Phosphorus Fertilizer Comparison in Silage Corn
Othello, WA (2013)

Experiment Info:	
Planted:	05/20/13
Harvest:	09/25/13
Yield Goal:	
Target Fert.:	
Variety:	
Population:	
Row Width:	
Prev. Crop:	
Plot Size:	~65 acres
Replications:	split pivot

Soil Test Values (ppm):	
pH:	7.4
CEC:	
%OM:	
Bray P1:	
Bicarb P:	14
K:	68
S:	17
%K:	
%Mg:	
%Ca:	
%H:	
Zn:	
Mn:	
B:	

Objective:

Compare field use rates of Pro-Germinator and 10-34-0 for effects on yield and quality of irrigated silage corn.

Unlike field corn, silage corn is as much about quality as yield. Quality measurements are utilized for determination of feed rations for livestock. Higher quality means better digestibility and energy for the animal. To determine if fertilizer source has an effect on silage corn outcome, a pivot circle was split between applications of two sources of phosphate fertilizers. These were applied at the relative recommended rates for the formulations used, that being 22.5 gal/A of 10-34-0 and 8.25 gal/A of Pro-Germinator. Fertilizers were planter-applied in 2x2 placement relative to the seed. Nitrogen fertilizer was applied through the pivot, and there was no adjustment for the reduced amount of nitrogen applied with the Pro-Germinator compared to the 10-34-0. As harvest proceeded, three samples from each field section were collected and taken to the NFTA-approved lab within an hour of each collection. Quality data in the table are an average of these.

Fertilizer Effect on Silage Corn. Othello, WA		
	Pro-Germ.	10-34-0
Silage Yield (T/A)	28.9	26.5
%Crude protein*	7.0	6.2
%ADF*	23.1	27.3
%NDF*	43.6	45.8
%TDN*	68.2	65.4
%Digest. DM*	70.9	67.6
%Phosphorus	0.20	0.18
RFV*	152.0	137.7

* - Dry matter basis

Conclusions:

- All measurements in this test favored Pro-Germinator vs 10-34-0.
- The Pro-Germinator resulted in 2.4 T/A more silage which is a 9% increase.
- The Pro-Germinator also enabled higher protein, TDN (total digestible nutrients), digestible dry matter, tissue phosphorus and RFV (Relative Feed Value). This was due to the reduction in both Acid and Neutral Detergent Fiber (ADF and NDF) which indicates better quality and digestibility.
- All of these positive outcomes occurred even though there was 75% fewer pounds of phosphate applied with the Pro-Germinator. As measured, this was better for the corn and less excess phosphate in the environment.

This test was managed by Steve Holland of Holland Agricultural Services.