Common footnotes on all products:

***NEW**

Trait ratings provide key information useful in selection and management of Pioneer® brand products in your area. Scores are based on period-of-years testing through 2012 harvest and were the latest available at time of printing. Some scores may change after 2013 harvest. Contact your Pioneer sales professional before planting for the latest trait rating information.

IMPORTANT: Information and ratings are based on comparisons with other Pioneer brand products, not competitive products. Information and ratings are assigned by DuPont Pioneer Agronomists and Research Managers, based on average performance across area of adaptation under normal conditions, over a wide range of both climate and soil types, and may not predict future results. Product responses are variable and subject to any number of environmental, disease and pest pressures. Please use this information as only part of your product positioning decision. Refer to www.pioneer.com/products or contact a Pioneer sales professional for the latest and most complete listing of traits and scores for each Pioneer brand product.

RATINGS: 9 = Excellent; **1** = Poor; Blank = Insufficient Data.

Alfalfa footnotes:

**All Pioneer products are varieties unless designated with Brand, in which case it is comprised of more than one Pioneer brand variety.

^ Scores taken in moderate to heavy leafhopper infestation, with no insecticide applied.

† Scores reflect the yield increase compared to conventional alfalfa types under one or more lodging events at harvest.

Agronomic ratings based on period-of-years testing through 2012 harvest. Pest resistance, dormancy and winterhardiness ratings based on standard test protocols prescribed by the North American Alfalfa Improvement Conference (NAAIC). Ratings may change over additional years of data collection, or if NAAIC protocols change. Contact your Pioneer sales professional before planting for the latest trait rating information.

DISEASE/PEST RESISTANCE KEY: HR = Highly Resistant; **R** = Resistant; **MR** = Moderately Resistant; LR = Low Resistance; **S** = Susceptible; Blank = Insufficient Data.

MILK YIELD PER ACRE: 9 = Outstanding; **1**=Poor. Estimated milk yield per acre is based on Wisconsin Milk2000 formula representing the combined impact of forage yield, nutrient content and fiber digestibility.

HERBICIDE RESISTANCE: Monsanto Company is a member of Excellence Through Stewardship® (ETS). Monsanto products are commercialized in accordance with ETS Product Launch Stewardship Guidance, and in compliance with Monsanto's Policy for Commercialization of Biotechnology-Derived Plant Products in Commodity Crops. This product has been approved for import into key export markets with functioning regulatory systems. Any crop or material produced from this product can only be exported to, or used, processed or sold in countries where all necessary regulatory approvals have been granted. **Do not export Genuity® Roundup Ready® Alfalfa seed or crop, including hay or hay products, to China pending import approval**. It is a violation of national and international law to move material containing biotech traits across boundaries into nations where import is not permitted. Growers should talk to their grain handler or product purchaser to confirm their buying position for this product. **Always read and follow pesticide label directions**. Crops that contain the Roundup Ready gene confer tolerance to glyphosate, the active ingredient in Roundup® agricultural herbicides. Roundup agricultural herbicides will kill plants that are not tolerant to glyphosate. Excellence Through Stewardship® is a registered trademark of Biotechnology Industry Organization.

Roundup Ready®, Roundup® and Genuity® are registered trademarks used under license from Monsanto Company.

WINTERHARDINESS: VH = Very Hardy; H = Hardy.

DISEASE RESISTANCE INDEX: DRI is a disease index based on the following pests: Bacterial wilt, Verticillium wilt, Fusarium wilt, Anthracnose, Phytophthora and Aphanomyces (Race 1) and Aphanomyces (Race 2). **HR** = 5 points; R = 4 points; **MR** = 3 points; **LR** = 2 points; **S** = 1 point. Highest possible DRI = 35 points.

All Pioneer® brand alfalfa varieties in the U.S. are treated with Apron® XL to help protect against seedling damping off diseases and Phytophthora root rot for good stand establishment.
® Apron is a registered trademark of a Syngenta Group Company.

STANDABILITY/LODGING RESISTANCE: Score based on standard test requirements where rating classes are assigned as **R** = Resistant, MR = Moderate Resistant and **S** = Susceptible.

Sorghum-sudangrasss and Forage Sorghum footnotes:

RM (RELATIVE MATURITY): Approximate length of time in days until flowering.

STEM SWEETNESS: 1 = Bitter; **9** = Sweet.

STEM JUICINESS: 1 = Dry; **9** = Wet.

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PIONEER® BRAND PRODUCTS

Pioneer® brand
Alfalfa Varieties

Variety/brand**	Forage Yield	Relative Forage Quality	Milk Yield Per Acre	Field Appearance	Herbicide Resistance	Fall Dormancy	Winterhardiness	Disease Resistance Index	Bacterial Wilt	Verticillium Wilt	Fusarium Wilt	Anthracnose [Race 1]	Phytophthora Root Rot	Aphanomyces [Race 1]	Aphanomyces [Race2]	Spotted Aphid	Pea Aphid	Blue Aphid 1	Northern Root-knot Nematode	Southern Root-knot Nematode	Stem Nematode	Standability/ Lodging Resistance	Leafhopper
Muscle Varieties – Stable High Yield and Winterhardiness																							
55V50	9	7	8	9		5	VH	34	HR	HR	R	HR	HR	HR	HR	R	R		HR		R		
55V48	9	7	8	9		5	VH	33	HR	R	HR	HR	HR	HR	R	R	HR		R		R		
54R02	8	7	7	8	RR	4	VH	31	HR	HR	HR	HR	HR	HR	S	HR	MR		R		R		
55V12†	9	7	7	9		5	VH	33	R	HR	HR	HR	HR	HR	R	R	MR		R		R	R	
Forage Quality Varieties																							
54QR04*	8	9	8	9	RR	4	VH	31	HR	HR	HR	HR	HR	HR		HR	R				R		
55Q27▲	9	8	9	9		5	VH	34	HR	HR	HR	HR	HR	HR	R	R	R				HR		
Leafhopper Resistant Varieties																							
55H94^	9^	8	9	9^		5	H	34	HR	HR	HR	HR	HR	HR	R	HR	R		HR		R		HR

▲Available in 2014

Pioneer® brand
Sorghum-sudangrass Hybrid

Hybrid	Relative Maturity	Yield for RM	Yield Under Stress	Yield for Hay	Yield for Green Chop	Yield for Pasture	Yield for Regrowth	Plant Height in Feet	Stem Sweetness	Stem Juiciness	Head Type	Regrowth Score	Charcoal Rot	Fusarium Rot
877F	72	9	9	9	7	9	8	7-9	7	7	Open	9	5	5

Pioneer® brand
Forage Sorghum Hybrid

Hybrid	Relative Maturity	Yield for Silage	Yield for Hay	Plant Height [Feet]	Stem Sweetness	Stem Juiciness	Percent Grain in Forage	Head Type	Grain Color	Regrowth Score	Stalk Strength	Root Strength
849F	71	7	5	7-10	6	7	30-35%	Semi-open	Red-Brown	5	8	7

Pioneer® brand
Inoculants offer choices Crop-Specific Inoculants
Patented, Proprietary Bacterial Strains.

Key Benefits and Recommended Product Usage	Corn Fiber Technology	Corn Silage		Alfalfa Fiber Technology	Alfalfa Silage		Grass Fiber Technology	Grass/Cereal	High-Moisture Corn		Multi-Crop	
	11CFT	**11C33**	**1132**	**11AFT**	**11G22**	**11H50**	**11GFT**	**11G22**	**11B91**	**1189**	**11A44**	**1174/1177**
	Contains ***L. buchneri***	Contains ***L. buchneri***		Contains ***L. buchneri***	Contains ***L. buchneri***		Contains ***L. buchneri***	Contains ***L. buchneri***	Contains ***L. buchneri***		Contains ***L. buchneri***	
	Reduces dry matter loss by rapidly lowering pH. Also contains *L. buchneri* to significantly reduce aerobic losses at feedout. Fiber Technology product which Improves fiber digestibility with an enzyme that is produced by a novel *L. buchneri* strain making this product an excellent choice for high-production animals fed high levels of forage. Allows for reduction in concentrate and protein supplementation to reduce total feed costs.	Improves silage feeding quality and bunklife by rapidly lowering pH and significantly improves bunklife as a result of the inclusion of a *L. buchneri* strain.	Rapidly lowers silage pH and incrementally improves rate of nutrient digestion. Best suited for silages that have excellent face management.	Fiber Technology product which reduces dry matter loss and protein degradation by rapidly lowering alfalfa silage pH. Also c ontains an *L. buchneri* strain to significantly improve bunklife. Fiber Technology product which Improves fiber digestibility with an enzyme that is produced by a novel *L. buchneri* strain making this product an excellent choice for high-production animals fed high levels of forage. Allows for reduction of protein and/or concentrate supplementation to reduce overall feed cost.	Helps protect nutritional quality in alfalfa silage by rapidly lowering pH and improving bunklife by including a *L. buchneri* strain	Reduces dry matter loss by promoting a faster and more efficient fermentation. Significantly reduces protein degradation in alfalfa silages.	Reduces dry matter loss by rapidly lowering grass or cereal silage pH and improving bunklife by including a *L. buchneri* strain. Fiber Technology product containing a novel *L. buchneri* strain to improve bunklife and significantly increases fiber digestion. Best suited to high-production animals fed high levels of forage. Allows for reduction in ration concentrate and protein supplementation costs.	Helps protect nutritional quality in grass or cereal silages by rapidly lowering pH and improving bunklife by including a *L. buchneri* strain	Combines the benefits of 1189 with greatly improved bunklife as a result of the inclusion of a *L. buchneri* strain	Rapidly reduces pH and increases the starch digestibility in high-moisture corn, snaplage or earlage. Helps improve feed efficiency and rate of gain in animals fed high-moisture shelled corn, snaplage or earlage.	Omnibus product containing a L. buchneri strain to signifi-cantly improve silage bunklife. Best suited to silages and management situations where silage face management and aerobic stability is a challenge.	Basic fermentation product which rapidly lowers silage pH conserving valuable crop sugars while reducing protein degradation.
Improves fermentation	**	**	***	**	**	***	**	**	***	***	Varies by crop	
Enhances bunklife	***	***	*	***	***	**	***	***	***	*		
Improves fiber digestibility	***	**	**	***	*	*	***	*				

Relative ratings: *** = Outstanding; ** = Excellent; * = Good; Blank = Insufficient Data.
IMPORTANT: Information and ratings are based on relative comparisons with other Pioneer® brand inoculants within each specific crop, not competitive products. Information and ratings are assigned by Pioneer Forage Additive Research, based on average performance across area of use under normal conditions, over a wide range of both environment and management conditions, and may not predict future results. Product responses are variable and subject to any number of environmental and management conditions. Please use this information as only part of your product positioning decision. Refer to www.pioneer.com/growingpoint or contact a Pioneer sales professional for the latest and most complete listing of traits and scores for each Pioneer brand product.

Fermentation – rate and extent of pH decline and the composition of fermentation acids occurring in silage.
Bunklife – relative heat development compared to ambient temperature. Bunklife considers both how quickly silage begins to heat and the amount of heat generated while remaining above ambient temperature.

Fiber Digestibility – the digestibility of neutral detergent fiber (NDF) by the ruminant animal expressed as a percentage of the total NDF.