

Table S1. Publication bias test of relevant data—Egger’s test

Data type	fertilizer treatment	Land type	P value
Yield	RP	Vegetables fields	0.3122
		Cereal fields	0.5787
	NPKM	Vegetables fields	0.9185
		Cereal fields	0.0612
P content	RP	Vegetables fields	0.7675
		Cereal fields	0.6226
	NPKM	Vegetables fields	0.1406
		Cereal fields	0.3071
P leaching	RP	Vegetables fields	0.0632
		Cereal fields	0.7048
	NPKM	Vegetables fields	0.3593
		Cereal fields	0.885

Note:  $p > 0.05$  indicates that there is no publication bias.

Table S2 Detailed information for Figure 2a and Figure 2b

				Effect Size (%)	Upper confidence interval (%)	Lower confidence interval (%)	n
RP (Figure 2a)		Vegetable fields	total	-0.62	1.09	-2.45	46
		Cereal yields	total	-4.57	-2.41	-6.92	63
	P inputs (kg/ha)	Vegetable fields	≤411	-3.59	0.40	-8.19	17
			> 411	0.92	2.15	-0.31	29
		Cereal yields	≤125	-5.45	-2.65	-8.88	39
			> 125	-3.30	-0.12	-6.52	24
	Reduction proportions (%)	Vegetable fields	≤30	-1.66	2.49	-5.91	16
			30-70	0.51	-1.01	2.01	23
			≥70	-1.65	1.52	-6.81	7
		Cereal yields	≤30	-1.77	1.11	-4.97	22
			30-70	-5.64	-9.42	-2.12	31
			≥70	-7.89	-12.79	-3.27	10
NPKM (Figure 2b)		Vegetable fields	total	3.96	8.73	-0.45	16
		Cereal yields	total	12.73	16.59	8.93	31
	P inputs (kg/ha)	Vegetable fields	≤161	1.06	6.00	-6.10	4
			> 161	5.82	11.88	-0.53	12
		Cereal yields	≤67	13.53	20.42	7.67	13
			> 67	12.12	16.88	6.74	18
	Organic fertilizer proportions (%)	Vegetable fields	≤30	——	——	——	——
			30-70	4.44	10.32	-1.65	14
			≥70	2.61	5.50	-0.16	2
		Cereal yields	≤30	2.32	-3.19	8.53	3
			30-70	14.94	18.14	11.22	20
			≥70	9.48	20.54	-3.83	5

Table S3. Detailed information for Figure 3a and Figure 3b

				Effect Size (%)	Upper confidence interval (%)	Lower confidence interval (%)	n
RP (Figure 3a)	Soil depth (cm)	Vegetable fields	0-20	-29.75	-35.85	-23.62	44
			20-40	-40.29	-49.19	-30.32	11
			40-60	-22.93	-37.92	-3.41	11
		Cereal yields	0-20	-34.45	-40.68	-27.97	70
			20-40	-19.97	-27.14	-12.32	41
			40-60	-18.94	-27.34	-9.81	22
	P inputs (kg/ha)	Vegetable fields	≤411	-31.87	-42.75	-20.28	20
			> 411	-27.84	-33.04	-22.51	21
		Cereal yields	≤125	-34.37	-41.87	-26.69	44
			> 125	-34.51	-44.84	-23.56	26
	Reduction proportions (%)	Vegetable fields	≤30	-14.02	-21.00	-6.64	11
			30-70	-28.48	-35.27	-21.79	24
			≥60	-56.59	-64.70	-47.99	6
		Cereal yields	≤30	-20.63	-27.31	-13.89	14
			30-70	-29.06	-36.40	-21.58	37
			≥70	-51.40	-62.19	-38.90	19
NPKM (Figure 3b)	Soil depth (cm)	Vegetable fields	0-20	23.87	41.52	10.62	51
			20-40	52.44	77.34	32.05	30
			40-60	23.43	51.45	1.92	34
		Cereal yields	0-20	76.72	84.82	70.13	52
			20-40	29.10	60.11	3.73	8
			40-60	22.30	57.63	-3.28	5
	P inputs (kg/ha)	Vegetable fields	≤161	7.78	35.99	-15.24	14
			> 161	29.76	45.03	17.33	36
		Cereal yields	≤67	52.01	69.28	35.64	19
			> 67	39.36	52.96	28.08	7
	Organic fertilizer proportions (%)	Vegetable fields	≤30	10.26	45.44	-11.86	13
			30-70	22.79	35.95	11.74	25
			≥70	40.76	73.05	16.59	13
		Cereal yields	≤30	53.34	85.84	26.81	6
			30-70	60.42	68.57	53.08	33
			≥70	49.59	60.19	39.40	13

Table S4. Detailed information for Figure 4a and Figure 4b

				Effect Size (%)	Upper confidence interval (%)	Lower confidence interval (%)	n
RP (Figure 4a)		Vegetable fields	total	-16.02	-8.94	-22.53	141
		Cereal yields	total	-31.50	-22.83	-39.04	60
	P inputs (kg/ha)	Vegetable fields	≤269	-19.14	-10.01	-27.54	87
			> 269	-18.67	-5.17	-30.72	40
		Cereal yields	≤219	-32.70	-19.38	-44.26	28
			> 219	-30.66	-11.24	-44.53	23
	Reduction proportions (%)	Vegetable fields	≤30	-11.28	-4.59	-17.54	55
			30-70	-21.23	-5.20	-34.81	49
			≥70	-36.49	-8.58	-58.67	9
		Cereal yields	≤30	-23.05	-12.78	-31.27	6
			30-70	-22.91	-7.61	-35.07	31
			≥70	-48.11	-32.46	-58.99	16
NPKM (Figure 4b)		Vegetable fields	total	30.43	44.25	18.86	37
		Cereal yields	total	30.08	57.54	-1.94	16
	P inputs (kg/ha)	Vegetable fields	≤187	37.22	44.95	28.71	19
			> 187	15.47	9.35	21.96	14
		Cereal yields	≤116	28.67	62.48	-7.04	5
			> 116	-3.45	14.83	-22.38	5
	Organic fertilizer proportions (%)	Vegetable fields	≤30	19.14	31.21	9.40	8
			30-70	35.70	49.51	21.75	18
			≥70	-1.03	4.60	-6.44	9
		Cereal yields	≤30	-2.99	19.51	-25.05	3
			30-70	32.29	56.89	16.38	5
			≥70	26.81	52.81	-4.56	4

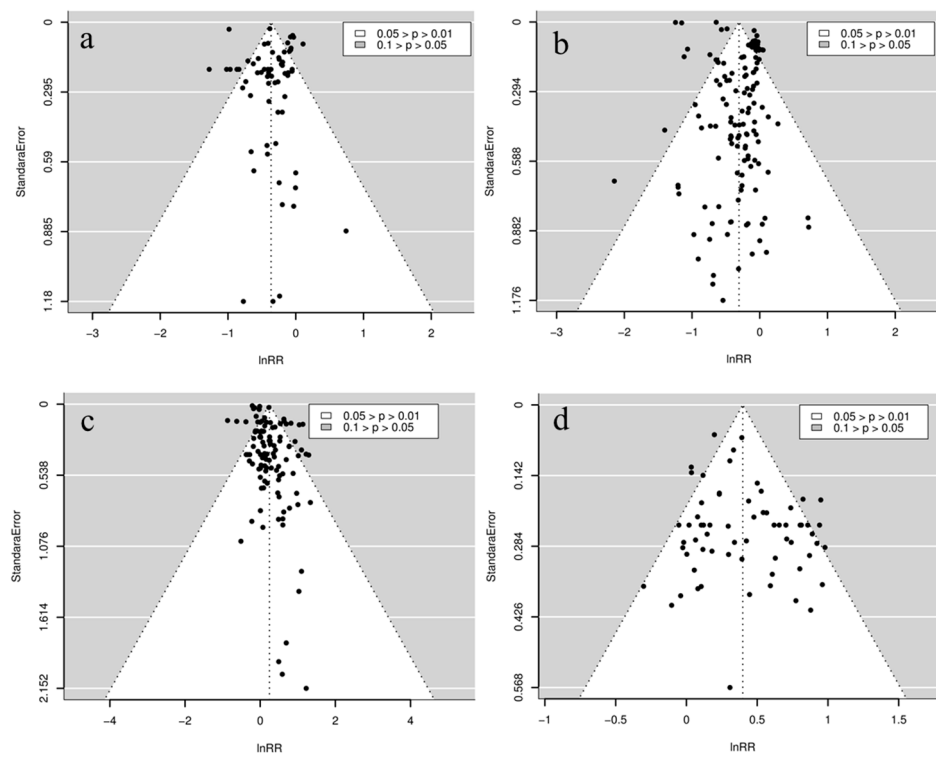


Figure S1. Publication bias test of crop yield data—Funnel plot

RP in vegetables fields (a) and cereal fields (b), NPKM in vegetables fields (c) and cereal fields (d)

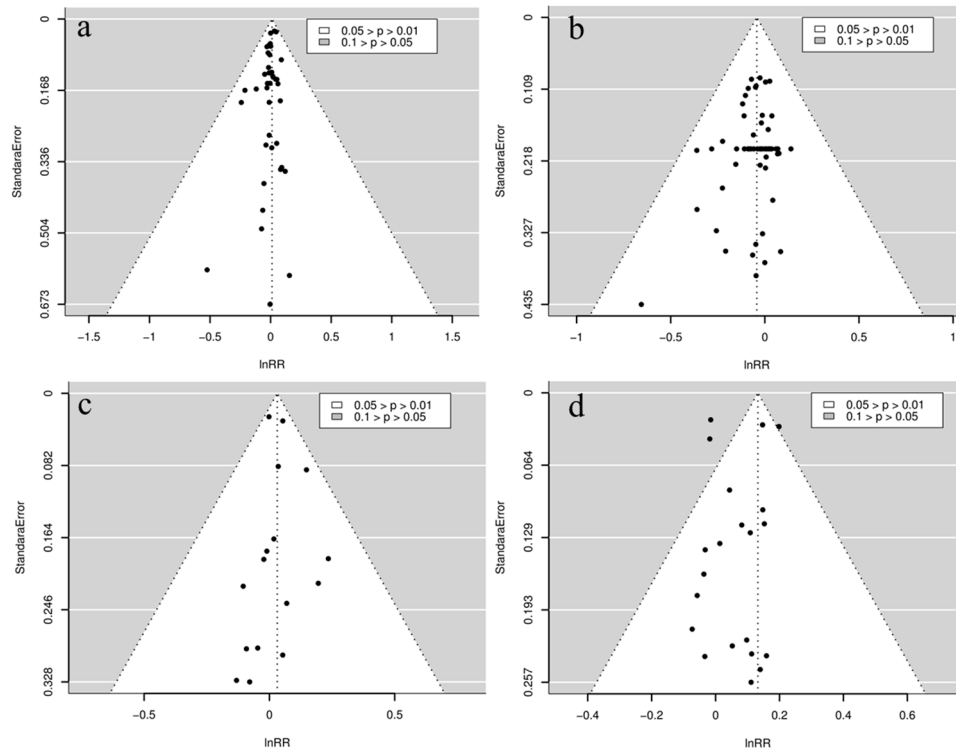


Figure S2. Publication bias test of soil available P data—Funnel plot

RP in vegetables fields (a) and cereal fields (b), NPKM in vegetables fields (c) and cereal fields (d)

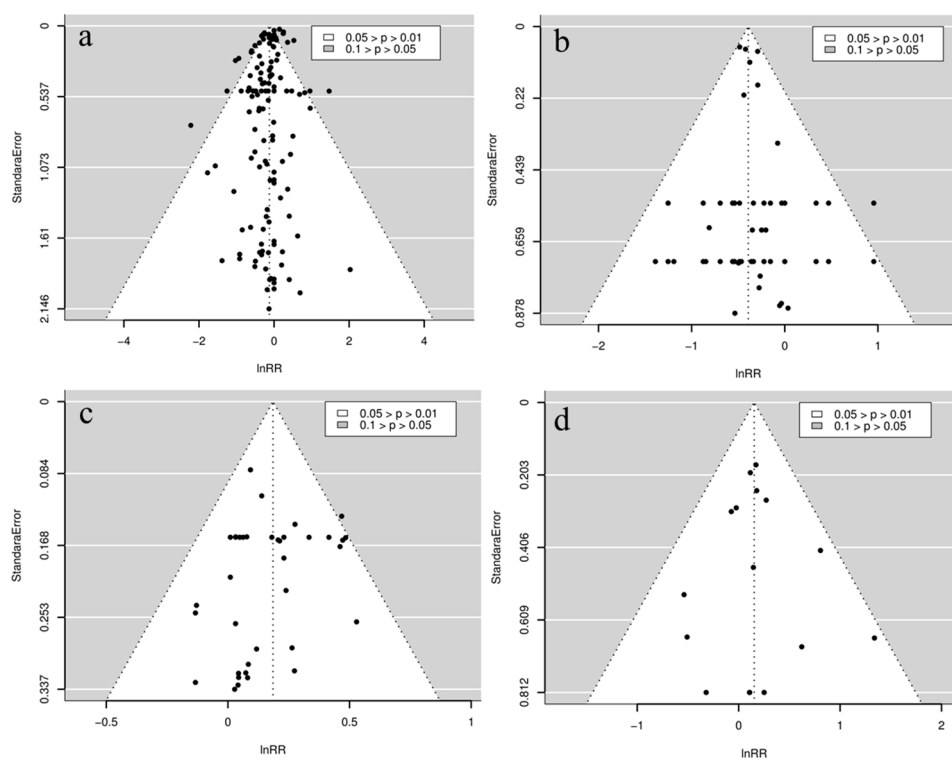


Figure S3. Publication bias test of total P leaching data—Funnel plot

RP in vegetables fields (a) and cereal fields (b), NPKM in vegetables fields (c) and cereal fields (d)