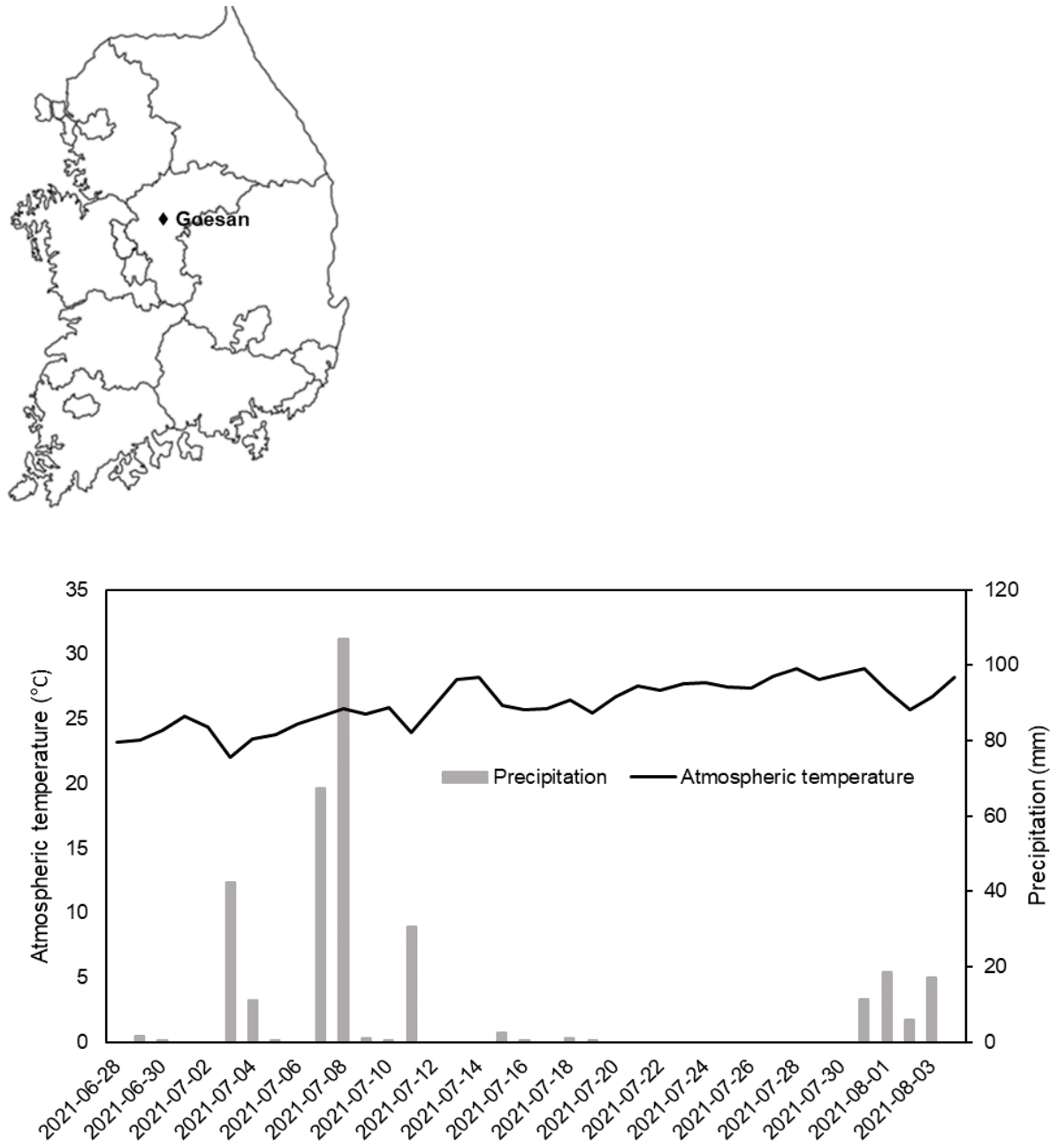


Supplementary Materials

Supplementary Figure S1. Location map of the experimental site, atmospheric temperature, and precipitation during spring onion cultivation.



Supplementary Table S1. Amount of applied fertilizer for different spring onion cultivation plots.

Fertilizer treatment	Amount of fertilizer (N-P ₂ O ₅ -K ₂ O, kg/10a)	
	Basal fertilizer	Additional fertigation
Inorganic fertilizer (N70, K60)	4.6-3.0-5.5	12.2-11.0
Organic fertilizer (N70, K60)	4.6-3.0-5.5	10.6-8.2
Compost (N70, K60)	4.6-3.0-5.5	10.6-8.2
Inorganic fertilizer (N80, K80)	3.0-3.0-2.7	12.2-11.0
Organic fertilizer (N80, K80)	3.0-3.0-2.7	12.2-11.0
Compost (N80, K80)	3.0-3.0-2.7	12.2-11.0

Supplementary Table S2. pH, EC, and water-soluble element concentrations (cmol_e/kg) of different fertilizer-applied soils.

Fertilizer treatments		pH	EC (dS/m)	Ca	K	Mg	Na	P	S	NO ₃ - N
66 DA T	Inorganic fertilizer (N70, K60)	6.06	0.87	1.11	0.47	0.72	0.38	0.14	0.47	0.64
	Organic fertilizer (N70, K60)	5.97	0.55	0.86	0.23	0.59	0.12	0.21	0.72	0.39
	Compost (N70, K60)	6.16	0.38	0.36	0.32	0.29	0.15	0.18	0.32	0.28
	Inorganic fertilizer (N80, K80)	5.53	1.63	2.25	0.66	1.69	0.43	0.08	1.01	1.33
	Organic fertilizer (N80, K80)	4.84	0.75	0.96	0.49	0.97	0.21	0.14	0.74	0.54
	Compost (N80, K80)	5.64	0.35	0.44	0.13	0.48	0.14	0.15	0.34	0.26
102 DA T	Inorganic fertilizer (N70, K60)	6.16	0.26	0.34	0.75	0.19	0.15	0.15	0.10	0.20
	Organic fertilizer (N70, K60)	6.45	0.06	0.07	0.17	0.03	0.04	0.14	0.01	0.10
	Compost (N70, K60)	5.96	0.13	0.24	0.36	0.11	0.12	0.15	0.09	0.18
	Inorganic fertilizer (N80, K80)	5.37	0.39	0.96	0.59	0.59	0.26	0.09	0.29	0.78
	Organic fertilizer (N80, K80)	6.14	0.08	0.12	0.25	0.08	0.06	0.16	0.04	0.10
	Compost (N80, K80)	5.69	0.13	0.25	0.27	0.15	0.13	0.16	0.09	0.17

Supplementary Table S3. Exchangeable ammonium and ammonium acetate extractable element concentrations (cmol_c/kg).

Sampling date	Fertilizer treatments	NH ₄ -N	Ca	K	Mg	Na
66 DAT	Inorganic fertilizer (N70, K60)	0.10	3.65	0.77	1.93	0.22
	Organic fertilizer (N70, K60)	0.17	2.70	0.43	1.74	0.06
	Compost (N70, K60)	0.06	3.11	0.86	1.82	0.10
	Inorganic fertilizer (N80, K80)	0.25	3.04	0.79	2.07	0.19
	Organic fertilizer (N80, K80)	0.16	3.57	1.19	1.34	0.18
	Compost (N80, K80)	0.06	2.53	0.39	1.35	0.08
102 DAT	Inorganic fertilizer (N70, K60)	0.07	6.71	1.95	1.92	0.15
	Organic fertilizer (N70, K60)	0.07	5.79	1.36	1.49	0.03
	Compost (N70, K60)	0.10	5.80	1.91	1.43	0.12
	Inorganic fertilizer (N80, K80)	0.10	5.83	1.97	2.21	0.24
	Organic fertilizer (N80, K80)	0.12	5.62	1.97	2.02	0.07
	Compost (N80, K80)	0.11	6.30	1.69	1.89	0.15