AUTHOR'S CORRECTION

Leaching of *Escherichia coli* O157:H7 in Diverse Soils under Various Agricultural Management Practices

JOEL V. GAGLIARDI AND JEFFREY S. KARNS

USDA, Agricultural Research Service, Soil Microbial Systems Laboratory, Beltsville, Maryland 20705

Volume 66, no. 3, p. 877–883, 2000. Pages 878, 880, and 881, Tables 1, 4, and 5, respectively: the following revised tables better represent the parameters measured and the techniques used to evaluate nutrients and carbon available to microorganisms in these samples and better indicate how soil parameters and treatments affected microorganisms, nutrients, carbon, and turbidity in leachate after rainfall events. The original tables should be disregarded.

TABLE 1. Soil and manure characteristics prior to inoculation, rainfall, and leaching

Soil or manure	Bulk density (g cm^{-3})[a]	Particle density (g cm^{-3})[a]	Pore space (%)[a]	Organic matter (%)[b]	Sand (%)[c]	Silt (%)[c]	Clay (%)[c]	Nitrate (µg g^{-1})[d]	Ammonium (µg g^{-1})[d]	Phosphate (µg g^{-1})[d]	W.S.O.C. (µg g^{-1})[d]
Dairy manure	ND[e]	ND	ND	ND	ND	ND	ND	4.34	15.30	104.35	687.70
Sandy loam	1.08	2.36	54	2.3	69	9	21	37.33	1.72	2.11	8.84
Silt loam	0.86	1.98	57	4.5	20	53	27	98.27	1.97	3.74	18.23
Clay loam	1.08	2.34	54	2.9	28	41	21	95.17	5.44	8.73	31.72

[a] Using 40 g of air-dried sieved soil (4 mm) in a graduated cylinder: bulk density = {[soil (weight)] × [soil (volume)]$^{-1}$}; particle density = {[soil (weight)] × [increase in volume of soil and water after addition of 30 ml of distilled water and removal of air bubbles]$^{-1}$}; percent solid space = 100 × [(bulk density) × (particle density)$^{-1}$]; percent pore space = (100 − percent solid space).

[b] Organic matter was determined by the difference in mass of oven-dried soil (80°C) baked to the red-hot level (approximately 750°C) in a ceramic container.

[c] Sand, silt, and clay contents were determined by the hydrometer method after oxidation with 30% H_2O_2, as described previously (G.R. Gee and J.W. Bauder. Particle-size analysis, p. 404–408, *in* A. Klute, ed., *Methods of Soil Analysis, Part 1, Physical and Mineralogical Methods*, 2nd ed.).

[d] Water-soluble nitrate, ammonium, and phosphate were measured with a Lachat analyzer (Zellweger Analytics, Milwaukee, Wis.); water-soluble organic carbon (W.S.O.C.) was measured with a Total Organic Carbon Analyzer (Rosemount Dohrman, Cincinnati, Ohio) after sparging samples with nitrogen gas to displace inorganic carbon (CO_2). Samples were prepared by making a 1:10 (weight/volume) sample dilution with water, shaking at 150 rpm for 60 minutes, and filtration (0.22-µm pore size).

[e] ND, not done or not applicable.

TABLE 4. Means over 18 days for concentrations of water-soluble nutrients and water-soluble organic carbon in leachate after filtration (0.22-µm pore size), and for turbidity of leachate samples, as affected by core type, soil type, and manure application[a]

Variable compared	Type	Nitrate (µg ml^{-1})[b]	Ammonium (µg ml^{-1})[b]	Phosphate (µg ml^{-1})[b]	W.S.O.C. (µg ml^{-1})[c]	Turbidity (OD$_{405}$)[c]
Core type	Intact	13.55 A	1.16 B	4.87 A	1.66 B	0.82 B
	Disturbed	13.20 A	2.71 A	4.63 A	1.82 A	0.93 A
Soil type	Sandy loam	14.26 A	1.88 A	4.90 AB	1.70 A	1.02 A
	Silt loam	13.64 A	2.12 A	5.46 A	1.72 A	0.85 B
	Clay loam	10.67 B	1.98 A	3.71 B	1.82 A	0.75 C
Manure applied	Yes	14.13 A	2.08 A	4.93 A	1.77 A	0.89 A
	No	12.67 B	1.92 A	4.60 A	1.72 A	0.87 A

[a] Samples from all replicates and time points were compared in a linear model to determine overall treatment effects. Letters following the means are from least-significant-difference comparisons (LSDs using SAS proc GLM). Mean comparisons with different letters are significantly different.

[b] Water-soluble nitrate, ammonium, and phosphate concentrations generally decreased in leachate over time.

[c] Water-soluble organic carbon (W.S.O.C.) concentrations and turbidity (optical density at 405 nm) were generally constant in leachate over time.

TABLE 5. Partial correlations between concentrations of water-soluble nutrients and water-soluble organic carbon (W.S.O.C.) after filtration (0.22-µm pore size), and for turbidity, with log$_{10}$-transformed concentrations of total coliforms, *E. coli* O157:H7 strain B6914, and total heterotrophs in leachate over 18 days[a]

Organisms	Nitrate Correlation	Nitrate Probability	Ammonium Correlation	Ammonium Probability	Phosphate Correlation	Phosphate Probability	W.S.O.C. Correlation	W.S.O.C. Probability	Turbidity Correlation	Turbidity Probability
Total coliforms[b]	**0.36**	**<0.01**	0.21	0.06	**0.25**	**0.03**	0.01	0.92	0.07	0.56
E. coli O157:H7 strain B6914[b]	**0.38**	**<0.01**	**0.23**	**0.05**	**0.22**	**0.05**	−0.05	0.64	0.09	0.45
Total heterotrophs[b]	**0.22**	**<0.01**	0.11	0.34	**0.22**	**0.05**	0.02	0.85	−0.15	0.18

[a] Analysis of variance using SAS proc GLM; soil type, column type, and manure application were class variables. Significant correlations ($P < 0.05$) are listed in boldface.

[b] Concentrations of total coliforms and *E. coli* O157:H7 strain B6914 correlated with concentrations of nitrate, ammonium, and phosphate, not with concentrations of W.S.O.C. or with turbidity in leachate. Total coliforms and total heterotrophs correlated only with nitrate and phosphate in leachate.