

Supplementary Materials:

Table S1. Total water supplied under continuous flooded and drip irrigation with plastic-film mulch systems during the growth season of 2020 and 2021.

Year	Irrigation regime	Irrigation (mm)	Precipitation (mm)	Total water supplied (mm)
2020	CF	1085	822	1907
	DI	389	822	1209
2021	CF	985	1022	2007
	DI	311	1022	1334

Total water supplied = Irrigation water + Precipitation; CF and DI indicate continuous flooded system and drip irrigation with plastic-film mulch systems, respectively.

Table S2. Shoot dry matter, root dry matter and root-to-shoot ratio of four rice varieties under continuous flooded (CF) and drip irrigation with plastic-film mulch systems (DI) in 2020 and 2021.

Cultivar	Panicle-initiation stage						Heading stage					
	Shoot dry matter(g m ⁻²)		Root dry matter(g m ⁻²)		Root-to-shoot		Shoot dry matter(g m ⁻²)		Root dry matter(g m ⁻²)		Root-to-shoot	
	CF	DI	CF	DI	CF	DI	CF	DI	CF	DI	CF	DI
2020												
Norin	206.6a	235.3a	54.2b	56.0a	0.263b	0.240c	1296.6b	1415.6a	289.3a	252.2a	0.223a	0.178a
Mitsu	212.7a	188.0b	65.0a	55.1a	0.306ab	0.293b	1330.9b	1241.2b	227.4b	198.6b	0.171bc	0.160b
Hoku	145.9b	143.9c	53.9b	57.9a	0.372a	0.402a	1448.4a	1220.4b	227.1b	179.9c	0.157c	0.148b
Koshi	147.1b	148.5c	50.5b	41.3b	0.345a	0.280bc	1159.6c	1028.2c	203.4c	163.1c	0.176b	0.159b
Mean	178.1	178.9	55.9	52.6	0.322	0.304	1308.9	1226.4	236.8	198.5	0.182	0.161
2021												
Norin	210.9a	226.7a	54.6	53.4a	0.260b	0.236bc	1303.8	1468.2a	282.7a	249.5a	0.220a	0.170
Mitsu	213.1a	176.6b	68.6	50.0ab	0.32ab	0.283b	1306.0	1211.8b	224.8b	190.4b	0.172ab	0.157
Hoku	144.7b	139.0b	54.4	56.7a	0.376a	0.410a	1468.3	1249.1ab	207.6b	178.1b	0.141b	0.145
Koshi	148.4b	164.8b	51.3	37.7b	0.354a	0.229c	1245.4	965.0c	218.2b	156.8b	0.184ab	0.163
Mean	179.3	176.8	57.2	49.5	0.328	0.290	1330.9	1223.5	233.3	193.7	0.179	0.159
Year(Y)	ns		ns		ns		ns		ns		ns	
Cultivar(C)	***		***		***		**		***		***	
Irrigation system(IR)	ns		ns		*		*		*		*	
Y × C	ns		ns		ns		ns		ns		ns	
Y × IR	ns		ns		ns		ns		ns		ns	
IR × C	*		**		**		*		ns		ns	
Y × IR × C	ns		ns		ns		ns		ns		ns	

Noted: Data indicate the mean of three replications. *, ** and *** are significant differences at $p < 0.05$, $p < 0.01$ and $p < 0.001$ respectively; ns means non-significant by ANOVA.