



33rd Annual NATIONAL NO-TILLAGE CONFERENCE

January 7-10, 2025 • Louisville, Ky.

Let's Talk Shit

Zach Alger
Annville, PA



Cover Crops
Our Roots Run Deep



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by Bayer



Let's talk shit.



Farming in the Pennsylvania Suburbs



Why Don't I Strip-Till?



Using Custom Work to Learn What Works



Advantages of Early Wheat Harvest for Subsequent Operations



Stumbling into Planting Green



Cover Crops Keeping Landlords and the Waterways Happy.



Consider Planting Cover Crops Early



Early Harvest Enables Early Seeding Which Enables Forage/ Grazing Opportunities





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The Andersons



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**soil
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EIS
ENVIRONMENTAL
TILLAGE SYSTEMS



HORSCH



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LSW
Low Steward Technology

When to Terminate?



Fall Manure Applications vs Spring



You May Need a Chisel Plow for Spreader Paths



Broiler Chicken Litter Analysis

	AS Received	Dry Basis	AS Received	Dry Basis
Total Nitrogen (N) %	4.01	6.61	80.2	132
Ammonium Nitrogen (NH ₄ -N) %	0.58	0.95	11.6	19.1
Organic Nitrogen				
Phosphorus, P %	0.785	1.29	36.1 P ₂ O ₅	59.5
Potassium, K %	2.33	3.84	55.9 K ₂ O	92.1
Sulfur, S %	0.271	0.446	5.42	8.93
Magnesium, Mg %	0.424	0.698	8.48	14.0
Calcium, Ca %	0.735	1.21	14.7	24.2
Sodium, Na ppm	2140	3530	4.28	7.05
Iron, Fe ppm	541	891	1.08	1.78
Aluminum, Al ppm	265	437	0.530	0.873
Manganese, Mn ppm	172	283	0.343	0.566
Copper, Cu ppm	346	570	0.692	1.14
Zinc, Zn ppm	205	338	0.410	0.675
Boron, B ppm	52.4	86.3	0.104	0.172

Test	Result
Moisture %	39.3
Solid %	60.7

Additional Information	Result
Type	Dry Basis

Additional Tests	Result
Digestion	Digested

Comments :

RMMA Recommended Methods of Manure Analysis, Peters et al, 2002, In Press
 SW USEPA, SW-846, Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, 3rd Ed.
 Current Revision



Composted Biosolids: A Cheap Way to Rebuild Neglected Soils

	As Received	Dry Basis	As Received	Dry Basis
Total Nitrogen (N) %	2.53	4.79	50.6	95.8
Ammonium Nitrogen (NH ₄ -N) %	0.470	0.890	9.399	17.80
Organic Nitrogen %	2.056	3.893	41.12	77.88
Phosphorus, P %	0.975	1.85	44.9 P ₂ O ₅	84.9
Potassium, K %	0.130	0.246	3.12 K ₂ O	5.91
Sulfur, S %	0.555	1.05	11.1	21.0
Magnesium, Mg %	0.261	0.494	5.22	9.89
Calcium, Ca %	0.930	1.76	18.6	35.2
Sodium, Na ppm	546	1030	1.09	2.07
Iron, Fe ppm	12400	23500	24.8	47.0
Aluminum, Al ppm	2380	4510	4.76	9.02
Manganese, Mn ppm	276	523	0.551	1.05
Copper, Cu ppm	245	464	0.490	0.928
Zinc, Zn ppm	511	968	1.02	1.94
Boron, B ppm	12.7	24.1	0.025	0.048

Test	Result
Moisture %	47.2
Solid %	52.8

Additional Information	Result
Type	Dry Basis

Additional Tests	Result
Digestion	Digested
Nitrate-N , ppm	31.5
pH , s.u.	7.92

Comments :

Nitrate determination using Ion Selective Electrode

Organic Nitrogen Calculation from lab derived data.

RMMA Recommended Methods of Manure Analysis, Peters et al, 2002, In Press

SW USEPA, SW-846, Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, 3rd Ed.

Current Revision



Liquid Dairy Manure

Test	Analysis		Pounds Per 1000 Gallons	
	As Received	Dry Basis	As Received	Dry Basis
Total Nitrogen (N) %	0.229		19.5	
Ammonium Nitrogen (NH ₄ -N) %	0.103		8.755	
Organic Nitrogen				
Phosphorus, P %	0.024		4.69 P ₂ O ₅	
Potassium, K %	0.153		15.6 K ₂ O	
Sulfur, S				
Magnesium, Mg				
Calcium, Ca				
Sodium, Na				
Iron, Fe				
Aluminum, Al				
Manganese, Mn				
Copper, Cu				
Zinc, Zn				
Boron, B				

Test	Result
Moisture %	97.1
Solid %	2.9

Additional Information	Result
Type	As Received

Additional Tests	Result
Digestion	Digested
P-Source Coefficient, %	0.154

Comments :

Calculation Calculation from lab derived data.

MPA Methods of Phosphorus Analysis for Soils, Sediments, Residuals and Waters. Southern Cooperative Bulletin 396.

RMMA Recommended Methods of Manure Analysis, Peters et al, 2002, In Press

SW USEPA, SW-846, Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, 3rd Ed. Current Revision



No Such Thing as Too Much Manure?

	Min	Avg	Max	1	2	3
pH	6.20	6.53	7.00	6.20	6.40	7.00
P-M3 (lb/ac)	316	972	1,562	1,562	316	1,038
K (lb/ac)	502	725	996	996	502	678
pH Buffer	6.74	6.83	6.93	6.74	6.82	6.93
CEC (meq/100g)	12.7	17.2	22.8	16.0	12.7	22.8
OM (%)	3.70	4.07	4.70	4.70	3.70	3.80
Ca (lb/ac)	3,926	5,632	8,234	4,736	3,926	8,234
Mg (lb/ac)	214	261	314	214	254	314
Na (lb/ac)	26.0	28.0	30.0	30.0	26.0	28.0
S (lb/ac)	20.0	26.0	30.0	28.0	20.0	30.0
Zn (lb/ac)	10.0	37.9	56.2	56.2	10.0	47.6
Mn (lb/ac)	162	212	254	162	254	220
B (lb/ac)	1.00	1.07	1.20	1.00	1.00	1.20
Cu (lb/ac)	5.40	7.53	9.20	9.20	5.40	8.00
Fe (lb/ac)	424	495	572	572	424	490
K %	3.80	5.63	8.00	8.00	5.10	3.80
Ca %	74.0	80.5	90.3	74.0	77.3	90.3
Mg %	5.60	6.53	8.30	5.60	8.30	5.70
Na %	0.30	0.37	0.40	0.40	0.40	0.30
H %	0.00	6.87	11.9	11.90	8.70	0.00
H (meq/100g)	0.00	1.00	1.90	1.90	1.10	0.00
ENR (lb/ac)	102	110	121	121	106	102
K/Mg	0.60	0.90	1.43	1.43	0.60	0.66
P/Zn	21.8	27.1	31.6	27.8	31.6	21.8
Ca %/K %	9.25	16.1	23.8	9.3	15.2	23.8
Ca %/Mg %	9.31	12.8	15.8	13.2	9.3	15.8



Small Grains Will Find Your Organic N



Full-Season Soybeans... or Miniature Pumpkins?





Cover Crops
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15" Small Grains with Row-Cleaners



More Cover Crop Options





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Thank you for your time