

Supplementary material

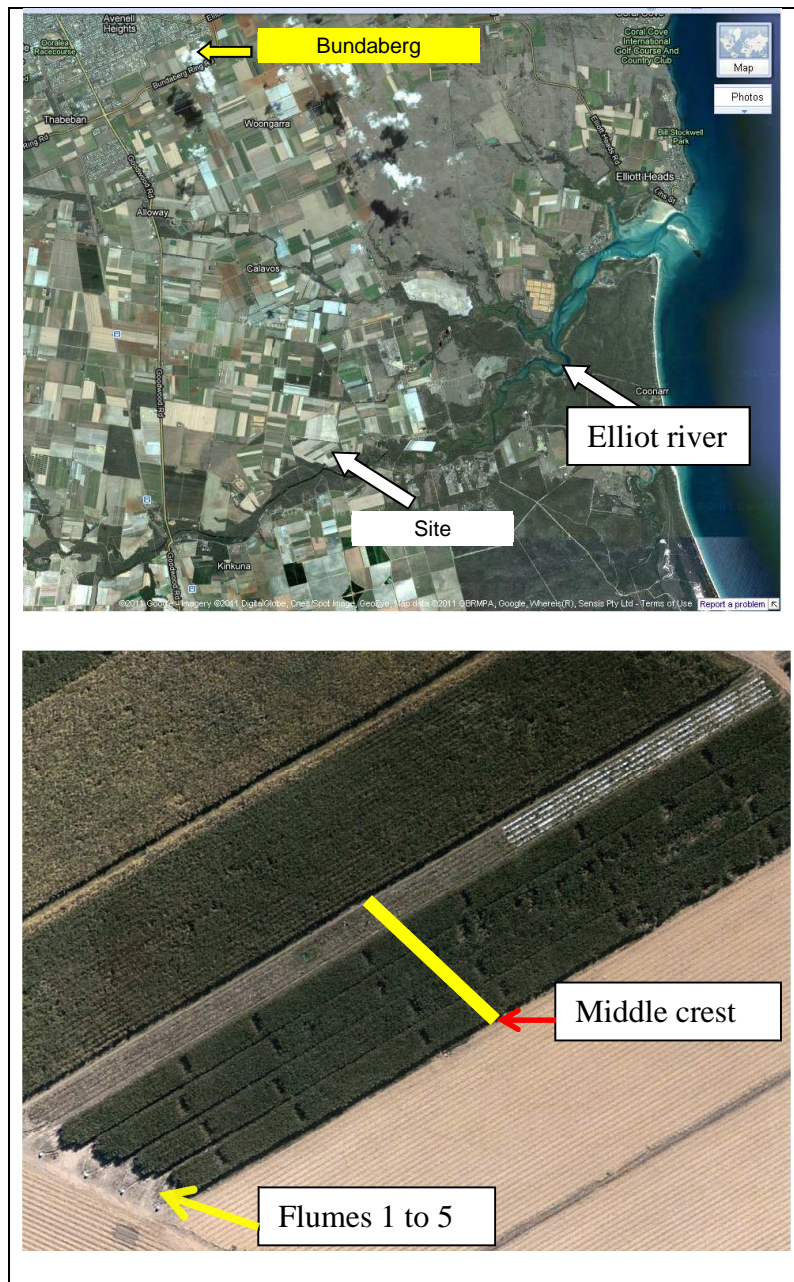


Figure S1. Site location and aerial view of the experimental site and its proximity to the Great Barrier Reef. The Elliott River is one of the multiple rivers that drain into the southern tip of the Great Barrier Reef, with the experimental site located adjacent to it.

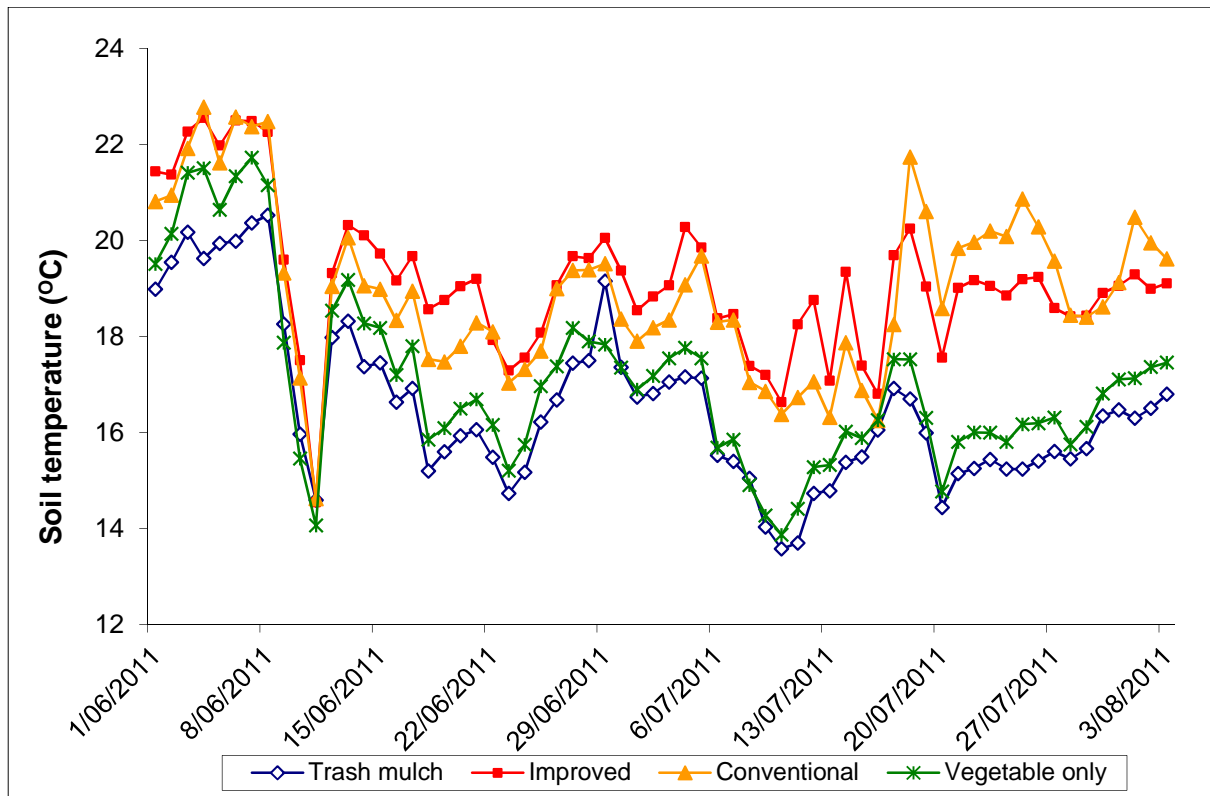


Figure S2. Soil temperature (maximum) recorded at 5 cm depth during the zucchini crop, showing the difference between plastic mulch and trash systems.

Table S1. Daily rainfall recorded during the vegetable phase monitoring period.

Date	Rainfall (mm)	Date	Rainfall (mm)
Capsicum phase		Fallow phase	
1/12/2010	6.5	3/03/2011	1
2/12/2010	68	4/03/2011	37
3/12/2010	1	5/03/2011	3
5/12/2010	15	6/03/2011	11
6/12/2010	42	7/03/2011	1.5
7/12/2010	1	8/03/2011	0.5
8/12/2010	5	9/03/2011	1
12/12/2010	47.5	11/03/2011	6
15/12/2010	20	12/03/2011	23
17/12/2010	12	14/03/2011	25
18/12/2010	11	15/03/2011	48
19/12/2010	17	16/03/2011	16
20/12/2010	13	20/03/2011	14
22/12/2010	21	21/03/2011	9
26/12/2010	106	22/03/2011	0.6
28/12/2010	214	28/03/2011	10
2/01/2011	1.6	29/03/2011	1
3/01/2011	13.4	30/03/2011	12
5/01/2011	0.2	31/03/2011	16
7/01/2011	65.2	1/04/2011	2
8/01/2011	2.2		
10/01/2011	3.5		
12/01/2011	19		
15/01/2011	3		
19/01/2011	31.3		
20/01/2011	36		
21/01/2011	2.4		
22/01/2011	1.8		
23/01/2011	2.6		
27/01/2011	0.2		
29/01/2011	1.2		

Table S2. The percentage of total rainfall leaving the field as runoff during various rainfall events during capsicum crop

Date	Rainfall (mm)	Trash mulch	Improved	Conventional
5/12/2010	15	23	27	30
6/12/2010	42	35	41	*
12/12/2010	47.5	8.0	6.0	42
15/12/2010	20	0.0	6.0	23
17/12/2010	12	0.0	6.0	36
18/12/2010	11	0.0	0.0	2.0
19/12/2010	17	0.1	11	36
20/12/2010	13	0.8	19	43
22/12/2010	21	0.0	4	15
26/12/2010	106	*	38	46
28/12/2010	214	*	45	54
3/01/2011	13.4	0.0	0.0	0.0
7/01/2011	65.2	44	41	46
12/01/2011	19	1.0	6.0	39
19/01/2011	31.3	*	32	49
20/01/2011	36	*	66	76

*Error in results. The flume over-estimated the flow due to flooding, with subsequent loosening of soil and subsidence in the flume footings. Error data excluded from load calculation for all the management practices.

Table S3. Time at which runoff was initiated during different rainfall events in summer 2010-2011

Date	Trash mulch	Improved	Conventional
5/12/2010	5:52	5:56	5:49
6/12/2010	15:42	15:45	15:42
12/12/2010	14:14	14:18	8:47
15/12/2010	NRO*	19:39	19:30
17/12/2010	NRO*	2:23	1:46
18/12/2010	NRO*	NRO	19:13
19/12/2010	16:05	15:55	9:49
20/12/2010	3:38	3:35	3:23
22/12/2010	NRO	13:09	1:29
25/12/2010	0:15	0:14	0:03
26/12/2010	0:39	0:29	0:17
27/12/2010	15:37	15:18	12:52
28/12/2010	0:07	0:01	0:01
3/01/2011	NRO*	20:59	20:48
6/01/2011	16:35	16:35	16:29
12/01/2011	3:58	3:50	3:41
19/01/2011	0:04	0:01	23:46
20/01/2011	5:02	5:02	4:54

*NRO- No runoff recorded during the rainfall event

Table S4. Event mean concentrations* (mg/L) during the vegetable phase for different management practices

Parameters	Conventional	Improved	Trash mulch	Vegetable only
Total Nitrogen	3.10	1.33	0.80	1.20
Total Phosphorus	1.10	0.68	0.29	0.51
Dissolved inorganic N (DIN)	0.49	0.34	0.24	0.32
Filterable Reactive Phosphorus (FRP)	0.34	0.36	0.19	0.20

*-this was calculated by dividing the total loads by total runoff volume of recorded events during capsicum crop.