

Table S1. Monthly rain totals during the growing seasons. This is the mean of two rain gauges south of Ames and north of Ankeny.

Month	2014	2015	2016
	mm	mm	mm
March	22	5	62
April	123	102	87
May	75	106	72
June	231	158	39
July	65	152	128
August	184	208	191
September	83	107	182
October	83	41	17

Table S2. Infiltration and runoff rates (means) and water quality for 2014.

Yard set	Treatment	Infiltration	Runoff	Time to runoff	Sediment	Phosphate	Nitrate ^c
		mm h ⁻¹	mm h ⁻¹	min	g L ⁻¹	mg kg ⁻¹	mg kg ⁻¹
Ankeny 1	Improved	62	201	1.7	0.22	0.56	0.70
	Control	39	234	0.9	0.11	0.16	1.27
Ankeny 2	Improved	23	205	4.5	0.17	0.55	1.83
	Control	60	148	1.2	0.22	0.30	1.93
Ames 1	Improved	39	210	1.2	0.30	0.22	nd ^b
	Control	21	246	2.4	na ^a	na ^a	na ^a
Ames 2	Improved	39	201	2.2	0.37	0.18	nd ^b
	Control	20	268	2.6	0.39	0.23	nd ^b

^aNot available

^bNot detected

^cBackground nitrate level was not measured.

Table S3. Hydraulic conductivity (means) for saturation (Ksat) and -30 mm head in 2015 using disk infiltrometer.

Yard set	Treatment	Ksat	K(-30 mm)
		mm h ⁻¹	mm h ⁻¹
Ankeny 1	Improved	22	3.1
	Control	14	0.8
Ankeny 2	Improved	12	0.7
	Control	23	1.2
Ames 1	Improved	26	1.5
	Control	34	1.5
Ames 2	Improved	8	1.6
	Control	16	2.9

Table S4. Infiltration and runoff rates (means) and water quality for 2016.

Yard set	Treatment	Infiltration	Runoff	Time to runoff	Sediment	Phosphorus	Nitrate ^a
		mm h ⁻¹	mm h ⁻¹	min	g L ⁻¹	mg kg ⁻¹	mg kg ⁻¹
Ankeny 1	Improved	39	201	2.7	0.14	0.29	0.4
	Control	20	268	1.1	0.22	0.15	0.1
Ankeny 2	Improved	24	104	5.8	0.0	0.20	0.2
	Control	29	198	2.5	0.22	0.12	0
Ames 1	Improved	66	167	1.5	0.42	0.08	0
	Control	97	140	1.8	0.42	0.14	0
Ames 2	Improved	37	139	1.6	0.38	0.19	0
	Control	59	184	2.2	0.28	0.09	0

^aBackground nitrate was subtracted.