

Consistent Silage Analysis™



Livestock producers require corn hybrids with proven performance to meet the nutritional needs of dairy and beef operations. To help livestock producers, Syngenta Agronomy Research developed a unique methodology to analyze hybrids called Consistent Silage Analysis. A combination of replicated research plots and on-farm strip trials identifies corn silage hybrids meeting producers' needs for yield, quality, and consistency. Hybrid evaluations occur across geographically diverse environments using locally accepted silage production practices. Silage is sampled and analyzed using the Consistent Silage Analysis method and evaluated for quality over multiple locations and years. Corn hybrids consistently demonstrating high quality and high yields in these trials earn the Consistent Silage™ designation.

Factors Affecting Silage Yield and Quality

Optimum Hybrid Selection

- Select hybrids well-adapted for the geographic region using local performance data whenever possible.
- Select hybrids best fitting specific needs for yield and quality (see chart on reverse) as well as dual-purpose utilization, target harvest date, etc.

Management Practices

- Plant early to optimize crop utilization of water, nutrients, and sunlight.
- Plant at populations equal to or up to 10% greater than corn for grain.
- Soil nutrient removal for potassium and phosphorus will be higher for silage than for grain production.
- Target a whole-plant moisture content of 60-70% at harvest, depending on ensiling method, with higher moistures best suited for storage in a bunker or pile.



Maximizing Quality and Yield

- Syngenta Agronomy Research data shows that Quilt Xcel™ fungicide applied to corn at green silk significantly improves silage yield and quality (see table 1).
- Quilt Xcel application increased silage tons 3.9%.
- Quilt Xcel application also increased milk and beef pounds per ton of silage by 2.4% and 5.9% respectively.
- Improved tonnage and silage quality resulted in a 6.4% increase in milk per acre and 1.5% increase in beef per acre.
- Fields used in this study had little to almost no disease pressure at application, showing how Quilt Xcel fungicide provides Plant Performance™ benefits beyond disease protection.

Table 1. Influence of Quilt Xcel Fungicide on Silage Yield and Quality (2009-10)*

	Yield @ 70% Mst (ton/A)	Milk (lbs/ton)	Milk (lbs/A)	Beef (lbs/ton)	Beef (lbs/A)
Quilt Xcel Treated	34.4	3,374	34,822	241.3	2,490
Untreated	33.1	3,296	32,720	237.8	2,361
Quilt Xcel Increase	1.3	78	2102	3.5	130
<i>LSD (0.10)</i>	0.5	41	674	1.7	41
% Quilt Xcel Increase	3.9%	2.4%	6.4%	5.9%	1.5%

* Replicated trials conducted at three Syngenta research locations in 2009 and 2010. Milk and beef production estimates were generated from University of Wisconsin equations that used digestibility values based on NIR and in-vitro digestibility analysis of samples from Syngenta silage trials.



Corn Silage Hybrid Selection – 2011

The following table provides silage quality and yield scores for select Garst® brand hybrids based on actual tonnage and silage analysis values. Scores represent relative differences among hybrids of a similar maturity.

Garst Brand Corn Silage Hybrid Selection Guide												
Hybrid Series	RM	Yield (Ton/A)	CP (% of DM)	NDF Dig. 48 hr (%)	Starch (% of DM)	TDN (% of DM)	NEL (Mcal/lb)	Milk (lbs/Ton)	Milk (lbs/A)	Beef (lbs/Ton)	Beef (lbs/A)	Consistent Silage
89V30	83	●	●	●	●	●	●	●	▼	●	▼	
89S28	83	●	●	●	★	▼	▼	▼	▼	▼	▼	
89S01	85	●	●	★	●	●	●	●	●	●	●	
89A33	85	★	▼	●	★	●	●	●	●	●	●	
89J14	86	●	●	●	●	●	●	●	●	●	●	
89M60	88	●	●	●	★	▼	●	●	●	●	●	✓
89K65	88	●	▼	●	★	▼	▼	▼	▼	▼	▼	
89G13	90	▼	▼	●	●	★	★	★	●	★	●	✓
89T43	92	●	▼	●	●	★	★	★	★	★	★	✓
88L03	93	●	▼	●	●	★	★	★	●	★	●	✓
88R16	94	★	●	●	★	★	★	★	★	★	★	
88K05	96	●	●	★	●	●	●	●	●	●	●	
88E24	96	★	●	★	▼	★	★	★	★	★	★	✓
88W22	97	●	★	●	●	★	★	★	●	★	●	✓
88F73	97	▼	★	▼	★	●	●	●	✘	●	✘	
88A27	97	●	★	▼	▼	●	●	●	★	●	●	
88M51	98	✘	▼	●	★	★	★	★	✘	★	✘	
88B37	99	●	●	●	★	●	▼	▼	●	●	●	
87G94	100	▼	●	▼	★	●	★	★	●	●	▼	
87V47	101	●	▼	●	★	▼	▼	▼	●	▼	●	
87T18	102	●	★	★	★	★	★	★	●	★	●	
87W95	103	★	●	★	●	●	●	●	★	●	★	✓
86J49	103	●	✘	●	●	●	●	●	●	●	●	
86X11	104	★	▼	●	▼	●	●	●	●	●	★	✓
86T82	105	●	✘	●	★	▼	●	●	●	▼	▼	✓
86M39	105	●	★	★	★	★	★	★	●	★	●	✓
86G35	105	●	●	★	★	★	★	★	●	●	●	✓
85V88	107	●	▼	●	★	★	●	●	●	★	●	
85E98	109	●	●	●	●	●	●	●	●	●	●	✓
85Z64	110	▼	▼	●	●	●	●	●	✘	▼	✘	
84U58	111	●	★	●	▼	●	●	★	▼	●	●	✓
84Z02	112	●	●	●	●	●	●	●	●	●	●	
84Q55	112	▼	●	●	★	●	●	●	●	●	●	
84J30	112	●	▼	●	▼	●	●	●	●	●	●	
84G70	112	★	●	●	▼	★	★	★	★	●	★	✓
83T94	112	●	✘	●	▼	●	●	●	●	▼	●	
84U96	113	▼	●	▼	★	▼	●	▼	▼	▼	▼	
84N18	113	▼	●	●	●	●	●	●	▼	●	▼	
83S06	113	●	●	▼	●	●	●	●	▼	●	▼	
83L67	113	★	●	●	★	●	●	●	●	●	★	✓
83E90	113	▼	●	●	★	●	●	●	▼	●	▼	
83X61	114	★	●	●	●	●	●	●	★	●	★	✓
83R38	114	▼	●	●	●	★	★	★	●	★	●	
83C55	114	●	▼	▼	●	★	★	★	●	★	●	✓
83P07	115	★	▼	★	●	●	●	●	●	●	●	✓
83M47	115	●	★	●	★	●	●	●	●	●	●	
82R05	115	●	●	●	▼	●	●	●	●	●	●	
82K01	116	●	●	●	●	●	★	★	●	●	●	✓
82R44	117	★	★	●	▼	●	●	●	★	●	★	✓
82H82	118	▼	●	●	✘	●	●	●	▼	●	▼	

Using This Chart

Yield
Calculated on a per acre basis and adjusted to standard moisture.

Crude Protein (CP)
Indicates the percent content of this important feed component relative to other hybrids.

Neutral Detergent Fiber Digestibility 48 Hour (NDF Dig. 48hr)
Estimates the ruminant digestibility of the NDF fraction.

Starch
Indicates the percent content of this important feed component.

Total Digestible Nutrients (TDN)
Describes the energy content of feeds as the sum of the digestibility of different nutrients.

Net Energy Lactation (NEL)
Represents net energy for lactating cows based on acid detergent fiber (ADF).

Milk and Beef Production per Ton and Acre
Feed quality on a per ton basis, and combination of yield and quality on a per acre basis.

Ratings Key

★ Greatest opportunity to maximize performance and/or trait content relative to other hybrids in maturity group.

● Performs well and/or has very good trait content relative to other hybrids in maturity group.

▼ Performance and/or trait content is lower relative to other hybrids in maturity group.

✘ Performance and/or trait content is below desired levels relative to other hybrids in maturity group.

✓ for Consistent Silage indicates hybrid has the greatest potential for consistent yield and high quality.

NOTE: Hybrid characteristics such as staygreen and drought stress tolerance are also important to consider when selecting hybrids for silage production; check the characteristics chart in Seed Guide for scores. Digestibility ratings are based on NIR and in-vitro digestibility analysis. Milk performance estimates generated from University of Wisconsin equations. Comparisons should only be made among hybrids within a maturity group. Although actual silage yield and quality analysis of a hybrid will vary with environment, the relative ranking of a hybrid will be similar. Ratings are a relative performance guide. Conduct a laboratory test to determine actual silage quality when balancing a feed ration.

For more information, contact your Garst Dealer or call 1-888-GO-GARST. Visit us at www.garstseed.com.



This bulletin was developed by Syngenta Agronomy Research. Syngenta Agronomy Research studies and evaluates environmental and cultural practices that impact yield in both corn and soybean production to provide answers to the critical issues facing growers. In 2010, 27 research trials were conducted at 10 Syngenta Agronomy Research locations.