

Impact of Torque™ on Corn Yield

Nebraska On-Farm Research Network

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Overview: According to product information published by Novozymes BioAg, Torque™ is a growth promoter designed to enhance natural growth processes, thereby maximizing crop health and performance. This report synthesizes the results of 7 Torque™ studies in Nebraska between 2010 and 2015. In all studies, Torque™ was applied to corn. Torque™ was applied at a rate of 8 oz/acre in all studies except for the two Saunders County studies, in which Torque™ was applied at a rate of 16 oz/acre. Site specific data is included in *Table 1*. Most studies reported data for yield and grain moisture; this data is presented in *Table 2*. The number of treatment replications conducted in each study is also presented in *Table 2*. This data is not available for all studies, but all studies conducted through the Nebraska On-Farm Research Network must involve at least 3 treatment replications. Data was analyzed using Statistix 10.0 Analytical Software and means were separated using Tukey’s HSD test. An alpha level of 0.10 is used to determine statistical significance.

<u>MINIMUM GUARANTEE</u>
ACTIVE: 2 x 10 ⁻⁷ % lipo-chiooligosaccharide (LCO) formulated for corn applications.
OTHER INGREDIENTS: Aqueous carrier > 99%

Figure 1. Torque™ product ingredients.

Table 1. Site characteristics and production practices for Torque™ research sites where available.*

Year	Location	Soil Texture	Previous Crop	Planting Date	Planting Rate (seeds/ac)	Row Spacing	Tillage	Irrigation
2010	Dodge	-	-	4/26/10	-	-	-	Pivot
2011	Dodge	-	Corn	5/3/11	-	-	-	Pivot
2013	Clay	-	Corn	5/10/13	34,000	-	Conventional	Pivot
2014	Clay	Silt Loam	Soybeans	5/1/14	33,000	30"	No-Till	Pivot
2014	York	Silt Loam Silty Clay	Soybeans	4/29/14	34,000	30"	Ridge	Pivot
2014	Saunders	Loam Silty Clay	CRP	5/18/14	26,000	15"	No-Till	None
2015	Saunders	Loam	Soybeans	5/22/15	28,000	15"	No-Till	None

* Detailed site characteristics and production practices are not available for all sites. In these cases, a dash is used to indicate the data is not available.

Table 2. Corn yield and moisture data for Torque™ applied to corn organized by year and study location.


Study Information			Moisture (%)			Yield† (bu/ac)			
Year	Location	Reps*	Torque	Check	P-Value	Torque	Check	Diff.	P-Value
2010	Dodge	-	15.2 A‡	15.3 A	0.052	178 A	180 A	-2	0.357
2011	Dodge	-	16.3 A	16.3 A	-	184 B	188 A	-4	0.055
2013	Clay	8	18.4 A	18.4 A	0.632	255.3 A	254.8 A	0.5	0.764
2014	Clay	6	16.9 A	16.8 A	0.175	284 A	283 A	1	0.216
2014	York	6	17 A	16.9 A	0.102	204 A	205 A	-1	0.382
2014	Saunders ^A	5	16.9 A	16.4 A	0.180	181 A	164 B	17	0.014
2015	Saunders ^A	8	14.64 A	14.58 B	0.045	215 A	213 A	2	0.149


* Number of replications is not available for all sites, however Nebraska On-Farm Research Network standards require a minimum of 3 replications for inclusion.

† All but 2010 study yield data is corrected to 15.5% moisture.

‡ Values with the same letter are not significantly different at a 90% confidence level.

^A Indicates that Torque™ was applied at a rate of 16 oz/acre at the site. At all other sites, Torque™ was applied at 8 oz/acre.

 Indicates yield is significantly lower for the Torque™ treatment at alpha = 0.1.

 Indicates yield is significantly higher for the Torque™ treatment at alpha = 0.1.

Conclusion: In all but two studies, the Torque™ treatment did not show a significant difference in yield from the check treatment. The check treatment exhibited statistically significant higher yield than the Torque™ treatment in one study while the Torque™ treatment resulted in statistically significant higher yield than the check treatment in the other.

Bottom Line: In 6 out of 7 studies conducted in Nebraska between 2010 and 2015, application of Torque™ did not result in a statistically significant increase in yield.

For more information about the Nebraska On-Farm Research Network and to view other study results, visit <https://cropwatch.unl.edu/on-farm-research>.

Individual study reports can be found at resultsfinder.unl.edu.

Studies included in this report are: 4053201001, 4053201101, 32035201301, 32035201402, 26185201401, 7155201403, 7155201501.