

Supporting Information

High Nitrate Accumulation in Vadose Zone after Land-Use Change from Cropland to Orchards

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Table S1. Physical-chemical parameters of groundwater samples of the study region.

Well ID	Groundwater table depth (m)	pH	Dissolved oxygen concentration (DO) (mg L ⁻¹)		
			EC (us cm ⁻¹)	NO ₃ ⁻ (mg L ⁻¹)	
1	5.0	7.43	7.04	710	124.3
2	8.4	6.87	8.31	790	128.8
3	7.0	7.05	7.50	540	127.9
4	20.2	8.14	7.71	860	134.8
5	22.0	7.69	7.95	880	85.3
6	15.7	7.25	7.35	990	128.6
7	9.8	7.57	7.68	960	125.8
8	9.6	7.1	7.05	1100	129.7
9	20.2	7.41	7.38	700	99.2
10	10.9	7.72	7.15	1200	132.1
11	8.0	7.63	6.47	990	140.2
12	8.3	7.64	7.59	1050	129.8
13	13.8	7.28	7.81	610	85.4
14	18.0	7.93	6.78	570	114.4
15	11.8	7.63	5.85	2150	141.0
16	5.6	7.46	8.33	1230	131.8
17	4.0	7.76	3.52	1240	131.6
18	14.0	7.71	7.88	690	85.4
19	6.5	7.46	6.45	800	67.1
20	7.8	7.87	7.36	1010	131.3
21	7.2	7.51	7.16	1230	127.6
22	9.0	7.60	4.92	1050	123.2
23	10.3	7.70	5.81	1170	136.8
24	15.9	7.33	6.3	1412	100.1
25	16.9	7.42	6.58	1169	97.1
26	17.3	7.5	6.50	1074	98.0
27	17.8	7.66	5.52	788	84.6
28	8.7	7.55	4.91	1014	130.7
29	23.1	7.65	6.43	724	46.2
30	7.4	7.11	7.33	2050	195.8
31	7.8	7.20	7.28	2100	210.0



Figure S1. The sampling sites of shallow wells in the study region.

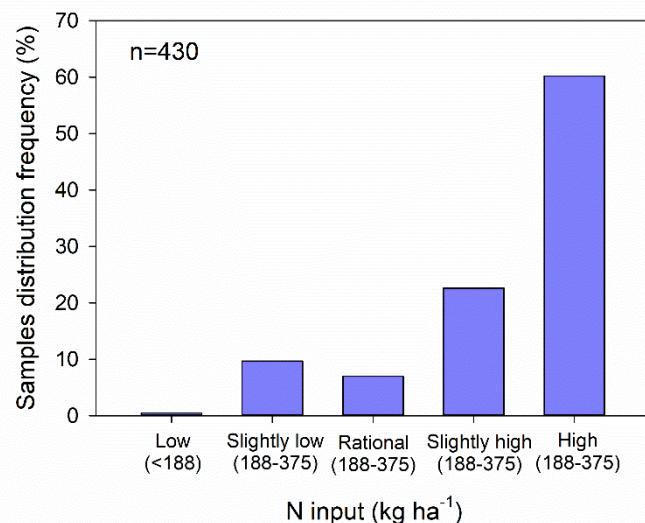


Figure S2. The status of chemical N fertilizer rates in kiwifruit orchards in the study region. Note: The classification standard is from Lu et al.³², summarized based on a combination of a survey of 242 kiwifruit orchards and literatures in this region.

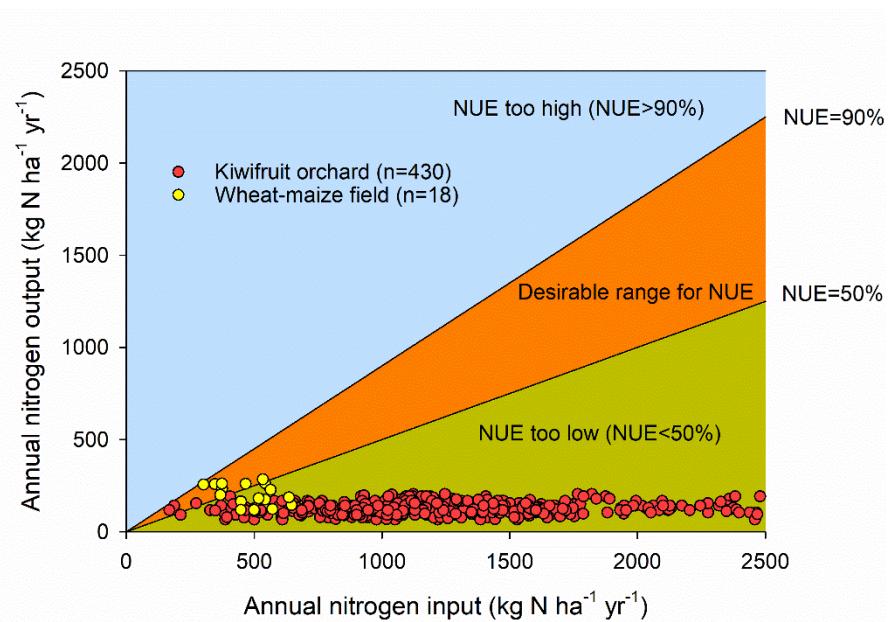


Figure S3. Comparison of Nitrogen use efficiency (NUE) in the kiwifruit orchards and wheat–maize fields. The ranges for NUE are divided according to the EU Nitrogen Expert Panel³⁴.

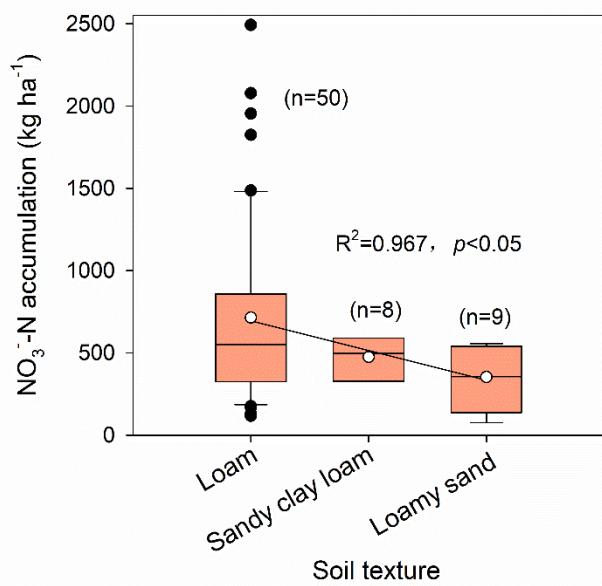


Figure S4. The box-whisker plot of NO_3^- -N accumulation in 0–1 m from the soil surface with different soil texture. Note: The number shows the numbers of samples. The circle indicates the mean. The straight line indicates the correlation between soil texture and soil NO_3^- -N accumulation.

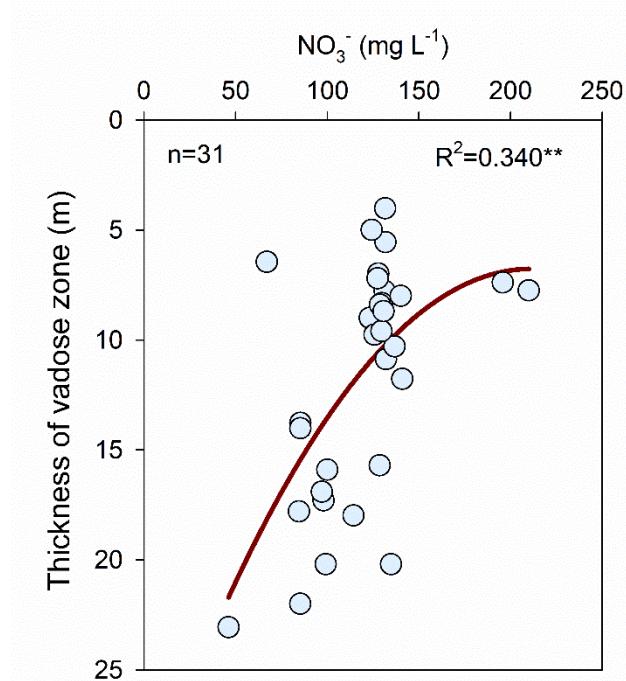


Figure S5. The thickness of the vadose zone and the groundwater nitrate concentrations.