



PIONEER®

BRAND ALFALFA



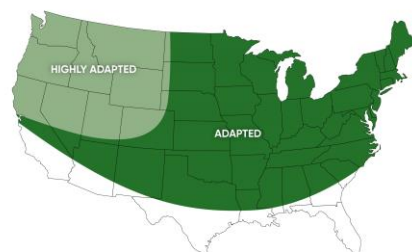
Pioneer® variety

55Q27

FALL DORMANCY 5

This fall dormant five variety has a history of both high forage yield and high forage quality potential, especially in Western environments where stem nematode resistance is desired. 55Q27 brings a very good disease package, winterhardiness, and stand persistence. It is well-suited to commercial and dairy hay operations.

AREA OF ADAPTATION



SUITABILITY* AND PLACEMENT GUIDE

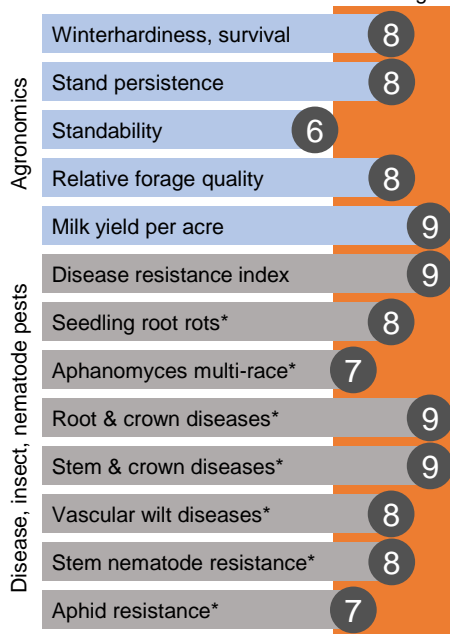
● Highly Suitable ● Suitable ○ Manage Appropriately

- Well-drained or excessively-drained soils
- Poorly-drained, root rot prone soils
- Stem nematode pressure
- Aphid pressure
- Potato leafhopper pressure (no insecticide used)
- Irrigated growing environments
- High forage quality goals
- Harvest delays or long cutting intervals
- High frequency, short cutting intervals
- Frequent winterkill area, stand persistence
- Heavy wheel traffic tolerance

PRODUCT PROFILE

9=Outstanding*; 1=Poor

Optimum Rating



RECOMMENDED ALFALFA SILAGE INOCULANT

Pioneer® inoculant

11H50

For faster fermentation, reduced protein degradation, and improved dry matter recovery

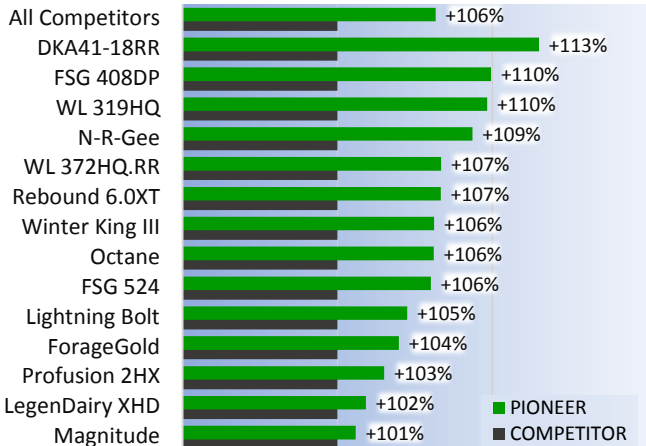
* See footnotes for category and score descriptions





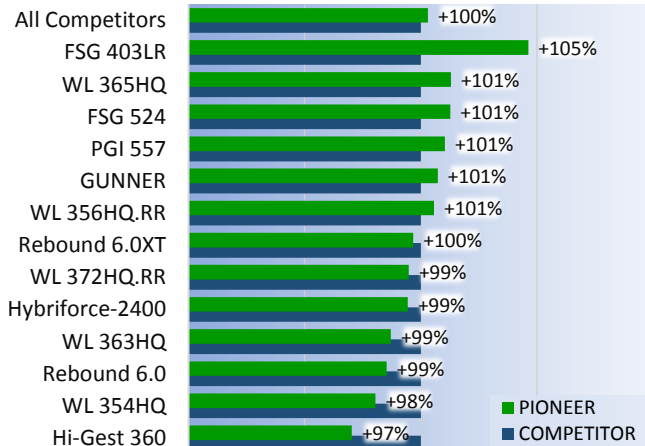
FORAGE YIELD ADVANTAGE

90% 100% 110% 120%

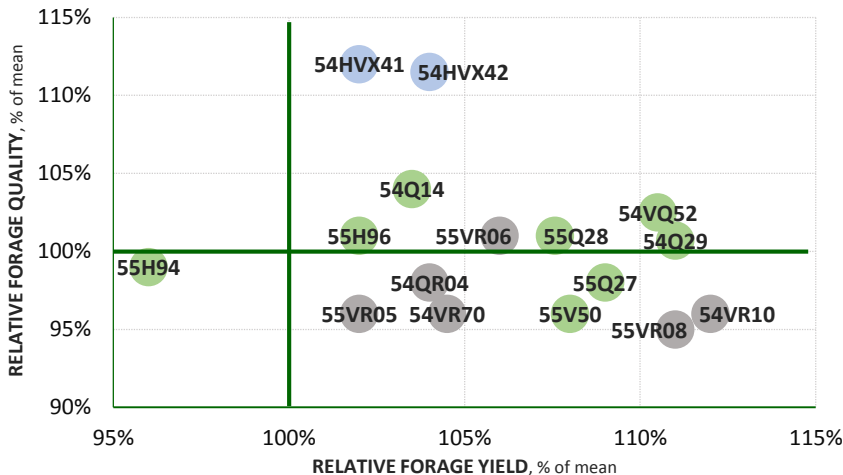


FORAGE QUALITY (RFQ) ADVANTAGE

90% 95% 100% 105% 110%



PERFORMANCE OF PIONEER® BRAND ALFALFA VARIETIES



*Agronomic and forage quality results are based on period-of-years testing from 2012 through 2018 and includes data from Pioneer research trials in CA, ID, MN, NY, OH, and WI and from University trials in CA, ID, MI, MN, NY, OH, OR, PA, WI, and ON, Canada. All comparisons are based on more than 10 paired comparisons.

Suitability ratings are based upon historical field observations and analysis of traits. Results may not predict future performance. 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.

Trait scores (9=outstanding; 1=poor; blank = insufficient data) unless otherwise noted) are based upon period-of-years testing against other Pioneer® brand products through 2018. Scores are assigned from research data across a range of climates and growing conditions and were the latest available at the time of printing.

Winter-hardiness: 9= Extremely Hardy (EH); 8=Very Hardy (VH); 7=Hardy (H). Ratings based on comparison to standard check varieties.

Stand persistence: Rating based on scores taken at end of stand life representing plant appearance and stand integrity after at least 3 harvest years.

Stability or lodging resistance: Score based on plant lodging observations (% of stems >45° angle) averaged across multiple locations and years.

Relative Forage Quality (RFQ) and Milk Yield per Acre scores based on forage analysis results and the Wisconsin Milk2006 calculations representing the impact of forage yield, nutrient content and fiber digestibility.

Disease, insect, and nematode pest resistance scores: 9=>70%, 8=51-69%, 7=41-50%, 6=31-40%, 5=23-30%, 4=16-22%, 3=11-15%, 2=6-10%, and 1=1-5% resistant plants in standardized tests.

Seedling root rots=average of Phytophthora and Aphanomyces root rot; Aphanomyces multi-race=average of Aphanomyces race 1, 2, and other documented isolates; Root and crown diseases= average of Fusarium wilt, Phytophthora root rot, and Anthracnose resistance; Stem and crown diseases=average of Anthracnose and Fusarium wilt resistance; Vascular wilt diseases=average of Bacterial wilt, Fusarium wilt, and Verticillium wilt; Aphid resistance=average of Blue aphid, Pea aphid, and Spotted aphid resistance. Disease Resistance Index (DRI): Index based on standard test scores for the following pests: Bacterial wilt, Verticillium wilt, Fusarium wilt, Anthracnose, Phytophthora and Aphanomyces (Race 1) and Aphanomyces (Race 2).

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 and for product placement and management suggestions specific to your operation and local conditions.



HERBICIDE RESISTANCE: Always read and follow label directions. Roundup Ready® Alfalfa (RRA) products and/or HarvXtra™ Alfalfa with Roundup Ready® Technology (HVX) contain genes that confer tolerance to glyphosate herbicide.

Glyphosate agricultural herbicides will kill crops that are not tolerant to glyphosate. **Accidental application of incompatible herbicides to these alfalfa varieties could result in total crops loss.** HVX alfalfa products contain the biotechnology-derived trait developed to maximize alfalfa quality compared to commercially available alfalfa products harvested at the same growth stage, by reducing the amount of lignin in the plant.

Do not export Pioneer® brand Alfalfa seed or crops containing Roundup Ready® and/or Pioneer® brand Alfalfa with HarvXtra™ Technology, including hay or hay products, to China pending import approval. In addition, due to the unique cropping practices, do not plant this product in Imperial County, California. Crops and materials containing biotech traits may only be exported to, used, processed, or sold in jurisdictions where all necessary regulatory approvals have been granted for those crops and materials. It is a violation of national and international law to move materials containing biotech traits into jurisdictions where their import is not permitted.

Growers should discuss these issues with their purchaser or grain handler to confirm the purchaser or handler's position on products purchased. For further information on the approval status of biotech traits, please visit www.biotechstatus.com.

Pioneer is a member of Excellence Through Stewardship® (ETS). Excellence Through Stewardship® is a registered trademark of Excellence Through Stewardship.

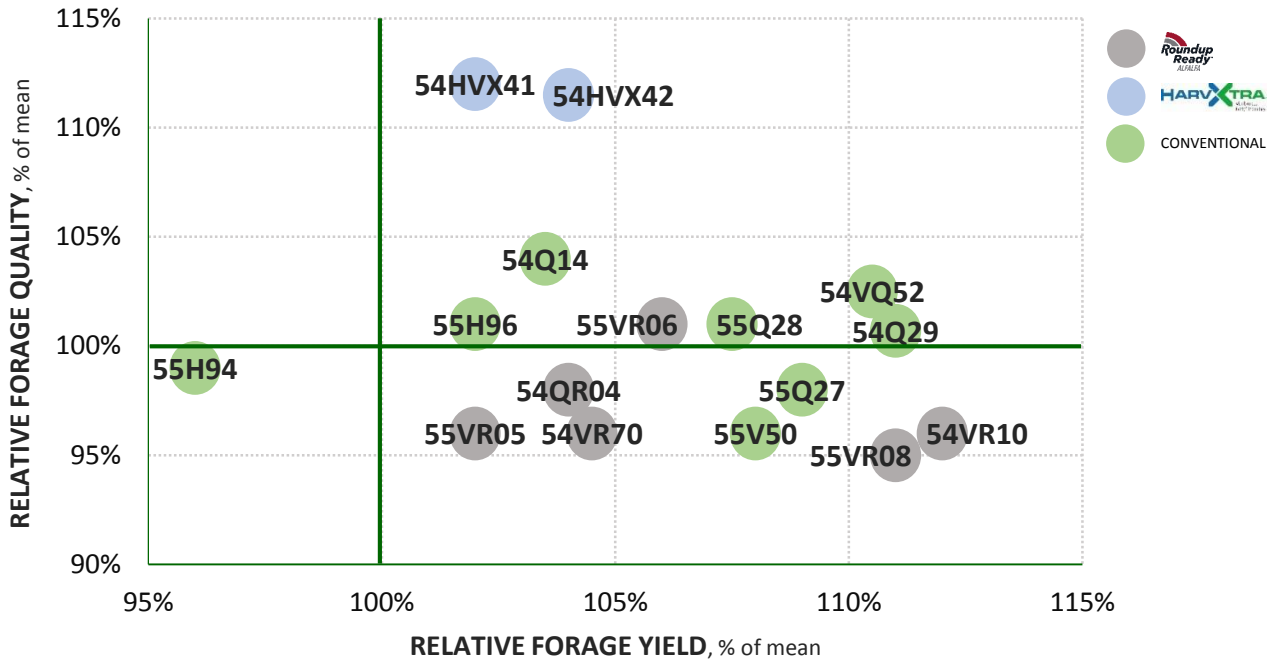
HarvXtra® is a trademark of Forage Genetics International, LLC. HarvXtra® Alfalfa with Roundup Ready® Technology is enabled with technology from The Samuel Roberts Noble Foundation, Inc.

Roundup Ready® and Roundup® are registered trademarks of Monsanto Technology LLC, used under license by Forage Genetics International, LLC.

Pioneer® brand products are provided subject to the terms and conditions of purchase which are part of the labeling and purchase documents. TM, ®, SM Trademarks and service marks of Dow AgroSciences, DuPont or Pioneer, and their affiliated companies or their respective owners. © 2019 PHIL.

PERFORMANCE OF PIONEER® BRAND ALFALFA VARIETIES

PIONEER AND UNIVERSITY TRIALS | 2012-2018



NOTES

*Agronomic and forage quality results are based on period-of-years testing from 2012 through 2018 and includes data from Pioneer research trials in CA, ID, MN, NY, OH, and WI and from University trials in CA, ID, MI, MN, NY, OH, OR, PA, WI, and ON, Canada. All comparisons are based on more than 10 paired comparisons.

Suitability ratings are based upon historical field observations and analysis of traits. Results may not predict future performance. 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.

Trait scores (9=outstanding; 1=poor; blank = insufficient data) unless otherwise noted) are based upon period-of-years testing against other Pioneer® brand products through 2018. Scores are assigned from research data across a range of climates and growing conditions and were the latest available at the time of printing.

Winter-hardiness: 9= Extremely Hardy (EH); 8=Very Hardy (VH); 7=Hardy (H). Ratings based on comparison to standard check varieties.

Stand persistence: Rating based on scores taken at end of stand life representing plant appearance and stand integrity after at least 3 harvest years.

Stability or lodging resistance: Score based on plant lodging observations (% of stems >45° angle) averaged across multiple locations and years.

Relative Forage Quality (RFQ) and Milk Yield per Acre scores based on forage analysis results and the Wisconsin Milk2006 calculations representing the impact of forage yield, nutrient content and fiber digestibility.

Disease, insect, and nematode pest resistance scores: 9=>70%, 8=51-69%, 7=41-50%, 6=31-40%, 5=23-30%, 4=16-22%, 3=11-15%, 2=6-10%, and 1=1-5% resistant plants in standardized tests.

Seedling root rots=average of Phytophthora and Aphanomyces root rot; **Aphanomyces multi-race**=average of Aphanomyces race1, 2, and other documented isolates; **Root and crown diseases**= average of Fusarium wilt, Phytophthora root rot, and Anthracnose resistance; **Stem and crown diseases**=average of Anthracnose and Fusarium wilt resistance; **Vascular wilt diseases**=average of Bacterial wilt, Fusarium wilt, and Verticillium wilt; **Aphid resistance**=average of Blue aphid, Pea aphid, and Spotted aphid resistance. **Disease Resistance Index (DRI):** Index based on standard test scores for the following pests: Bacterial wilt, Verticillium wilt, Fusarium wilt, Anthracnose, Phytophthora and Aphanomyces (Race 1) and Aphanomyces (Race 2).

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 and for product placement and management suggestions specific to your operation and local conditions.



HERBICIDE RESISTANCE: Always read and follow label directions. Roundup Ready® Alfalfa (RRA) products and/or HarvXtra™ Alfalfa with Roundup Ready® Technology (HVX) contain genes that confer tolerance to glyphosate herbicide.

Glyphosate agricultural herbicides will kill crops that are not tolerant to glyphosate. **Accidental application of incompatible herbicides to these alfalfa varieties could result in total crops loss.** HVX alfalfa products contain the biotechnology-derived trait developed to maximize alfalfa quality compared to commercially available alfalfa products harvested at the same growth stage, by reducing the amount of lignin in the plant.

Do not export Pioneer® brand Alfalfa seed or crops containing Roundup Ready® and/or Pioneer® brand Alfalfa with HarvXtra™ Technology, including hay or hay products, to China pending import approval. In addition, due to the unique cropping practices, do not plant this product in Imperial County, California. Crops and materials containing biotech traits may only be exported to, used, processed, or sold in jurisdictions where all necessary regulatory approvals have been granted for those crops and materials. It is a violation of national and international law to move materials containing biotech traits into jurisdictions where their import is not permitted.

Growers should discuss these issues with their purchaser or grain handler to confirm the purchaser or handler's position on products purchased. For further information on the approval status of biotech traits, please visit www.biotechstatus.com.

Pioneer is a member of Excellence Through Stewardship® (ETS). Excellence Through Stewardship® is a registered trademark of Excellence Through Stewardship.

HarvXtra® is a trademark of Forage Genetics International, LLC. HarvXtra® Alfalfa with Roundup Ready® Technology is enabled with technology from The Samuel Roberts Noble Foundation, Inc.

Roundup Ready® and Roundup® are registered trademarks of Monsanto Technology LLC, used under license by Forage Genetics International, LLC.

Pioneer® brand products are provided subject to the terms and conditions of purchase which are part of the labeling and purchase documents. TM, ®, SM Trademarks and service marks of Dow AgroSciences, DuPont or Pioneer, and their affiliated companies or their respective owners. © 2019 PHIL.