

**A REPORT OF THE  
NATIONAL ALFALFA AND MISCELLANEOUS LEGUMES  
VARIETY REVIEW BOARD**



**ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES**

NATIONAL ALFALFA AND MISCELLANEOUS LEGUMES  
VARIETY REVIEW BOARD REPORT ©2008

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NATIONAL ALFALFA AND MISCELLANEOUS LEGUMES  
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ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES  
(JANUARY 2008)

The Association of Official Seed Certifying Agencies (AOSCA) National Alfalfa and Miscellaneous Legumes Variety Review Board reviewed the following varieties on January 15, 2008, in Las Vegas, NV. The Board recommended the inclusion of these varieties for certification. Seed of these varieties may be certified, providing production meets all standards of the Seed Certifying Agency of the jurisdiction in which the seed is grown.

All variety information, including descriptions, claims, and research data to support any claim, was supplied to the National Alfalfa and Miscellaneous Legumes Variety Review Board by the applicants. The National Alfalfa and Miscellaneous Legumes Variety Review Board makes judgments regarding recommendation of varieties for inclusion into certification based on the data supplied. Beyond this, the National Alfalfa and Miscellaneous Legumes Variety Review Board takes no position on the accuracy or truthfulness of any description or claim made by the applicants.

Further information on current procedures, application forms, and details regarding the National Alfalfa and Miscellaneous Legumes Variety Review Board can be obtained from:

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Respectively submitted,

Mike D. Moore, Chair  
National Alfalfa and Miscellaneous Legumes Variety Review Board

## 2008 AOSCA ALFALFA & MISC LEGUMES NVRB

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# Adrenalin

## **Breeding History:**

Adrenalin is a synthetic variety with 230 parent plants that were selected sequentially for multifoliolate leaf expression and for resistance to Phytophthora root rot, Aphanomyces root rot, and anthracnose. Parent plants were selected from five-year old Pennsylvania yield trials, three-year old Illinois yield trials, three-year old Minnesota yield trials, and three-year old Wisconsin yield trials. Yield trial source varieties were derived from various populations that were developed by phenotypic recurrent selection for high relative feed value (using Near Infrared Reflectance Spectroscopy), and for resistance to one or more of the following pests: bacterial wilt, Fusarium Wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot, anthracnose (race 1), and Leptosphaerulina leafspot. Parentage of Adrenalin traces to the following germplasm sources: Alliant, GH 700, WinterGold, and miscellaneous Cal/West Seeds breeding populations. Breeder seed (Syn.1) was produced under cage isolation near Woodland, California in 2002.

## **Area of Probable Adaptation:**

Adrenalin is adapted to the North Central and East Central areas of the U.S. and is intended for use in the North Central, East Central, Great Plains, Moderately Winterhardy Intermountain, and Winterhardy Intermountain areas of the U.S. Adrenalin has been tested in Wisconsin, Iowa, Minnesota, and South Dakota.

## **Agronomic & Botanical Characteristics:**

Adrenalin is a moderately dormant variety with fall dormancy similar to FD class 4 check varieties. Flower color observed in the Syn.2 generation is approximately 100% purple with a trace of variegated, white, cream, and yellow. Adrenalin has high multifoliolate leaf expression rating similar to High MF check variety.

Adrenalin has high resistance to anthracnose (race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, and Aphanomyces root rot (race 1), with resistance to pea aphid. Reaction to the spotted alfalfa aphid, blue alfalfa aphid, stem nematode, and root knot nematode has not been tested.

## **Procedures for Maintaining Seed Stock:**

Seed increase of Adrenalin is on a limited generation basis with two generations each of breeder, foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2 or Syn.3), and certified (Syn.3 or Syn.4) classes will be recognized. Production of Syn.2 breeder or Syn.3 foundation seed requires consent of the breeder. Breeder seed was produced under cage isolation near Woodland, California in 2002. Sufficient foundation seed for the projected life of the variety will be maintained by Cal/West Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

## **Date Certified Seed First Offered for Sale:**

Certified seed of Adrenalin will be available in 2006.

## **PVP Information:**

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Variety Name Adrenalin

Experimental Designation(s) CW 24027

Date NA&MLVRB first accepted this variety January 2006

Date(s) previous amendments were accepted \_\_\_\_\_

Date amendment submitted November 30, 2007

## Attention II

### Breeding History:

Attention II is a synthetic variety with 225 parent plants that were selected for resistance to Phytophthora root rot and/or anthracnose. Parent plants were selected from crosses between selections of various populations from three-year old Wisconsin nurseries for high forage yield and improved standability or lodging resistance and three-year old Wisconsin-yield trials. Yield trial source varieties and nursery source plants were derived from various populations that were developed by phenotypic recurrent selection for high NDFD and low ADL (using Near Infrared Reflectance Spectroscopy), and for resistance to one or more of the following pests: bacterial wilt, Fusarium Wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot, anthracnose (race 1), and Leptosphaerulina leafspot. Parentage of Attention II traces to the following germplasm sources: Alicia (4%), Aubigny (4%), Daisy (3%), Diane (3%), Europe (4%), Marshal (3%), Mercedes (4%), and miscellaneous Cal/West Seeds breeding populations with North American and/or European origin (75%). Breeder seed (Syn.1) was produced under cage isolation near Woodland, California in 2004. Seed was bulk harvested from all parent plants.

### Area of Probable Adaptation:

Attention II is adapted to the North Central, East Central, and Great Plains areas of the U.S. and is intended for use in the North Central, East Central, Great Plains, Moderately Winterhardy Intermountain and Winterhardy Intermountain areas of the U.S. Attention II has been tested in Iowa, Kansas, Minnesota, Ohio, Pennsylvania, and Wisconsin.

### Agronomic & Botanical Characteristics:

Attention II is a moderately dormant variety with fall dormancy similar to FD class 5 check varieties. Flower color observed in the Syn.2 generation is approximately 100% purple, with a trace of variegated and a trace of white. Attention II has low multifoliolate leaf expression rating similar to low MF check variety. CW 045036 has resistance to lodging with standability rating similar to class 7 check variety.

Attention II has high resistance to anthracnose (race 1), bacterial wilt, Fusarium wilt, and Verticillium wilt, with resistance to Phytophthora root rot, Aphanomyces root rot (race 1), and to pea aphid. Reaction to spotted alfalfa aphid, blue alfalfa aphid, root knot nematode (*Meloidogyne hapla*), and stem nematode have not been tested.

### Procedures for Maintaining Seed Stock:

Seed increase of Attention II is on a limited generation basis with two generations each of breeder, foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2 or Syn.3), and certified (Syn.3 or Syn.4) classes will be recognized. Production of Syn.2 breeder or Syn.3 foundation seed requires consent of the breeder. Breeder seed (Syn.1) was produced under cage isolation near Woodland, California in 2004. Sufficient foundation seed for the projected life of the variety will be maintained by Cal/West Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### Date Certified Seed First Offered for Sale:

Certified seed of Attention II will be available in 2008.

### PVP Information:

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Variety Name: Attention II Date submitted November 30, 2007

Experimental designations: CW 045037



## FSG 528SF

### **Breeding History:**

FSG 528SF is a synthetic variety with 194 parent plants that were selected sequentially for resistance to Phytophthora root rot and anthracnose. Parent plants were selected from crosses between selections of various populations from three-year old Wisconsin nurseries for high forage yield and improved standability or lodging resistance and three-year old Wisconsin-yield trials. Yield trial and nursery source plants were selected from various populations that were developed by phenotypic recurrent selection for winter hardiness, leaf disease resistance, high leaf to stem ratio, fast recovery, standability, high NDFD and low ADL (using Near Infrared Reflectance Spectroscopy), high milk per acre using Milk2000, high forage dry matter yield, and for resistance to one or more of the following pests: bacterial wilt, Fusarium Wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (race 1), anthracnose (race 1), and Leptosphaerulina leafspot. Parentage of FSG 528SF traces to the following germplasm sources: Alicia (1%), Aubigny (1%), Daisy (1%), Diane (1%), Europe (1%), Mercedes (1%), and miscellaneous Cal/West Seeds breeding populations with North American and/or European origin (94%). Breeder seed (syn.1) was produced under cage isolation near Woodland, California in 2004. Seed was bulk harvested from all parent plants.

### **Area of Probable Adaptation:**

FSG 528SF is adapted to the North Central, East Central and Great Plains areas of the U.S. and is intended for use in the North Central, East Central, Great Plains, Moderately Winterhardy Intermountain and Winterhardy Intermountain areas of the U.S. areas of the U.S. FSG 528SF has been tested in Iowa, Kansas, Minnesota, Ohio, Pennsylvania, and Wisconsin.

### **Agronomic & Botanical Characteristics:**

FSG 528SF is a moderately dormant variety with fall dormancy similar to FD class 5 check varieties. Flower color observed in the Syn.2 generation is approximately 98% purple, and 2% variegated, with a trace of white. FSG 528SF has low multifoliolate leaf expression rating similar to Low MF check variety. FSG 528SF has resistance to lodging with standability rating similar to class 7 check variety.

FSG 528SF has high resistance to anthracnose (race 1), bacterial wilt, Fusarium wilt, and Verticillium wilt, with resistance to Phytophthora root rot, Aphanomyces root rot (race 1), pea aphid, and blue alfalfa aphid. Reaction to the spotted alfalfa aphid, root knot nematode (*Meloidogyne hapla*), and stem nematode have not been tested.

### **Procedures for Maintaining Seed Stock:**

Seed increase of FSG 528SF is on a limited generation basis with two generations each of breeder, foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2 or Syn.3), and certified (Syn.3 or Syn.4) classes will be recognized. Production of Syn.2 breeder or Syn.3 foundation seed requires consent of the breeder. Breeder seed (Syn.1) was produced under cage isolation near Woodland, California in 2004. Sufficient foundation seed for the projected life of the variety will be maintained by Cal/West Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed of FSG 528SF will be available in 2008.

### **PVP Information:**

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Variety Name: FSG 528SF Date submitted November 30, 2007

Experimental designations: CW 045038

# Keystone

## Breeding History:

Keystone is a synthetic variety with 240 parent plants that were selected sequentially for resistance to Phytophthora root rot, Aphanomyces root rot, and anthracnose and for multifoliolate leaf expression. Parent plants were selected from crosses between selections of various populations from five-year old Pennsylvania yield trials and six-year old Wisconsin yield trials. Yield trial source varieties were derived from various populations that were developed by phenotypic recurrent selection for high relative feed value (using Near Infrared Reflectance Spectroscopy), and for resistance to one or more of the following pests: bacterial wilt, Fusarium Wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot, anthracnose (race 1), and Leptosphaerulina leafspot. Parentage of Keystone traces to the following germplasm sources: FQ 315 (54%), Sprint (13%), and miscellaneous Cal/West Seeds breeding populations (33%). Breeder seed (Syn.1) was produced under cage isolation near Woodland, California in 2001. Seed was bulk harvested from all parent plants.

## Area of Probable Adaptation:

Keystone is adapted to the North Central, East Central, and Great Plains, areas of the U.S. and is intended for use in the North Central, East Central, Great Plains, Moderately Winterhardy Intermountain and Winterhardy Intermountain areas of the U.S. Keystone been tested in Kansas, Minnesota, Ohio, Pennsylvania, and Wisconsin.

## Agronomic & Botanical Characteristics:

Keystone is a dormant variety with fall dormancy similar to FD class 3 check varieties. Flower color observed in the Syn.2 generation is approximately 100% purple with a trace of variegated. CW 13017 has high multifoliolate leaf expression.

Keystone has high resistance to anthracnose (race 1), Aphanomyces root rot (race 1), bacterial wilt, Phytophthora root rot, Fusarium wilt, and Verticillium wilt, with resistance to Aphanomyces root rot (race 2), Pea aphid, and blue alfalfa aphid. Reaction to root knot nematode (*Meloidogyne hapla*), stem nematode, and spotted alfalfa aphid have not been tested.

## Procedures for Maintaining Seed Stock:

Seed increase of Keystone is on a limited generation basis with two generations each of breeder, foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2 or Syn.3), and certified (Syn.3 or Syn.4) classes will be recognized. Production of Syn.2 breeder or Syn.3 foundation seed requires consent of the breeder. Breeder seed (Syn.1) was produced under cage isolation near Woodland, California in 2001. Sufficient foundation seed for the projected life of the variety will be maintained by Cal/West Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

## Date Certified Seed First Offered for Sale:

Certified seed of Keystone will be available in 2008.

## PVP Information:

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Variety Name: Keystone Date submitted November 30, 2007

Experimental designations: CW 13017

## PGI 1007 BA

### **Breeding History:**

PGI 1007 BA is a synthetic variety with 400 parent plants which were selected for cow pea aphid resistance. Parent plants were derived from populations selected out of 4 year old California yield trials that were further selected by a combination of phenotypic recurrent selection and strain crossing with selection for resistance to one or more of the following pests: Fusarium wilt, Verticillium wilt, Phytophthora root rot, anthracnose (race 1), spotted alfalfa aphid, blue alfalfa aphid, and stem nematode. Parentage of PGI 1007 BA traces to ACA 900, Robusta, Mecca, DK 191, Grassis II, 5939, Topacio, WL 711, and miscellaneous Cal/West Seeds breeding populations. Approximate germplasm source contributions are as follows: M. varia (2%), Turkistan (8%), Flemish (1%), Chilean (6%), Peruvian (3%), Indian (24%), and African (56%).

### **Area of Probable Adaptation:**

PGI 1007 BA is adapted to the Southwestern area of the U.S. and Mexico. It is intended for use in the Southwestern U.S., Mexico, and Argentina. PGI 1007 BA has been tested in California and Mexico.

### **Agronomic & Botanical Characteristics:**

PGI 1007 BA is a very nondormant variety with fall dormancy similar to the FD 10 check variety. Flower color observed in the Syn.2 generation is greater than 99% purple with a trace of variegated, cream, white, and yellow.

PGI 1007 BA has high resistance to Fusarium wilt, Phytophthora root rot, pea aphid, spotted alfalfa aphid, blue alfalfa aphid, northern root knot nematode, southern root knot nematode, and cowpea aphid, with resistance to stem nematode. The reaction to anthracnose (race 1), bacterial wilt, Verticillium wilt, and Aphanomyces root rot (race 1) has not been adequately tested.

### **Procedures for Maintaining Seed Stock:**

Seed increase of PGI 1007 BA is on a limited generation basis with two generations of breeder, foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2 or Syn.3), and certified (Syn.3 or Syn.4) classes will be recognized. Production of Syn.2 breeder or Syn.3 foundation seed requires consent of the breeder. Breeder seed (Syn.1) was produced under cage isolation near Woodland, California in 2002. Sufficient foundation seed for the projected life of the variety will be maintained by Cal/West Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed of PGI 1007 BA will be available in 2008.

### **PVP Information:**

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Variety Name: PGI 1007 BA Date submitted November 30, 2007

Experimental designations: CW 20097

## PGI 670

### **Breeding History:**

PGI 670 is a synthetic variety with 69 parent plants which were selected for seed yield. Parent plants were selected from various populations which were developed by a combination of phenotypic recurrent selection and strain crossing with selection for resistance to one or more of the following pests: Fusarium wilt, Verticillium wilt, Phytophthora root rot, anthracnose (race 1), spotted alfalfa aphid, blue alfalfa aphid, stem nematode, and abusive grazing. Parentage of PGI 670 traces to Del Rio, 5683, Archer, CW 704, Beacon, CUF 101, 5939, and miscellaneous Cal/West breeding populations. Approximate germplasm source contributions are as follows: *M.falcata* (2%), Ladak (3%), *M.varia* (13%), Turkistan (16%), Flemish (35%), Chilean (7%), Peruvian (4%), Indian (5%), African (10%), and Unknown (5%).

### **Area of Probable Adaptation:**

PGI 670 is adapted to the Southwestern area of the U.S. It is intended for use in the Southwestern U.S. PGI 670 has been tested in California.

### **Agronomic & Botanical Characteristics:**

PGI 670 is a nondormant variety with fall dormancy similar to the FD 7 check variety. Flower color observed in the Syn.2 generation is 99% purple and 1% variegated, with a trace of cream, white, and yellow.

PGI 670 has high resistance to Fusarium wilt, Phytophthora root rot, pea aphid, spotted alfalfa aphid, blue alfalfa aphid, and southern root knot nematode, with moderate resistance to stem nematode. The reaction to anthracnose (race 1), Bacterial wilt, Verticillium wilt, and Aphanomyces root rot (race 1) has not been adequately tested.

### **Procedures for Maintaining Seed Stock:**

Seed increase of PGI 670 is on a limited generation basis with two generations of breeder, foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2 or Syn.3), and certified (Syn.3 or Syn.4) classes will be recognized. Production of Syn.3 foundation seed requires consent of the breeder. Breeder seed (Syn.1) was produced under field isolation near Woodland, California in 2003. Sufficient foundation seed for the projected life of the variety will be maintained by Cal/West Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed of PGI 670 will be available in 2008.

### **PVP Information:**

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Variety Name: PGI 670 Date submitted November 30, 2007

Experimental designations: CW 36106

# SpringGold

## Breeding History:

SpringGold is a synthetic variety with 240 parent plants. Parent plants were selected from crosses between selections of various populations from three-year old Wisconsin nurseries. Nursery source plants were derived from various populations that were developed by phenotypic recurrent selection for winter hardiness, high forage dry matter yield, high relative feed value (using Near Infrared Reflectance Spectroscopy), high milk per acre using Milk2000, and high rumen undegradable protein using (using Near Infrared Reflectance Spectroscopy), and for resistance to one or more of the following pests: bacterial wilt, Fusarium Wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot, anthracnose (race 1), and Leptosphaerulina leafspot. Parentage of SpringGold traces to the following germplasm sources: 9429 (2%), FQ 315 (3%), WinterGold (4%), Alliant (5%), CW 45098 (7%), CW 55058 (7%), Tribute (12%), and miscellaneous Cal/West Seeds breeding populations (60%). Breeder seed was produced under cage isolation near Woodland, California in 2002. Seed was bulk harvested from all parent plants.

## Area of Probable Adaptation:

SpringGold is adapted to the North Central and East Central areas of the U.S. and is intended for use in the North Central, East Central, Great Plains, Moderately Winterhardy Intermountain, and Winterhardy Intermountain areas of the U.S. SpringGold has been tested in Wisconsin, Iowa, and South Dakota.

## Agronomic & Botanical Characteristics:

SpringGold is a moderately dormant variety with fall dormancy similar to FD class 5 check varieties. Flower color observed in the Syn.2 generation is approximately 94% purple, 3% yellow, 2% cream, and 1% variegated, with a trace of white. SpringGold has moderate multifoliolate leaf expression rating similar to Moderate MF check variety.

SpringGold has high resistance to anthracnose (race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (race 1), and root knot nematode (*Meloidogyne hapla*), with resistance to Aphanomyces root rot (race 2), pea aphid and stem nematode. Reaction to the blue alfalfa aphid and spotted alfalfa aphid has not been tested.

## Procedures for Maintaining Seed Stock:

Seed increase of SpringGold is on a limited generation basis with two generations each of breeder, foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2 or Syn.3), and certified (Syn.3 or Syn.4) classes will be recognized. Production of Syn.2 breeder or Syn.3 foundation seed requires consent of the breeder. Breeder seed was produced under cage isolation near Woodland, California in 2002. Sufficient foundation seed for the projected life of the variety will be maintained by Cal/West Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

## Date Certified Seed First Offered for Sale:

Certified seed of SpringGold will be available in 2007.

## PVP Information:

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Variety Name SpringGold

Experimental Designation(s) CW 25037

Date NA&MLVRB first accepted this variety January 2007

Date(s) previous amendments were accepted \_\_\_\_\_

Date amendment submitted November 30, 2007

# Upper Edge

## **Breeding History:**

Upper Edge is a synthetic variety with 180 parent plants that were selected sequentially for multifoliolate leaf expression and for resistance to Phytophthora root rot, Aphanomyces root rot, and anthracnose. Parent plants were selected from crosses between selections of various populations from three-year old Wisconsin nurseries. Nursery source plants were derived from various populations that were developed by phenotypic recurrent selection for high relative feed value (using Near Infrared Reflectance Spectroscopy), and for resistance to one or more of the following pests: bacterial wilt, Fusarium Wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot, anthracnose (race 1), and Leptosphaerulina leafspot. Parentage of Upper Edge traces to the following germplasm sources: 9326 (6%), Abound (6%), and miscellaneous Cal/West Seeds breeding populations (88%). Breeder seed was produced under cage isolation near Woodland, California in 2001. Seed was bulk harvested from all parent plants.

## **Area of Probable Adaptation:**

Upper Edge is adapted to the North Central, East Central, Great Plains areas of the U.S. and is intended for use in the North Central, East Central, Great Plains, Moderately Winterhardy Intermountain, and Winterhardy Intermountain areas of the U.S. Upper Edge has been tested in Wisconsin, Iowa, Minnesota, Pennsylvania, Kansas and South Dakota.

## **Agronomic & Botanical Characteristics:**

Upper Edge is a moderately dormant variety with fall dormancy similar to FD class 3 check varieties. Flower color observed in the Syn.2 generation is approximately 99% purple, and 1% variegated. Upper Edge has high multifoliolate leaf expression rating similar to High MF check variety.

Upper Edge has high resistance to anthracnose (race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (race 2), and Aphanomyces root rot (race 1), with resistance to pea aphid. Reaction to the blue alfalfa aphid, spotted alfalfa aphid, root knot nematode (*Meloidogyne hapla*), and stem nematode has not been tested.

## **Procedures for Maintaining Seed Stock:**

Seed increase of Upper Edge is on a limited generation basis with two generations each of breeder, foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2 or Syn.3), and certified (Syn.3 or Syn.4) classes will be recognized. Production of Syn.2 breeder or Syn.3 foundation seed requires consent of the breeder. Breeder seed was produced under cage isolation near Woodland, California in 2001. Sufficient foundation seed for the projected life of the variety will be maintained by Cal/West Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

## **Date Certified Seed First Offered for Sale:**

Certified seed of Upper Edge will be available in 2007.

## **PVP Information:**

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Variety Name Upper Edge

Experimental Designation(s) CW 13015

Date NA&MLVRB first accepted this variety January 2007

Date(s) previous amendments were accepted \_\_\_\_\_

Date amendment submitted November 30, 2007

## CW 040095

### **Breeding History:**

CW 040095 is a synthetic variety with 449 parent plants which were selected for heat tolerance, salt tolerance, virus resistance, agronomic appearance, and persistence in a hay fields in Saudi Arabia. Parentage of CW 040095 traces to the Cal/West varieties, Super Supreme and Supreme Forager. Approximate germplasm source contributions are as follows: M.varia (1%), Turkistan (9%), Chilean (13%), Peruvian (2%), Indian (19%), African (53%), and Unknown (3%).

### **Area of Probable Adaptation:**

CW 040095 is adapted to the Southwestern area of the U.S. It is intended for use in the Southwestern U.S. and Saudi Arabia. CW 040095 has been tested in California.

### **Agronomic & Botanical Characteristics:**

CW 040095 is a very nondormant variety with fall dormancy similar to the FD9 check variety. Flower color observed in the Syn.2 generation is greater than 99% purple with a trace of variegated, cream, white, and yellow.

CW 040095 has high resistance to Fusarium wilt, Phytophthora root rot, pea aphid, blue alfalfa aphid, and southern root knot nematode, with resistance to bacterial wilt, spotted alfalfa aphid, and moderate resistance to stem nematode. The reaction to anthracnose (race 1), Verticillium wilt, and Aphanomyces root rot (race 1) has not been adequately tested.

### **Procedures for Maintaining Seed Stock:**

Seed increase of CW 040095 is on a limited generation basis with two generations of breeder, foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2 or Syn.3), and certified (Syn.3 or Syn.4) classes will be recognized. Production of Syn.2 breeder or Syn.3 foundation seed requires consent of the breeder. Breeder seed (Syn.1) was produced under cage isolation near Hail, Saudi Arabia in 2004. Sufficient foundation seed for the projected life of the variety will be maintained by Cal/West Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed of CW 040095 will be available in 2008.

### **PVP Information:**

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Variety Name: \_\_\_\_\_ Date submitted November 30, 2007

Experimental designations: CW 040095

## CW 040096

### **Breeding History:**

CW 040096 is a synthetic variety with 204 parent plants which were selected for drought tolerance, heat tolerance, virus tolerance, and agronomic characteristics from yield trial selections in Saudi Arabia. Parent plants were selected from various populations which were developed by a combination of phenotypic recurrent selection and strain crossing with selection for resistance to one or more of the following pests: Fusarium wilt, Verticillium wilt, Phytophthora root rot, anthracnose (race 1), spotted alfalfa aphid, blue alfalfa aphid, and stem nematode. Parentage of CW 040096 traces to DK 194, SPS 9000, CW 101, PGI 1086, CUF-101, and miscellaneous Cal/West Seeds breeding populations. Approximate germplasm source contributions are as follows: *M. varia* (1%), Turkistan (8%), Flemish (2%), Chilean (10%), Peruvian (6%), Indian (31%), and African (42%).

### **Area of Probable Adaptation:**

CW 040096 is adapted to the Southwestern area of the U.S. It is intended for use in the Southwestern U.S. and Saudi Arabia. CW 040096 has been tested in California.

### **Agronomic & Botanical Characteristics:**

CW 040096 is a very nondormant variety with fall dormancy similar to the FD9 check variety. Flower color observed in the Syn.2 generation is 98% purple, and 2% variegated with a trace of cream, white, and yellow.

CW 040096 has high resistance to Fusarium wilt, pea aphid, spotted alfalfa aphid, and southern root knot nematode, with resistance to Phytophthora root rot, blue alfalfa aphid, stem nematode, and moderate resistance to bacterial wilt. The reaction to anthracnose (race 1), Verticillium wilt, and Aphanomyces root rot (race 1) has not been adequately tested.

### **Procedures for Maintaining Seed Stock:**

Seed increase of CW 040096 is on a limited generation basis with two generations of breeder, foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2 or Syn.3), and certified (Syn.3 or Syn.4) classes will be recognized. Production of Syn.2 breeder or Syn.3 foundation seed requires consent of the breeder. Breeder seed (Syn.1) was produced under cage isolation near Al Kharj, Saudi Arabia in 2004. Sufficient foundation seed for the projected life of the variety will be maintained by Cal/West Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed of CW 040096 will be available in 2008.

### **PVP Information**

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Variety Name: \_\_\_\_\_ Date submitted November 30, 2007

Experimental designations: CW 040096



## CW 04028

### **Breeding History:**

CW 04028 is a synthetic variety with 225 parent plants that were selected sequentially for resistance to Phytophthora root rot, Aphanomyces root rot, and anthracnose and for multifoliolate leaf expression. Parent plants were selected from crosses between selections of various populations from three-year old Iowa yield trials and four-year old Wisconsin yield trials. Yield trial source varieties were derived from various populations that were developed by phenotypic recurrent selection for winter hardiness, high forage yield, high relative feed value (using Near Infrared Reflectance Spectroscopy), and for resistance to one or more of the following pests: bacterial wilt, Fusarium Wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot, anthracnose (race 1), and Leptosphaerulina leafspot. Parentage of CW 04028 traces to the following germplasm sources: 8930MF (2%), 9429 (5%), A4230 (5%), Abound (1%), Alliant (1%), DK 142 (1%), Foremost (5%), GH 700 (10%), Perfect (1%), Pointer (1%), Radiant (3%), Sprint (1%), Ultralac (1%), WinterGold (3%), and miscellaneous Cal/West Seeds breeding populations (60%). Breeder seed (Syn.1) was produced under cage isolation near Woodland, California in 2000. Seed was bulk harvested from all parent plants.

### **Area of Probable Adaptation:**

CW 04028 is adapted to the North Central, East Central, and Great Plains areas of the U.S. and is intended for use in the North Central, East Central, Great Plains, Moderately Winterhardy Intermountain and Winterhardy Intermountain areas of the U.S. CW 04028 has been tested in Wisconsin, Iowa, Minnesota, Pennsylvania, Kansas, and Ohio.

### **Agronomic & Botanical Characteristics:**

CW 04028 is a moderately dormant variety with fall dormancy similar to FD class 4 check varieties. Flower color observed in the Syn.2 generation is approximately 98% purple and 2% variegated. CW 04028 has high multifoliolate leaf expression.

CW 04028 has high resistance to anthracnose (race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (race 1), root knot nematode (*Meloidogyne hapla*) and with resistance to pea aphid and the blue alfalfa aphid. Reaction to stem nematode and spotted alfalfa aphid has not been tested.

### **Procedures for Maintaining Seed Stock:**

Seed increase of CW 04028 is on a limited generation basis with two generations each of breeder, foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2 or Syn.3), and certified (Syn.3 or Syn.4) classes will be recognized. Production of Syn.2 breeder or Syn.3 foundation seed requires consent of the breeder. Breeder seed (Syn.1) was produced under cage isolation near Woodland, California in 2000. Sufficient foundation seed for the projected life of the variety will be maintained by Cal/West Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed of CW 04028 will be available in 2008.

### **PVP Information**

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Variety Name: \_\_\_\_\_ Date submitted November 30, 2007

Experimental designations: CW 04028

## CW 04029

### **Breeding History:**

CW 04029 is a synthetic variety with 200 parent plants that were selected sequentially for resistance to Phytophthora root rot, Aphanomyces root rot, and anthracnose and for multifoliolate leaf expression. Parent plants were selected from crosses between selections of various populations from three-year old Minnesota yield trials, five-year old Pennsylvania yield trials, three and five-year old Wisconsin yield trials, and from three-year old Wisconsin nurseries. Yield trial source varieties and nursery source plants were derived from various populations that were developed by phenotypic recurrent selection for high relative feed value (using Near Infrared Reflectance Spectroscopy), and for resistance to one or more of the following pests: bacterial wilt, Fusarium Wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot, anthracnose (race 1), and Leptosphaerulina leafspot. Parentage of CW 04029 traces to the following germplasm sources: 512 (5%), 8930MF (2%), 9429 (2%), A4230 (2%), Big Horn (5%), DK 142 (3%), Foremost (3%), GH 700 (4%), Radiant (2%), Sprint (2%), WinterGold (2%) miscellaneous Cal/West Seeds breeding populations (70%). Breeder seed (Syn.1) was produced under cage isolation near Woodland, California in 2000. Seed was bulk harvested from all parent plants.

### **Area of Probable Adaptation:**

CW 04029 is adapted to the North Central, East Central, and Great Plains areas of the U.S. and is intended for use in the North Central, East Central, Great Plains, Moderately Winterhardy Intermountain and Winterhardy Intermountain areas of the U.S. areas of the U.S. CW 04029 has been tested in Wisconsin, Iowa, Minnesota, Indiana, Pennsylvania, Ohio, and Nebraska.

### **Agronomic & Botanical Characteristics:**

CW 04029 is a moderately dormant variety with fall dormancy similar to FD class 4 check varieties. Flower color observed in the Syn.2 generation is approximately 99% purple, and 1% variegated. CW 04029 has high multifoliolate leaf expression.

CW 04029 has high resistance to anthracnose (race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, and Aphanomyces root rot (race 1), with resistance to pea aphid, blue alfalfa aphid, stem nematode, and root knot nematode (*Meloidogyne hapla*), and moderate resistance to spotted alfalfa aphid.

### **Procedures for Maintaining Seed Stock:**

Seed increase of CW 04029 is on a limited generation basis with two generations each of breeder, foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2 or Syn.3), and certified (Syn.3 or Syn.4) classes will be recognized. Production of Syn.2 breeder or Syn.3 foundation seed requires consent of the breeder. Breeder seed (Syn.1) was produced under cage isolation near Woodland, California in 2000. Sufficient foundation seed for the projected life of the variety will be maintained by Cal/West Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed of CW 04029 will be available in 2008.

### **PVP Information**

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Variety Name: \_\_\_\_\_ Date submitted November 30, 2007

Experimental designations: CW 04029

## CW 045036

### **Breeding History:**

CW 045036 is a synthetic variety with 220 parent plants that were selected for resistance to anthracnose. Parent plants were selected from crosses between selections of various populations from three-year old Wisconsin nurseries for high forage yield, fast recovery, improved standability or lodging resistance, and high NDFD and low ADL (using Near Infrared Reflectance Spectroscopy). Nursery source plants were selected from various populations that were developed by phenotypic recurrent selection for winter hardiness, leaf disease resistance, high leaf to stem ratio, fast recovery, standability, high NDFD (using Near Infrared Reflectance Spectroscopy), high forage yield potential, and for resistance to one or more of the following pests: bacterial wilt, Fusarium Wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (race 1), anthracnose (race 1), and Leptosphaerulina leafspot. Parentage of CW 045036 traces to the following germplasm sources: miscellaneous Cal/West Seeds breeding populations with North American and/or European origin (100%). Breeder seed (Syn.1) was produced under cage isolation near Woodland, California in 2004. Seed was bulk harvested from all parent plants.

### **Area of Probable Adaptation:**

CW 045036 is adapted to the North Central, East Central and Great Plains areas of the U.S. and is intended for use in the North Central, East Central, Great Plains, Moderately Winterhardy Intermountain and Winterhardy Intermountain areas of the U.S. areas of the U.S. CW 045036 has been tested in Iowa, Kansas, Minnesota, Ohio, Pennsylvania, and Wisconsin.

### **Agronomic & Botanical Characteristics:**

CW 045036 is a moderately dormant variety with fall dormancy similar to FD class 5 check varieties. Flower color observed in the Syn.2 generation is approximately 99% purple and 1% variegated, with a trace of cream. CW 045036 has moderate multifoliolate leaf expression rating similar to Moderate MF check variety. CW 045036 has resistance to lodging with standability rating similar to class 7 check variety.

CW 045036 has high resistance to anthracnose (race 1), bacterial wilt, Fusarium wilt, and Verticillium wilt, with resistance to Phytophthora root rot, Aphanomyces root rot (race 1), and pea aphid. Reaction to the spotted alfalfa aphid, blue alfalfa aphid, root knot nematode (*Meloidogyne hapla*), and stem nematode have not been tested.

### **Procedures for Maintaining Seed Stock:**

Seed increase of CW 045036 is on a limited generation basis with two generations each of breeder, foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2 or Syn.3), and certified (Syn.3 or Syn.4) classes will be recognized. Production of Syn.2 breeder or Syn.3 foundation seed requires consent of the breeder. Breeder seed (Syn.1) was produced under cage isolation near Woodland, California in 2004. Sufficient foundation seed for the projected life of the variety will be maintained by Cal/West Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed of CW 045036 will be available in 2008.

### **PVP Information**

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Variety Name: \_\_\_\_\_ Date submitted November 30, 2007

Experimental designations: CW 045036

## CW 13006

### **Breeding History:**

CW 13006 is a synthetic variety with 100 parent plants that were selected sequentially for winter hardiness, high forage yield, high relative feed value, and multifoliolate leaf expression. Parent plants were selected from various populations from three-year old Iowa yield trials, three-year old Minnesota yield trials, five-year old Pennsylvania yield trials, three and five-year old Wisconsin yield trials, and from three-year old Wisconsin nurseries. Yield trial source varieties and nursery source plants were derived from various populations that were developed by phenotypic recurrent selection for winter hardiness, high forage yield, high relative feed value (using Near Infrared Reflectance Spectroscopy), and for resistance to one or more of the following pests: bacterial wilt, Fusarium Wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot, anthracnose (race 1), and Leptosphaerulina leafspot. Parentage of CW 13006 traces to the following germplasm sources: 9326 (2%), 30-30Q (5%), Abound (2%), eXtreme (9%), Foremost II (2%), FQ 315 (3%), Setter (1%), Supreme (9%), TopHand (7%), and miscellaneous Cal/West Seeds breeding populations (60%). Breeder seed (Syn.1) was produced under cage isolation near Woodland, California in 2001. Seed was bulk harvested from all parent plants.

### **Area of Probable Adaptation:**

CW 13006 is adapted to the North Central, East Central, and Great Plains and is intended for use in the North Central, East Central, Great Plains, Moderately Winterhardy Intermountain and Winterhardy Intermountain areas of the U.S. CW 13006 has been tested in Wisconsin, Minnesota, Pennsylvania, Ohio, and Kansas.

### **Agronomic & Botanical Characteristics:**

CW 13006 is a moderately dormant variety with fall dormancy similar to FD class 3 check varieties. Flower color observed in the Syn.2 generation is approximately 100% purple with a trace of cream. CW 13006 has high multifoliolate leaf expression.

CW 13006 has high resistance to anthracnose (race 1), bacterial wilt, Phytophthora root rot, Fusarium Wilt, Verticillium wilt, and blue alfalfa aphid, with resistance to Aphanomyces root rot (race 1), Aphanomyces root rot (Race 2), and pea aphid. Reaction to root knot nematode (*Meloidogyne hapla*), stem nematode, and spotted alfalfa aphid have not been tested.

### **Procedures for Maintaining Seed Stock:**

Seed increase of CW 13006 is on a limited generation basis with two generations each of breeder, foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2 or Syn.3), and certified (Syn.3 or Syn.4) classes will be recognized. Production of Syn.2 breeder or Syn.3 foundation seed requires consent of the breeder. Breeder seed (Syn.1) was produced under cage isolation near Woodland, California in 2001. Sufficient foundation seed for the projected life of the variety will be maintained by Cal/West Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed of CW 13006 will be available in 2008.

### **PVP Information**

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Variety Name: \_\_\_\_\_ Date submitted November 30, 2007

Experimental designations: CW 13006

## CW 18099

### **Breeding History:**

CW 18099 is a synthetic variety with 433 parent plants which were selected for aphid resistance, drought tolerance, frost tolerance, persistence and agronomic characteristics from space planted nurseries and yield trials in Argentina. Parent plants were selected from various populations which were developed by a combination of phenotypic recurrent selection and strain crossing with selection for resistance to one or more of the following pests: Fusarium wilt, Verticillium wilt, Phytophthora root rot, anthracnose (race 1), spotted alfalfa aphid, blue alfalfa aphid, and stem nematode. Parentage of CW 18099 traces to 13R Supreme, DK 170, DK 180ML, DK 189, DK 194, Monarca, N890, 5715, WL 516, WL 525, and miscellaneous Cal/West Seeds breeding populations. Approximate germplasm source contributions are as follows: *M. varia* (5%), Turkistan (16%), Flemish (6%), Chilean (9%), Peruvian (5%), Indian (24%), and African (35%).

### **Area of Probable Adaptation:**

CW 18099 is adapted to the Southwestern area of the U.S. and Argentina. It is intended for use in the Southwestern U.S. and Argentina. CW 18099 has been tested in California and Argentina.

### **Agronomic & Botanical Characteristics:**

CW 18099 is a nondormant variety with fall dormancy similar to the FD 8 check variety. Flower color observed in the Syn.2 generation is greater than 99% purple with a trace of variegated, cream, white, and yellow.

CW 18099 has high resistance to anthracnose (race 1), Fusarium wilt, Phytophthora root rot, pea aphid, northern root knot nematode, and southern root knot nematode, with resistance to blue alfalfa aphid, spotted alfalfa aphid, and stem nematode. The reaction to Bacterial wilt, Verticillium wilt, and Aphanomyces root rot (race 1) has not been adequately tested.

### **Procedures for Maintaining Seed Stock:**

Seed increase of CW 18099 is on a limited generation basis with two generations of breeder, foundation, and certified seed classes. Breeder (Syn.1 or Syn.2)), foundation (Syn.2 or Syn.3), and certified (Syn.3 or Syn.4) classes will be recognized. Production of Syn.3 foundation seed requires consent of the breeder. Breeder seed (Syn.1) was produced under cage isolation near Tunuyan, Argentina in the 2000-2001 growing season. Sufficient foundation seed for the projected life of the variety will be maintained by Cal/West Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed of CW 18099 will be available in 2008.

### **PVP Information**

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Variety Name: \_\_\_\_\_ Date submitted November 30, 2007

Experimental designations: CW 18099

## CW 19098

### **Breeding History:**

CW 19098 is a synthetic variety with 339 parent plants which were selected for aphid resistance, drought tolerance, frost tolerance, persistence and agronomic characteristics from space planted nurseries and yield trials in Argentina. Parent plants were selected from various populations which were developed by a combination of phenotypic recurrent selection and strain crossing with selection for resistance to one or more of the following pests: Fusarium wilt, Verticillium wilt, Phytophthora root rot, anthracnose (race 1), spotted alfalfa aphid, blue alfalfa aphid, and stem nematode. Parentage of CW 19098 traces to DK 191, DK 192, DK 193, DK 194, N910, 5939, CUF 101, and miscellaneous Cal/West Seeds breeding populations. Approximate germplasm source contributions are as follows: *M. varia* (1%), Turkistan (10%), Flemish (3%), Chilean (11%), Peruvian (7%), Indian (28%), and African (40%).

### **Area of Probable Adaptation:**

CW 19098 is adapted to the Southwestern area of the U.S., Mexico, and Argentina. It is intended for use in the Southwestern U.S. and Argentina. CW 19098 has been tested in California, Mexico, and Argentina.

### **Agronomic & Botanical Characteristics:**

CW 19098 is a very nondormant variety with fall dormancy similar to the FD 9 check variety. Flower color observed in the Syn.2 generation is greater than 99% purple with a trace of variegated, cream, white, and yellow.

CW 19098 has high resistance to anthracnose (race 1), Fusarium wilt, Phytophthora root rot, pea aphid, blue alfalfa aphid, northern root knot nematode, and southern root knot nematode, with resistance to spotted alfalfa aphid and stem nematode. The reaction to Bacterial wilt, Verticillium wilt, and Aphanomyces root rot (race 1) has not been adequately tested.

### **Procedures for Maintaining Seed Stock:**

Seed increase of CW 19098 is on a limited generation basis with two generations of breeder, foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2 or Syn.3), and certified (Syn.3 or Syn.4) classes will be recognized. Production of Syn.3 foundation seed requires consent of the breeder. Breeder seed (Syn.1) was produced under cage isolation near Tunuyan, Argentina in the 2000-2001 growing season. Sufficient foundation seed for the projected life of the variety will be maintained by Cal/West Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed of CW 19098 will be available in 2008.

### **PVP Information**

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Variety Name: \_\_\_\_\_ Date submitted November 30, 2007

Experimental designations: CW 19098

## CW 23017

### **Breeding History:**

CW 23017 is a synthetic variety with 205 parent plants that were selected sequentially for resistance to Phytophthora root rot, Aphanomyces root rot, and anthracnose and for multifoliolate leaf expression. Parent plants were selected from crosses between selections of various populations from three-year old Illinois yield trials, three-year old Minnesota yield trials, five-year old Pennsylvania yield trials, and three and five-year old Wisconsin yield trials. Yield trial source varieties were derived from various populations that were developed by phenotypic recurrent selection for winter hardiness, high forage yield, high relative feed value (using Near Infrared Reflectance Spectroscopy), and for resistance to one or more of the following pests: bacterial wilt, Fusarium Wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot, anthracnose (race 1), and Leptosphaerulina leafspot. Parentage of CW 23017 traces to the following germplasm sources: Abound (6%), Concept (3%), GH 700 (2%), Harmony (4%), Perfect (1%), Power 4.2 (2%), Radiant (1%), WinterGold (4%), and miscellaneous Cal/West Seeds breeding populations (77%). Breeder seed (Syn.1) was produced under cage isolation near Woodland, California in 2002. Seed was bulk harvested from all parent plants.

### **Area of Probable Adaptation:**

CW 23017 is adapted to the North Central, East Central, and Great Plains, areas of the U.S. and is intended for use in the North Central, East Central, Great Plains, Moderately Winterhardy Intermountain and Winterhardy Intermountain areas of the U.S. CW 23017 has been tested in Iowa, Kansas, Minnesota, South Dakota, Pennsylvania, and Wisconsin.

### **Agronomic & Botanical Characteristics:**

CW 23017 is a dormant variety with fall dormancy similar to FD class 3 check varieties. Flower color observed in the Syn.2 generation is approximately 99% purple, 1% cream, a trace of yellow, and a trace of variegated. CW 23017 has moderate multifoliolate leaf expression.

CW 23017 has high resistance to anthracnose (race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (race 1), Aphanomyces root rot (race 2), pea aphid, and spotted alfalfa aphid with resistance to blue alfalfa aphid, root knot nematode (*Meloidogyne hapla*), and stem nematode.

### **Procedures for Maintaining Seed Stock:**

Seed increase of CW 23017 is on a limited generation basis with two generations each of breeder, foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2 or Syn.3), and certified (Syn.3 or Syn.4) classes will be recognized. Production of Syn.2 breeder or Syn.3 foundation seed requires consent of the breeder. Breeder seed (Syn.1) was produced under cage isolation near Woodland, California in 2002. Sufficient foundation seed for the projected life of the variety will be maintained by Cal/West Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed of CW 23017 will be available in 2008.

### **PVP Information**

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Variety Name: \_\_\_\_\_ Date submitted November 30, 2007

Experimental designations: CW 23017

# CW 38100

## **Breeding History:**

CW 38100 is a synthetic variety with 393 parent plants which were selected for aphid resistance, drought tolerance, frost tolerance, persistence and agronomic characteristics from selection trials in Argentina that had been grazed rotationally. Parent plants were selected from various populations which were developed by a combination of phenotypic recurrent selection and strain crossing with selection for resistance to one or more of the following pests: Fusarium wilt, Verticillium wilt, Phytophthora root rot, anthracnose (race 1), spotted alfalfa aphid, blue alfalfa aphid, and stem nematode. Parentage of CW 38100 traces to DK 170, DK 189, 58N58, WL 525, and miscellaneous Cal/West Seeds breeding populations. Approximate germplasm source contributions are as follows: M. varia (6%), Turkistan (15%), Flemish (4%), Chilean (11%), Peruvian (6%), Indian (23%), and African (35%).

## **Area of Probable Adaptation:**

CW 38100 is adapted to the Southwestern area of the U.S. and Argentina. It is intended for use in the Southwestern U.S. and Argentina. CW 38100 has been tested in California and Argentina.

## **Agronomic & Botanical Characteristics:**

CW 38100 is a nondormant variety with fall dormancy similar to the FD 8 check variety. Flower color observed in the Syn.2 generation is 99% purple and 1% variegated, with a trace of cream, white, and yellow.

CW 38100 has high resistance to Fusarium wilt, Phytophthora root rot, pea aphid, spotted alfalfa aphid, blue alfalfa aphid, and southern root knot nematode, with moderate resistance to stem nematode. The reaction to anthracnose (race 1), Bacterial wilt, Verticillium wilt, and Aphanomyces root rot (race 1) has not been adequately tested.

## **Procedures for Maintaining Seed Stock:**

Seed increase of CW 38100 is on a limited generation basis with two generations of breeder, foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2 or Syn.3), and certified (Syn.3 or Syn.4) classes will be recognized. Production of Syn.2 breeder or Syn.3 foundation seed requires consent of the breeder. Breeder seed (Syn.1) was produced under cage isolation near Tunuyan, Argentina in 2002-2003 season. Sufficient foundation seed for the projected life of the variety will be maintained by Cal/West Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

## **Date Certified Seed First Offered for Sale:**

Certified seed of CW 38100 will be available in 2008.

## **PVP Information**

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Variety Name: \_\_\_\_\_ Date submitted November 30, 2007

Experimental designations: CW 38100



## CW 39060

### **Breeding History:**

CW 39060 is a synthetic variety with 177 parent plants which were selected for survival under salt stress at the seedling stage and for yield under salt stress at the mature plant stage. Parent plants were selected from various populations which were developed by a combination of phenotypic recurrent selection and strain crossing with selection for resistance to one or more of the following pests: Fusarium wilt, Verticillium wilt, Phytophthora root rot, anthracnose (race 1), spotted alfalfa aphid, blue alfalfa aphid, stem nematode, and cowpea aphid. Parentage of CW 39060 traces to DK 194, SPS 9000, CW 907, Milenia, and various Cal/West Seeds miscellaneous breeding populations. Approximate germplasm source contributions are as follows: M. varia (2%), Turkistan (6%), Flemish (3%), Chilean (11%), Peruvian (7%), Indian (25%), African (41%), and Unknown (5%).

### **Area of Probable Adaptation:**

CW 39060 is adapted to the Southwestern area of the U.S. It is intended for use in the Southwestern U.S. CW 39060 has been tested in California and Arizona.

### **Agronomic & Botanical Characteristics:**

CW 39060 is a very nondormant variety with fall dormancy similar to the FD9 check variety. Flower color observed in the Syn.2 generation is 99% purple and 1% cream, with a trace of variegated, white, and yellow.

CW 39060 has high resistance to Fusarium wilt, Phytophthora root rot, pea aphid, spotted alfalfa aphid, blue alfalfa aphid, northern root knot nematode, and southern root knot nematode, with resistance to bacterial wilt and stem nematode. The reaction to anthracnose (race 1), Verticillium wilt, and Aphanomyces root rot (race 1) has not been adequately tested.

### **Procedures for Maintaining Seed Stock:**

Seed increase of CW 39060 is on a limited generation basis with two generations of breeder, foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2 or Syn.3), and certified (Syn.3 or Syn.4) classes will be recognized. Production of Syn.2 breeder or Syn.3 foundation seed requires consent of the breeder. Breeder seed was produced under cage isolation near Woodland, California in 2003. Sufficient foundation seed for the projected life of the variety will be maintained by Cal/West Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed of CW 39060 will be available in 2008.

### **PVP Information**

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Variety Name: \_\_\_\_\_ Date submitted November 30, 2007

Experimental designations: CW 39060

## CW 5087

### **Breeding History:**

CW 5087 is a synthetic variety with 155 parent plants. Parent plants were selected for persistence and vigor following two years of close continuous grazing with both cattle and sheep at Woodland, California. Pastures were established in October 1992 and grazed for 175 days in 1993 and 190 days in 1994. Parentage of CW 5087 traces to the following germplasm sources: Madera (31%), Yolo (29%), Maricopa (13%), WL 516 (11%), P5715 (7%), Monarca (6%), and P5888 (3%).

### **Area of Probable Adaptation:**

CW 5087 is adapted to the Southwestern area of the U.S., Argentina, and Australia. It is intended for use in Australia. CW 5087 has been tested in California, Argentina, and Australia.

### **Agronomic & Botanical Characteristics:**

CW 5087 is a moderately dormant variety with fall dormancy similar to the FD 6 check variety. Flower color observed in the Syn.2 generation is 99% purple and 1% cream, with a trace of variegated, white, and yellow.

CW 5087 has high resistance to anthracnose (race 1), Fusarium wilt, spotted alfalfa aphid, and stem nematode with resistance to Phytophthora root rot, pea aphid, and blue alfalfa aphid. The reaction to bacterial wilt, Verticillium wilt, Aphanomyces root rot (race 1), and root knot nematode has not been adequately tested.

### **Procedures for Maintaining Seed Stock:**

Seed increase of CW 5087 is on a limited generation basis with two generations of breeder, foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2 or Syn.3), and certified (Syn.3 or Syn.4) classes will be recognized. Production of Syn.3 foundation seed requires consent of the breeder. Breeder seed (Syn.1) was produced under field isolation near Woodland, California in 1995. Sufficient foundation seed for the projected life of the variety will be maintained by Cal/West Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed of CW 5087 will be available in 2008.

### **PVP Information**

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Variety Name: \_\_\_\_\_ Date submitted November 30, 2007

Experimental designations: CW 5087

## CW 88076

### **Breeding History:**

CW 88076 is a synthetic variety with 99 parent plants. Parent plants were selected for persistence and vigor following two years of close continuous grazing with beef cattle at Woodland, California. Pastures were established in October 1995 and grazed for 180 days in 1996 and 195 days in 1997. Parentage of CW 88076 traces to the following germplasm sources: Cibola (18%), Beacon (13%), P5939 (13%), Mecca II (12%), San Miguelito (5%), CUF101 (4%), Mecca (2%), and miscellaneous Cal/West Seeds breeding populations (33%). Breeder seed was produced under field isolation near Woodland, California in 1998.

### **Area of Probable Adaptation:**

CW 88076 is adapted to the Southwestern area of the U.S. and Australia. It is intended for use in Australia. CW 88076 has been tested in California and Australia.

### **Agronomic & Botanical Characteristics:**

CW 88076 is a nondormant variety with fall dormancy similar to the FD 7 check variety. Flower color observed in the Syn.2 generation is greater than 99% purple, with a trace of variegated, cream white, and yellow.

CW 88076 has high resistance to Fusarium wilt, Phytophthora root rot, pea aphid, northern root knot nematode, and stem nematode with resistance to bacterial wilt, spotted alfalfa aphid, and blue alfalfa aphid, and moderate resistance to anthracnose (race 1). The reaction to Verticillium wilt, Aphanomyces root rot (race 1), has not been adequately tested.

### **Procedures for Maintaining Seed Stock:**

Seed increase of CW 88076 is on a limited generation basis with two generations of breeder, foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2 or Syn.3), and certified (Syn.3 or Syn.4) classes will be recognized. Production of Syn.3 foundation seed requires consent of the breeder. Breeder seed (Syn.1) was produced under field isolation near Woodland, California in 1995. Sufficient foundation seed for the projected life of the variety will be maintained by Cal/West Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed of CW 88076 will be available in 2008.

### **PVP Information**

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Variety Name: \_\_\_\_\_ Date submitted November 30, 2007

Experimental designations: CW 88076

## FSG 639ST

### **Breeding History:**

FSG 639ST is a 50 clone synthetic. The parent clones were selected out of salt tolerance forage yield test conducted at the University of Arizona, Tucson. The highest yielding 25% of the plants were selected and intercrossed by honey, leaf cutting and bumble bees near Sloughhouse, California in 2004 to produce Syn. 1 as Breeder Seed. Seed from parent plants were bulked to produce Breeder seed.

### **Area of Probable Adaptation:**

FSG 639ST is adapted to the North Central Region of the United States and intended for use across the North Central, Great Plains, Southwest and Moderately Winterhardy Intermountain Regions of the United States. The state where it has been tested is Wisconsin.

### **Agronomic & Botanical Characteristics:**

FSG 639ST is a moderately dormant variety similar to the fall dormancy 6 check. FGS 639ST is moderately winter hardy similar to the winter survival 3 check. Flower color in the Syn. 2 generation is 80% purple, 20% variegated with trace amounts of cream, white and yellow.

FSG 639ST has high resistance to bacterial wilt, *Fusarium* wilt, *Phytophthora* root rot, northern root-knot nematode, stem nematode; resistance to pea aphid, anthracnose (Race 1), *Verticillium* wilt, southern root-knot nematode; moderate resistance to *Aphanomyces* root rot (Race1), FSG 639ST has not been tested for resistance to blue alfalfa aphid and spotted alfalfa aphid.

### **Procedures for Maintaining Seed Stock**

Breeder seed (Syn. 1) was produced by bulking seed of parent plants which were grown in field isolation near Sloughhouse, CA in 2004. Seed from parental clones were bulked. Foundation seed (Syn.2) was produced from Breeder seed and Certified seed (Syn. 2 or 3) from either Breeder or Foundation seed. One generation each of Breeder, Foundation and two generations of Certified seed classes are recognized. A maximum of three harvest years each is permitted on stands producing Breeder and Foundation seed with five years for Certified seed. Dairyland Research International will maintain sufficient Breeder seed for the projected life of the variety.

### **Date Certified Seed First Offered for Sale:**

Certified Seed will be available spring of 2009

### **PVP Information**

Application for the Plant Variety Protection is undecided. Information in the NAVRB application can be forwarded to the PVP office.

Variety Name: FSG 639ST Date submitted 11/29/07

Experimental designations: DS768

## FSG 329

### **Breeding History:**

FSG 329 is a 90 clone synthetic. The parent clones were selected out of forage yield plots and/or disease and nematode selection evaluations. These parent plants were selected for a combination of the following traits: multifoliolate expression, herbage yield, winter hardiness, Verticillium wilt and stem nematode resistance. All of parent plants trace back to Dairyland experimentals. Parent plants were planted in cage isolation and inter-pollinated by leaf cutting bees near Sloughhouse, California in 2005-2007 to produce Syn. 1 as Breeder Seed.

### **Area of Probable Adaptation:**

FSG 329 is adapted to the North Central Region of the United States and intended for use across the North Central, Great Plains and East Central Regions of the United States. The state where it has been tested is Wisconsin.

### **Agronomic & Botanical Characteristics:**

FSG 329 is a dormant variety similar to the fall dormancy 3 check. DS730ML is very winter hardy similar to the winter survival 2 check. Flower color in the Syn. 2 generation is 90% purple, 10% variegated with trace amounts of cream, white and yellow.

FSG 329 has high resistance to bacterial wilt, *Fusarium* wilt, *Phytophthora* root rot, anthracnose (Race 1), *Verticillium* wilt, *Aphanomyces* root rot (Race1), northern root-knot nematode, stem nematode; resistance to pea aphid. FSG 329 has not been tested for resistance to blue alfalfa aphid and spotted alfalfa aphid.

### **Procedures for Maintaining Seed Stock**

Breeder seed (Syn. 1) was produced by bulking seed of parent plants which were grown in cage isolation near Sloughhouse, CA in 2005-2007. Seed from parental clones were equally bulked. Foundation seed (Syn.2) was produced from Breeder seed and Certified seed (Syn. 2 or 3) from either Breeder or Foundation seed. One generation each of Breeder, Foundation and two generations of Certified seed classes are recognized. A maximum of three harvest years each is permitted on stands producing Breeder and Foundation seed with five years for Certified seed. Dairyland Research International will maintain sufficient Breeder seed for the projected life of the variety.

### **Date Certified Seed First Offered for Sale:**

Certified Seed will be available spring of 2009.

### **PVP Information:**

Application for the Plant Variety Protection is undecided. Information in the NAVRB application can be forwarded to the PVP office.

Variety Name: FSG 329 Date submitted 11/29/07

Experimental designations: DS730ML



# Magna 995

## Breeding History:

Magna 995 is a 24 clone synthetic variety. Parent plants were selected for plant vigor and root health from forage yield plots from the University of California Research Centers in West Side, Kearney and Imperial Valley.

## Area of Probable Adaptation:

Magna 995 is adapted and intended for use across the Southwest Region of the United States. The state where it has been tested is California.

## Agronomic & Botanical Characteristics:

Magna 995 is a non dormant variety similar to the fall dormancy 9 check. Flower color of the male line in the Syn. 2 generation is 99% purple, 1% variegated with trace amounts of cream and white.

Magna 995 has high resistance to Fusarium wilt, Phytophthora root rot, stem nematode, northern root-knot nematode (*M. hapla*), spotted alfalfa aphid; resistance to pea aphid, southern root-knot nematode (*M. incognita*); moderate resistance to anthracnose (Race 1) and low resistance to Verticillium wilt and bacterial wilt. Magna 995 has not been tested for resistance to blue alfalfa aphid and *Aphanomyces* root rot (Race 1).

## Procedures for Maintaining Seed Stock

Breeder seed (Syn. 1) was produced within field isolation near Sloughhouse, CA in the year 2000. Seed classes will be breeder, foundation seed (Syn. 2 or 3) and certified seed (Syn. 3, 4 or 5). A second generation of foundation seed is at the discretion of Dairyland Seed. A maximum of three years each is permitted on stands producing Breeder and Foundation seed with five years for certified seed. Sufficient Breeder seed for the projected life of the variety will be maintained by Dairyland Research International.

## Date Certified Seed First Offered for Sale:

Certified Seed will be available fall of 2005.

## PVP Information:

Application for the Plant Variety Protection is undecided. Information in the NAVRB application can be forwarded to the PVP office.

Variety Name Magna 995

Experimental Designation(s) DS995

Date NA&MLVRB first accepted this variety November 23, 2005

Date(s) previous amendments were accepted November 29, 2006

Date amendment submitted November 29, 2007

# Magnum VI

## Breeding History:

Magnum VI is a 121 clone synthetic. Parent clones were selected out of forage yield plots and/or disease nurseries. These parent plants were progeny tested for one or more of the following traits: forage yield, stand persistence, forage quality, resistance to bacterial wilt, Fusarium wilt, Phytophthora root rot, anthracnose (Race 1), Verticillium wilt and Aphanomyces root rot (Race 1). Parent plants were planted in field isolation and inter-pollinated by honey, leaf cutting and bumble bees near Sloughhouse, California in 2001 to produce Syn. 1 as Breeder Seed. Seed from parent plants were equally bulked each year to produce Breeder seed.

## Area of Probable Adaptation:

Magnum VI is adapted to the North Central Region of the United States and intended for use across the North Central, Great Plains and East Central Regions of the United States. The states where it has been tested are Iowa, Minnesota and Wisconsin.

## Agronomic & Botanical Characteristics:

Magnum VI is a moderately dormant variety similar to the fall dormancy 4 check. Magnum VI is very winter hardy similar to the winter survival 2 check. Flower color in the Syn. 2 generation is 90% purple, 10% variegated with trace amounts of cream, white and yellow.

Magnum VI has high resistance to bacterial wilt, *Fusarium* wilt, *Phytophthora* root rot, anthracnose (Race 1), *Verticillium* wilt, *Aphanomyces* root rot (Race1), northern root-knot nematode; resistance to stem nematode and southern root-knot nematode and moderate resistance pea aphid. Magnum VI has not been tested for resistance to blue alfalfa aphid and spotted alfalfa aphid.

## Procedures for Maintaining Seed Stock

Breeder seed (Syn. 1) was produced by bulking seed of parent plants which were grown in field isolation near Sloughhouse, CA in 2001. Seed from parental clones were equally bulked. Foundation seed (Syn.2) was produced from Breeder seed and Certified seed (Syn. 2 or 3) from either Breeder or Foundation seed. One generation each of Breeder, Foundation and two generations of Certified seed classes are recognized. A maximum of three harvest years each is permitted on stands producing Breeder and Foundation seed with five years for Certified seed. Dairyland Research International will maintain sufficient Breeder seed for the projected life of the variety.

## Date Certified Seed First Offered for Sale:

Certified Seed will be available spring of 2007.

## PVP Information:

Application for the Plant Variety Protection is undecided. Information in the NAVRB application can be forwarded to the PVP office.

Variety Name Magnum VI

Experimental Designation(s) DS417

Date NA&MLVRB first accepted this variety November 29, 2006

Date(s) previous amendments were accepted \_\_\_\_\_

Date amendment submitted November 29, 2007



# PerForm

## Breeding History:

PerForm is a 20 clone synthetic. Parent clones were selected out of disease nurseries. These parent plants were progeny tested for one or more of the following traits: forage yield, stand persistence, multileaf expression, forage quality, resistance to bacterial wilt, Fusarium wilt, Phytophthora root rot, anthracnose (Race 1), Verticillium wilt and Aphanomyces root rot (Race 1). Selected plants were inter-pollinated near Sloughhouse, CA in field isolation in 2002 and equally bulked to produce Syn. 1 as Breeder seed. Breeder seed is maintained for the life of the variety by Dairyland Research International.

## Area of Probable Adaptation:

PerForm is adapted to the North Central and East Central Regions of the United States and intended for use across the North Central, Great Plains and East Central Regions of the United States. The states where it has been tested are Illinois, Minnesota, Pennsylvania, New York and Wisconsin.

## Agronomic & Botanical Characteristics:

PerForm is a moderately dormant variety similar to the fall dormancy 4 check. PerForm is very winter hardy similar to the winter survival 2 check. Flower color in the Syn. 2 generation is 90% purple, 10% variegated with trace amounts of cream, white and yellow.

PerForm has high resistance to bacterial wilt, *Fusarium* wilt, *Phytophthora* root rot, anthracnose (Race 1), *Verticillium* wilt, *Aphanomyces* root rot (Race1), northern root-knot nematode, stem nematode and resistance to pea aphid and southern root knot nematode. PerForm has not been tested for resistance to blue alfalfa aphid and spotted alfalfa aphid.

## Procedures for Maintaining Seed Stock:

Breeder seed (Syn. 1) was produced by bulking seed of parent plants which were grown in field isolation near Sloughhouse, CA in 2002. Seed from parental clones were equally bulked. Foundation seed (Syn.2) was produced from Breeder seed and Certified seed (Syn. 2or3) from either Breeder or Foundation seed. One generation each of Breeder, Foundation and two generations of Certified seed classes are recognized. A maximum of three harvest years each is permitted on stands producing Breeder and Foundation seed with five years for Certified seed. Dairyland Research International will maintain sufficient Breeder seed for the projected life of the variety.

## Date Certified Seed First Offered for Sale:

Certified Seed will be available spring of 2007.

## PVP Information:

Application for the Plant Variety Protection is undecided. Information in the NAVRB application can be forwarded to the PVP office.

Variety Name PerForm

Experimental Designation(s) BPR387

Date NA&MLVRB first accepted this variety November 29, 2006

Date(s) previous amendments were accepted \_\_\_\_\_

Date amendment submitted November 29, 2007

## Persist II

### Breeding History:

Persist II is a 140 clone synthetic. The parent clones were selected out of forage yield plots and/or disease nurseries. These parent plants were progeny tested for one or more of the following traits: forage yield, stand persistence, forage quality, resistance to bacterial wilt, Fusarium wilt, Phytophthora root rot, anthracnose (Race 1), Verticillium wilt and Aphanomyces root rot (Race 1). All of parent plants trace back to Dairyland experimentals in which greater than 50% trace back to Persist. Parent plants were planted in field isolation and inter-pollinated by honey, leaf cutting and bumble bees near Sloughhouse, California in 2004-2005 to produce Syn. 1 as Breeder Seed.

### Area of Probable Adaptation:

Persist II is adapted to the North Central Region of the United States and intended for use across the North Central and East Central Regions of the United States. The state where it has been tested is Wisconsin.

### Agronomic & Botanical Characteristics:

Persist II is a moderately dormant variety similar to the fall dormancy 4 check. DS652 is very winter hardy similar to the winter survival 2 check. Flower color in the Syn. 2 generation is 90% purple, 10% variegated with trace amounts of cream, white and yellow.

Persist II has high resistance to bacterial wilt, *Fusarium* wilt, *Phytophthora* root rot, anthracnose (Race 1), *Verticillium* wilt, *Aphanomyces* root rot (Race1), northern root-knot nematode, stem nematode and pea aphid. Persist II has not been tested for resistance to blue alfalfa aphid and spotted alfalfa aphid.

### Procedures for Maintaining Seed Stock:

Breeder seed (Syn. 1) was produced by bulking seed of parent plants which were grown in field isolation near Sloughhouse, CA in 2004-2005. Seed from parental clones were bulked. Foundation seed (Syn.2) was produced from Breeder seed and Certified seed (Syn. 2 or 3) from either Breeder or Foundation seed. One generation each of Breeder, Foundation and two generations of Certified seed classes are recognized. A maximum of three harvest years each is permitted on stands producing Breeder and Foundation seed with five years for Certified seed. Dairyland Research International will maintain sufficient Breeder seed for the projected life of the variety.

### Date Certified Seed First Offered for Sale:

Certified Seed will be available spring of 2008.

### PVP Information:

Application for the Plant Variety Protection is undecided. Information in the NAVRB application can be forwarded to the PVP office.

Variety Name: Persist II Date submitted 11/29/07

Experimental designations: DS651

## Hybri-Force 700

### Breeding History:

HybriForce-700 is a three clone 75-95% hybrid alfalfa variety. Parent clones were selected out of forage yield plots and/or disease nurseries. These parent plants were tested for male sterility, maintaining and restoration ability. The parent plants were also progeny tested for one or more of the following traits: forage yield, stand persistence, resistance Fusarium wilt, Phytophthora root rot, anthracnose (Race 1), and Verticillium wilt. The female, maintainer and restorer lines were selected entirely from Dairyland experimentals. Female seed (D-2002) was generated by crossing a cytoplasmic male sterile female line by a maintainer line in field isolation and inter-pollinated by honey, leaf cutting bees. The female plants were harvested to produce the female Breeder Seed near Sloughhouse, California in 2004, 2005 and 2006. Female seed was kept separate each year to produce Breeder seed. Male Breeder seed (Syn. 1) was produced in 2004 and 2005 near Sloughhouse, CA.

### Area of Probable Adaptation:

HybriForce-700 is adapted and intended for use in the Southwest Region of the United States. The state where it has been tested is California.

### Agronomic & Botanical Characteristics:

HybriForce-700 is a non-dormant variety similar to the fall dormancy 7 check. Flower color of the male line in the Syn. 2 and female (F1) generation is 99% purple, less than 1% white with trace amounts of variegated and cream. The male line of HybriForce-700 is 1% white seeded.

HybriForce-700 has high resistance to *Fusarium* wilt, *Phytophthora* root rot, spotted alfalfa aphid, northern root-knot nematode, stem nematode; resistance to *Verticillium* wilt, pea aphid, southern root-knot nematode; moderate resistance to bacterial wilt. HybriForce-700 has not been tested for resistance to blue alfalfa aphid, anthracnose (Race 1) and *Aphanomyces* root rot (Race1).

### Procedures for Maintaining Seed Stock:

Female Breeder seed was produced by crossing the cytoplasmic male sterile line (A) by the maintainer line (B) in field isolation near Sloughhouse, CA in 2004, 2005 and 2006. Female seed was kept separate across production years. Male Breeder seed (Syn. 1) was produced in field isolation near Sloughhouse in 2004 and 2005. Hybrid seed (F1) was produced from crossing female seed by either Breeder or Foundation male seed. Two generations of male seed are recognized. A maximum of three harvest years each is permitted on stands producing Breeder and Foundation seed with five years for Certified seed. Dairyland Research International will maintain sufficient seed for the projected life of the variety.

### Date Certified Seed First Offered for Sale:

Certified Seed will be available spring of 2009.

### PVP Information:

Application for the Plant Variety Protection is undecided. Information in the NAVRB application can be forwarded to the PVP office.

Variety Name: HybriForce-700 Date submitted 11/29/07

Experimental designations: DS0571, DS583-HYB

## FSG 229CR

### **Breeding History:**

FSG 229CR is a 60 clone synthetic. The parent clones were selected out of disease nurseries for *Phytophthora* root rot, *Aphanomyces* root rot (Race 1 and Race 2) and rhizomatous crown tendencies. All of parent plants trace back to Dairyland experimentals. Parent plants were planted in field isolation and inter-pollinated by honey, leaf cutting and bumble bees near Sloughhouse, California in 2004 to produce Syn. 1 as Breeder Seed. Seed from parent plants were bulked to produce Breeder seed.

### **Area of Probable Adaptation:**

FSG 229CR is adapted to the North Central and East Central Regions of the United States and intended for use across the North Central, Great Plains and East Central Regions of the United States. The state where it has been tested are Wisconsin and Michigan.

### **Agronomic & Botanical Characteristics:**

FSG 229CR is a dormant variety similar to the fall dormancy 2 check. FSG 229CR is very winter hardy similar to the winter survival 2 check. Flower color in the Syn. 2 generation is 90% purple, 10% variegated with trace amounts of cream, white and yellow.

FSG 229CR has high resistance to bacterial wilt, *Fusarium* wilt, *Phytophthora* root rot, anthracnose (Race 1), *Verticillium* wilt; resistance to *Aphanomyces* root rot (Race1). FSG 229CR has not been tested for resistance to northern root-knot nematode, stem nematode, blue alfalfa aphid, pea aphid and spotted alfalfa aphid.

### **Procedures for Maintaining Seed Stock**

Breeder seed (Syn. 1) was produced by bulking seed of parent plants which were grown in field isolation near Sloughhouse, CA in 2004. Seed from parental clones were bulked. Foundation seed (Syn. 2 or 3) was produced from Breeder or second generation Foundation seed and Certified seed (Syn. 3 or 4) from Foundation seed. One generation each of Breeder and two generations Foundation and Certified seed classes are recognized. The second-generation foundation seed may be produced at the discretion of Dairyland Research. A maximum of three harvest years each is permitted on stands producing Breeder and Foundation seed with five years for Certified seed. Dairyland Research International will maintain sufficient Breeder seed for the projected life of the variety.

### **Date Certified Seed First Offered for Sale:**

Certified Seed will be available spring of 2009.

### **PVP Information:**

Application for the Plant Variety Protection is undecided. Information in the NAVRB application can be forwarded to the PVP office.

Variety Name: FSG 229CR Date submitted 11/29/07

Experimental designations: DS101

## DS510

### **Breeding History:**

DS510 is a population made up of a bulk of equal amounts of half sib seed from 16 parent plants. These plants were all selected from forage yield trials and placed in an observation nursery. Selections from the nursery were made on aphid resistance, plant vigor, visual forage yield, seed yield, alfalfa mosaic virus resistance, and persistence. Germplasm traces back entirely to Dairyland breeding material. Plants were then placed in field isolation in a top cross format with DS788 as the pollinator line to produce half sib seed. Seed from the 16 selected individuals was bulked in equal quantity and grown in isolation to produce Syn.1 seed. Breeder seed for DS510 is the Syn.1 generation and was produced in 2001-02.

### **Area of Probable Adaptation:**

DS510 is adapted to the Southwest Region of the United States and Argentina and intended for use across the Southwest Region of the United States and Argentina. The states where it has been tested are California and the country of Argentina.

### **Agronomic & Botanical Characteristics:**

DS510 is a non-dormant variety similar to the fall dormancy 8 check. Flower color in the Syn. 2 generation is 99% purple, 1% variegated with trace amounts of cream, white and yellow.

DS510 has high resistance to *Fusarium* wilt, *Phytophthora* root rot, stem nematode, spotted alfalfa aphid; resistance to bacterial wilt, *anthracnose* (Race 1), pea aphid, northern root-knot nematode, southern root-knot nematode; moderate resistance to *Verticillium* wilt. DS510 has not been tested for resistance to *Aphanomyces* root rot (Race1) and blue alfalfa aphid.

### **Procedures for Maintaining Seed Stock**

Breeder seed (Syn. 1) was produced by growing a bulk of equal proportions of half-sib seed from the 16 parent plants. Foundation seed (Syn.2 or 3) was produced from Breeder or Foundation seed and Certified seed (Syn. 3 or 4) from Foundation seed. One generation of Breeder, two generations of Foundation and two generations of Certified seed classes are recognized. . The second-generation foundation seed may be produced at the discretion of Dairyland Research. A maximum of three harvest years each is permitted on stands producing Breeder and Foundation seed with five years for Certified seed. Dairyland Research International will maintain sufficient Breeder seed for the projected life of the variety.

### **Date Certified Seed First Offered for Sale:**

Certified Seed will be available spring of 2008.

### **PVP Information:**

Application for the Plant Variety Protection is undecided. Information in the NAVRB application can be forwarded to the PVP office.

Variety Name: \_\_\_\_\_ Date submitted 11/29/07

Experimental designations: DS510

## 6431

### **Breeding History:**

6431 is a 28 clone synthetic. The parent clones were selected out of forage yield plots and/or disease nurseries. These parent plants were progeny tested for one or more of the following traits: forage yield, stand persistence, forage quality, resistance to bacterial wilt, Fusarium wilt, Phytophthora root rot, anthracnose (Race 1), Verticillium wilt and Aphanomyces root rot (Race 1). Parent plants were planted in field isolation and inter-pollinated by honey, leaf cutting and bumble bees near Sloughhouse, California in 2003-2004 to produce Syn. 1 as Breeder Seed

### **Area of Probable Adaptation:**

6431 is adapted to the North Central Region of the United States and intended for use across the North Central, Great Plains and East Central Regions of the United States. The state where it has been tested is Wisconsin.

### **Agronomic & Botanical Characteristics:**

6431 is a moderately dormant variety similar to the fall dormancy 4 check. 6431 is very winter hardy similar to the winter survival 2 check. Flower color in the Syn. 2 generation is 90% purple, 10% variegated with trace amounts of cream, white and yellow.

6431 has high resistance to bacterial wilt, *Fusarium* wilt, *Phytophthora* root rot, anthracnose (Race 1), *Verticillium* wilt, *Aphanomyces* root rot (Race1), northern root-knot nematode, stem nematode; resistance to pea aphid. 6431 has not been tested for resistance to blue alfalfa aphid and spotted alfalfa aphid.

### **Procedures for Maintaining Seed Stock**

Breeder seed (Syn. 1) was produced by bulking seed of parent plants which were grown in field isolation near Sloughhouse, CA in 2003-2004. Seed from parental clones were equally bulked. Foundation seed (Syn.2) was produced from Breeder seed and Certified seed (Syn. 2 or 3) from either Breeder or Foundation seed. One generation each of Breeder, Foundation and two generations of Certified seed classes are recognized. A maximum of three harvest years each is permitted on stands producing Breeder and Foundation seed with five years for Certified seed. Dairyland Research International will maintain sufficient Breeder seed for the projected life of the variety.

### **Date Certified Seed First Offered for Sale:**

Certified Seed will be available spring of 2008.

### **PVP Information:**

Application for the Plant Variety Protection is undecided. Information in the NAVRB application can be forwarded to the PVP office.

Variety Name: 6431 Date submitted 11/29/07

Experimental designations: DS652

# DS655BR

## **Breeding History:**

DS655BR is a 70 clone synthetic. One half of the plants were selected for branch root expression and resistance to a disease complex of Phytophthora root rot and Aphanomyces root rot (Race 1 and 2) in disease nursery near Appleton, WI. These plants were progeny tested for high levels of resistance to Aphanomyces root rot (Race 2). The selected plants make up the first half of DS655. The other half of the plants was selected for resistance to Aphanomyces Race 2 and agronomic traits such as seed yield and plant vigor. The source populations for DS655 are from elite Dairyland experimentals. Selected plants from each respective population were separately hand inter-pollinated near Clinton, WI in 2004 and equally bulked to produce Syn. 1 as Breeder seed.

## **Area of Probable Adaptation:**

DS655BR is adapted to the North Central and East Central Region of the United States and intended for use across the North Central and East Central Regions of the United States. The states where it has been tested are Wisconsin, Pennsylvania and New York.

## **Agronomic & Botanical Characteristics:**

DS655BR is a moderately dormant variety similar to the fall dormancy 4 check. DS655BR is very winter hardy similar to the winter survival 2 check. Flower color in the Syn. 2 generation is 90% purple, 10% variegated with trace amounts of cream, white and yellow.

DS655BR has high resistance to bacterial wilt, *Fusarium* wilt, *Phytophthora* root rot, anthracnose (Race 1), *Verticillium* wilt, *Aphanomyces* root rot (Race1), northern root-knot nematode, stem nematode; resistance to *Aphanomyces* root rot (Race2), pea aphid. DS655BR has not been tested for resistance to blue alfalfa aphid and spotted alfalfa aphid.

## **Procedures for Maintaining Seed Stock:**

Breeder seed (Syn. 1) was produced by bulking seed of parent plants which were crossed in greenhouse isolation near Clinton, WI in 2004. Seed from parental clones were bulked. Foundation seed (Syn. 2) was produced from Breeder seed and Certified seed (Syn. 2 or 3) from either Breeder or Foundation seed. One generation each of Breeder, Foundation and two generations of Certified seed classes are recognized. A maximum of three harvest years each is permitted on stands producing Breeder and Foundation seed with five years for Certified seed. Dairyland Research International will maintain sufficient Foundation seed for the projected life of the variety.

## **Date Certified Seed First Offered for Sale:**

Certified Seed will be available spring of 2008.

## **PVP Information:**

Application for the Plant Variety Protection is undecided. Information in the NAVRB application can be forwarded to the PVP office.

Variety Name: \_\_\_\_\_ Date submitted 11/29/07

Experimental designations: DS655BR

## Magna 551

### **Breeding History:**

Magna 551 is a 160 clone synthetic. The parent clones were selected out of forage yield plots and/or disease nurseries. These parent plants were selected for resistance to bacterial wilt, Fusarium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1), late fall growth and deep set crown placement. All of parent plants trace back to Dairyland experimentals. Parent plants were planted in field isolation and inter-pollinated by honey, leaf cutting and bumble bees near Sloughhouse, California in 2002-04 to produce Syn. 1 as Breeder Seed. Seed from parent plants were bulked each year to produce Breeder seed.

### **Area of Probable Adaptation:**

Magna 551 is adapted to the North Central Region of the United States and intended for use across the North Central, Great Plains and East Central Regions of the United States. The state where it has been tested is Wisconsin.

### **Agronomic & Botanical Characteristics:**

Magna 551 is a moderately dormant variety similar to the fall dormancy 5 check. Magna 551 is very winter hardy similar to the winter survival 2 check. Flower color in the Syn. 2 generation is 90% purple, 10% variegated with trace amounts of cream, white and yellow.

Magna 551 has high resistance to bacterial wilt, *Fusarium* wilt, *Phytophthora* root rot, *Verticillium* wilt, *Aphanomyces* root rot (Race1), northern root-knot nematode; resistance to anthracnose (Race 1) and stem nematode. Magna 551 has not been tested for resistance to pea aphid, blue alfalfa aphid and spotted alfalfa aphid.

### **Procedures for Maintaining Seed Stock:**

Breeder seed (Syn. 1) was produced by bulking seed of parent plants which were grown in field isolation near Sloughhouse, CA in 2002-2004. Seed from parental clones were bulked. Foundation seed (Syn.2) was produced from Breeder seed and Certified seed (Syn. 2 or 3) from either Breeder or Foundation seed. One generation each of Breeder, Foundation and two generations of Certified seed classes are recognized. A maximum of three harvest years each is permitted on stands producing Breeder and Foundation seed with five years for Certified seed. Dairyland Research International will maintain sufficient Breeder seed for the projected life of the variety.

### **Date Certified Seed First Offered for Sale:**

Certified Seed will be available spring of 2008.

### **PVP Information:**

Application for the Plant Variety Protection is undecided. Information in the NAVRB application can be forwarded to the PVP office.

Variety Name: Magna 551 Date submitted 11/29/07

Experimental designations: DS658



## DS709-T

### **Breeding History:**

DS709-T is a 12 clone synthetic. The parent clones were selected out of forage yield plots and/or disease nurseries. These parent plants were progeny tested for one or more of the following traits: forage yield, stand persistence, forage quality, resistance to bacterial wilt, Fusarium wilt, Phytophthora root rot, anthracnose (Race 1), Verticillium wilt and Aphanomyces root rot (Race 1). All of parent plants trace back to Dairyland experimentals. Parent plants were planted in field isolation and inter-pollinated by honey, leaf cutting and bumble bees near Sloughhouse, California in 2004-2006 to produce Syn. 1 as Breeder Seed.

### **Area of Probable Adaptation:**

DS709-T is adapted to the North Central Region of the United States and intended for use across the North Central, Great Plains and East Central Regions of the United States. The state where it has been tested is Wisconsin.

### **Agronomic & Botanical Characteristics:**

DS709-T is a moderately dormant variety similar to the fall dormancy 4 check. DS709-T is very winter hardy similar to the winter survival 2 check. Flower color in the Syn. 2 generation is 90% purple, 10% variegated with trace amounts of cream, white and yellow.

DS709-T has high resistance to bacterial wilt, *Fusarium* wilt, *Phytophthora* root rot, anthracnose (Race 1), *Verticillium* wilt, *Aphanomyces* root rot (Race1), northern root-knot nematode; resistance to pea aphid and stem nematode. DS709-T has not been tested for resistance to blue alfalfa aphid and spotted alfalfa aphid.

### **Procedures for Maintaining Seed Stock:**

Breeder seed (Syn. 1) was produced by bulking seed of parent plants which were grown in field isolation near Sloughhouse, CA in 2004-2006. Seed from parental clones were equally bulked. Foundation seed (Syn.2) was produced from Breeder seed and Certified seed (Syn. 2 or 3) from either Breeder or Foundation seed. One generation each of Breeder, Foundation and two generations of Certified seed classes are recognized. A maximum of three harvest years each is permitted on stands producing Breeder and Foundation seed with five years for Certified seed. Dairyland Research International will maintain sufficient Breeder seed for the projected life of the variety.

### **Date Certified Seed First Offered for Sale:**

Certified Seed will be available spring of 2008.

### **PVP Information:**

Application for the Plant Variety Protection is undecided. Information in the NAVRB application can be forwarded to the PVP office.

Variety Name: \_\_\_\_\_ Date submitted 11/29/07

Experimental designations: DS709-T

## DS783

### **Breeding History:**

DS783 is a 22 clone synthetic. The parent clones were selected out of forage yield plots. These parent plants were progeny tested for one or more of the following traits: forage yield, stand persistence, leaf diseases, Fusarium wilt, Phytophthora root rot, anthracnose (Race 1), and Verticillium wilt. All of parent plants trace back to Dairyland experimentals. Parent plants were planted in field isolation and inter-pollinated by honey, leaf cutting and bumble bees near Sloughhouse, California in 1994 and 1995 to produce Syn. 1 as Breeder Seed.

### **Area of Probable Adaptation:**

DS783 is adapted to the Southwest Region of the United States and intended for use across the Southwest Region of the United States. The state where it has been tested is California.

### **Agronomic & Botanical Characteristics:**

DS783 is a non-dormant variety similar to the fall dormancy 8 check. Flower color in the Syn. 2 generation is 98% purple, 2% variegated with trace amounts of cream, white and yellow.

DS783 has high resistance to *Fusarium* wilt, *Phytophthora* root rot, stem nematode, spotted alfalfa aphid; resistance to bacterial wilt, *anthracnose* (Race 1), northern root-knot nematode; moderate resistance to pea aphid *Verticillium* wilt. DS783 has not been tested for resistance to *Aphanomyces* root rot (Race1) and blue alfalfa aphid.

### **Procedures for Maintaining Seed Stock:**

Breeder seed (Syn. 1) was produced by bulking seed of parent plants which were grown in field isolation near Sloughhouse, CA in 1994 and 1995. Foundation seed (Syn.2 or 3) was produced from Breeder seed or second generation Foundation seed, and Certified seed (Syn. 3 or 4) from Foundation seed. The second-generation foundation seed may be produced at the discretion of Dairyland Research. One generation of Breeder, two generations of Foundation and two generations of Certified seed classes are recognized. A maximum of three harvest years each is permitted on stands producing Breeder and Foundation seed with five years for Certified seed. Dairyland Research International will maintain sufficient Breeder seed for the projected life of the variety.

### **Date Certified Seed First Offered for Sale:**

Certified Seed will be available spring of 2008.

### **PVP Information:**

Application for the Plant Variety Protection is undecided. Information in the NAVRB application can be forwarded to the PVP office.

Variety Name: \_\_\_\_\_ Date submitted 11/29/07

Experimental designations: DS783

## DS787

### **Breeding History:**

DS787 is a 331 clone synthetic population derived from Dairyland Seed experimentals. Parent plants were selected from forage yield plots and observation nurseries for forage yield, persistence and resistance to leaf, stem, root and crown diseases across central Argentina. Breeder seed (Syn.1) was produced in isolation cages near Tunyan, Mendoza, Argentina in 2000-2001. Seed from the entire population was bulked.

### **Area of Probable Adaptation:**

DS787 is adapted and intended for the Southwest Region of the United States and Argentina. The state and countries where it has been tested are California and Argentina.

### **Agronomic & Botanical Characteristics:**

DS787 is a non-dormant variety similar to the fall dormancy 7 check. Flower color in the Syn. 2 generation is 99% purple, 1% variegated with trace amounts of cream and white.

DS787 has high resistance to Fusarium wilt, northern root-knot nematode, stem nematode, spotted alfalfa aphid; resistance to bacterial wilt, Phytophthora root rot, anthracnose (Race 1) and pea aphid; moderate resistance to Verticillium wilt. DS787 has not been tested for resistance to Aphanomyces root rot (Race1) and blue alfalfa aphid.

### **Procedures for Maintaining Seed Stock:**

Breeder seed (Syn. 1) was produced within cage isolation near Tunyan, Mendoza, Argentina in 2000-2001. Seed classes will be breeder, foundation seed (Syn. 2 or 3) and certified seed (Syn. 3, 4 or 5). A second generation of foundation seed is at the discretion of Dairyland Seed. A maximum of three years each is permitted on stands producing Breeder and Foundation seed with five years for certified seed. Sufficient Breeder seed for the projected life of the variety will be maintained by Dairyland Research International

### **Date Certified Seed First Offered for Sale:**

Certified Seed will be available spring of 2007.

### **PVP Information:**

Application for the Plant Variety Protection is undecided. Information in the NAVRB application can be forwarded to the PVP office.

Variety Name \_\_\_\_\_  
Experimental Designation(s) DS787  
Date NA&MLVRB first accepted this variety November 29, 2006  
Date(s) previous amendments were accepted \_\_\_\_\_  
Date amendment submitted November 29, 2007

## DS789

### **Breeding History:**

DS789 is a 257 clone synthetic population derived from Dairyland Seed experimentals. Parent plants were selected from forage yield plots and observation nurseries for forage yield, persistence and resistance to leaf, stem, root and crown diseases across central Argentina. Breeder seed (Syn.1) was produced in isolation cages near Tunyan, Mendoza, Argentina in 2000-2001. Seed from the entire population was bulked.

### **Area of Probable Adaptation:**

DS789 is adapted and intended for the Southwest Region of the United States and Argentina. The state and countries where it has been tested are California and Argentina.

### **Agronomic & Botanical Characteristics:**

DS789 is a very-dormant variety similar to the fall dormancy 8 check. Flower color in the Syn. 2 generation is 99% purple, 1% variegated with trace amounts of cream and white.

DS789 has high resistance to Fusarium wilt, northern root-knot nematode, spotted alfalfa aphid; resistance to bacterial wilt, Phytophthora root rot, anthracnose (Race 1), stem nematode, pea aphid and moderate resistance to Verticillium wilt. DS789 has not been tested for resistance to Aphanomyces root rot (Race1) and blue alfalfa aphid.

### **Procedures for Maintaining Seed Stock:**

Breeder seed (Syn. 1) was produced within cage isolation near Tunyan, Mendoza, Argentina in 2000-2001. Seed classes will be breeder, foundation seed (Syn. 2 or 3) and certified seed (Syn. 3,4 or 5). A second generation of foundation seed is at the discretion of Dairyland Seed. A maximum of three years each is permitted on stands producing Breeder and Foundation seed with five years for certified seed. Sufficient Breeder seed for the projected life of the variety will be maintained by Dairyland Research International.

### **Date Certified Seed First Offered for Sale:**

Certified Seed will be available spring of 2007.

### **PVP Information:**

Application for the Plant Variety Protection is undecided. Information in the NAVRB application can be forwarded to the PVP office.

Variety Name \_\_\_\_\_  
Experimental Designation(s) DS789  
Date NA&MLVRB first accepted this variety November 29, 2006  
Date(s) previous amendments were accepted \_\_\_\_\_  
Date amendment submitted November 29, 2007

## msSunstra-504

### Breeding History:

msSunstra-504 is a three clone 75-95% hybrid alfalfa variety. Parent clones were selected out of forage yield plots and/or disease nurseries. These parent plants were tested for male sterility, maintaining and restoration ability. The parent plants were also progeny tested for one or more of the following traits: forage yield, stand persistence, forage quality, resistance to bacterial wilt, Fusarium wilt, Phytophthora root rot, anthracnose (Race 1), Verticillium wilt and Aphanomyces root rot (Race 1). The female line traces to DS experimentals, maintainer trace to Thor and DS experimentals and restorer line trace to selections from Extend, 6410 and WL342. Female seed was generated by crossing a cytoplasmic male sterile female line by a maintainer line in field isolation and inter-pollinated by honey, leaf cutting and bumble bees. The female plants were harvested to produce the female Breeder Seed near Sloughhouse, California in 2003-04. Male Breeder seed (Syn. 1) was produced in 2003 near Sloughhouse, CA.

### Area of Probable Adaptation:

msSunstra-504 is adapted to the North Central Region of the United States and intended for use across the North Central, Great Plains and East Central Regions of the United States. The states where it has been tested are Wisconsin, Minnesota and Iowa.

### Agronomic & Botanical Characteristics:

msSunstra-504 is a moderately dormant variety similar to the fall dormancy 4 check. msSunstra-504 is very winter hardy similar to the winter survival 2 check. Flower color of the male line in the Syn. 2 generation and female (F1) is 90% purple, 9% variegated, less than 1% white with trace amounts of yellow and cream. The male of msSunstra-504 is 1% white seeded.

msSunstra-504 has high resistance to bacterial wilt, *Fusarium* wilt, *Phytophthora* root rot, anthracnose (Race 1), *Verticillium* wilt, northern root-knot nematode, stem nematode; resistance to *Aphanomyces* root rot (Race1) and southern root-knot nematode. msSunstra-504 has not been tested for resistance to pea aphid, blue alfalfa aphid and spotted alfalfa aphid.

### Procedures for Maintaining Seed Stock:

Female Breeder seed was produced by crossing the cytoplasmic male sterile line (A) by the maintainer line (B) in field isolation near Sloughhouse, CA in 2004-05. Female seed was kept separate across production years. Male Breeder seed (Syn. 1) was produced in field isolation near Sloughhouse in 2003. Male Foundation seed (Syn. 2) was produced from Breeder seed. Hybrid seed (F1) was produced from crossing female seed by either Breeder or Foundation male seed. Two generations of male seed are recognized. A maximum of three harvest years each is permitted on stands producing Breeder and Foundation seed with five years for Certified seed. Dairyland Research International will maintain sufficient seed for the projected life of the variety.

### Date Certified Seed First Offered for Sale:

Certified Seed will be available spring of 2008.

### PVP Information:

Application for the Plant Variety Protection is undecided. Information in the NAVRB application can be forwarded to the PVP office.

Variety Name: \_\_\_\_\_ Date submitted 11/29/07

Experimental designations: msSunstra-504

## Hybri-Jade

### Breeding History:

Hybri-Jade is a three clone 75-95% hybrid alfalfa variety. Parent clones were selected out of forage yield plots and/or disease nurseries. These parent plants were tested for male sterility, maintaining and restoration ability. The parent plants were also progeny tested for one or more of the following traits: forage yield, stand persistence, forage quality, resistance to bacterial wilt, Fusarium wilt, Phytophthora root rot, anthracnose (Race 1), Verticillium wilt and Aphanomyces root rot (Race 1). The female line traces to DS experimentals, maintainer trace to Thor and DS experimentals in which greater than 50% trace back to Jade. The restorer line trace to Extend, 6410 and WL342. Female seed was generated by crossing a cytoplasmic male sterile female line by a maintainer line in field isolation and inter-pollinated by honey, leaf cutting and bumble bees. The female plants were harvested to produce the female Breeder Seed near Sloughhouse, California in 2003-04. Male Breeder seed (Syn. 1) was produced in 2003 near Sloughhouse, CA.

### Area of Probable Adaptation:

msSunstra-505 is adapted to the North Central and East Central Region of the United States and intended for use across the North Central, Great Plains and East Central Regions of the United States. The states where it has been tested are Wisconsin, Minnesota, Pennsylvania, Michigan and Iowa.

### Agronomic & Botanical Characteristics:

Hybri-Jade is a moderately dormant variety similar to the fall dormancy 4 check. Hybri-Jade is very winter hardy similar to the winter survival 2 check. Flower color of the male line in the Syn. 2 and female (F1) generation is 90% purple, 9% variegated, less than 1% white with trace amounts of yellow and cream. The male of Hybri-Jade is 1% white seeded.

Hybri-Jade has high resistance to bacterial wilt, *Fusarium* wilt, *Phytophthora* root rot, anthracnose (Race 1), *Verticillium* wilt, stem nematode; resistance to *Aphanomyces* root rot (Race1), northern root-knot nematode and southern root-knot nematode. Hybri-Jade has not been tested for resistance to pea aphid, blue alfalfa aphid and spotted alfalfa aphid.

### Procedures for Maintaining Seed Stock:

Female Breeder seed was produced by crossing the cytoplasmic male sterile line (A) by the maintainer line (B) in field isolation near Sloughhouse, CA in 2004-05. Female seed was kept separate across production years. Male Breeder seed (Syn. 1) was produced in field isolation near Sloughhouse in 2003. Male Foundation seed (Syn. 2) was produced from Breeder seed. Hybrid seed (F1) was produced from crossing female seed by either Breeder or Foundation male seed. Two generations of male seed are recognized. A maximum of three harvest years each is permitted on stands producing Breeder and Foundation seed with five years for Certified seed. Dairyland Research International will maintain sufficient seed for the projected life of the variety.

### Date Certified Seed First Offered for Sale:

Certified Seed will be available spring of 2009.

### PVP Information:

Application for the Plant Variety Protection is undecided. Information in the NAVRB application can be forwarded to the PVP office.

Variety Name: Hybri-Jade Date submitted 11/29/07

Experimental designations: msSunstra-505

# FG 54W210

## **Breeding History:**

FG 54W210 is a synthetic variety consisting of 120 parent plants. Plants were selected based on forage yield, fall dormancy reaction, persistence, pest resistance and for resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, stem nematode and Phytophthora root rot. A combination of genotypic and phenotypic recurrent selection was used in the development of this variety. The parental populations from which all plants were derived trace to the following cultivars: Mountaineer 2.0 (33%), Expedition (33%) and FG 5M107 (34%). Breeder seed (Syn 1) was produced near Nampa, Idaho in 2004. Seed was harvested in total on all parents and bulked to form breeder seed.

## **Area of Probable Adaptation:**

This variety is adapted to the Winterhardy Intermountain and Moderately Winterhardy Intermountain U.S. regions. This variety has been tested in Idaho and Washington and is intended for use in Moderately Winterhardy Intermountain U.S. regions.

## **Agronomic & Botanical Characteristics:**

Test variety is Moderately Fall Dormant, similar to FD6 check. Flower color (Syn2) is 85% purple, 15% variegated with traces of cream, yellow and white. This variety has high multifoliolate leaf expression. This variety has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1), pea aphid and stem nematode; with resistance to root knot nematode (*M. hapla*) and spotted alfalfa aphid. Reaction to blue alfalfa aphid has not been tested.

## **Procedures for Maintaining Seed Stock:**

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. Breeder seed was produced in the field near Nampa, ID in 2004. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

## **Date Certified Seed First Offered for Sale:**

Certified seed will be marketed in 2008.

## **PVP Information:**

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name: \_\_\_\_\_ Date submitted November 15, 2007

Experimental designations: FG 54W210

## FG 44W204

### **Breeding History:**

FG 44W204 is a synthetic variety consisting of 120 parent plants. Plants were selected based on forage yield, fall dormancy reaction, persistence, pest resistance and for resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, stem nematode and Phytophthora root rot. A combination of genotypic and phenotypic recurrent selection was used in the development of this variety. The parental populations from which all plants were derived trace to the following cultivars: Whitney (33%), Medalist (33%) and Masterpiece (34%). Breeder seed (Syn 1) was produced near Nampa, Idaho in 2004. Seed was harvested in total on all parents and bulked to form breeder seed.

### **Area of Probable Adaptation:**

This variety is adapted to the Winterhardy Intermountain and Moderately Winterhardy Intermountain U.S. regions. This variety has been tested in Idaho and Washington and is intended for use in Winterhardy Intermountain and Moderately Winterhardy Intermountain U.S. regions.

### **Agronomic & Botanical Characteristics:**

Test variety is Moderately Fall Dormant, similar to FD5 check. Flower color (Syn2) is 70% purple, 2% cream, 9% yellow, 11 % variegated and 8% white. This variety has high multifoliolate leaf expression. This variety has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1), pea aphid and stem nematode; with resistance to root knot nematode (*M. hapla*). Reaction to spotted alfalfa aphid and blue alfalfa aphid has not been tested.

### **Procedures for Maintaining Seed Stock:**

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. Breeder seed was produced in the field near Nampa, ID in 2004. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed will be marketed in 2008.

### **PVP Information:**

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name: \_\_\_\_\_ Date submitted December 1, 2007

Experimental designations: FG 44W204



## FG 93T055

### **Breeding History:**

FG 93T055 is a synthetic variety consisting of 130 parent plants. Plants were selected based on forage yield, fall dormancy reaction, persistence, pest resistance and for resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, stem nematode and Phytophthora root rot. A combination of genotypic and phenotypic recurrent selection was used in the development of this variety. The parental populations from which all plants were derived trace to elite FG breeding populations. Breeder seed (Syn 1) was produced near Nampa, Idaho in 2003. Seed was harvested in total on all parents and bulked to form breeder seed.

### **Area of Probable Adaptation:**

This variety is adapted to the Southwest U.S. region. This variety has been tested in California and is intended for use in Southwest U.S. region.

### **Agronomic & Botanical Characteristics:**

Test variety is Very Non Dormant, similar to FD9 check. Flower color (Syn2) is 100% purple with traces of variegated, cream, yellow and white. This variety has high resistance to Fusarium wilt, Phytophthora root rot, pea aphid, spotted alfalfa aphid, blue alfalfa aphid and root knot nematode (*M. hapla*), resistance to anthracnose (Race 1) and stem nematode with moderate resistance to bacterial wilt. Reaction to Verticillium wilt and Aphanomyces root rot (Race 1) has not been tested.

### **Procedures for Maintaining Seed Stock:**

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. Breeder seed was produced in the field near Nampa, ID in 2003. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed will be marketed in 2008

### **PVP Information:**

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name: \_\_\_\_\_ Date submitted December 1, 2007

Experimental designations: FG 93T055

## FG 94T02

### **Breeding History:**

FG 94T02 is a synthetic variety consisting of 162 parent plants. Plants were selected based on forage yield, fall dormancy reaction, persistence, pest resistance and for resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, stem nematode and Phytophthora root rot. A combination of genotypic and phenotypic recurrent selection was used in the development of this variety. The parental populations from which all plants were derived trace to the following cultivars: TriplePlay (50%) and elite FG breeding populations (50%). Breeder seed (Syn 1) was produced near Nampa, Idaho in 2004. Seed was harvested in total on all parents and bulked to form breeder seed.

### **Area of Probable Adaptation:**

This variety is adapted to the Southwest U.S. region. This variety has been tested in California and is intended for use in Southwest U.S. region.

### **Agronomic & Botanical Characteristics:**

Test variety is Very Non-Dormant, similar to FD9 check. Flower color (Syn2) is 100% purple with traces of variegated, cream, yellow and white. This variety has high resistance to Fusarium wilt, Phytophthora root rot, pea aphid, spotted alfalfa aphid and blue alfalfa aphid; resistance to stem nematode; with moderate resistance to anthracnose (Race 1) and bacterial wilt. Reaction to Verticillium wilt, Aphanomyces root rot (Race 1) and root knot nematode (*M. hapla*) has not been tested.

### **Procedures for Maintaining Seed Stock:**

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. Breeder seed was produced in the field near Nampa, ID in 2004. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed will be marketed in 2008.

### **PVP Information:**

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name: \_\_\_\_\_ Date submitted December 1, 2007

Experimental designations: FG 94T02

## FSG 429SN

### **Breeding History:**

FSG 429SN is a synthetic variety consisting of 93 parent plants. Plants were selected based on forage yield, fall dormancy reaction, persistence and for resistance to stem nematode and root knot nematode (*M. hapla*). A combination of genotypic and phenotypic recurrent selection was used in the development of this variety. The parental populations from which all plants were derived trace to the following cultivars: Select (25%), MasterPiece (25%) and two experimental FGI lines FG 4A125 (25%) and FG 4A130 (25%). Breeder seed (Syn 1) was produced near Nampa, Idaho in 2002. Seed was harvested in total on all parents and bulked to form breeder seed.

### **Area of Probable Adaptation:**

FSG 429SN is adapted to the Winterhardy Intermountain and Moderately Winterhardy Intermountain U.S. regions. This variety has been tested in Idaho, Washington and Colorado and is intended for use in Winterhardy Intermountain and Moderately Winterhardy Intermountain U.S. regions.

### **Agronomic & Botanical Characteristics:**

FSG 429SN is Moderately Fall Dormant, similar to FD4 check. Test variety is very Winterhardy, similar to WS2 check. Flower color (Syn2) is 93% purple, 6% variegated and 1% white with traces of cream and yellow. This variety has high multifoliolate leaf expression. This variety has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1), pea aphid and stem nematode; with resistance to root knot nematode (*M. hapla*) and spotted alfalfa aphid. Reaction to blue alfalfa aphid has not been tested.

### **Procedures for Maintaining Seed Stock:**

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. Breeder seed was produced in the field near Nampa, ID in 2002. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed will be marketed in 2008.

### **PVP Information:**

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name: FSG 429SN Date submitted December 1, 2007

Experimental designations: FG 42W201

# Phoenix

## Breeding History:

Phoenix is a synthetic variety with 110 parent plants. Parent plants were selected for forage yield, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose, Phytophthora root rot, Aphanomyces root rot (Race 1 and Race 2), and Sclerotinia crown and stem rot. Phenotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: 5454 (70%), Reward (15%), and Hyland (15%). Seed was harvested in total on all parents and bulked to form breeder seed.

## Area of Probable Adaptation:

This variety is adapted to East Central and Winterhardy Intermountain regions. This variety has been tested in Idaho, Indiana, and Tennessee, and is intended for use in the East Central and Winterhardy Intermountain regions.

## Agronomic & Botanical Characteristics:

Test variety is Moderately Fall Dormant, similar to FD5 check. Test variety is Low Winterhardy, similar to WS4 check. Flower color (Syn2) is 97% purple, 3% variegated with a trace of yellow, white and cream.

Test variety has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, stem nematode and pea aphid; resistance to Aphanomyces root rot (Race 1); with moderate resistance to root-knot nematode (*M. hapla*). Reactions to spotted alfalfa aphid and blue alfalfa aphid have not been tested.

## Procedures for Maintaining Seed Stock:

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. Breeder seed was produced in the greenhouse in 1999 and in the field near Nampa, ID in 2000. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

## Date Certified Seed First Offered for Sale:

Certified seed will be marketed in 2004.

## PVP Information:

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name Phoenix

Experimental Designation(s) FG 50T176

Date NA&MLVRB first accepted this variety January 2004

Date(s) previous amendments were accepted January 2006, January 2007

Date amendment submitted November 21, 2007

## Pawnee II

### Breeding History:

FG 52M145 is a synthetic variety with 15 parent clones. Parent clones were selected for forage yield, forage quality, persistence and/or resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose, Phytophthora root rot, stem nematode, northern root-knot nematode and Aphanomyces root rot (Race 1 and Race 2). A combination of genotypic and phenotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: Pawnee (50%), WL357HQ (25%) and various FGI experimental populations (25%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2002.

### Area of Probable Adaptation:

Pawnee II is adapted to the North Central and East Central regions. Pawnee II has been tested in Wisconsin, Indiana, Pennsylvania and Iowa and is intended for use in the North Central and East Central regions.

### Agronomic & Botanical Characteristics:

Pawnee II is moderately Fall Dormant, similar to FD5 check. Pawnee II is very Winterhardy, similar to WS2 check. Flower color (Syn2) is 91% purple, 7% variegated and 2% cream with traces of yellow and white. Pawnee II has high multifoliolate leaf expression. Test variety has high resistance to anthracnose (Race 1), bacterial wilt, Phytophthora root rot, Verticillium wilt, Fusarium wilt, Aphanomyces root rot (Race 1), pea aphid, root-knot nematode (*M. hapla*) and stem nematode. Reaction to blue alfalfa aphid and spotted alfalfa aphid has not been tested.

### Procedures for Maintaining Seed Stock:

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. Breeder seed (Syn1) was produced in the greenhouse in 2001 and in the field near Nampa, ID in 2002. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### Date Certified Seed First Offered for Sale:

Certified seed will be marketed in 2008.

### PVP Information:

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name: Pawnee II Date submitted December 1, 2007

Experimental designations: FG 52M145



## Alfagraze 600 RR

### Breeding History:

Alfagraze 600 RR is a synthetic variety with 110 parent plants. Parent plants contain tolerance to Roundup® (glyphosate) herbicide conferred by the CP4 5-enolpyruvylshikimate-3-phosphate synthase (*cp4-epsps*) transgene, specifically, the Roundup Ready® alfalfa transgenic events J101 and/or J163 (OECD unique identifiers: MON-00101-8 and MON-00163-7, respectively). The parent plants trace to University of Georgia and FGI breeding populations selected for Roundup tolerance, grazing tolerance, forage yield, winter-active growth, persistence and resistance to one or more of the following pests: Fusarium wilt, anthracnose (Race 1) and Phytophthora root rot. Genotypic selection with event-specific markers was used to identify the parent plants. The germplasm sources for this variety were University of Georgia experimental populations (75%) and various FGI experimental populations into which the Roundup Ready events were introgressed (25%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2004.

### Area of Probable Adaptation:

This variety is adapted to the Southwest and Winterhardy Intermountain regions. This variety has been tested in California and Idaho. It will be used in the Southwest and Winterhardy Intermountain regions.

### Agronomic & Botanical Characteristics:

Test variety has fall dormancy similar to FD6 checks. Flower color (Syn1) is 100% purple with a trace of yellow, white, cream and variegated. Test variety is "Roundup Ready®" expressing tolerance to Roundup® herbicide conferred by the *cp4-epsps* transgene.

This variety has high resistance to Fusarium wilt, root knot nematode (*M. hapla*) and Southern root knot nematode (*M. incognita*); resistance to anthracnose (Race 1), Phytophthora root rot, Verticillium wilt and spotted alfalfa aphid; with moderate resistance to stem nematode. Reaction to bacterial wilt, pea aphid, blue alfalfa aphid and Aphanomyces root rot has not been tested.

### Procedures for Maintaining Seed Stock:

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Breeder seed was produced in the field near Nampa, ID in 2004. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Production of Syn 2 foundation seed requires the consent of the breeder. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that *cp4-epsps* null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety.)

### Date Certified Seed First Offered for Sale:

Certified seed will be marketed in 2007.

### PVP Information:

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name Alfagraze 600 RR

Experimental Designation(s) FG R84BD31, RR04BD-401

Date NA&MLVRB first accepted this variety January 2007

Date(s) previous amendments were accepted \_\_\_\_\_

Date amendment submitted December 1, 2007

# AmeriStand 407TQ

## Breeding History:

AmeriStand 407TQ is a synthetic variety with 21 parent clones. Parent clones were selected for forage yield, forage quality, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose (Race 1), Phytophthora root rot, and Aphanomyces root rot (Race 1 and Race 2). A combination of genotypic and phenotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: 4A421 (30%), DKA42-15 (25%), WL 357HQ (20%), AmeriStand 403T (20%), and Geneva (5%). Seed was harvested in total on all parents and bulked to form breeder seed.

## Area of Probable Adaptation:

This variety is adapted to the North Central and East Central regions. This variety has been tested in Wisconsin, New York, Pennsylvania and Iowa and is intended for use in the North Central and East Central regions.

## Agronomic & Botanical Characteristics:

Test variety is moderately Fall Dormant, similar to FD4 check. Test variety is very Winterhardy, similar to WS2 check. Flower color (Syn2) is 53% purple, 22% variegated, 11% white, 10% yellow and 4% cream. This variety has high multifoliolate leaf expression.

Test variety has high resistance to anthracnose (Race 1), bacterial wilt, Phytophthora root rot, Verticillium wilt, Fusarium wilt, Aphanomyces root rot (Race 1), stem nematode and pea aphid; resistance to root-knot nematode (*M. hapla*) and spotted alfalfa aphid. Reaction to blue alfalfa aphid has not been tested.

## Procedures for Maintaining Seed Stock:

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. Breeder seed was produced near Nampa, Idaho in 2002. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

## Date Certified Seed First Offered for Sale:

Certified seed will be marketed in 2006.

## PVP Information:

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office

Variety Name AmeriStand 407TQ

Experimental Designation(s) FG 42M134

Date NA&MLVRB first accepted this variety January 2006

Date(s) previous amendments were accepted \_\_\_\_\_

Date amendment submitted December 1, 2007



## AmeriStand 815T RR

### Breeding History:

AmeriStand 815T RR is a synthetic variety with 110 parent plants. Parent plants contain tolerance to Roundup® (glyphosate) herbicide conferred by the CP4 5-enolpyruvylshikimate-3-phosphate synthase (*cp4-epsps*) transgene, specifically, the Roundup Ready® alfalfa transgenic events J101 and/or J163 (OECD unique identifiers: MON-00101-8 and MON-00163-7, respectively). The parent plants trace to breeding populations selected for Roundup herbicide tolerance, winter-active growth, forage yield, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose (Race 1) and Phytophthora root rot. Genotypic selection with event-specific markers was used to identify the parent plants. The germplasm sources for this variety were ABI experimental populations (75%) and various FGI experimental populations into which the Roundup Ready events were introgressed (25%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2004.

### Area of Probable Adaptation:

This variety is adapted to California and the low desert areas of the West. This variety has been tested in California and Idaho. It will be used in the Southwest.

### Agronomic & Botanical Characteristics:

Test variety has fall dormancy similar to FD7 checks. Flower color (Syn1) is 100% purple with a trace of yellow, white, cream and variegated. Test variety is "Roundup Ready®" expressing tolerance to Roundup® herbicide conferred by the *cp4-epsps* transgene. Test variety has improved forage yield under saline stress similar to the salt tolerant check.

This variety has high resistance to Phytophthora root rot; resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, root knot nematode (*M. hapla*), stem nematode, Southern root knot nematode (*M. incognita*) and spotted alfalfa aphid ; with low resistance to Aphanomyces root rot (Race 1). Reaction to Verticillium wilt, pea aphid and blue alfalfa aphid has not been tested.

### Procedures for Maintaining Seed Stock:

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Breeder seed was produced in the field near Nampa, ID in 2004. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Production of Syn 2 foundation seed requires the consent of the breeder. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that *cp4-epsps* null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety.)

### Date Certified Seed First Offered for Sale:

Certified seed will be marketed in 2007.

### PVP Information:

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name AmeriStand 815T RR

Experimental Designation(s) FG R74BD27, RR04BD-409

Date NA&MLVRB first accepted this variety January 2007

Date(s) previous amendments were accepted \_\_\_\_\_

Date amendment submitted December 1, 2007

## AmeriStand 855T RR

### Breeding History:

AmeriStand 855T RR is a synthetic variety with 110 parent plants. Parent plants contain tolerance to Roundup® (glyphosate) herbicide conferred by the CP4 5-enolpyruvylshikimate-3-phosphate synthase (*cp4-epsps*) transgene, specifically, the Roundup Ready® alfalfa transgenic events J101 and/or J163 (OECD unique identifiers: MON-00101-8 and MON-00163-7, respectively). The parent plants trace to breeding populations selected for Roundup tolerance, forage yield, winter active growth, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, anthracnose (Race 1) and Phytophthora root rot. Genotypic selection with event-specific markers was used to identify the parent plants. The germplasm sources for this variety were ABI experimental populations (75%) and various FGI experimental populations into which the Roundup Ready events were introgressed (25%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2004.

### Area of Probable Adaptation:

This variety is adapted to the Southwest. This variety has been tested in California and Idaho. It will be used in the Southwest.

### Agronomic & Botanical Characteristics:

Test variety has fall dormancy similar to FD8 checks. Flower color (Syn1) is 100% purple with a trace of yellow, white, cream and variegated. Test variety is "Roundup Ready®" expressing tolerance to Roundup® herbicide conferred by the *cp4-epsps* transgene. Test variety has improved forage yield under saline stress similar to the salt tolerant check.

This variety has high resistance to Phytophthora root rot and spotted alfalfa aphid; with resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, stem nematode, root knot nematode (*M. hapla*) and Southern root knot nematode (*M. incognita*). Reaction to pea aphid, blue alfalfa aphid, Aphanomyces root rot and Verticillium wilt has not been tested.

### Procedures for Maintaining Seed Stock:

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Breeder seed was produced in the field near Nampa, ID in 2004. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Production of Syn 2 foundation seed requires the consent of the breeder. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that *cp4-epsps* null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety.)

### Date Certified Seed First Offered for Sale:

Certified seed will be marketed in 2007.

### PVP Information:

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name AmeriStand 855T RR

Experimental Designation(s) FG R84BD24, RR04BD-408

Date NA&MLVRB first accepted this variety January 2007

Date(s) previous amendments were accepted \_\_\_\_\_

Date amendment submitted December 1, 2007

# Velocity

## **Breeding History:**

Velocity is a synthetic variety with 13 parent clones. Parent clones were selected for forage yield, forage quality, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose, Phytophthora root rot and Aphanomyces root rot (Race 1 and Race 2). A combination of genotypic and phenotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: Geneva (20%), 4A421 (15%), WL357HQ (10%), 5454 (5%) and various FGI experimental populations (50%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2002.

## **Area of Probable Adaptation:**

Velocity is adapted to the North Central and East Central regions. Velocity has been tested in Wisconsin, New York, Pennsylvania and Iowa and is intended for use in the North Central and East Central regions.

## **Agronomic & Botanical Characteristics:**

Velocity is moderately Fall Dormant, similar to FD4 check. Velocity is very Winterhardy, similar to WS2 check. Flower color (Syn2) is 93% purple, 6% variegated and 1% white with traces of yellow and cream. This variety has high multifoliolate leaf expression. Velocity has high resistance to anthracnose (Race 1), bacterial wilt, Phytophthora root rot, Verticillium wilt, Fusarium wilt, Aphanomyces root rot (Race 1) and pea aphid; with resistance to root-knot nematode (*M. hapla*), spotted alfalfa aphid and stem nematode. Reaction to blue alfalfa aphid has not been tested.

## **Procedures for Maintaining Seed Stock:**

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. Breeder seed (Syn1) was produced in the greenhouse in 2001 and in the field near Nampa, ID in 2002. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

## **Date Certified Seed First Offered for Sale:**

Certified seed will be marketed in 2008.

## **PVP Information:**

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name: Velocity Date submitted December 1, 2007

Experimental designations: FG 42M168

## Desert Sun 8.10RR

### Breeding History:

Desert Sun 8.10RR is a synthetic variety with 110 parent plants. Parent plants contain tolerance to Roundup® (glyphosate) herbicide conferred by the CP4 5-enolpyruvylshikimate-3-phosphate synthase (*cp4-epsps*) transgene, specifically, the Roundup Ready® alfalfa transgenic events J101 and/or J163 (OECD unique identifiers: MON-00101-8 and MON-00163-7, respectively). The parent plants trace to FGI breeding populations selected for Roundup tolerance, forage yield, forage quality, winter active growth, persistence and resistance to one or more of the following pests: Fusarium wilt, anthracnose (Race 1) and Phytophthora root rot. Genotypic selection with event-specific markers was used to identify the parent plants. The germplasm sources for this variety were various FGI experimental populations into which the Roundup Ready events were introgressed. Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2004.

### Area of Probable Adaptation:

This variety is adapted to the Southwest. This variety has been tested in California and Idaho. It will be used in the Southwest.

### Agronomic & Botanical Characteristics:

Test variety has fall dormancy similar to FD8 checks. Flower color (Syn1) is 100% purple with a trace of yellow, white, cream and variegated. Test variety is "Roundup Ready®" expressing tolerance to Roundup® herbicide conferred by the *cp4-epsps* transgene.

This variety has high resistance to Phytophthora root rot, root knot nematode (*M. hapla*) and spotted alfalfa aphid; resistance to anthracnose (Race 1), bacterial wilt and Southern root knot nematode (*M. incognita*), with moderate resistance to Fusarium wilt and stem nematode. Reaction to pea aphid, blue alfalfa aphid, Aphanomyces root rot and Verticillium wilt has not been tested.

### Procedures for Maintaining Seed Stock:

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Breeder seed was produced in the field near Nampa, ID in 2004. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Production of Syn 2 foundation seed requires the consent of the breeder. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that *cp4-epsps* null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety.)

### Date Certified Seed First Offered for Sale:

Certified seed will be marketed in 2007.

### PVP Information:

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name Desert Sun 8.10RR

Experimental Designation(s) FG R84BD23, RR04BD-406

Date NA&MLVRB first accepted this variety January 2007

Date(s) previous amendments were accepted \_\_\_\_\_

Date amendment submitted December 1, 2007

## Denali 4.10RR

### Breeding History:

Denali 4.10RR is a synthetic variety with 110 parent plants. Parent plants contain tolerance to Roundup® (glyphosate) herbicide conferred by the CP4 5-enolpyruvylshikimate-3-phosphate synthase (*cp4-epsps*) transgene, specifically, the Roundup Ready® alfalfa transgenic events J101 and/or J163 (OECD unique identifiers: MON-00101-8 and MON-00163-7, respectively). The parent plants trace to FGI breeding populations selected for Roundup tolerance, forage yield, forage quality, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose (Race 1), Phytophthora root rot, and Aphanomyces root rot (Race 1 and Race 2). Genotypic selection with event-specific markers was used to identify the parent plants. The germplasm sources for this variety were various FGI experimental populations into which the Roundup Ready events were introgressed. Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2004.

### Area of Probable Adaptation:

This variety is adapted to the Moderately Winterhardy Intermountain and Winterhardy Intermountain regions. This variety has been tested in Idaho, Washington and Colorado, and is intended for use in the Moderately Winterhardy Intermountain and Winterhardy Intermountain regions.

### Agronomic & Botanical Characteristics:

Test variety is Moderately Dormant, similar to FD4 check. Test variety is Very Winterhardy, similar to WS2 check. Flower color (Syn2) is 98% purple and 2% variegated with a trace of yellow, cream and white. This variety has high multifoliolate leaf expression. Test variety is "Roundup Ready®" expressing tolerance to Roundup® herbicide conferred by the *cp4-epsps* transgene.

Test variety has high resistance to anthracnose (Race 1), bacterial wilt, Phytophthora root rot, Verticillium wilt, Fusarium wilt, Aphanomyces root rot (Race 1) and stem nematode; with resistance to root-knot nematode (*M. hapla*). Reaction to blue alfalfa aphid, spotted alfalfa aphid and pea aphid has not been tested.

### Procedures for Maintaining Seed Stock:

Seed increase is on a limited generation basis with one generation each of breeder and foundation and two generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Production of Syn 2 foundation seed requires consent of the breeder. Breeder seed (Syn1) was produced in the greenhouse in 2003 and in the field near Nampa, ID in 2004. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that *cp4-epsps* null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety.)

### Date Certified Seed First Offered for Sale:

Certified seed will be marketed in 2007.

### PVP Information:

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name Denali 4.10RR

Experimental Designation(s) FG R44BD15

Date NA&MLVRB first accepted this variety January 2007

Date(s) previous amendments were accepted \_\_\_\_\_

Date amendment submitted December 1, 2007

## Transition 6.10RR

### Breeding History:

Transition 6.10RR is a synthetic variety with 110 parent plants. Parent plants contain tolerance to Roundup® (glyphosate) herbicide conferred by the CP4 5-enolpyruvylshikimate-3-phosphate synthase (*cp4-epsps*) transgene, specifically, the Roundup Ready® alfalfa transgenic events J101 and/or J163 (OECD unique identifiers: MON-00101-8 and MON-00163-7, respectively). The parent plants trace to FGI breeding populations selected for Roundup tolerance, forage yield, forage quality, winter active growth, persistence and resistance to one or more of the following pests: Fusarium wilt, anthracnose (Race 1) and Phytophthora root rot. Genotypic selection with event-specific markers was used to identify the parent plants. The germplasm sources for this variety were various FGI experimental populations into which the Roundup Ready events were introgressed. Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2004.

### Area of Probable Adaptation:

This variety is adapted to California and the low desert areas of the West. This variety has been tested in California and Idaho. It will be used in the Southwest and Winterhardy Intermountain regions.

### Agronomic & Botanical Characteristics:

Test variety has fall dormancy similar to FD6 checks. Flower color (Syn1) is 100% purple with a trace of yellow, white, cream and variegated. Test variety is "Roundup Ready®" expressing tolerance to Roundup® herbicide conferred by the *cp4-epsps* transgene.

This variety has high resistance to Phytophthora root rot and pea aphid; resistance to anthracnose (Race 1), Fusarium wilt, bacterial wilt, Verticillium wilt, root knot nematode (*M. hapla*) and spotted alfalfa aphid; with moderate resistance to stem nematode. Reaction to blue alfalfa aphid and Aphanomyces root rot has not been tested.

### Procedures for Maintaining Seed Stock:

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Breeder seed was produced in the field near Nampa, ID in 2004. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Production of Syn 2 foundation seed requires the consent of the breeder. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that *cp4-epsps* null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety).

### Date Certified Seed First Offered for Sale:

Certified seed will be marketed in 2007.

### PVP Information:

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name Transition 6.10RR

Experimental Designation(s) FG R74BD28, RR04BD-487

Date NA&MLVRB first accepted this variety January 2007

Date(s) previous amendments were accepted \_\_\_\_\_

Date amendment submitted December 1, 2007

## RRALF 8R100

### Breeding History:

RRALF 8R100 is a synthetic variety with 110 parent plants. Parent plants contain tolerance to Roundup® (glyphosate) herbicide conferred by the CP4 5-enolpyruvylshikimate-3-phosphate synthase (*cp4-epsps*) transgene, specifically, the Roundup Ready® alfalfa transgenic events J101 and/or J163 (OECD unique identifiers: MON-00101-8 and MON-00163-7, respectively). The parent plants trace to FGI breeding populations selected for Roundup tolerance, forage yield, winter-active growth, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, anthracnose (Race 1) and Phytophthora root rot. Genotypic selection with event-specific markers was used to identify the parent plants. The germplasm sources for this variety were various FGI experimental populations into which the Roundup Ready events were introgressed. Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2004.

### Area of Probable Adaptation:

This variety is adapted to the Southwest. This variety has been tested in California and Idaho. It will be used in the Southwest.

### Agronomic & Botanical Characteristics:

Test variety has fall dormancy similar to FD8 checks. Flower color (Syn1) is 100% purple with a trace of yellow, white, cream and variegated. Test variety is "Roundup Ready®" expressing tolerance to Roundup® herbicide conferred by the *cp4-epsps* transgene.

This variety has high resistance to Phytophthora root rot, root knot nematode (*M. hapla*) and spotted alfalfa aphid; resistance to anthracnose (Race), bacterial wilt, Fusarium wilt and Southern root knot nematode (*m. incognita*); with moderate resistance to stem nematode. Reaction to Verticillium wilt, Aphanomyces root rot, pea aphid and blue alfalfa aphid has not been tested.

### Procedures for Maintaining Seed Stock:

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Breeder seed was produced in the field near Nampa, ID in 2004. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Production of Syn 2 foundation seed requires the consent of the breeder. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that *cp4-epsps* null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety.)

### Date Certified Seed First Offered for Sale:

Certified seed will be marketed in 2007.

### PVP Information:

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name RRALF 8R100

Experimental Designation(s) FG R84BD22, RR04BD-454

Date NA&MLVRB first accepted this variety January 2007

Date(s) previous amendments were accepted \_\_\_\_\_

Date amendment submitted December 1, 2007

## 6417

### **Breeding History:**

6417 is a synthetic variety with 110 parent plants. Parent plants trace to Aphanomyces (Race 1 and Race 2) selections from populations previously selected for forage yield, forage quality, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose (Race 1), Phytophthora root rot, and Aphanomyces root rot (Race 1 and Race 2). Phenotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2004.

### **Area of Probable Adaptation:**

This variety is adapted to the North Central and East Central regions. This variety has been tested in Wisconsin, Indiana and Iowa and is intended for use in the North Central and East Central regions.

### **Agronomic & Botanical Characteristics:**

Test variety is moderately Fall Dormant, similar to FD4 check. Test variety is very Winterhardy, similar to WS2 check. Flower color (Syn2) is 95% purple, 4% variegated and 1% yellow with a trace of white and cream. This variety has high multifoliolate leaf expression.

Test variety has high resistance to anthracnose (Race 1), bacterial wilt, Phytophthora root rot, Verticillium wilt, Fusarium wilt, Aphanomyces root rot (Race 1), Aphanomyces root rot (Race 2) and pea aphid; with resistance to stem nematode. Reaction to blue alfalfa aphid, spotted alfalfa aphid and root-knot nematode (*M. hapla*) has not been tested.

### **Procedures for Maintaining Seed Stock:**

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. Breeder seed (Syn1) was produced in the greenhouse in 2003 and in the field near Nampa, ID in 2004. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed will be marketed in 2007.

### **PVP Information:**

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name 6417

Experimental Designation(s) FG 54A155

Date NA&MLVRB first accepted this variety January 2007

Date(s) previous amendments were accepted \_\_\_\_\_

Date amendment submitted December 1, 2007



## 6552

### **Breeding History:**

6552 is a synthetic variety with 15 parent clones. Parent clones were selected for forage yield, forage quality, persistence and/or resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose, Phytophthora root rot, stem nematode, northern root-knot nematode and Aphanomyces root rot (Race 1 and Race 2). A combination of genotypic and phenotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: WL 357HQ (25%), Genoa (10%), 6415 (10%) and various FGI experimental populations (55%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2004.

### **Area of Probable Adaptation:**

6552 is adapted to the North Central and East Central regions. 6552 has been tested in Wisconsin, Indiana, Nebraska and Iowa and is intended for use in the North Central and East Central regions.

### **Agronomic & Botanical Characteristics:**

6552 is moderately Fall Dormant, similar to FD5 check. 6552 is very Winterhardy, similar to WS2 check. Flower color (Syn2) is 94% purple, 4% variegated, 1% yellow and 1% white with a trace of cream. This variety has high multifoliolate leaf expression. Test variety has high resistance to anthracnose (Race 1), bacterial wilt, Phytophthora root rot, Verticillium wilt, Fusarium wilt and Aphanomyces root rot (Race 1); with resistance to pea aphid and stem nematode. Reaction to blue alfalfa aphid, root-knot nematode (*M. hapla*) and spotted alfalfa aphid has not been tested.

### **Procedures for Maintaining Seed Stock:**

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. Breeder seed (Syn1) was produced in the greenhouse in 2003 and in the field near Nampa, ID in 2004. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed will be marketed in 2008.

### **PVP Information:**

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name: 6552 Date submitted December 1, 2007

Experimental designations: FG 54M152

## DKA84-10RR

### Breeding History:

DKA84-10RR is a synthetic variety with 110 parent plants. Parent plants contain tolerance to Roundup® (glyphosate) herbicide conferred by the CP4 5-enolpyruvylshikimate-3-phosphate synthase (*cp4-epsps*) transgene, specifically, the Roundup Ready® alfalfa transgenic events J101 and/or J163 (OECD unique identifiers: MON-00101-8 and MON-00163-7, respectively). The parent plants trace to FG breeding populations selected for Roundup tolerance, forage yield, winter-active growth, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose (Race 1), Phytophthora root rot and Aphanomyces root rot (Race1 and/or Race2). Genotypic selection with event-specific markers was used to identify the parent plants. The germplasm sources for this variety were various FGI experimental populations into which the Roundup Ready events J101 and J163 were introgressed. Breeder seed (Syn 1) was produced near Nampa, Idaho in 2003. Seed was harvested in total on all parents and bulked to form breeder seed.

### Area of Probable Adaptation:

This variety is adapted to California and the low desert areas of the West. This variety has been tested in California. It will be used in the Southwest.

### Agronomic & Botanical Characteristics:

Test variety has fall dormancy similar to FD8 checks. Flower color (Syn2) is 100% purple with a trace of yellow, white, cream and variegated. Test variety is "Roundup Ready®" expressing tolerance to Roundup® herbicide conferred by the *cp4-epsps* transgene.

This variety has high resistance to anthracnose (Race), Fusarium wilt, Phytophthora root rot, pea aphid, spotted alfalfa aphid, blue alfalfa aphid, root knot nematode (*M. hapla*) and stem nematode; resistance to bacterial wilt and Southern root knot nematode (*M. incognita*); with moderate resistance to Verticillium wilt. Reaction to Aphanomyces root rot has not been tested.

### Procedures for Maintaining Seed Stock:

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Breeder seed was produced in the field near Nampa, ID in 2003. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Production of Syn2 foundation seed requires the consent of the breeder. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that *cp4-epsps* null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety).

### Date Certified Seed First Offered for Sale:

Certified seed will be marketed in 2006.

### PVP Information:

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name DKA84-10RR

Experimental Designation(s) FG R83T907; RR03BD-140

Date NA&MLVRB first accepted this variety January 2006

Date(s) previous amendments were accepted \_\_\_\_\_

Date amendment submitted December 1, 2007

## Phabulous III

### Breeding History:

Phabulous III is a synthetic variety with 110 parent plants. Parent plants are Aphanomyces (Race 1 and/or Race 2) resistant selections from populations selected for forage yield, forage quality, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose, Phytophthora root rot and Aphanomyces root rot (Race1 and Race2). Phenotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: Phabulous II (50%) and various FGI experimental populations (50%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2003.

### Area of Probable Adaptation:

Phabulous III is adapted to the North Central and East Central regions. Phabulous III has been tested in Wisconsin, Indiana, Pennsylvania and Iowa and is intended for use in the North Central and East Central regions.

### Agronomic & Botanical Characteristics:

Phabulous III is moderately Fall Dormant, similar to FD4 check. Phabulous III is very Winterhardy, similar to WS2 check. Flower color (Syn2) is 93% purple, 4% variegated, 2% white and 1% yellow with a trace of cream. This variety has high multifoliolate leaf expression. Phabulous III has high resistance to anthracnose (Race 1), bacterial wilt, Phytophthora root rot, Verticillium wilt, Fusarium wilt, Aphanomyces root rot (Race 1) and Aphanomyces root rot (Race 2); with resistance to pea aphid, root-knot nematode (*M. hapla*), spotted alfalfa aphid, and stem nematode. Reaction to blue alfalfa aphid has not been tested.

### Procedures for Maintaining Seed Stock:

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. Breeder seed (Syn1) was produced in the greenhouse in 2002 and in the field near Nampa, ID in 2003. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### Date Certified Seed First Offered for Sale:

Certified seed will be marketed in 2008.

### PVP Information:

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name: Phabulous III Date submitted December 1, 2007

Experimental designations: FG 43A132

# Integra 8600

## Breeding History:

Integra 8600 is a synthetic variety with 120 parent plants. Parent plants were selected for winter-active growth, high forage yield and persistence from older trials and/or nurseries. Recurrent phenotypic selection was used to develop source populations and identify parent plants. Germplasm sources used in developing this cultivar were P5683 (50%) and Aurora (50%). Breeder seed (Syn 1) was produced near Nampa, Idaho in 2001. Seed was harvested in total on all parents and bulked to form breeder seed.

## Area of Probable Adaptation:

This variety is adapted to California and the low desert areas of the Southwest. This variety has been tested in California. It will be used in the Southwest.

## Agronomic & Botanical Characteristics:

Test variety has fall dormancy similar to FD6 checks. Flower color (Syn2) is 100% purple with traces of white, cream, variegated and yellow.

This variety has high resistance to pea aphid, spotted alfalfa aphid, blue alfalfa aphid and root-knot nematode (*M. hapla*); resistance to anthracnose (Race 1), Fusarium wilt, Phytophthora root rot and stem nematode; with moderate resistance to Verticillium wilt and Aphanomyces root rot (Race 1). Reaction to bacterial wilt has not been tested.

## Procedures for Maintaining Seed Stock:

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. Breeder seed was produced in the field near Nampa, ID in 2001. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

## Date Certified Seed First Offered for Sale:

Certified seed will be marketed in 2006.

## PVP Information:

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name Integra 8600

Experimental Designation(s) FG 71T004

Date NA&MLVRB first accepted this variety January 2006

Date(s) previous amendments were accepted \_\_\_\_\_

Date amendment submitted December 1, 2007

## Integra 8801R

### Breeding History:

Integra 8801R is a synthetic variety with 110 parent plants. Parent plants contain tolerance to Roundup® (glyphosate) herbicide conferred by the CP4 5-enolpyruvylshikimate-3-phosphate synthase (*cp4-epsps*) transgene, specifically, the Roundup Ready® alfalfa transgenic events J101 and/or J163 (OECD unique identifiers: MON-00101-8 and MON-00163-7, respectively). The parent plants trace to FGI breeding populations selected for Roundup tolerance, forage yield, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, anthracnose (Race 1) and Phytophthora root rot. Genotypic selection with event-specific markers was used to identify the parent plants. The germplasm sources for this variety were various FGI experimental populations into which the Roundup Ready events were introgressed. Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2004.

### Area of Probable Adaptation:

This variety is adapted to California and the low desert areas of the West. This variety has been tested in California and Idaho. It will be used in the Southwest.

### Agronomic & Botanical Characteristics:

Test variety has fall dormancy similar to FD8 checks. Flower color (Syn1) is 100% purple with a trace of yellow, white, cream and variegated. Test variety is "Roundup Ready®" expressing tolerance to Roundup® herbicide conferred by the *cp4-epsps* transgene.

This variety has high resistance to Phytophthora root rot, root knot nematode (*M. hapla*) and Southern root knot nematode (*M. incognita*); resistance to bacterial wilt, Fusarium wilt and spotted alfalfa aphid; with moderate resistance to anthracnose (Race1) and stem nematode. Reaction to pea aphid, blue alfalfa aphid, Aphanomyces root rot (Race 1) and Verticillium wilt has not been tested.

### Procedures for Maintaining Seed Stock:

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Breeder seed was produced in the field near Nampa, ID in 2004. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Production of Syn 2 foundation seed requires the consent of the breeder. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that *cp4-epsps* null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety.)

### Date Certified Seed First Offered for Sale:

Certified seed will be marketed in 2007.

### PVP Information:

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name Integra 8801R

Experimental Designation(s) FG R84BD20, RR04BD-407

Date NA&MLVRB first accepted this variety January 2007

Date(s) previous amendments were accepted \_\_\_\_\_

Date amendment submitted December 1, 2007

## WL 363HQ

### **Breeding History:**

WL 363HQ is a synthetic variety with 17 parent clones. Parent clones were selected for forage yield, forage quality, persistence and/or resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose, Phytophthora root rot, stem nematode, northern root-knot nematode and Aphanomyces root rot (Race 1 and Race 2). A combination of genotypic and phenotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: WL357HQ (50%), Masterpiece (10%) and various FGI experimental populations (40%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2004.

### **Area of Probable Adaptation:**

WL 363HQ is adapted to the North Central and East Central regions. WL 363HQ has been tested in Wisconsin, Indiana, Pennsylvania and Iowa and is intended for use in the North Central and East Central regions.

### **Agronomic & Botanical Characteristics:**

WL 363HQ is moderately Fall Dormant, similar to FD5 check. WL 363HQ is extremely Winterhardy, similar to WS1 check. Flower color (Syn2) is 92% purple, 7% variegated, 1% cream with traces of yellow and white. WL 363HQ has high multifoliolate leaf expression. Test variety has high resistance to anthracnose (Race 1), bacterial wilt, Phytophthora root rot, Verticillium wilt, Fusarium wilt, Aphanomyces root rot (Race 1), pea aphid, root-knot nematode (*M. hapla*) and stem nematode. Reaction to blue alfalfa aphid and spotted alfalfa aphid has not been tested.

### **Procedures for Maintaining Seed Stock:**

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. Breeder seed (Syn1) was produced in the greenhouse in 2001 and in the field near Nampa, ID in 2002. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed will be marketed in 2008.

### **PVP Information:**

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name: WL 363HQ Date submitted December 1, 2007

Experimental designations: FG 52M150

## WL 550RR

### Breeding History:

WL 550RR is a synthetic variety with 120 parent plants. Parent plants contain tolerance to Roundup® (glyphosate) herbicide conferred by the CP4 5-enolpyruvylshikimate-3-phosphate synthase (*cp4-epsps*) transgene, specifically, the Roundup Ready® alfalfa transgenic events J101 and/or J163 (OECD unique identifiers: MON-00101-8 and MON-00163-7, respectively). The parent plants trace to FG breeding populations selected for Roundup tolerance, forage yield, winter-active growth, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose (Race 1), Phytophthora root rot, and Aphanomyces root rot (Race1 and/or Race2). Genotypic selection with event-specific markers was used to identify the parent plants. The germplasm sources for this variety were various FG experimental populations into which the Roundup Ready events J101 and J163 were introgressed. Breeder seed (Syn 1) was produced near Nampa, Idaho in 2003. Seed was harvested in total on all parents and bulked to form breeder seed.

### Area of Probable Adaptation:

This variety is adapted to California and the low desert areas of the west. This variety has been tested in California. It will be used in the Southwest.

### Agronomic & Botanical Characteristics:

Test variety has fall dormancy similar to FD8 checks. Flower color (Syn2) is 100% purple. Test variety is "Roundup Ready" with a minimum of 90% of the plants expressing tolerance to Roundup herbicide as measured in a greenhouse grow-out seedling evaluation.

This variety has high resistance to anthracnose, bacterial wilt, Fusarium wilt, pea aphid, blue alfalfa aphid and Southern root knot nematode (*M. incognita*); resistance to Phytophthora root rot, spotted alfalfa aphid, root knot nematode (N) and stem nematode; and moderate resistance to Verticillium wilt; Reaction to Aphanomyces root rot has not been tested.

### Procedures for Maintaining Seed Stock:

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Breeder seed was produced in the field near Nampa, ID in 2003. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### Date Certified Seed First Offered for Sale:

Certified seed will be marketed in 2006.

### PVP Information:

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name WL 550RR

Experimental Designation(s) FG R83T906, RR03BD-101

Date NA&MLVRB first accepted this variety January 2006

Date(s) previous amendments were accepted \_\_\_\_\_

Date amendment submitted December 1, 2007

# WL 660RR

## Breeding History:

WL 660RR is a synthetic variety with 110 parent plants. Parent plants contain tolerance to Roundup® (glyphosate) herbicide conferred by the CP4 5-enolpyruvylshikimate-3-phosphate synthase (cp4-epsps) transgene, specifically, the Roundup Ready® alfalfa transgenic events J101 and/or J163 (OECD unique identifiers: MON-00101-8 and MON-00163-7, respectively). The parent plants trace to FGI breeding populations selected for Roundup herbicide tolerance, forage yield, winter-active growth, persistence and resistance to one or more of the following pests: Fusarium wilt, anthracnose (Race1) and Phytophthora root rot. Genotypic selection with event-specific markers was used to identify the parent plants. The germplasm sources for this variety were various FGI experimental populations into which the Roundup Ready events were introgressed. Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2004.

## Area of Probable Adaptation:

This variety is adapted to the Southwest. This variety has been tested in California and Idaho. It will be used in the Southwest.

## Agronomic & Botanical Characteristics:

Test variety has fall dormancy similar to FD9 checks. Flower color (Syn1) is 100% purple with a trace of yellow, white, cream and variegated. Test variety is "Roundup Ready®" expressing tolerance to Roundup® herbicide conferred by the *cp4-epsps* transgene.

This variety has high resistance to Phytophthora root rot, root knot nematode (*M. hapla*) and Southern root knot nematode (*M. incognita*); resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, spotted alfalfa aphid, and stem nematode; with low resistance to Aphanomyces root rot (Race 1). Reaction to pea aphid, blue alfalfa aphid and Verticillium wilt has not been tested.

## Procedures for Maintaining Seed Stock:

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Breeder seed was produced in the field near Nampa, ID in 2004. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Production of Syn 2 foundation seed requires the consent of the breeder. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that *cp4-epsps* null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety.)

## Date Certified Seed First Offered for Sale:

Certified seed will be marketed in 2007.

## PVP Information:

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name WL 660RR

Experimental Designation(s) FG R94BD21, RR04BD-436

Date NA&MLVRB first accepted this variety January 2007

Date(s) previous amendments were accepted \_\_\_\_\_

Date amendment submitted December 1, 2007



## Pinal 9

### Breeding History:

Pinal 9 is a synthetic variety with 110 parent plants. Parent plants contain tolerance to Roundup® (glyphosate) herbicide conferred by the CP4 5-enolpyruvylshikimate-3-phosphate synthase (cp4-epsps) transgene, specifically, the Roundup Ready® alfalfa transgenic events J101 and/or J163 (OECD unique identifiers: MON-00101-8 and MON-00163-7, respectively). The parent plants trace to FGI breeding populations selected for Roundup tolerance, forage yield, winter-active growth, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, anthracnose (Race 1) and Phytophthora root rot. Genotypic selection with event-specific markers was used to identify the parent plants. The germplasm sources for this variety were various FGI experimental populations into which the Roundup Ready events were introgressed(100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2004.

### Area of Probable Adaptation:

This variety is adapted to the Southwest. This variety has been tested in California and Idaho. It will be used in the Southwest.

### Agronomic & Botanical Characteristics:

Test variety has fall dormancy similar to FD9 checks. Flower color (Syn1) is 100% purple with a trace of yellow, white, cream and variegated. Test variety is "Roundup Ready®" expressing tolerance to Roundup® herbicide conferred by the *cp4-epsps* transgene.

This variety has high resistance to Phytophthora root rot, root knot nematode (*M. hapla*) and spotted alfalfa aphid; with resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt and stem nematode. Reaction to Aphanomyces root rot, pea aphid, blue alfalfa aphid and Verticillium wilt has not been tested.

### Procedures for Maintaining Seed Stock:

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Breeder seed was produced in the field near Nampa, ID in 2004. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Production of Syn 2 foundation seed requires the consent of the breeder. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that *cp4-epsps* null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety.)

### Date Certified Seed First Offered for Sale:

Certified seed will be marketed in 2007.

### PVP Information:

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name Pinal 9

Experimental Designation(s) FG R94BD25

Date NA&MLVRB first accepted this variety January 2007

Date(s) previous amendments were accepted \_\_\_\_\_

Date amendment submitted December 1, 2007

# Revolution

## Breeding History:

Revolution is a synthetic variety with 120 parent plants. Parent plants contain tolerance to Roundup® (glyphosate) herbicide conferred by the CP4 5-enolpyruvylshikimate-3-phosphate synthase (*cp4-epsps*) transgene, specifically, the Roundup Ready® alfalfa transgenic events J101 and/or J163 (OECD unique identifiers: MON-00101-8 and MON-00163-7, respectively). The parent plants trace to FG breeding populations selected for Roundup tolerance, forage yield, winter-active growth, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose (Race 1), Phytophthora root rot, and Aphanomyces root rot (Race1 and/or Race2). Genotypic selection with event-specific markers was used to identify the parent plants. The germplasm sources for this variety were various FG experimental populations into which the Roundup Ready events J101 and J163 were introgressed. Breeder seed (Syn 1) was produced near Nampa, Idaho in 2003. Seed was harvested in total on all parents and bulked to form breeder seed.

## Area of Probable Adaptation:

This variety is adapted to California and the low desert areas of the West. This variety has been tested in California. It will be used in the Southwest.

## Agronomic & Botanical Characteristics:

Test variety has fall dormancy similar to FD8 checks. Flower color (Syn2) is 100% purple with a trace of yellow, white, cream and variegated. Test variety is "Roundup Ready®" expressing tolerance to Roundup® herbicide conferred by the *cp4-epsps* transgene.

This variety has high resistance to anthracnose (Race 1), Bacterial wilt, Fusarium wilt, Phytophthora root rot, pea aphid, spotted alfalfa aphid, root-knot nematode (*M. hapla*), Southern root knot nematode (*M. incognita*), blue alfalfa aphid and stem nematode; with moderate resistance to Verticillium wilt. Reaction to Aphanomyces root rot has not been tested

## Procedures for Maintaining Seed Stock:

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Breeder seed was produced in the field near Nampa, ID in 2003. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Production of Syn2 foundation seed requires the consent of the breeder. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that *cp4-epsps* null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety).

## Date Certified Seed First Offered for Sale:

Certified seed will be marketed in 2006.

## PVP Information:

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name Revolution

Experimental Designation(s) R83T905, RR03BD-181

Date NA&MLVRB first accepted this variety January 2006

Date(s) previous amendments were accepted \_\_\_\_\_

Date amendment submitted December 1, 2007

## **04FQEXP1** (Experimental Designation)

### **Breeding History:**

04FQEXP1 is a synthetic variety with 14 parent clones. The selection criteria used in the development of this variety include forage yield, forage quality, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose (Race 1), Phytophthora root rot, and Aphanomyces root rot (Race 1). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2000.

### **Area of Probable Adaptation:**

04FQEXP1 is adapted to the North Central, East Central and Moderately Winterhardy Intermountain regions of the US. This variety has been tested in Wisconsin, Washington, Illinois and Iowa, and is intended for use in the North Central, East Central, Moderately Winterhardy Intermountain, Winterhardy Intermountain, Great Plains regions of the US and Canada.

### **Agronomic & Botanical Characteristics:**

Test variety is Moderately Dormant, similar to FD4 check. Flower color (Syn2) is 76% purple, 23% variegated and 1% cream with a trace of yellow and white. 04FQEXP1 has high resistance to anthracnose (Race 1), bacterial wilt, Phytophthora root rot, Verticillium wilt, Fusarium wilt, Aphanomyces root rot (Race 1); with resistance to spotted alfalfa aphid, pea aphid and root-knot nematode (*M. hapla*); and low resistance to stem nematode,. Reaction to blue alfalfa aphid has not been tested.

### **Procedures for Maintaining Seed Stock:**

Seed increase is on a limited generation basis with one generation each of breeder and foundation and two generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2 or Syn 3), and certified (Syn 3, Syn 4 or Syn 5) classes will be recognized. Production of Syn 2 or Syn 3 foundation seed requires consent of the breeder. Breeder seed was produced in the field near Nampa Idaho in 2000. Pioneer Hi-Bred International will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

### **Date Certified Seed First Offered for Sale:**

Certified seed may be marketed in 2008.

### **PVP Information:**

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name:

Date submitted December 3, 2007

Experimental designations: 04FQEXP1

## 58R51

### **Breeding History:**

58R51 is a synthetic variety with 110 parent plants. Parent plants contain tolerance to Roundup® (glyphosate) herbicide conferred by the CP4 5-enolpyruvylshikimate-3-phosphate synthase (*cp4-epsps*) transgene, specifically, the Roundup Ready® alfalfa transgenic events J101 and/or J163 (OECD unique identifiers: MON-00101-8 and MON-00163-7, respectively). The parent plants trace to breeding populations selected for Roundup tolerance, forage yield, winter active growth, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, anthracnose (Race 1) and Phytophthora root rot. Genotypic selection with event-specific markers was used to identify the parent plants. The germplasm sources for this variety are various FGI experimental populations into which the Roundup Ready events were introgressed (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2004.

### **Area of Probable Adaptation:**

This variety is adapted to California and the low desert areas of the West. This variety has been tested in California and Idaho. It will be used in the Southwest.

### **Agronomic & Botanical Characteristics:**

Test variety Non-Dormant, similar to FD8 check. Flower color (Syn2) is 100% purple with a trace of variegated, cream, yellow and white. Test variety is "Roundup Ready®" expressing tolerance to Roundup® herbicide conferred by the *cp4-epsps* transgene. This variety has high resistance to Fusarium wilt, Phytophthora root rot, pea aphid, spotted alfalfa aphid and stem nematode; resistance to anthracnose (Race 1) and blue alfalfa aphid; with moderate resistance to bacterial wilt and Verticillium wilt. Reaction to Aphanomyces root rot (Race 1) and root knot nematode (*M. hapla*) has not been tested.

### **Procedures for Maintaining Seed Stock:**

Seed increase is on a limited generation basis with one generation of breeder and two generations of foundation and certified seed classes. Breeder (Syn 1), foundation (Syn 2) and certified (Syn 2 or Syn 3) classes will be recognized. Breeder seed was produced in the field near Nampa, ID in 2004. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Production of Syn 2 foundation seed requires the consent of the breeder. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that *cp4-epsps* null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety.)

### **Date Certified Seed First Offered for Sale:**

Certified seed may be marketed in 2009.

### **PVP Information:**

No decision has been made concerning Plant Variety Protection Act. The information in this application may not be forwarded to the PVP office.

Variety Name: 58R51 Date submitted December 3, 2007

Experimental designations: FG R84BD32

## RC9603 Red Clover

### **Breeding History:**

RC9603 red clover was developed using phenotypic recurrent selection. In April 1993 a 3-replicate red clover trial with 18 entries was seeded at Battle Ground, IN. A total of 5 harvests (3 in 1994, 2 in 1995) were taken on the trial. In April 1996, 25 plants each of the following entries in this trial were dug: Cinnamon, Royal Red, RC8801, and RC9101 (tracing to 34% Persist, 34% Red Star, and 32% Renegade). These plants were selected for vigor and healthy crowns, and were transplanted into a crossing block at Battle Ground, and seed bulk harvested in August 1996. The resulting population was screened in the greenhouse at Battle Ground one cycle for resistance to one or more of the following: northern and southern anthracnose, and powdery mildew. Approximately 300 screened plants were sent to Touchet, WA in April 1997 for seed production in 1998. This seed was used to establish a breeder seed block in isolation at Touchet for the production of syn-1 breeder seed in 1999, sufficient for the life of the variety.

### **Area of Probable Adaptation:**

RC9603 is adapted to the north central and east central United States, and is intended for use in those areas. It has been tested in Indiana, Kentucky, Michigan, New York, Ohio, Pennsylvania, Tennessee, and Wisconsin.

### **Agronomic & Botanical Characteristics:**

RC9603 is a diploid medium red clover. Its flower color is 19% red, 38% dark pink, 35% medium pink, and 8% light pink. Approximately 69% of the plants exhibit leaf marks, and 91.7% have hair on the stems. RC9603 is highly resistant to southern anthracnose and powdery mildew. Approximately 70% of the plants bloom in the seeding year. RC9603 reaches 50% bloom approximately 4 days earlier than Arlington, and 1 day later than Kenland in the spring growth of the first year after seeding.

### **Procedures for Maintaining Seed Stock:**

Seed increase of RC9603 is limited to one generation of breeder (syn-1), two generations of foundation (syn-2 or 3), and three generations of certified (syn-2, 3, or 4) classes. Breeder seed was produced in 1999 sufficient for the life of the variety, and is maintained in cold storage by FFR Cooperative. Length of stand allowed is 2 years and 3 years each of the foundation and certified classes, respectively. Production of foundation seed is limited to the northwest United States.

### **Date Certified Seed First Offered for Sale:**

Certified seed will first be offered for sale in 2008.

### **PVP Information:**

Application will not be made for Plant Variety Protection. Information in this application may be forwarded to the PVP office.

Variety name:

Date Submitted: November 30, 2007

Experimental designation: RC9603

## RC9703 Red Clover

### **Breeding History:**

RC9703 red clover was developed using phenotypic recurrent selection. In April 1994, a 3-replicate red clover trial with 14 entries was seeded at Otterbein, IN. A total of 6 harvests (3 in 1995, 3 in 1996) were taken on the trial. In April 1997, 86 total plants exhibiting vigorous growth and healthy crowns were dug from the following entries: RC9102 (19), Royal Red (17), Cinnamon (12), RC9101 (10), Scarlett (10), RC9103 (9), Plus (8), and RC8801 (1). These were transplanted into a crossing block at Battle Ground, IN, and seed bulk harvested in August 1997. The resulting population was screened in the greenhouse at Battle Ground 3 cycles for resistance to one or more of the following diseases: northern and southern anthracnose, powdery mildew, and *Mycoleptodiscus* root rot. Approximately 300 screened plants were sent to Touchet, WA in April 2000 for breeder seed (syn-1) production in 2001, sufficient for the life of the variety.

### **Area of Probable Adaptation:**

RC9703 is adapted to the north central and east central United States, and is intended for use in those areas. It has been tested in Indiana, Illinois, Kentucky, Ohio, Pennsylvania, Tennessee, and Wisconsin.

### **Agronomic & Botanical Characteristics:**

RC9703 is a diploid medium red clover. Its flower color is 11% red, 36% dark pink, 35% medium pink, and 18% light pink. Approximately 73% of the plants exhibit leaf marks, and 87% have hair on the stems. RC9703 is resistant to powdery mildew and southern anthracnose, and moderately resistant to northern anthracnose. Approximately 71% of the plants bloom in the seeding year. RC9703 reaches 50% bloom approximately 5 days earlier than Arlington in the spring growth of the first year after seeding.

### **Procedures for Maintaining Seed Stock:**

Seed increase of RC9703 is limited to one generation of breeder (syn-1), two generations of foundation (syn-2 or 3), and three generations of certified (syn-2, 3, or 4) classes. Breeder seed was produced in 2001 sufficient for the life of the variety, and is maintained in cold storage by FFR Cooperative. Length of stand allowed is 2 years and 3 years each of the foundation and certified classes, respectively. Production of foundation seed is limited to the northwest United States.

### **Date Certified Seed First Offered for Sale:**

Certified seed will first be offered for sale in 2008.

### **PVP Information:**

Application will not be made for Plant Variety Protection. Information in this application may be forwarded to the PVP office.

Variety name:

Date Submitted: November 30, 2007

Experimental designation: RC9703

## **Insight White Clover**

### **Breeding History:**

Insight white clover was developed using mass selection. Approximately equal numbers of plants from each of the following germplasm sources were established in a spaced-plant nursery at Pintlala, AL: Osceola, CW600, SRVR, VS700, Regal, California Ladino, Brown Loam Agri 2, Fla XPL-3, Shasta, Prestige, Canopy, Will, and Durana, and 19 plant introductions. Of the approximately 1000 plants in the nursery, 25 were selected for early vigor, drought tolerance, no obvious foliar disease, canopy density, stolon numbers and growth rate, flowering intensity, and deer grazing selectivity. These plants were crossed in isolation in 2000, and the seed harvested, bulked and designated as breeder seed (syn-1).

### **Area of Probable Adaptation:**

Insight is adapted to and intended for use in the east central United States. It has been tested in Indiana, Iowa, and Kentucky.

### **Agronomic & Botanical Characteristics:**

Insight is a large-leaf type white clover. Its flower color is 35% white, 63% pinkish, and 2% white. Approximately 61% of the plants exhibit leaf marks. Approximately 83% of the plants bloom in the seeding year. Insight reaches 50% bloom one day earlier than Will in Indiana.

### **Procedures for Maintaining Seed Stock:**

Seed increase of Insight is limited to one generation of breeder (syn-1), one generation of foundation (syn-2), and two generations of certified (syn-3 or 4) classes. Breeder seed was produced in 2000 sufficient for the life of the variety, and is maintained in cold storage by the Whitetail Institute. Length of stand allowed is 3 years each for the foundation and certified classes.

### **Date Certified Seed First Offered for Sale:**

Certified seed will first be offered for sale in 2008.

### **PVP Information:**

Application will not be made for Plant Variety Protection. Information in this application may be forwarded to the PVP office.

Variety name: Insight

Date submitted: November 30, 2007

Experimental designation: RS34-C6