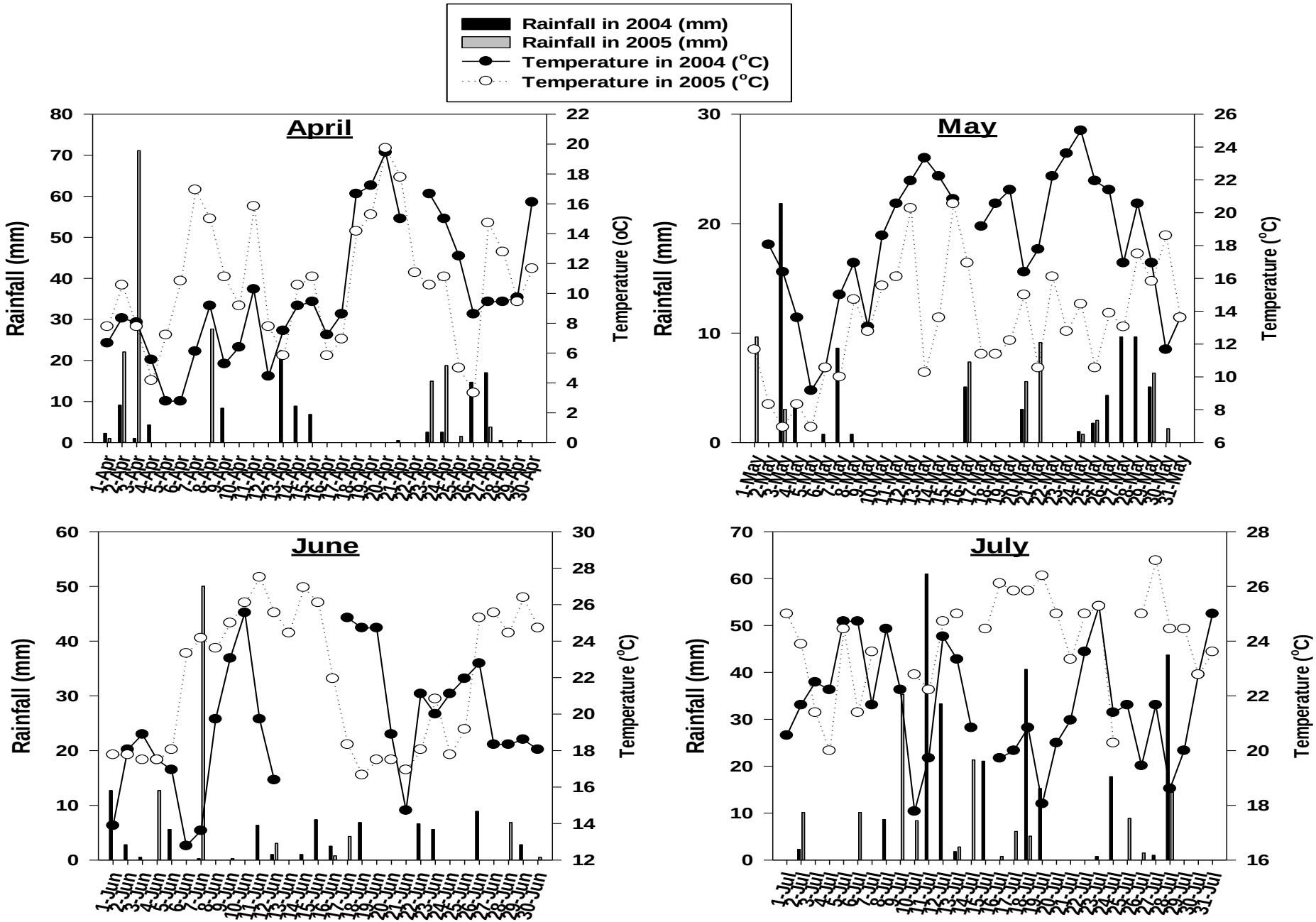
Rainfall in 2004 (mm)
Rainfall in 2005 (mm)
Temperature in 2004 (°C)
Temperature in 2005 (°C)
April
May
June
July
Rainfall (mm)
Temperature (oC)
Temperature (°C)

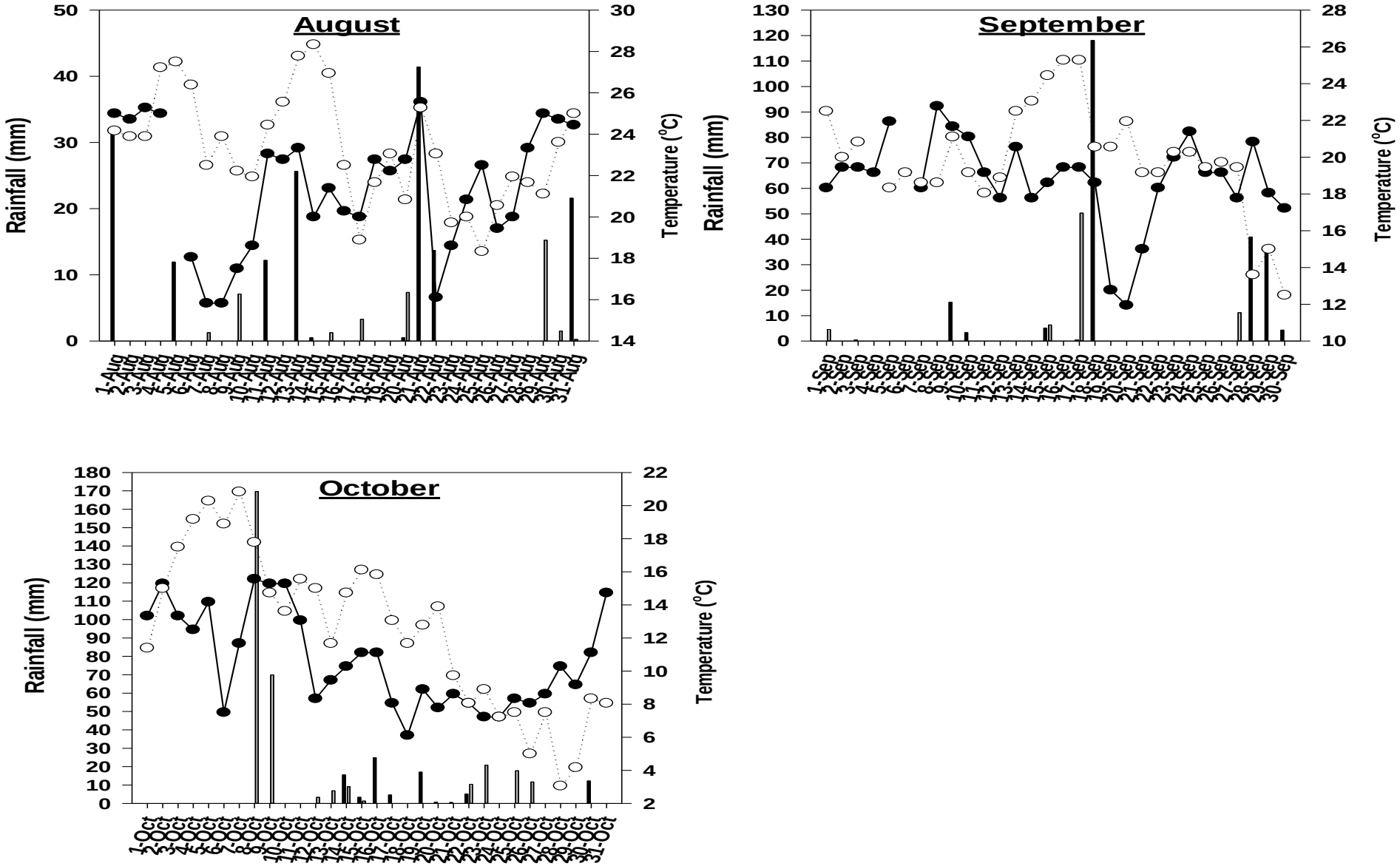

Figure S1. Daily rainfall, and temperature during the growing seasons in 2004, and 2005.

Farming Systems Trial - Field Layout

2004-2005

Crop. Sys 1 = manure-based

Crop. Sys 2 = legume-based

Crop. Sys 3 = conventional

N

W + E

S

rep/crop.sys/entry pt.

2004	plot no.		2005
HV-O/C/rye	323	o	rye/SB/W
SB/W	321	o	W/HV-O
W/HV-O	322	o	HV-O/C/rye
W	331	o	C
SB/W	332	o	W
C	333	o	SB/W
W/A-OG	312	o	A-OG/c/C/rye
c/C/rye	311	o	rye/SB/W
SB/W	313	o	W/A-OG
W	831		C
C	833		SB/W
SB/W	832		W
SB/W	821		W/HV-O
W/HV-O	822		HV-O/C/rye
HV-O/C/rye	823		rye/SB/W
W/A-OG	812		A-OG/c/C/rye
c/C/rye	811		rye/SB/W
SB/W	813		W/A-OG

2004		plot no.		2005
	SB/W	221	o	W/HV-O
	HV-O/C/rye	223	o	rye/SB/W
	W/HV-O	222	o	HV-O/C/rye
	W	231	o	C
SB/W		232	o	W
C		233	o	SB/W
W/A-OG		212	o	A-OG/c/C/rye
SB/W		213	o	W/A-OG
c/C/rye		211	o	rye/SB/W
SB/W		421		W/HV-O
W/HV-O		422		HV-O/C/rye
HV-O/C/rye		423		rye/SB/W
W/A-OG		412		A-OG/c/C/rye
SB/W		413		W/A-OG
c/C/rye		411		rye/SB/W
C		433		SB/W
SB/W		432		W
W		431		C
c/C/rye		711		rye/SB/W
SB/W		713		W/A-OG
W/A-OG		712		A-OG/c/C/rye
W		731		C
C		733		SB/W
SB/W		732		W
SB/W		721		W/HV-O
W/HV-O		722		HV-O/C/rye
HV-O/C/rye		723		rye/SB/W

2004		plot no.		2005
SB/W	o	121		W/HV-O
HV-O/C/rye	o	123		rye/SB/W
W/HV-O	o	122		HV-O/C/rye
SB/W	o	113		W/A-OG
c/C/rye	o	111		rye/SB/W
W/A-OG	o	112		A-OG/c/C/rye
C	o	133		SB/W
W	o	131		C
SB/W	o	132		W
W/A-OG	o	512	o	A-OG/c/C/rye
c/C/rye	o	511	o	rye/SB/W
SB/W	o	513	o	W/A-OG
W/HV-O	o	522	o	HV-O/C/rye
SB/W	o	521	o	W/HV-O
HV-O/C/rye	o	523	o	rye/SB/W
W	o	531	o	C
C	o	533	o	SB/W
SB/W	o	532	o	W
W/HV-O		622		HV-O/C/rye
SB/W		621		W/HV-O
HV-O/C/rye		623		rye/SB/W
W		631		C
C		633		SB/W
SB/W		632		W
SB/W		613		W/A-OG
W/A-OG		612		A-OG/c/C/rye
c/C/rye		611		rye/SB/W

Siegfriedale Road

Tree Line

C = Corn

c/C = compost applied before corn

SB = Soybean

A-OG = Alfalfa / orchard grass mix

W = Winter wheat

HV-O = Hairy vetch /Oats mix

NOTE: Plots 221, 223, 222, 231 were shortened to 180 feet

o =location of zero tension lysimeters

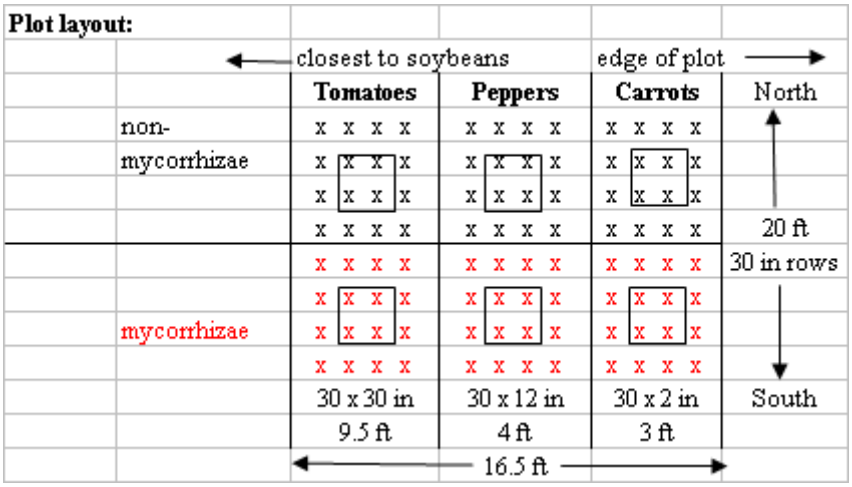

Figure S2. Map, and plot layout for both years.

Table S1. Characteristics of compost (dairy manure and leaf) used (date sampled: 04/13/2016); units are given in parenthesis.

Compost Characteristics	Values	Units
pH	7.9	
Soluble Salts (1:5; w/w)	2.94	(mmhos cm^{-1})
Bulk Density	0.64	(g cm^{-3})
Solids	29.2	(%)
Moisture	70.8	(%)
Organic Matter	20.9	(%)
Total Nitrogen (N)	0.8	(%)
Organic Nitrogen	0.8	(%)
Ammonium N (NH_4-N)	5.0	(mg kg^{-1})
Carbon (C)	16.0	(%)
C:N ratio	21.1	
Phosphorus (P_2O_5)	0.30	(%)
Potassium (K_2O)	0.38	(%)

Table S2. Disease epidemic, and environmental factors during 2004, and 2005.

2004		**2005**	
Conventional	Organic	Conventional	Organic
1. 95% Tomato Late Blight Defoliation	1. 80% Tomato Late Blight Defoliation	1. Fertilizer burn on Tomato & Peppers	1. No fertilizer burn
2. 2 of 3 plots have Pepper Virus Complex	2. No Pepper Virus Complex	2. Carrots with lesions (25% unmarketable)	2. Carrots with lesions (6% unmarketable)
3. 40% Defoliation of carrots by Alternaria Leaf Blight	3. 25% Defoliation of carrots by Alternaria Leaf Blight		

Table S3. Impacts of management practices of different vegetative mineral (macro- and micro-) nutrients over two years period; Nutrients concentrations are expressed in ppm. Means within a row within a nutrient followed by the same letter are not statistically different (alpha 0.05). Key: MNR (organic); CNV (conventional).

Carrot														
Micro-nutrients	**Al**		**B**		**Cu**		**Fe**		**Mn**		**Na**		**Zn**	
	CNV	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**
2004	20.1±24 a	17.9±7a	26.9±2.4a	29.9±2.1a	11.7±1.4 a	11±1a	29.9±3.9 b	34.1±8b	14.4±2. 5b	14.8±5. 4b	1638±88 6b	3265±11 58ab	22.4±2. 8a	22.6±2 a
2005	7.8±3.7a	17.3±25 .4a	26.8±2.4a	27.3±3.5a	12±0.8a	12.5±2.4 a	40.6±9.3 ab	38.8±10 b	12.8±1. 8b	9.8±3.4 b	1877±34 8b	3813±11 92a	21.5±1. 2a	22.6±5 .8a
Macro-nutrients	**Ca**		**K**		**Mg**		**P**		**S**					
	CNV	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**				
2004	3755±23 2ab	3944±1 30a	29004±32 98ab	31495±29 93a	2065±25 7ab	2063±28 8ab	4695±36 2ab	4863±45 4a	1718±1 68a	1870±4 10a				
2005	3171±30 3c	3122±2 89c	22290±39 02bc	19757±44 41c	2343±24 4a	2018±26 0ab	4575±35 7ab	4032±30 7bc	1510±2 26a	1524±2 31a				
Tomato														
Micro-nutrients	**Al**		**B**		**Cu**		**Fe**		**Mn**		**Na**		**Zn**	
	CNV	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**
2005	2.3±1.2a	1.8±0.9 a	11.3±1ab	10.8±0.9b	13.5±0.8 a	13.8±3.1 a	40±4a	43±15.1 a	12.1±0. 9ab	9.6±0.8 b	24.8±9.6 a	30.6±11a	20±1.6 a	17.3±1 .5b
Macro-nutrients	**Ca**		**K**		**Mg**		**P**		**S**					
	CNV	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**				

2005	1020±121ab	825±72b	21662±684b	21551±912b	1562±82a	1483±31ab	3224±128a	3240±149a	1785±76b	1748±85b				
Pepper														
Micron-utrients	**Al**		**B**		**Cu**		**Fe**		**Mn**		**Na**		**Zn**	
	CNV	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**
2004	4.2±2.5b	5.8±3ab	16.4±1a	17.3±0.7a	12.4±1.1ab	13.5±0.9a	46.4±7ab	52.6±12.6a	15.9±1.2ab	12.8±1.6b	98.3±14.2c	146.2±15b	25.2±2.3a	24.7±1.3a
2005	4.6±0.5ab	4.6±1.8ab	11.5±0.5c	12.5±1c	10.3±1.7c	11.3±1bc	29±2.8c	32.8±6.7bc	16±1ab	12.8±1.9b	209.6±35.6a	202.3±40.4a	18.1±1.9bc	19.6±2.4b
Macro-nutrients	**Ca**		**K**		**Mg**		**P**		**S**					
	CNV	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**	**CNV**	**MNR**				
2004	1410±362b	1533±410b	39797±2847a	40183±3190a	1498±89c	1684±109b	4055±230bc	4294±380bc	1658±83c	1841±124b				
2005	1311±242b	1216±167b	32823±3417b	35623±4037ab	1500±77bc	1676±152bc	3617±269c	4343±759bc	1582±81c	1935±192b				