

**Summary Table: 2019-2021 Normalized Stress Response, Common Wheat.** Average normalized response of common hard spring wheat varieties to terminal drought and nitrogen (N) stress in trials conducted in Yolo and Fresno Counties of California during the 2018-19, 2019-20 and 2020-21 seasons. Terminal drought and N stress responses are based on averages of 3 and 4 site-years of data, respectively. The normalized stress response is calculated as:  $(A_i / \text{mean } A) + [(B_i - \text{mean } B) / (\text{mean } B)]$ , where A is a fully watered/fertilized control, B is a managed stress trial grown at the same location, and i is an individual variety. Stress trials are managed identically except for the exclusion of irrigation after the vegetative growth period (terminal drought) or the exclusion of N fertilizer additions throughout the season (N stress).

Variety Name	Terminal Drought Stress Response									Nitrogen Stress Response										
	Yield				Protein Yield			Protein			Yield				Protein Yield			Protein		
	Rank	Response (%)	SE Response	p-value	Response (%)	SE Response	p-value	Response (%)	SE Response	p-value	Rank	Response (%)	SE Response	p-value	Response (%)	SE Response	p-value	Response (%)	SE Response	p-value
AP OCTANE	5	9.2	8.0	0.253	-1.3	10.9	0.905	-12.5	6.5	0.061	2	22.7	6.5	0.001	5.5	8.9	0.541	-21.3	5.3	0.000
AP REDWING 204	16	-4.2	8.0	0.600	-5.6	10.9	0.607	1.1	6.5	0.867	12	2.9	7.9	0.711	8.1	10.8	0.454	10.9	6.5	0.097
AP VENOM	22	-10.7	11.1	0.341	-15.4	15.2	0.316	-4.8	9.1	0.600	7	10.0	7.9	0.213	-3.4	10.8	0.755	-6.1	6.5	0.353
SY 64-1-9	14	-3.0	11.1	0.791	-5.1	15.2	0.736	11.1	9.1	0.229	1	49.7	7.9	0.000	63.4	10.8	0.000	-0.5	6.5	0.938
SY BLANCA GRANDE 515	2	16.8	11.1	0.138	32.8	15.2	0.036	0.8	9.1	0.927	13	1.5	7.9	0.849	-17.9	10.8	0.104	-1.0	6.5	0.881
SY CAL ROJO	1	18.1	8.0	0.028	22.5	10.9	0.044	-0.3	6.5	0.961	15	-1.6	6.5	0.805	3.2	8.9	0.719	1.1	5.3	0.837
SY SIENNA	19	-5.3	8.0	0.510	-12.3	10.9	0.263	3.2	6.5	0.625	21	-15.4	6.5	0.022	-7.4	8.9	0.409	6.8	5.3	0.207
SY SUMMIT 515	18	-4.8	8.0	0.547	-18.8	10.9	0.090	2.1	6.5	0.744	9	8.3	6.5	0.208	1.5	8.9	0.870	-7.5	5.3	0.163
UC 1907	6	8.4	11.1	0.454	31.3	15.2	0.044	9.8	9.1	0.288	16	-2.5	7.9	0.754	18.6	10.8	0.090	16.0	6.5	0.016
UC AMARILLO	25	-16.9	11.1	0.135	-2.1	15.2	0.891	11.0	9.1	0.231	18	-5.3	7.9	0.503	12.2	10.8	0.262	15.7	6.5	0.019
UC CENTRAL RED	10	3.6	8.0	0.652	-6.6	10.9	0.550	4.2	6.5	0.519	6	10.8	6.5	0.104	3.9	8.9	0.664	1.3	5.3	0.812
UC LASSIK	12	-1.4	11.1	0.900	-13.0	15.2	0.396	-8.8	9.1	0.337	10	5.6	7.9	0.484	-8.5	10.8	0.434	-14.5	6.5	0.029
UC PATWIN 515	20	-7.3	8.0	0.368	-19.1	10.9	0.085	4.2	6.5	0.523	4	12.7	6.5	0.056	5.1	8.9	0.572	-7.9	5.3	0.142
UC PATWIN 515 HP	15	-4.1	8.0	0.612	4.1	10.9	0.706	9.0	6.5	0.174	11	3.4	6.5	0.601	26.5	8.9	0.004	15.7	5.3	0.005
UC YUROK	3	13.3	8.0	0.103	27.3	10.9	0.016	-4.9	6.5	0.458	8	9.4	6.5	0.155	10.4	8.9	0.246	-11.6	5.3	0.034
WB 9229	11	1.1	8.0	0.892	-7.4	10.9	0.503	3.0	6.5	0.649	14	-0.9	6.5	0.885	7.1	8.9	0.425	5.8	5.3	0.277
WB 9699	8	6.6	8.0	0.411	-7.3	10.9	0.507	-4.4	6.5	0.499	3	16.3	6.5	0.016	3.3	8.9	0.712	-12.2	5.3	0.026
WB 9904	7	6.8	8.0	0.397	10.2	10.9	0.351	-6.0	6.5	0.363	22	-15.6	6.5	0.021	-27.5	8.9	0.003	-2.4	5.3	0.654
WB 9990	23	-12.2	8.0	0.134	-16.9	10.9	0.128	-5.3	6.5	0.419	5	11.2	7.9	0.162	-4.6	10.8	0.672	-8.8	6.5	0.179
WB JOAQUIN ORO	24	-14.2	8.0	0.081	-14.3	10.9	0.195	-0.4	6.5	0.955	23	-23.6	6.5	0.001	-4.9	8.9	0.581	16.8	5.3	0.003
WB PATRON	4	10.4	8.0	0.198	4.2	10.9	0.704	-7.1	6.5	0.282	19	-7.9	6.5	0.230	-15.2	8.9	0.093	-7.0	5.3	0.196
WB TRIPLE IV	21	-8.2	11.1	0.463	-4.8	15.2	0.754	-15.3	9.1	0.100	24	-33.0	7.9	0.000	-25.6	10.8	0.021	3.9	6.5	0.545
WINCAL 158-5	9	4.1	11.1	0.716	1.1	15.2	0.942	-0.7	9.1	0.941	20	-13.8	7.9	0.088	-20.8	10.8	0.059	-8.8	6.5	0.177
YECORA ROJO	13	-1.5	11.1	0.892	9.1	15.2	0.553	11.1	9.1	0.227	17	-2.6	7.9	0.740	4.4	10.8	0.685	5.3	6.5	0.416
YECORA ROJO 515	17	-4.6	8.0	0.568	7.4	10.9	0.499	-0.2	6.5	0.974	25	-42.2	7.9	0.000	-37.6	10.8	0.001	10.2	6.5	0.119