

2017 Agro-Expo Demonstration Plot

Biosolids vs. Commercial Fertilizers



<p>Crop: Corn Variety: DeKalb DKC52-68RIB Planting Date: May 10, 2017 Plant Population: 36,000 Yield Goal: 200 bu/acre Harvest Date: November 3, 2017</p>	
Fertilizer Side	Biosolids Side
<p>Soil Test Results Bray P1:12 ppm Potassium: 62 ppm Calcium:1144 ppm Magnesium: 141 ppm Zinc: 0.6 ppm Manganese: 4 ppm pH: 7.2 CEC: 14.1 meq/100g Organic Matter: 4.1%</p>	<p>Soil Test Results Bray P1: 12 ppm Potassium: 62 ppm Calcium: 1144 ppm Magnesium: 141 ppm Zinc: 0.6 ppm Manganese: 4 ppm pH: 7.2 CEC: 14.3 meq/100g Organic Matter: 5.3%</p>
<p>Fertilizer May 9, 2017: Fertilizer Applied 46-0-0: 294 #/Acre 18-46-0: 363 #/Acre 0-0-60: 160 #/Acre PAN² applied:200 lbs/acre</p>	<p>Biosolids¹ April 26, 2017: Biosolids Applied 6.0 DT/Acre Total Nitrogen: 480 #/Acre Phosphorus: 240 #/Acre Potassium: 35 #/Acre May 9, 2017: Fertilizer Applied 0-0-60: 100 #/Acre PAN² applied: 200 lbs/acre</p>
Yield: 296 bu/acre	Yield: 307 bu/acre
Moisture:19.2 %	Moisture: 19.6%
Test Weight: 54.4 lbs/bushel	Test Weight: 54.6 lbs/bushel

¹ Source: NEFCO Granular from Great Lakes Water Authority Wastewater Treatment Facility (Detroit, Michigan)

² PAN = Plant Available Nitrogen

Agro Expo Biosolids Site – 2017

Soil Test Information

Date	pH	Bray P1	K	Ca	Mg	S	Fe	Cu	Mn	B	Zn	CEC	O.M.
		----- ppm -----										Meq/100g	%
East Side w/ Biosolids													
4/26/17	7.2	12	62	1144	141	17	38	0.3	4	0.4	0.6	7.1	1.2
West Side w/o Biosolids													
4/26/17	7.2	12	62	1144	141	17	38	0.3	4	0.4	0.6	7.1	1.2

2017 Crop – Corn (var. Dekalb DKC52-68RIB)

Plots were chisel plowed in the fall of 2016. Biosolids was applied on April 26, 2017 and was supplied by NEFCO at the Detroit, Michigan Facility. The corn was planted on May 10, 2017. Fertilizer was applied on May 9, 2017. On May 15, 2017, a Pre-emergence application of Dual II Magnum® at 1.33 pt/ac was applied over both plots. On June 27, 2017, a Post-emergence application of Roundup Ready Max® at 1 qt/ac was applied over both plots. Both of the plots were irrigated in 2017 on the following schedule:

June 12: 0.5"; June 19: 0.5"; June 30: 1"; July 8: 1"; July 14: 1"; July 20: 1"; July 28: 1"; and August 2: 1".

Biosolids and Fertilizers Applied

Based on the 2017 soil test results, recommended K₂O (potash) levels were 100 lb K₂O/acre for the west and east side, so granular 0-0-62 fertilizer was broadcast on the west side at a rate of 160 lb K₂O/acre, and the east side at 100 lb K₂O/acre. For the west side of the site where no biosolids have been applied, recommended P₂O₅ (phosphate) level for 200 bu/acre yield was 164 lbs. P₂O₅/acre, so granular 18-46-0 fertilizer was broadcast. The potash and phosphate was applied on May 9, 2017. Biosolids were applied on April 26, 2017 at a rate of 6 dry tons per acre for Corn. At this rate 200 lbs. TAN, 240 lbs. Phosphorus, and 35 pounds Potassium were applied per acre. 46-0-0 was applied at a rate of 294 lbs./acre and 18-46-0 was applied at 363 lbs./acre on May 9, 2017 to provide 200 lbs. N/acre for the fertilizer side.

