat stress during floral development and anthesis. Journal of Agronomy and Crop Science. (2016). (<http://dx.doi.org/10.1111/jac.12172>) by Jacob Bishop, School of Agriculture, Policy and Development, University of Reading, Reading RG6 6AR, UK

Filename dataset_1.csv

Contains various measurements taken from faba bean (*Vicia faba* L.) plants over two years of experiments conducted at the University of Reading Plant Environment Laboratory (latitude 51 27' N, longitude 00 56' W) in controlled environment chambers and in mesh cages to exclude plants from insect pollination. All parameters have been averaged across 4 experimental replicates, 3 replicate experiments were conducted in year 1 and 1 additional replicate was used in year 2. For the experimental rationale and methodology, including how the data were averaged, please see the manuscript. All measurements were conducted once plants had reached senescence.

<i>Column no</i>	<i>Variable name</i>	<i>Description and units</i>	<i>Notes</i>
1	Year	Growing season of experimentation	<i>For sowing dates, see the manuscript</i>
2	Temp	Daytime temperature of 5-day temperature treatment	
3	Replicate	Replicate experiment identity number	
4	Cabinet	Controlled environment cabinet identity number	
5	Yieldmass	Mean total mass in grams of all beans produced on each plant	
6	Beannum	Mean count of the total number of beans produced on each plant	
7	Podnum	Mean count of the total number of pods produced on each plant	
8	Massperpod	Mean mass per pod in grams for each experimental plant.	
9	Massperbean	Mean mass per bean in grams for each experimental plant.	
10	Beanperpod	Mean number of beans per pod for each experimental plant.	

Filename dataset_2.csv

As dataset1.csv but contains only per plant yield parameters from flowers that were determined as present prior to stress during examination (floral development stage 1 to 10; for more details please see the manuscript). These data were used to produce figure 2B in the paper and quantify the variable 'subset plant yield'.

<i>Column no</i>	<i>Variable name</i>	<i>Description and units</i>	<i>Notes</i>
1	Year	Growing season of experimentation	<i>For sowing dates, see the manuscript</i>
2	Temp	Daytime temperature of 5-day temperature treatment	
3	Replicate	Replicate experiment identity number	
4	Cabinet	Controlled environment cabinet identity number	
5	Yieldmass	Mean total mass in grams of all beans produced on each plant from flowers present prior to temperature treatments	<i>For an explanation of floral development stages and scoring methodology, see the manuscript</i>
6	Beannum	Mean count of the total number of beans produced on each plant from flowers present prior to temperature treatments	<i>For an explanation of floral development stages and scoring methodology, see the manuscript</i>
7	Podnum	Mean count of the total number of pods produced on each plant from flowers present prior to temperature treatments	<i>For an explanation of floral development stages and scoring methodology, see the manuscript</i>

Filename dataset_3.csv

Percentage pollen germination measured following heat stress at five different temperatures (used in figure 1D). This work was conducted in year 1 (2013). A summary table of the pollen germination information is included as supplementary online material to the paper.

<i>Column no</i>	<i>Variable name</i>	<i>Description and units</i>	<i>Notes</i>
1	Temp	Daytime temperature (°C) of 5-day temperature treatment	
2	Replicate	Replicate experiment identity number	
3	Germination	Mean percentage pollen germination	<i>For pollen germination methodology and information about data collection, see manuscript</i>

Filename dataset_4.csv

Advancement of flowers across development stages at five different temperatures (used in figure 2A). In year 1 (2013) flowers on all experimental plants were examined prior to temperature treatments and a subset of plants were also examined following temperature treatments (with the same flowers being scored pre-and and post-temperature treatments), to determine how individual floral development varied with temperature. For the floral development stage definitions, and the experimental rationale and methodology, including how the data were averaged, please see the manuscript.

<i>Column no</i>	<i>Variable name</i>	<i>Description and units</i>	<i>Notes</i>
1	Temp	Daytime temperature (°C) of 5-day temperature treatment	
2	Replicate	Replicate experiment identity number	
3	Pre_score	Floral development stage scored prior to temperature treatments	<i>For an explanation of floral development stages and scoring methodology, see the manuscript</i>
4	Post_score	Floral development stage scored following temperature treatments	

Filename dataset_5.csv

As dataset_1.csv but contains mean per-plant yield contribution from each floral development stage (6 stages 9 5 temperature levels 9 4 replicate experiments). Pods from each floral node were harvested and processed individually. This data was used to produce figure 2B in the paper and quantify the variable 'floral stage yield'. For the floral development stage definitions, and the experimental rationale and methodology, including how the data were averaged, please see the manuscript.

<i>Column no</i>	<i>Variable name</i>	<i>Description and units</i>	<i>Notes</i>
1	Year	Growing season of experimentation	<i>For sowing dates, see the manuscript</i>
2	Temp	Daytime temperature (°C) of 5-day temperature treatment	
3	Replicate	Replicate experiment identity number	
4	Pre_score	Floral development stage scored prior to temperature treatments	<i>For an explanation of floral development stages and scoring methodology, see the manuscript</i>
5	Yieldmass	Count data of the mean number of beans produced per flower of the stated development stage	
6	Beannum	Mean mass in grams of all beans produced per flower of the stated development stage	

Filename dataset_6.csv

As dataset_1.csv but contains higher resolution samples taken from the main stems of experimental plants. Pods from each floral node were harvested and processed individually. This data was used to produce figure 3 in the paper and quantify the variable 'node with yield maxima'.

<i>Column no</i>	<i>Variable name</i>	<i>Description and units</i>	<i>Notes</i>
1	Year	Growing season of experimentation	<i>For sowing dates, see the manuscript</i>
2	Temp	Daytime temperature (°C) of 5-day temperature treatment	
3	Replicate	Replicate experiment identity number	
4	Floralnode	Floral node position on the main stem of each experimental plant, with node 1 being the first (and oldest) node to produce flowers	<i>This was counted following senescence by examining remnant floral trusses to differentiate between vegetative and floral nodes</i>
5	Yieldmass	Mean mass in grams of all beans produced at each floral node	
6	Beannum	Count data of the mean number of beans produced at each floral node	