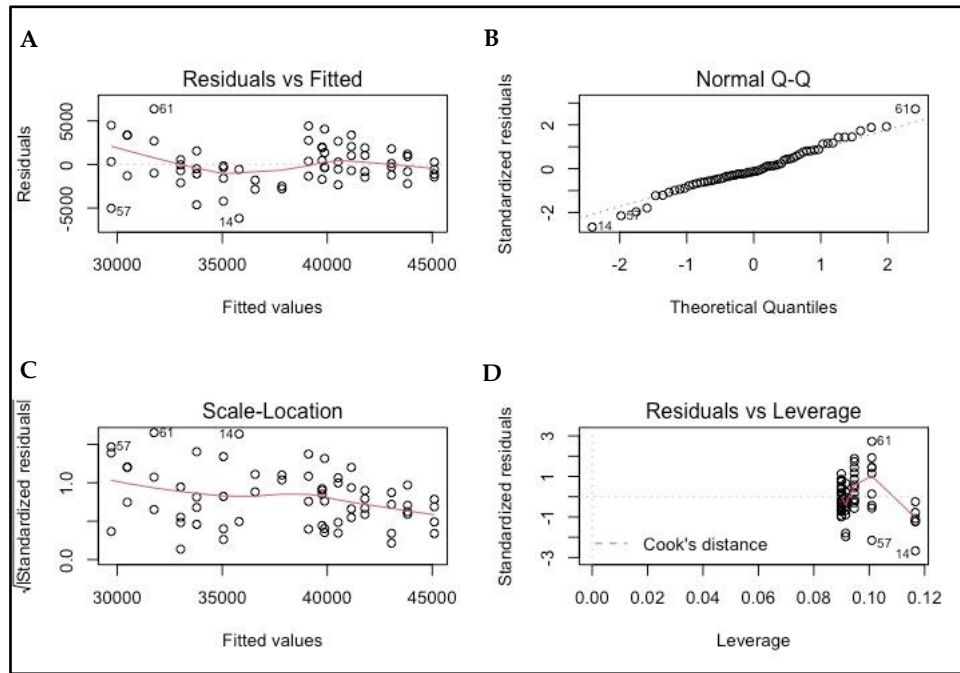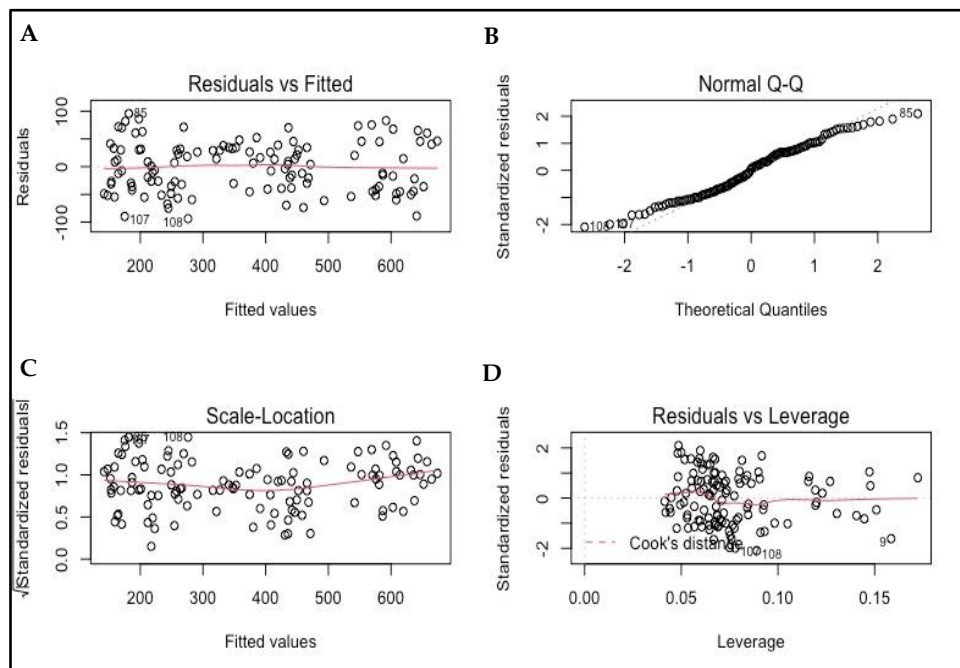# Supplementary Materials

Table S1. Air (60 cm) and soil (−10 cm) temperature (Celsius) of Farm A and B from January 2018 to June 2020. Data adapted from Florida Automated Weather Network (Available online: https://fawn.ifas.ufl.edu/data/reports/?res (accessed on 6 March 2022)).

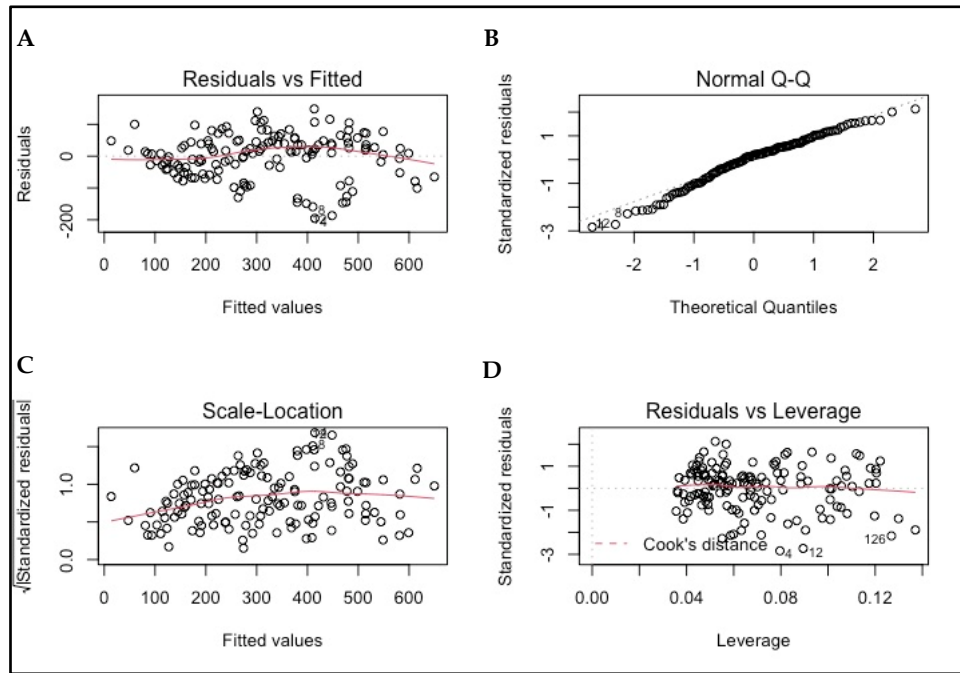| Time	60 cm-air (avg)	60 cm-air (min)	60 cm-air (max)	-10 cm-soil (avg)	-10 cm-soil (min)	-10 cm-soil (max)
Jan 2018	11.16	-3.18	26.96	13.51	8.96	18.10
Feb 2018	18.83	5.69	29.66	18.07	12.31	21.51
Mar 2018	15.71	-0.58	30.01	18.06	14.65	21.08
Apr 2018	19.61	6.71	30.74	20.50	17.08	24.02
May 2018	22.96	11.41	33.99	23.62	20.78	26.59
Jun 2018	26.02	19.65	37.48	26.99	24.59	30.09
Jul 2018	26.32	20.79	35.11	27.51	25.31	29.30
Aug 2018	26.59	21.33	35.83	27.65	25.79	29.26
Sep 2018	26.64	19.87	36.19	27.49	25.52	29.73
Oct 2018	22.90	9.26	34.80	24.66	20.51	27.68
Nov 2018	18.02	2.22	31.28	20.89	15.12	24.31
Dec 2018	15.21	0.56	28.61	16.99	12.97	20.99
Jan 2019	13.18	1.15	28.10	15.90	10.80	20.73
Feb 2019	18.38	4.29	30.53	17.78	12.11	21.56
Mar 2019	16.91	1.19	31.14	18.74	15.07	20.76
Apr 2019	20.31	6.86	31.35	21.39	17.64	23.90
May 2019	24.72	13.94	38.23	24.58	22.09	28.10
Jun 2019	26.51	20.30	37.50	26.92	24.63	29.84
Jul 2019	26.44	21.04	37.00	27.58	25.56	29.44
Aug 2019	26.71	21.04	36.86	27.59	26.03	29.86
Sep 2019	25.83	16.09	36.21	26.19	23.85	28.40
Oct 2019	23.92	14.71	32.33	24.41	22.46	26.03
Nov 2019	16.61	4.73	29.68	19.58	15.56	25.11
Dec 2019	16.53	1.28	28.39	17.59	14.39	20.51
Jan 2020	15.30	0.40	29.60	16.96	13.46	20.27
Feb 2020	15.83	0.94	29.66	17.23	14.41	20.43
Mar 2020	20.63	1.03	33.93	20.17	14.03	24.55
Apr 2020	21.26	7.60	33.64	22.64	19.38	25.38
May 2020	22.93	5.91	35.45	24.11	20.59	27.05
Jun 2020	25.81	16.79	36.60	26.56	23.96	29.71

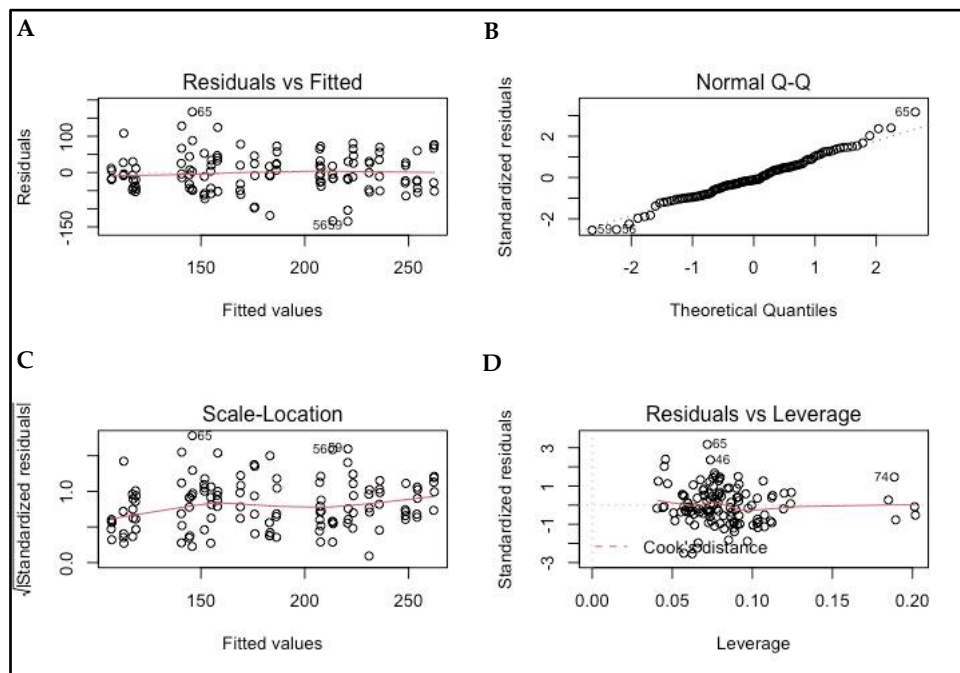Source: Data adapted from Florida Automated Weather Network [38].

Figure S1. The diagnostic plot of the regression of yield on P rate, year of measure, and farm. Graph A (top left) checks for nonlinear patterns and plots the residuals versus the fitted values. Graph B (top right) is the Q-Q plot of the standardized residuals and checks if the data has a large departure from the normal distribution. Graph C (bottom left) checks if any particular point has a large standardized residual and displays the square root of the absolute value of the standardized residuals versus the fitted values. Graph D (bottom right) investigates the existence of influential plots via the standardized residuals, leverages and the Cook's distance.
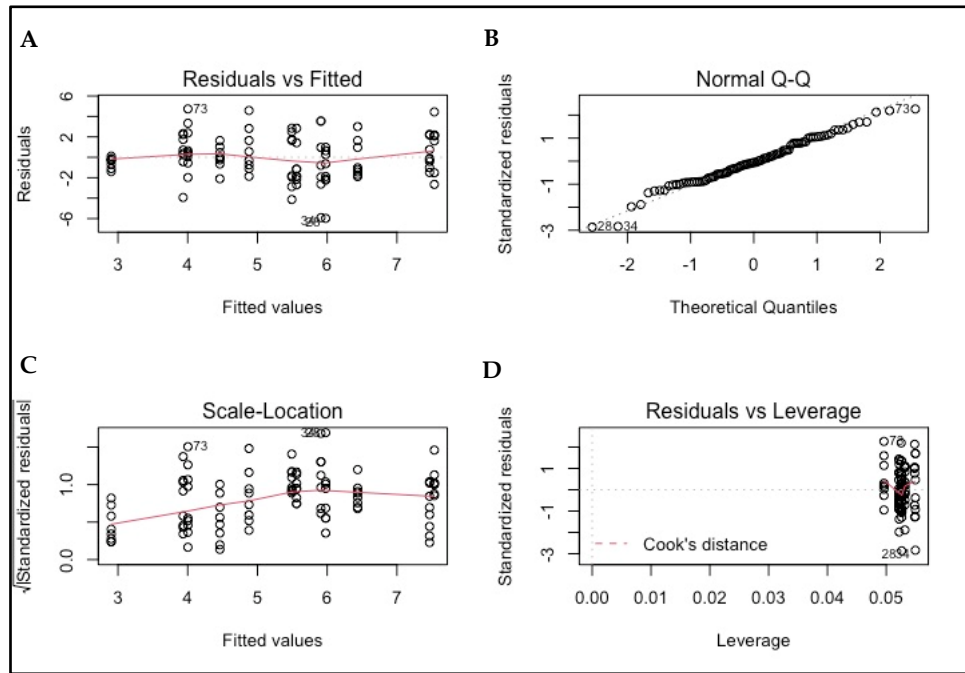

Figure S2. The diagnostic plot of the regression of P content on P rate, days in the growing season, farm, soil pH, and nutrient contents before fertilization for the year of 2020. Graphs A, B, C, and D are as described in Figure S1.

Figure S3. The diagnostic plot of the regression of P content on P rate, days in the growing season, farm, soil pH, and nutrient contents before fertilization for the year of 2019. Graphs A, B, C, and D are as described in Figure S1.

Figure S4. The diagnostic plot of the regression of P content on P rate, days in the growing season, farm, soil pH, and nutrient contents before fertilization for the year of 2018. Graphs A, B, C, and D are all as described in Figure S1.

Figure S5. The diagnostic plot of the regression of total cull on P rate, farm, and year. Graphs A, B, C, and D are all as described in Figure S1.