

The Effect of Pop-Up Fertilizers on Corn Silage Yield

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Objective

The objective of this field trial was to evaluate different forms of pop-up fertilizers on corn silage production.

Background

Crop Year:	2008	Fertilizer:	2005; 10 gal/ac 10-34-0
Cooperator:	Cliff & Charlie Finton		10 gal/ac 5-15-15
County/Town:	Tuscarawas/ New Philadelphia	2006 & 2007	10 gal/ac 10-34-0
Soil Type:	Fitchville Silt Loam		10 gal/ac 6-24-6
Drainage:	Moderately drained		10 gal/ac 8-19-3 + Zinc
Previous Crop:	Corn	Herbicide:	1 qt/ac Harness, 1.5 pt/ac Pendimax
Tillage:	Conventional	Planting Rate:	30,000 seeds/ac
Variety:	Masters Choice 615	Row Width:	30 inches
Soil Test:	Buffer pH 6.6, P 28 ppm, K 180 ppm	Planting Date:	05/18/05, 05/10/06, 05/15/07
		Harvest Date:	10/04/05, 10/10/06, 10/08/07

Method

The study consisted of four replications to evaluate different pop-up fertilizer formulations. The center of each plot was weighed at harvest to determine the total pounds of harvested forage.

Results

Pop-Up Fertilizer	2005 Corn Silage Yield (lb/ac)
5-15-15	20,180 a
10-34-0	20,540 a
LSD (0.05)	505
CV	0.4

Pop-Up Fertilizer	2006 Corn Silage Yield (lb/ac)
10-34-0	16,098 ab
6-24-6	18,230 a
8-19-3 + Zn	14,150 bc
0	12,081 c
LSD (0.05)	3,505
CV	0.4

In 2007 individual plots were not measured; rather those plots with the same rates of fertilizer were harvested and weighed as a whole. Because of this, no statistical analysis can be completed. The table below shows the pop-up fertilizer and final yield.

Pop-Up Fertilizer	2007 Corn Silage Yield (lb/ac)
6-24-6	19,520
10-34-0	20,110
8-19-3	18,750

Economic Impact

Fertilizer prices have varied considerably in the last several years. However, our research has shown the 10-34-0 has done well and is approximately half the cost of other fertilizers. In this plot, the savings amounted to \$2.00 per acre.

Summary

Yields were nearly identical regardless of the starter fertilizer used in this study. However, the 10-34-0 was nearly 50% less expensive than the 5-15-15. Additionally, the 6-24-6 was 30% higher and the 8-19-3 was 37% higher in price compared with the 10-34-0. Although some growth differences could be seen early in the growing season there was no apparent difference in plant height or yield at harvest. In this study there was very little potassium response because of adequate levels of K in the soils evaluated.

Zinc addition did not benefit yields either at this location in 2006 (added from the 8-19-3). Thus, if micronutrient deficiency has never been a problem on a particular field application is likely not warranted.

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