



ONE12-156 – Integrating ground cover crops and new herbicide strategies (conventional and organic) for tree growth and soil health -- Part II.

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Lamont Fruit Farm, Mason Farms, Fowler Farms

Soil Health assessment after 2 seasons of weed management in high density orchards.

Table 17. Mason Farms

Soil Health

Colored cells show the soil test quality rating for that test.

Baseline sample collected on Jun 14, 2011

high med low

Treatment samples were collected on Oct. 23, 2012

	Soil texture			overall score/ 100	
	% sand	% silt	% clay		
Baseline	43.8	46.9	9.3	74.5	high
Trt 15	36.4	50.7	12.9	68.8	med
Trt 11	42.6	46.6	10.8	65.8	med
Trt 10	46.9	44.1	9	59	med
Trt 4	42	44.8	13.2	61.7	med

	Physical									
	Aggregate stability		Available water capacity		Surface hardness psi		SubSurface hardness psi		water infiltration in/hr	
Baseline	45.8	71	0.16	52	150	61	300	46		
Trt 15	41.9	64	0.2	78	180	47	472	*3	8.2	
Trt 11	30.6	41	0.23	90	158	57	452	5		
Trt 10	32.8	45	0.18	61	170	52	435	7	4.6	
Trt 4	30.2	40	0.15	42	150	61	422	8		

*subsurface pan/deep compaction

	Biological							
	OM %	Active carbon ppm		Potential mineralizable N µgN/gdwsoil/week		Root health		
Baseline	4.3	72	568	41	17.8	100	4	63
Trt 15	4.75	83	740	75	7.5	27	5.7	50
Trt 11	3.84	60	630	54	8.9	32	5.7	50
Trt 10	3.64	54	558	39	3.5	13	6	38
Trt 4	3.9	62	630	54	6.9	24	5.2	50

Cont.

	Chemical								
	pH	Extract- able phosphorus (PPM)	Extract- able potassium (ppm)	Ca (ppm)	Mg (ppm)	Minor elements			Fe
						Al	Zn	Mn	
Baseline	6.2	8.9	102.5	1684	197	32.2	2.4	36.3	2.3
Trt 15	7.11	8.2	88.8	2608.9	266	6.4	0.8	11.2	0.6
Trt 11	7.04	4.7	61	1936.9	213.6	8.5	0.6	9.9	0.6
Trt 10	7.02	7	69.9	1781.6	197.3	8.8	0.8	9.3	0.5
Trt 4	7.24	4.8	62.4	2099.6	243.5	8.2	0.6	12.6	0.5