

**Table S1.** Index for relative comparison of  $\Delta$ , grain yield (GY), plant height (HT), and heading date (HD) between environments.

Standard Deviations from Mean	Rating
Less than -2	1
Between -2 and -1.5	2
Between -1.5 and -1	3
Between -1 and -0.5	4
Between -0.5 and Mean	5
Between Mean and 0.5	6
Between 0.5 and 1	7
Between 1 and 1.5	8
Between 1.5 and 2	9
Greater than 2	10

**Table S2.** Monthly and total precipitation (mm) occurring over the growing season for each location-year.

Year	Location	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Total
2015	Pullman		25.9	65.5	77.5	47.2	54.1	59.9	10.2	34.3	4.8	4.8	384.3
2016	Pullman		38.9	49.8	106.2	68.3	31.5	82.3	36.8	16.8	18.5	13.7	462.8
2017	Pullman			39.4	29.7	23.1	65.8	121.2	36.6	39.6	20.8	0.5	376.7
2017	Lind	8.9	86.9	25.1	6.6	19.8	52.3	45.5	25.1	10.4	13.5	0.0	294.1
2017	Pendleton		44.2	12.4	32.8	39.6	45.0	36.1	25.9	9.4	17.8	1.5	264.7

**Table S3.** Average maximum temperature (°C) per month during the growing season for each location-year and average maximum temperature (°C) over the entire growing season for each location-year.

Year	Location	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Average
2015	Pullman		17.6	6.4	4.3	4.3	8.8	12.6	14.2	20.5	27.3	29.5	14.6
2016	Pullman		18.7	5.1	2.4	3.5	8.7	10.0	17.4	19.2	23.4	25.8	13.4
2017	Pullman			10.6	-0.7	-2.0	4.0	9.2	12.2	18.8	22.9	30.1	11.7
2017	Lind	23.2	15.3	12.4	-0.4	-2.9	3.1	10.7	15.0	21.6	26.1	32.3	14.2
2017	Pendleton		17.9	14.3	2.9	-2.0	4.3	14.1	17.4	24.3	28.4	34.7	15.6