

A REPORT OF THE
SMALL GRAIN VARIETY REVIEW BOARD



ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES

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MAY 2015



SMALL GRAIN VARIETY REVIEW BOARD

ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES

May 2015

The Association of Official Seed Certifying Agencies (AOSCA), Small Grain Variety Review Board (SGVRB), reviewed the following varieties on March 19, 2015. 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 Small Grain Variety Review Board by the applicants. The Small Grain Variety Review Board makes judgments regarding recommendation of varieties for inclusion into certification based on the data supplied. Beyond that, the Small Grain 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 detail regarding the Small Grain Variety Review Board can be obtained from:

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Respectfully submitted,

Steve Schuler, Chairman
Small Grains Variety Review Board

2015 AOSCA SMALL GRAIN VARIETY REVIEW BOARD

TABLE OF CONTENTS

PLACING THE CURSOR OVER THE DESIRED VARIETY/EXPERIMENTAL DESIGNATION & CLICKING WILL TAKE YOU DIRECTLY TO THE SUMMARY DESCRIPTION.

Company	Kind	Page	Variety Name	Experimental Designation
Wheat				
21 st Century Genetics Corp	Wheat, Hard Red Spring	1	TCG-Spitfire	TCG 528B
21 st Century Genetics Corp	Wheat, Hard Red Spring	2	TCG-Wildfire	TCG 544B
DuPont Pioneer	Wheat, Soft Red Winter	3		XW13S
DuPont Pioneer	Wheat, Soft Red Winter	4		XW13T
DuPont Pioneer	Wheat, Soft Red Winter	5		XW13W
DuPont Pioneer	Wheat, Soft Red Winter	6	25R25	XW12L
DuPont Pioneer	Wheat, Soft Red Winter	7	25R50	XW12K
DuPont Pioneer	Wheat, Soft Red Winter	8	25R72	XW12J
Kansas State University	Wheat, Hard Red Winter	9	Hot Rod	KS061406-LN~37
Kansas State University	Wheat, Hard Red Winter	10	KanMark	KS030887K-6
Kansas State University	Wheat, Hard White Winter	11		KS11HW39-5-4
Meridian Seeds	Wheat, Durum Spring	12	MS Dart	DG050565
Monsanto Company	Wheat, Soft Red Winter	13	4231598	LA7W08-1099
Monsanto Company	Wheat, Soft Red Winter	14	4240867	XY06-852
Monsanto Company	Wheat, Hard Red Spring	15	4941026	BZ908-582
Monsanto Company	Wheat, Hard Red Spring	16	4951893	FA9S10-0008R
Monsanto Company	Wheat, Hard Red Spring	17	4972951	FA9S10-0015R
Monsanto Company	Wheat, Soft White Winter	18	WB1376CLP	BZ6WM09-1030
Monsanto Company	Wheat, Hard Red Winter	19	WB4623CLP	BZ9WM09-1663
Monsanto Company	Wheat, Hard White Spring	20	WB7328	BZ9S09-1033W
Monsanto Company	Wheat, Hard White Spring	21	WB7417	BZ9S09-0687W
Monsanto Company	Wheat, Hard White Spring	22	WB7589	BZ9S09-0735W
Monsanto Company	Wheat, Hard Red Spring	23	WB9377	BZ903-472
Monsanto Company	Wheat, Hard Red Spring	24	WB9411	BZ908-418
Monsanto Company	Wheat, Hard Red Spring	25	WB9653	FA9S10-0016R
Syngenta Seeds	Wheat, Hard Red Winter	26	SY Sunrise	06BC796#68
Syngenta Seeds	Wheat, Soft Red Winter	27	SY Viper	B08-91993
Syngenta Seeds	Wheat, Soft Red Winter	28		B08-92082
Syngenta Seeds	Wheat, Hard Red Winter	29*	Underwood*	BC03212-20
Syngenta Seeds	Wheat, Hard Red Spring	30*	SY Valda*	06S0385-5
Syngenta Seeds	Wheat, Soft Red Winter	31	SY 100	M10-1100#
Syngenta Seeds	Wheat, Hard Red Winter	32	SY Flint	06BC722#25
Barley				
Highland Specialty Grains	Spring	33	Claymore	BZ509-216, TR12733
Highland Specialty Grains	Spring	34	Oreana	BZ509-448, TR12735
Syngenta Seeds	Spring	35, 36	AAC Synergy	TR09208, BM0215-189-1
Syngenta Seeds	Winter	37	SY Tepee	SY 209-66
Triticale				
Syngenta Seeds	Winter	38	SY TF 135	09PF1-135

* indicates amendment application for name change

Wheat

TCG-Spitfire

1. TCG-Spitfire is a hard red spring wheat (HRS) developed by 21st Century Genetics Corp (TCG).
2. TCG-Spitfire was selected as a very high yielding, medium late maturity, medium height HRS with excellent standability and very good bread making quality based on SDS sedimentation tests.
3. TCG-Spitfire has been tested primarily in the Red River Valley region of ND and MN. TCG Spitfire is adapted to the Red River Valley region of ND and MN and is intended for the bread wheat milling industry.
4. TCG-Spitfire has shown good field resistance (R-MR) to the prevalent races of leaf rust, MR for foliar disease, (tan spot, *Septoria tritici*, and *Stagnosporium nodorum*) and MR for *Fusarium* head blight. The foliar disease ratings are listed in Table 2. No exceptional foliar disease was observed at any of the other testing locations, and was not included in the disease ratings except as marginal comments. Nothing was observed at these other sites that negated the initial ratings made in 2013 with respect to TCG-Spitfire.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	<u>Hard Red Spring</u>		
	If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)		
2. Seasonal Growth Habit:	<u>Spring</u>	16. Awn Type:	<u>Awne</u>
3. Coleoptile Color:	<u>White</u>	17. Awn Color:	<u>Light Tan</u>
4. Juvenile Growth Habit:	<u>Erect</u>	18. Glume Color:	<u>Light Tan</u>
5. Leaf Color at Boot:	<u>Green</u>	19. Glume Length:	<u>Medium</u>
6. Flag Leaf at Boot:	<u>Erect, Twisted, Waxy</u>	20. Shoulder Shape:	<u>Elevated</u>
7. Auricle Color:	<u>White</u>	21. Shoulder Width:	<u>Narrow</u>
8. Days to 50% Heading:	<u>41 days after June 1</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L.VL):	<u>Medium</u>
10. Anthocyanin: stem	<u>Absent</u>	24. Glume Pubescence:	<u>Absent</u>
11. Plant Height (cm):	<u>84.1</u>	25. Seed Color	<u>Red</u>
12. Internodes:	<u>Hollow</u>	26. Seed Shape:	<u>Ovate</u>
13. Spike Shape:	<u>Oblong</u>	27. Cheeks:	<u>Angular</u>
14. Spike Density:	<u>Mid Dense</u>	28. Brush Size (S,M,L.):	<u>Medium</u>
15. Spike Curvature:	<u>Erect</u>	29. Avg 1,000 Kernel Wt (g):	<u>38</u>

30. Physiological/biochemical Traits: DNA markers LR34, Glu-D1, Glu-A1, Tsn1-5B

Variants and frequency: TCG-Spitfire may have a tall variant at a frequency of 1/1000.

6. Recognized classes of seed are Breeder, Foundation, Registered, and Certified. TCG-Spitfire will be regenerated by head row purification when needed.
7. Certified Seed will be offered for sale in 2016.
8. Application will be made for PVP (Title V) protection.
9. Seed production acreage of TCG Spitfire is not to be published by AOSCA or other seed certifying agencies.

Date this application was submitted: Jan 07, 2015

Date recommended by the VRB: Apr 09, 2015



Wheat

TCG-Wildfire

1. TCG-Wildfire is a hard red spring wheat developed by 21st Century Genetics Corp.
2. TCG-Wildfire was selected as a very high yielding, medium early maturity, medium height, HRS with very good standability and good bread making quality based on SDS sedimentation tests.
3. TCG-Wildfire has been tested primarily in the Red River Valley Region of ND and MN. TCG 544B is adapted to the Red River Valley region of ND and MN and is intended for the bread wheat milling industry.
4. TCG-Wildfire has good field resistance (R-MR) to the prevalent races of leaf rust, with an MR rating for foliar disease (tan spot, *Septoria tritici*, and *Stagnosporium nodorum*), and an MS rating for *Fusarium* head blight. The foliar disease ratings are listed in Table 2. No exceptional foliar disease was observed at any of the other locations, and was not included in the disease ratings, except as marginal comments. Nothing was observed at these other sites that negated the initial ratings made in 2013 with regard to TCG-Wildfire.

5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	<u>Hard Red Spring</u>		
2. Seasonal Growth Habit:	<u>Spring</u>	16. Awn Type:	<u>Awned</u>
3. Coleoptile Color:	<u>White</u>	17. Awn Color:	<u>Tan</u>
4. Juvenile Growth Habit:	<u>Erect</u>	18. Glume Color:	<u>Tan</u>
5. Leaf Color at Boot:	<u>Green</u>	19. Glume Length:	<u>Medium</u>
6. Flag Leaf at Boot:	<u>Erect, Twisted, Waxy</u>	20. Shoulder Shape:	<u>Rounded</u>
7. Auricle Color:	<u>Purple</u>	21. Shoulder Width:	<u>Narrow</u>
8. Days to 50% Heading:	<u>38 days after June 1</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L.VL):	<u>Medium</u>
10. Anthoncyanin: stem	<u>Absent</u>	24. Glume Pubescence:	<u>Absent</u>
11. Plant Height (cm):	<u>89</u>	25. Seed Color:	<u>Red</u>
12. Internodes:	<u>Hollow</u>	26. Seed Shape:	<u>Ovate</u>
13. Spike Shape:	<u>Oblong</u>	27. Cheeks:	<u>Rounded</u>
14. Spike Density:	<u>Mid dense</u>	28. Brush Size (S,M,L.):	<u>Medium</u>
15. Spike Curvature:	<u>Nodding</u>	29. Avg 1,000 Kernel Wt (g):	<u>37 grams</u>

30. Physiological/biochemical Traits: DNA markers Fhb7A, Glu-D1, Glu-A1, and Lr21-1D

Variants and frequency: TCG-Wildfire may have a tall variant at a frequency of 1/1000.

6. Recognized classes of seed are Breeder, Foundation, Registered and Certified. TCG-Wildfire will be regenerated by head row purification /increase when needed.
7. Certified Seed will be offered for sale in 2016.
8. Application will be made for PVP (Title V) protection.
9. Seed production acreage of TCG-Wildfire is not to be published by AOSCA or any other seed certifying agencies.

Date this application was submitted: Jan 07, 2015

Date recommended by the VRB: Apr 09, 2015



Wheat

XW13S (Exp)

1. XW13S is a soft red winter wheat developed by DuPont Pioneer.
2. The cultivar XW13S was bred and selected using a modified pedigree selection method for the following characteristics in the field environment: disease resistance, plant type, plant height, head type, straw strength, maturity, grain yield, test weight, and milling and baking characteristics.
3. XW13S has shown best adaptation to the northern U.S. and Ontario Canada soft wheat regions.
4. XW13S has shown excellent resistance to leaf rust and Fusarium head blight (scab) and better than average resistance to powdery mildew.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind: Soft Red Winter

If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)

2. Seasonal Growth Habit:	<u>Winter</u>	16. Awn Type:	<u>Awned</u>
3. Coleoptile Color:	<u>White</u>	17. Awn Color:	<u>Tan</u>
4. Juvenile Growth Habit:	<u>Semi-Erect</u>	18. Glume Color:	<u>Tan</u>
5. Leaf Color at Boot:	<u>Yellow-Green</u>	19. Glume Length:	<u>Medium</u>
6. Flag Leaf at Boot:	<u>Recurved, Twisted, Wax Present</u>	20. Shoulder Shape:	<u>Oblique</u>
7. Auricle Color:	<u>Purple</u>	21. Shoulder Width:	<u>Medium</u>
8. Days to 50% Heading:	<u>135</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L.VL):	<u>Long</u>
10. Anthoncyanin:	<u>Absent</u>	24. Glume Pubescence:	<u>Absent</u>
11. Plant Height (cm):	<u>88.9</u>	25. Seed Color:	<u>Red</u>
12. Internodes:	<u>Hollow</u>	26. Seed Shape:	<u>Oval</u>
13. Spike Shape:	<u>Tapering</u>	27. Cheeks:	<u>Rounded</u>
14. Spike Density:	<u>Mid Dense</u>	28. Brush Size (S,M,L.):	<u>Short</u>
15. Spike Curvature:	<u>Nodding</u>	29. Avg 1,000 Kernel Wt (g):	<u>38.6</u>

30. Physiological/biochemical Traits: Phenol reaction = Dark brown

Variants and frequency: XW13S has shown no variants other than what would normally be expected due to environment. Some taller and/or awnless off-type plants have been observed and rogued during seed multiplication to below 0.01% level.

6. Breeder, foundation, and registered seed classes will be maintained and controlled by the Pioneer Parent Seed Operations and Production department. Foundation seed will be initially produced from breeders' seed, and thereafter foundation seed will be produced from foundation seed: maintaining the specific identity and purity of the variety as released. Registered seed will be grown from foundation or breeder seed, and maintained at a purity level satisfactory to Pioneer Parent Seed Operations, Production department, or the appropriate certifying agency. No royalty fees or licensing agreements are anticipated.
7. Certified seed of XW13S will potentially first be offered for sale in the fall of 2016.
8. Plant Variety Protection application will be made in 2015 and the certification option will not be elected.
9. Certified acreage is not to be published by AOSCA and certifying agencies.

Date this application was submitted: Jan 09, 2015

Date recommended by the VRB: Mar 19, 2015



Wheat

XW13T (Exp)

1. XW13T is a soft red winter wheat developed by DuPont Pioneer.
2. The cultivar XW13T was bred and selected using a modified pedigree selection method for the following characteristics in the field environment: disease resistance, plant type, plant height, head type, straw strength, maturity, grain yield, test weight, and milling and baking characteristics.
3. XW13T has shown best adaptation to the southern U.S. soft wheat regions.
4. XW13T has shown very good resistance to stripe rust and powdery mildew and better than average resistance to leaf rust and fungal leaf blights.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind: Soft Red Winter

If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)

2. Seasonal Growth Habit:	<u>Winter</u>	16. Awn Type:	<u>Apically Awnletted</u>
3. Coleoptile Color:	<u>Red</u>	17. Awn Color:	<u>White</u>
4. Juvenile Growth Habit:	<u>Semi-Erect</u>	18. Glume Color:	<u>White/Amber</u>
5. Leaf Color at Boot:	<u>Green</u>	19. Glume Length:	<u>Short</u>
6. Flag Leaf at Boot:	<u>Erect, Twisted, Wax Present</u>	20. Shoulder Shape:	<u>Rounded</u>
7. Auricle Color:	<u>White</u>	21. Shoulder Width:	<u>Medium</u>
8. Days to 50% Heading:	<u>113</u>	22. Beak Shape:	<u>Obtuse</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L.VL):	<u>Short</u>
10. Anthoncyanin:	<u>Present</u>	24. Glume Pubescence:	<u>Absent</u>
11. Plant Height (cm):	<u>81.3</u>	25. Seed Color:	<u>Red</u>
12. Internodes:	<u>Hollow</u>	26. Seed Shape:	<u>Oval</u>
13. Spike Shape:	<u>Tapering</u>	27. Cheeks:	<u>Rounded</u>
14. Spike Density:	<u>Mid Dense</u>	28. Brush Size (S,M,L.):	<u>Short</u>
15. Spike Curvature:	<u>Nodding</u>	29. Avg 1,000 Kernel Wt (g):	<u>40.3</u>

30. Physiological/biochemical Traits: Phenol reaction = Light brown

Variants and frequency: XW13T has shown no variants other than what would normally be expected due to environment. Some taller, earlier and/or awned off-type plants have been observed and rogued during seed multiplication to below 0.02% level.

6. Breeder, foundation, and registered seed classes will be maintained and controlled by the Pioneer Parent Seed Operations and Production department. Foundation seed will be initially produced from breeders' seed, and thereafter foundation seed will be produced from foundation seed: maintaining the specific identity and purity of the variety as released. Registered seed will be grown from foundation or breeder seed, and maintained at a purity level satisfactory to Pioneer Parent Seed Operations, Production department, or the appropriate certifying agency. No royalty fees or licensing agreements are anticipated.
7. Certified seed of XW13T will potentially first be offered for sale in the fall of 2016.
8. Plant Variety Protection application will be made in 2015 and the certification option will not be elected.
9. Certified acreage is not to be published by AOSCA and certifying agencies.

Date this application was submitted: Jan 09, 2015

Date recommended by the VRB: Apr 23, 2015



Wheat

XW13W (Exp)

1. XW13W is a soft red winter wheat developed by DuPont Pioneer.
2. The cultivar XW13W was bred and selected using a modified pedigree selection method for the following characteristics in the field environment: disease resistance, plant type, plant height, head type, straw strength, maturity, grain yield, test weight, and milling and baking characteristics.
3. XW13W has shown best adaptation to the southern U.S. soft wheat regions.
4. XW13W has shown strong resistance to leaf rust, stripe rust, Fusarium head blight (scab) and soil-borne mosaic virus.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind: Soft Red Winter

If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)

2. Seasonal Growth Habit:	<u>Winter</u>	16. Awn Type:	<u>Awned</u>
3. Coleoptile Color:	<u>Red</u>	17. Awn Color:	<u>White</u>
4. Juvenile Growth Habit:	<u>Semi-Erect</u>	18. Glume Color:	<u>White/Amber</u>
5. Leaf Color at Boot:	<u>Green</u>	19. Glume Length:	<u>Medium</u>
6. Flag Leaf at Boot:	<u>Erect, Twisted, Wax Present</u>	20. Shoulder Shape:	<u>Oblique</u>
7. Auricle Color:	<u>Purple</u>	21. Shoulder Width:	<u>Narrow</u>
8. Days to 50% Heading:	<u>118</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Purple</u>	23. Beak Length (S.M.L.VL):	<u>Medium</u>
10. Anthocyanin:	<u>Present</u>	24. Glume Pubescence:	<u>Absent</u>
11. Plant Height (cm):	<u>91.4</u>	25. Seed Color:	<u>Red</u>
12. Internodes:	<u>Hollow</u>	26. Seed Shape:	<u>Elliptical</u>
13. Spike Shape:	<u>Oblong</u>	27. Cheeks:	<u>Rounded</u>
14. Spike Density:	<u>Mid Dense</u>	28. Brush Size (S,M,L.):	<u>Short</u>
15. Spike Curvature:	<u>Nodding</u>	29. Avg 1,000 Kernel Wt (g):	<u>39.3</u>

30. Physiological/biochemical Traits: Phenol reaction = Dark brown

Variants and frequency: XW13W has shown no variants other than what would normally be expected due to environment. Earlier, taller, and/or awnless off-type plants of slightly lighter or darker color have been observed and rogued during seed multiplication to below 0.02% level.

6. Breeder, foundation, and registered seed classes will be maintained and controlled by the Pioneer Parent Seed Operations and Production department. Foundation seed will be initially produced from breeders' seed, and thereafter foundation seed will be produced from foundation seed: maintaining the specific identity and purity of the variety as released. Registered seed will be grown from foundation or breeder seed, and maintained at a purity level satisfactory to Pioneer Parent Seed Operations, Production department, or the appropriate certifying agency. No royalty fees or licensing agreements are anticipated.
7. Certified seed of XW13W will potentially first be offered for sale in the fall of 2016.
8. Plant Variety Protection application will be made in 2015 and the certification option will not be elected.
9. Certified acreage is not to be published by AOSCA and certifying agencies.

Date this application was submitted: Jan 09, 2015

Date recommended by the VRB: Apr 23, 2015



Wheat

25R25

1. 25R25 (XW12L) is a soft red winter wheat developed by DuPont Pioneer.
2. The cultivar 25R25 was bred and selected using a modified pedigree selection method for the following characteristics in the field environment: disease resistance, plant type, plant height, head type, straw strength, maturity, grain yield, test weight, and milling and baking characteristics.
3. 25R25 has shown best adaptation to the northern U.S. and Ontario Canada soft wheat regions.
4. 25R25 has shown very good resistance to fungal leaf blights, Fusarium head blight (scab), powdery mildew, and soil-borne mosaic virus.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	<u>Soft Red Winter</u>		
If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)			
2. Seasonal Growth Habit:	<u>Winter</u>	16. Awn Type:	<u>Awned</u>
3. Coleoptile Color:	<u>Red</u>	17. Awn Color:	<u>Tan</u>
4. Juvenile Growth Habit:	<u>Semi-Erect</u>	18. Glume Color:	<u>Tan</u>
5. Leaf Color at Boot:	<u>Green</u>	19. Glume Length:	<u>Medium</u>
6. Flag Leaf at Boot:	<u>Recurved, Twisted, Wax Present</u>	20. Shoulder Shape:	<u>Oblique</u>
7. Auricle Color:	<u>Purple</u>	21. Shoulder Width:	<u>Narrow</u>
8. Days to 50% Heading:	<u>132</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Purple</u>	23. Beak Length (S.M.L. VL):	<u>Medium</u>
10. Anthocyanin:	<u>Present</u>	24. Glume Pubescence:	<u>Absent</u>
11. Plant Height (cm):	<u>86.4</u>	25. Seed Color:	<u>Red</u>
12. Internodes:	<u>Hollow</u>	26. Seed Shape:	<u>Oval</u>
13. Spike Shape:	<u>Tapering</u>	27. Cheeks:	<u>Rounded</u>
14. Spike Density:	<u>Mid Dense</u>	28. Brush Size (S,M,L.):	<u>Medium</u>
15. Spike Curvature:	<u>Nodding</u>	29. Avg 1,000 Kernel Wt (g):	<u>38</u>
30. Physiological/biochemical Traits:	<u>Phenol reaction = Light brown</u>		
Variants and frequency:	<u>25R25 has shown no variants other than what would normally be expected due to environment. Some taller and earlier off-type plants have been observed and rogued during seed multiplication to below 0.02% level.</u>		

6. Breeder, foundation, and registered seed classes will be maintained and controlled by the Pioneer Parent Seed Operations and Production department. Foundation seed will be initially produced from breeders' seed, and thereafter foundation seed will be produced from foundation seed: maintaining the specific identity and purity of the variety as released. Registered seed will be grown from foundation or breeder seed, and maintained at a purity level satisfactory to Pioneer Parent Seed Operations, Production department, or the appropriate certifying agency. No royalty fees or licensing agreements are anticipated.
7. Certified seed of 25R25 will potentially first be offered for sale in the fall of 2015.
8. Plant Variety Protection application was made in 2014 and the certification option was not elected.
9. Certified acreage is not to be published by AOSCA and certifying agencies.

Date this application was submitted: Jan 09, 2015

Date recommended by the VRB: Mar 19, 2015



Wheat

25R50

1. 25R50 (XW12K) is a soft red winter wheat developed by DuPont Pioneer.
2. The cultivar 25R50 was bred and selected using a modified pedigree selection method for the following characteristics in the field environment: disease resistance, plant type, plant height, head type, straw strength, maturity, grain yield, test weight, and milling and baking characteristics.
3. 25R50 has shown best adaptation to the northern U.S. and Ontario Canada soft wheat regions.
4. 25R25 has shown very good resistance to fungal leaf blights, Fusarium head blight (scab), powdery mildew, and soil-borne mosaic virus.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	<u>Soft Red Winter</u>		
	If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)		
2. Seasonal Growth Habit:	<u>Winter</u>	16. Awn Type:	<u>Apically Awnletted</u>
3. Coleoptile Color:	<u>White</u>	17. Awn Color:	<u>Tan</u>
4. Juvenile Growth Habit:	<u>Semi-Erect</u>	18. Glume Color:	<u>Tan</u>
5. Leaf Color at Boot:	<u>Green</u>	19. Glume Length:	<u>Short</u>
6. Flag Leaf at Boot:	<u>Erect, Twisted, Wax Present</u>	20. Shoulder Shape:	<u>Oblique</u>
7. Auricle Color:	<u>White</u>	21. Shoulder Width:	<u>Medium</u>
8. Days to 50% Heading:	<u>132</u>	22. Beak Shape:	<u>Acute</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L.VL):	<u>Short</u>
10. Anthocyanin:	<u>Absent</u>	24. Glume Pubescence:	<u>Absent</u>
11. Plant Height (cm):	<u>83.8</u>	25. Seed Color:	<u>Red</u>
12. Internodes:	<u>Hollow</u>	26. Seed Shape:	<u>Oval</u>
13. Spike Shape:	<u>Oblong</u>	27. Cheeks:	<u>Rounded</u>
14. Spike Density:	<u>Dense</u>	28. Brush Size (S,M,L.):	<u>Medium</u>
15. Spike Curvature:	<u>Inclined</u>	29. Avg 1,000 Kernel Wt (g):	<u>33</u>

30. Physiological/biochemical Traits: Phenol reaction = Dark brown

Variants and frequency: 25R50 has shown no variants other than what would normally be expected due to environment. Some awned, taller and/or earlier off-type plants have been observed and rogued during seed multiplication to below 0.02% level.

6. Breeder, foundation, and registered seed classes will be maintained and controlled by the Pioneer Parent Seed Operations and Production department. Foundation seed will be initially produced from breeders' seed, and thereafter foundation seed will be produced from foundation seed: maintaining the specific identity and purity of the variety as released. Registered seed will be grown from foundation or breeder seed, and maintained at a purity level satisfactory to Pioneer Parent Seed Operations, Production department, or the appropriate certifying agency. No royalty fees or licensing agreements are anticipated.
7. Certified seed of 25R50 will potentially first be offered for sale in the fall of 2015.
8. Plant Variety Protection application was made in 2014 and the certification option was not elected.
9. Certified acreage is not to be published by AOSCA and certifying agencies.

Date this application was submitted: Jan 09, 2015

Date recommended by the VRB: Apr 23, 2015



Wheat

25R72

1. 25R72 (XW12J) is a soft red winter wheat developed by DuPont Pioneer.
2. The cultivar 25R72 was bred and selected using a modified pedigree selection method for the following characteristics in the field environment: disease resistance, plant type, plant height, head type, straw strength, maturity, grain yield, test weight, and milling and baking characteristics.
3. 25R72 has shown best adaptation to the northern U.S. soft wheat region.
4. 25R72 has shown very good resistance to leaf rust and powdery mildew and good resistance to Fusarium head blight (scab), and stripe rust.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	<u>Common Soft Red</u>		
	If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)		
2. Seasonal Growth Habit:	<u>Winter</u>	16. Awn Type:	<u>Awned</u>
3. Coleoptile Color:	<u>White</u>	17. Awn Color:	<u>White</u>
4. Juvenile Growth Habit:	<u>Semi-Erect</u>	18. Glume Color:	<u>White/Amber</u>
5. Leaf Color at Boot:	<u>Green</u>	19. Glume Length:	<u>Medium</u>
6. Flag Leaf at Boot:	<u>Recurved, Twisted, Wax Present</u>	20. Shoulder Shape:	<u>Wanting</u>
7. Auricle Color:	<u>White</u>	21. Shoulder Width:	<u>Narrow</u>
8. Days to 50% Heading:	<u>129</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L.VL):	<u>Long</u>
10. Anthocyanin:	<u>Absent</u>	24. Glume Pubescence:	<u>Absent</u>
11. Plant Height (cm):	<u>91.4</u>	25. Seed Color:	<u>Red</u>
12. Internodes:	<u>Hollow</u>	26. Seed Shape:	<u>Ovate</u>
13. Spike Shape:	<u>Tapering</u>	27. Cheeks:	<u>Rounded</u>
14. Spike Density:	<u>Dense</u>	28. Brush Size (S,M,L.):	<u>Medium</u>
15. Spike Curvature:	<u>Nodding</u>	29. Avg 1,000 Kernel Wt (g):	<u>38</u>

30. Physiological/biochemical Traits: Phenol reaction = Light brown

Variants and frequency: 25R72 has shown no variants other than what would normally be expected due to environment. Taller off-type plants have been observed and rogued during seed multiplication to below 0.02% level.

6. Breeder, foundation, and registered seed classes will be maintained and controlled by the Pioneer Parent Seed Operations and Production department. Foundation seed will be initially produced from breeders' seed, and thereafter foundation seed will be produced from foundation seed: maintaining the specific identity and purity of the variety as released. Registered seed will be grown from foundation or breeder seed, and maintained at a purity level satisfactory to Pioneer Parent Seed Operations, Production department, or the appropriate certifying agency. No royalty fees or licensing agreements are anticipated.
7. Certified seed of 25R72 will potentially first be offered for sale in the fall of 2015.
8. Plant Variety Protection application was made in 2014 and the certification option was not elected.
9. Certified acreage is not to be published by AOSCA and certifying agencies.

Date this application was submitted: Jan 09, 2015

Date recommended by the VRB: Mar 19, 2015



Wheat

Hot Rod

1. Hot Rod was tested under the experimental number KS061406-LN~37 and is a short-statured, early maturing hard red winter wheat.
2. Hot Rod was developed using a selected bulk approach where selection was applied for maturity (using early and late checks to identify plants within the acceptable window), height (semi-dwarf), straw strength, resistance to prevalent diseases (leaf rust, stripe rust, stem rust, soil borne mosaic, tan spot, septoria leaf blotch and powdery mildew) and other plant characteristics such as spike size and density and tillering capacity, yield and quality
3. Hot Rod was extensively tested in central and western Kansas. Its best performance has been in south central Kansas. It is to be marketed as a component of varietal blends for central Kansas and is expected to improve yield performance.
4. Hot Rod is moderately resistant to the prevalent races of stripe rust and resistant to the prevalent races of leaf rust in the Great Plains. It is also resistant to soil-borne mosaic virus. KanMark is moderately resistant to powdery mildew and susceptible to Hessian fly and moderately susceptible to Fusarium head blight.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	<u>Hard Red Winter</u>		
	If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)		
2. Seasonal Growth Habit:	<u>Winter</u>	16. Awn Type:	<u>Awned</u>
3. Coleoptile Color:	<u>White</u>	17. Awn Color:	<u>White</u>
4. Juvenile Growth Habit:	<u>Semi-Erect</u>	18. Glume Color:	<u>White</u>
5. Leaf Color at Boot:	<u>Green</u>	19. Glume Length:	<u>Medium</u>
6. Flag Leaf at Boot:	<u>Recurved, Wax Absent</u>	20. Shoulder Shape:	<u>Oblique to wanting</u>
7. Auricle Color:	<u>White</u>	21. Shoulder Width:	<u>Narrow</u>
8. Days to 50% Heading:	<u>128</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L.VL):	<u>S</u>
10. Stem Color:	<u>No Anthocyanin</u>	24. Glume Pubescence:	<u>Glaborous</u>
11. Plant Height (cm):	<u>80</u>	25. Seed Color:	<u>Red</u>
12. Internodes:	<u>Hollow</u>	26. Seed Shape:	<u>Oval</u>
13. Spike Shape:	<u>Oblong</u>	27. Cheeks:	<u>Rounded</u>
14. Spike Density:	<u>Mid-Dense</u>	28. Brush Size (S,M,L.):	<u>M</u>
15. Spike Curvature:	<u>Nodding</u>	29. Avg 1,000 Kernel Wt (g):	<u>28</u>

30. Physiological/biochemical Traits: N/A

Variants and frequency: Talls at a frequency of 1 in 1,000 and dark chaff at a frequency of 1 in 1,000.

6. Recognized classes of Hot Rod are breeder, foundation, registered, and certified. Kansas State University will maintain the variety by the head-row purification method to produce breeder seed as needed and all foundation seed. Royalties or licensing agreements are anticipated to be collected through the Kansas Wheat Alliance.
7. Certified seed of Hot Rod will likely be available for planting in fall of 2015.
8. Application for PVP is anticipated with the option that Hot Rod can be sold by variety name only as a class of certified seed. Per licensing agreement, it will only be sold as a component of a varietal blend at a maximum of 50% of the blend with the other component(s) having good or better winterhardiness and quality.
9. Certified seed production acreage may be published by AOSCA and individual certifying agencies.

Date this application was submitted: Jan 08, 2015

Date recommended by the VRB: May , 2015



Wheat

KanMark

1. KanMark was tested under the experimental number KS030887K-6. It is a short-statured semi-dwarf, hard red winter wheat developed by the Kansas Agricultural Experiment Station.
2. KanMark was developed using a selected bulk approach where selection was applied for maturity (using early and late checks to identify plants within the acceptable window), height (semi-dwarf), straw strength, resistance to prevalent diseases (leaf rust, stripe rust, stem rust, soil borne mosaic, tan spot, septoria leaf blotch and powdery mildew) and other plant characteristics such as spike size and density and tillering capacity, yield and quality.
3. KanMark was extensively tested in central and western Kansas. Its best performance has been in western Kansas under both dryland and irrigated conditions.
4. KanMark is resistant to the prevalent races of leaf and stripe rust in the Great Plains and is also resistant to soil-borne mosaic virus. KanMark is moderately susceptible to powdery mildew and susceptible to Hessian fly and Fusarium head blight.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	Hard Red Winter		
	If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)		
2. Seasonal Growth Habit:	Winter	16. Awn Type:	Awed
3. Coleoptile Color:	White	17. Awn Color:	White
4. Juvenile Growth Habit:	Semi-Erect	18. Glume Color:	White/Amber
5. Leaf Color at Boot:	Green	19. Glume Length:	Medium
6. Flag Leaf at Boot:	Erect, Wax Absent	20. Shoulder Shape:	Square
7. Auricle Color:	White	21. Shoulder Width:	Medium
8. Days to 50% Heading:	128	22. Beak Shape:	Acuminate
9. Anther Color:	Yellow	23. Beak Length (S.M.L.VL):	M
10. Stem Color:	No Anthocyanin	24. Glume Pubescence:	Glaborous
11. Plant Height (cm):	82.5	25. Seed Color:	Red
12. Internodes:	Hollow	26. Seed Shape:	Ovate
13. Spike Shape:	Oblong	27. Cheeks:	Rounded
14. Spike Density:	Mid-Dense	28. Brush Size (S,M,L.):	S
15. Spike Curvature:	Inclined	29. Avg 1,000 Kernel Wt (g):	27.5

30. Physiological/biochemical Traits:N/A

Variants and frequency: Talls at a frequency of 1 in 1,000 and dark chaff at a frequency of 1 in 1,000

6. Recognized classes of KanMark are breeder, foundation, registered, and certified. Kansas State University will maintain the variety by the head-row purification method to produce breeder seed as needed and all foundation seed. Royalties or licensing agreements are anticipated to be collected through the Kansas Wheat Alliance.
7. Certified seed of KanMark will likely be available for planting in fall of 2015.
8. Application for PVP is anticipated with the option that KanMark can be sold by variety name only as a class of certified seed.
9. Certified seed production acreage may be published by AOSCA and individual certifying agencies.

Date this application was submitted: Jan 08, 2015

Date recommended by the VRB: May , 2015



Wheat

KS11HW39-5-4

1. KS11HW39-5-4 is a hard white winter wheat breeding line. It was developed by Dr. Guorong Zhang at the Agricultural Research Center-Hays, Kansas State University.
2. KS11HW39-5-4 was selected for yield, baking quality, disease resistance (WSMV, stripe rust, leaf rust, SBMV, Hessian fly), and other agronomic traits (pre-harvest sprouting, grain shattering, lodging, maturity) using the modified bulk method. The first breeder seed of KS11HW39-5-4 was produced in 2014 at Hays, KS.
3. KS11HW39-5-4 was extensively tested in Kansas and is well adapted to the dryland production areas in western Kansas.
4. KS11HW39-5-4 is resistant to wheat streak mosaic virus, stripe rust, and leaf rust.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	<u>Hard White Winter</u>		
If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)			
2. Seasonal Growth Habit:	<u>Winter</u>	16. Awn Type:	<u>Awned</u>
3. Coleoptile Color:	<u>White</u>	17. Awn Color:	<u>White</u>
4. Juvenile Growth Habit:	<u>Prostrate</u>	18. Glume Color:	<u>White</u>
5. Leaf Color at Boot:	<u>Green</u>	19. Glume Length:	<u>Medium</u>
6. Flag Leaf at Boot:	<u>Erect, Twisted, No Waxy</u>	20. Shoulder Shape:	<u>Apiculate</u>
7. Auricle Color:	<u>White</u>	21. Shoulder Width:	<u>Narrow</u>
8. Days to 50% Heading:	<u>139.5 (from Jan 1)</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L.VL):	<u>M</u>
10. Anthoncyanin:	<u>Absent</u>	24. Glume Pubescence:	<u>Absent</u>
11. Plant Height (cm):	<u>66</u>	25. Seed Color:	<u>White</u>
12. Internodes:	<u>Hollow</u>	26. Seed Shape:	<u>Ovate</u>
13. Spike Shape:	<u>Tapering</u>	27. Cheeks:	<u>Rounded</u>
14. Spike Density:	<u>Mid Dense</u>	28. Brush Size (S,M,L.):	<u>Medium</u>
15. Spike Curvature:	<u>Inclined</u>	29. Avg 1,000 Kernel Wt (g):	<u>29</u>

30. Physiological/biochemical Traits: NA

Variants and frequency: Variants are limited to: slightly taller plants that occur at a frequency of less than 1 in 1,000 plants.

6. Recognized classes are breeder, foundation, registered, and certified seed. Kansas State University will maintain its purity by the head-row method to produce breeder seed as needed.
7. Certified seed will likely be available for planting in fall of 2016.
8. If this breeding line gets approved for release by the KSU Plant and Genetic Material Release Committee, an application will be submitted for protection under the U.S. Plant Variety Protection Act and the “Certification Option” will be elected (to be sold by variety name only as a class of certified seed).
9. Certified seed production acreage may be published by AOSCA and certifying agencies.

Date this application was submitted: Jan 08, 2015

Date recommended by the VRB: Mar 19, 2015



Wheat

MS Dart

1. MS Dart (Experimental no.DG050565) is a durum spring wheat developed by Crop Production Services.
2. MS Dart (Exp. No. DG050565) was selected based on Pasta quality, resistance to scab, straw strength and yield and was advanced through the Dakota Growers Breeding program.
3. MS Dart was tested in Neapolis, Alberta, Canada and is well-adapted as to be a high-yield durum wheat in the irrigated and dryland production areas of North Dakota and Minnesota.
4. MS Dart has moderate to good resistant to leaf diseases and Scab.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	<u>Durum</u>		
If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)			
2. Seasonal Growth Habit:	<u>Spring</u>	16. Awn Type:	<u>Awned</u>
3. Coleoptile Color:	<u>White</u>	17. Awn Color:	<u>Tan</u>
4. Juvenile Growth Habit:	<u>Semi-Erect</u>	18. Glume Color:	<u>White/Amber</u>
5. Leaf Color at Boot:	<u>Blue-Green</u>	19. Glume Length:	<u>Long</u>
6. Flag Leaf at Boot:	<u>Erect, Not Twisted, No Wax</u>	20. Shoulder Shape:	<u>Apiculate</u>
7. Auricle Color:	<u>White</u>	21. Shoulder Width:	<u>Medium</u>
8. Days to 50% Heading:	<u>60</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L.VL):	<u>M</u>
10. Stem Color:	<u>Absent</u>	24. Glume Pubescence:	<u>Present</u>
11. Plant Height (cm):	<u>110</u>	25. Seed Color:	<u>Amber</u>
12. Internodes:	<u>Hollow</u>	26. Seed Shape:	<u>Elliptical</u>
13. Spike Shape:	<u>Tapering</u>	27. Cheeks:	<u>Angular</u>
14. Spike Density:	<u>Mid Dense</u>	28. Brush Size (S,M,L.):	<u>S</u>
15. Spike Curvature:	<u>Erect</u>	29. Avg 1,000 Kernel Wt (g):	<u>38</u>

30. Physiological/biochemical Traits:

Variants and frequency: 0

6. Recognized classes of MS Dart are breeder, foundation, registered and certified. Crop Production Services will maintain the variety by the head-row purification method to produce breeder seed as needed and all foundation seed.
7. Certified seed of MS Dart will likely be available for planting in fall of 2015.
8. Application for PVP is not planned and descriptive data may be supplied to the PVP database.
9. Certified seed production acreage may be published by AOSCA and individual certifying agencies.

Date this application was submitted: Mar 02, 2015

Date recommended by the VRB: Apr 13, 2015



Wheat

4231598

1. 4231598 (LA7W08-1099) is a soft red winter wheat developed by the Monsanto LLC.
2. In early generations of 4231598, single spikes were selected based on agronomics and disease resistance. Later generations were selected based on yield, quality, and disease resistance.
3. 4231598 is adapted to the soft red winter wheat growing regions of the Eastern United States.
4. Replicated data indicates that 4231598 may be resistant to leaf rust and moderately resistant to *Fusarium* Head Blight, stripe rust, and *Septoria tritici*. Preliminary data shows that 4231598 may be resistant to bacterial leaf blight and moderately resistant to powdery mildew and *Rhizoctonia* root rot.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	Soft Red Winter		
If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)			
2. Seasonal Growth Habit:	Winter	16. Awn Type:	Apically Awnletted
3. Coleoptile Color:	White	17. Awn Color:	White
4. Juvenile Growth Habit:	Semi-Erect	18. Glume Color:	White
5. Leaf Color at Boot:	Green	19. Glume Length:	Long
6. Flag Leaf at Boot:	Erect, Twisted, Waxy	20. Shoulder Shape:	Oblique
7. Auricle Color:	White	21. Shoulder Width:	Narrow
8. Days to 50% Heading:	124 (Julian)	22. Beak Shape:	Obtuse
9. Anther Color:	Yellow	23. Beak Length (S.M.L. VL):	Short
10. Anthocyanin:	Absent	24. Glume Pubescence:	Absent
11. Plant Height (cm):	94	25. Seed Color:	Red
12. Internodes:	Hollow	26. Seed Shape:	Ovate
13. Spike Shape:	Oblong (Strap)	27. Cheeks:	Angular
14. Spike Density:	Lax	28. Brush Size (S,M,L.):	Long
15. Spike Curvature:	Inclined	29. Avg 1,000 Kernel Wt (g):	38

30. Physiological/biochemical Traits:

Variants and frequency: A white seed variant may occur at a frequency of up to .5% (50 seeds per 10,000) and a tall variant (one to two heads taller) may occur at a frequency of .2% (20/10,000). An awned variant may occur at a frequency of .1% (10/10,000). A bronze head variant may occur at a frequency of up to .2% (20/10,000). Otherwise, 4231598 is uniform and stable in appearance and performance across several generations (F5-F10) and environments.

6. Recognized classes of 4231598 are breeder, foundation, registered, certified, quality assured and non-certified. Monsanto Company will maintain the variety by the head-row purification method to produce breeder seed as needed and all foundation seed. Royalty fees and/or licensing agreements are anticipated.
7. Commercial seed of 4231598 is ready for commercial sale by the fall of 2014.
8. Application for Utility Patent and PVP for 4231598 are anticipated. Title V option will not be taken.
9. Application of certified seed production acreage cannot be published.

Date this application was submitted: Jan 10, 2015

Date recommended by the VRB: May 04, 2015



Wheat

4240867

1. 4240867 (XY06-852) is a soft red winter wheat developed by the Monsanto LLC.
2. In early generations of 4240867, single spikes were selected based on agronomics and disease resistance. Later generations were selected based on yield, quality, and disease resistance.
3. 4240867 is adapted to the soft red winter wheat growing regions of the Eastern United States.
4. Replicated data indicates that 4240867 may be moderately resistant *Fusarium* Head Blight, powdery mildew, and *Septoria tritici*. Preliminary data indicates that 4240867 may be moderately resistant to bacterial leaf blight.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	Soft Red Winter		
	If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)		
2. Seasonal Growth Habit:	Winter	16. Awn Type:	Awnless
3. Coleoptile Color:	White	17. Awn Color:	N/A
4. Juvenile Growth Habit:	Semi-Erect	18. Glume Color:	White
5. Leaf Color at Boot:	Green	19. Glume Length:	Long
6. Flag Leaf at Boot:	Recurved, Twisted, No Wax	20. Shoulder Shape:	Oblique
7. Auricle Color:	White	21. Shoulder Width:	Narrow
8. Days to 50% Heading:	125 (Julian)	22. Beak Shape:	Obtuse
9. Anther Color:	Yellow	23. Beak Length (S.M.L.VL):	Short
10. Anthocyanin:	Absent	24. Glume Pubescence:	Absent
11. Plant Height (cm):	90	25. Seed Color:	Red
12. Internodes:	Hollow	26. Seed Shape:	Ovate
13. Spike Shape:	Oblong (Strap)	27. Cheeks:	Angular
14. Spike Density:	Lax	28. Brush Size (S,M,L.):	Medium
15. Spike Curvature:	erect	29. Avg 1,000 Kernel Wt (g):	39

30. Physiological/biochemical Traits:

Variants and frequency: A white seed variant may occur at a frequency of up to .5% (50 seeds per 10,000) and a tall variant (one to two heads taller) may occur at a frequency of .2% (20/10,000). An awned variant may occur at a frequency of .1% (10/10,000). A bronze head variant may occur at a frequency of up to .2% (20/10,000). Otherwise, 4240867 (XY06-852) is uniform and stable in appearance and performance across several generations (F5-F10) and environments.

6. Recognized classes of 4240867 are breeder, foundation, registered, certified, quality assured and non- certified. Monsanto Company will maintain the variety by the head-row purification method to produce breeder seed as needed and all foundation seed. Royalty fees and/ or licensing agreements are anticipated.
7. Commercial seed of 4240867 is available for commercial sale in the fall of 2014.
8. Application for a Utility Patent, PVP is anticipated for 4240867. Title V option will not be taken.
9. Application of certified seed production acreage cannot be published.

Date this application was submitted: Jan 10, 2015

Date recommended by the VRB: May 04, 2015



Wheat

4941026

1. 4941026 (BZ908-582) is a hard red spring wheat developed by the Monsanto LLC.
2. In early generations of 4941026, single spikes were selected based on agronomics and disease resistance. Later generations were selected based on yield, quality, and disease resistance.
3. 4941026 is adapted to the hard spring wheat growing regions of the Pacific Northwest, including parts of Washington, Oregon, and Idaho.
4. Preliminary data indicates that 4941026 may be resistant Stripe Rust and moderately resistant to *Fusarium* head blight.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	<u>Hard Red Spring</u>		
If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)			
2. Seasonal Growth Habit:	<u>Spring</u>	16. Awn Type:	<u>Awned</u>
3. Coleoptile Color:	<u>White</u>	17. Awn Color:	<u>White</u>
4. Juvenile Growth Habit:	<u>Semi-erect</u>	18. Glume Color:	<u>White</u>
5. Leaf Color at Boot:	<u>Green</u>	19. Glume Length:	<u>Medium</u>
6. Flag Leaf at Boot:	<u>Recurved, Twisted, Waxy</u>	20. Shoulder Shape:	<u>Oblique</u>
7. Auricle Color:	<u>White</u>	21. Shoulder Width:	<u>Medium</u>
8. Days to 50% Heading:	<u>183 (Julian)</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L.VL):	<u>Long</u>
10. Anthocyanin:	<u>Absent</u>	24. Glume Pubescence:	<u>Absent</u>
11. Plant Height (cm):	<u>78.7</u>	25. Seed Color:	<u>Red</u>
12. Internodes:	<u>Hollow</u>	26. Seed Shape:	<u>Ovate</u>
13. Spike Shape:	<u>Clavate</u>	27. Cheeks:	<u>Rounded</u>
14. Spike Density:	<u>Mid dense</u>	28. Brush Size (S,M,L.):	<u>Medium</u>
15. Spike Curvature:	<u>Inclined</u>	29. Avg 1,000 Kernel Wt (g):	<u>33</u>

30. Physiological/biochemical Traits:

Variants and frequency: A tall plant (1-2 heads taller) may occur at a frequency up to .2% (20/10,000 plants) and a white seed variant may occur at a frequency of up to .2% (20 seeds per 10,000). Also, an awnless variant may occur at a frequency of up to .01% (1/10,000 plants). A bronze head variant may occur at a frequency of up to .1% (10/10,000). Otherwise, this variety has been uniform and stable in appearance and performance across several generations (F5 –F10) and environments.

6. Recognized classes of 4941026 are breeder, foundation, registered, certified, quality assured and non-certified. Monsanto Company will maintain the variety by the head-row purification method to produce breeder seed as needed and all foundation seed. Royalty fees and/or licensing agreements are anticipated.
7. Commercial seed of 4941026 will likely be ready for commercial sale by the spring of 2015.
8. Application for a Utility Patent, PVP is anticipated for 4941026. Title V option will not be taken.
9. Application of certified seed production acreage cannot be published.

Date this application was submitted: Jan 10, 2015

Date recommended by the VRB: May 04, 2015



Wheat

4951893

1. 4951893 (FA9S10-0008R) is a hard red spring wheat developed by the Monsanto LLC.
2. In early generations of 4951893, single spikes were selected based on agronomics and disease resistance. Later generations were selected based on yield, quality, and disease resistance.
3. 4951893 is adapted to the hard spring wheat growing regions of the Northern Plains, including parts of Montana, the Dakotas, and Minnesota.
4. Preliminary data indicates that 4951893 may be moderately resistant Fusarium Head Blight.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	<u>Hard Red Spring</u>		
If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)			
2. Seasonal Growth Habit:	<u>Spring</u>	16. Awn Type:	<u>Awned</u>
3. Coleoptile Color:	<u>White</u>	17. Awn Color:	<u>Tan</u>
4. Juvenile Growth Habit:	<u>Semi-Erect</u>	18. Glume Color:	<u>White</u>
5. Leaf Color at Boot:	<u>Green</u>	19. Glume Length:	<u>Long</u>
6. Flag Leaf at Boot:	<u>Recurved, Twisted, Waxy</u>	20. Shoulder Shape:	<u>Apiculate</u>
7. Auricle Color:	<u>Purple</u>	21. Shoulder Width:	<u>Medium</u>
8. Days to 50% Heading:	<u>182 (Julian)</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L.VL):	<u>Long</u>
10. Anthocyanin:	<u>Absent</u>	24. Glume Pubescence:	<u>Absent</u>
11. Plant Height (cm):	<u>86.4</u>	25. Seed Color:	<u>Red</u>
12. Internodes:	<u>Hollow</u>	26. Seed Shape:	<u>Elliptical</u>
13. Spike Shape:	<u>Tapering</u>	27. Cheeks:	<u>Angular</u>
14. Spike Density:	<u>Lax</u>	28. Brush Size (S,M,L.):	<u>Short</u>
15. Spike Curvature:	<u>Inclined</u>	29. Avg 1,000 Kernel Wt (g):	<u>21</u>

30. Physiological/biochemical Traits:

Variants and frequency: A variant that is similar to 4951893 but has white seed occurs at a frequency of up to .2% (20 out 10,000 seeds). A variant that is similar to 4951893 but is 15cm to 20cm taller occurs at a frequency of up to .2% (20/10,000). A bronze head variant may occur at a frequency of .1% (10/10,000). An awnless variant may occur at a frequency of .1% (10/10,000).

6. Recognized classes of 4951893 are breeder, foundation, registered, certified, quality assured and non-certified. Monsanto Company will maintain the variety by the head-row purification method to produce breeder seed as needed and all foundation seed. Royalty fees and/ or licensing agreements are anticipated.
7. Commercial seed of 4951893 will likely be ready for commercial sale by the spring of 2015.
8. Application for a Utility Patent, PVP is anticipated for 4951893. Title V option will not be taken.
9. Application of certified seed production acreage cannot be published.

Date this application was submitted: Jan 10, 2015

Date recommended by the VRB: May 04, 2015



Wheat

4972951

1. 4972951 (FA9S10-0015R) is a hard red spring wheat developed by the Monsanto LLC.
2. In early generations of 4972951, single spikes were selected based on agronomics and disease resistance. Later generations were selected based on yield, quality, and disease resistance.
3. 4972951 is adapted to the hard spring wheat growing regions of the Northern Plains, including parts of Montana, the Dakotas, and Minnesota.
4. Preliminary data indicates that 4972951 may be moderately resistant Stripe Rust.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	<u>Hard Red Spring</u>		
If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)			
2. Seasonal Growth Habit:	<u>Spring</u>	16. Awn Type:	<u>Awned</u>
3. Coleoptile Color:	<u>Red</u>	17. Awn Color:	<u>Tan</u>
4. Juvenile Growth Habit:	<u>Semi-Erect</u>	18. Glume Color:	<u>White</u>
5. Leaf Color at Boot:	<u>Blue-Green</u>	19. Glume Length:	<u>Short</u>
6. Flag Leaf at Boot:	<u>Recurved, Twisted, Waxy</u>	20. Shoulder Shape:	<u>Oblique</u>
7. Auricle Color:	<u>White</u>	21. Shoulder Width:	<u>Narrow</u>
8. Days to 50% Heading:	<u>182 (Julian)</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L.VL):	<u>Long</u>
10. Anthocyanin:	<u>Absent</u>	24. Glume Pubescence:	<u>Absent</u>
11. Plant Height (cm):	<u>73.7</u>	25. Seed Color:	<u>Red</u>
12. Internodes:	<u>Hollow</u>	26. Seed Shape:	<u>Ovate</u>
13. Spike Shape:	<u>Tapering</u>	27. Cheeks:	<u>Rounded</u>
14. Spike Density:	<u>Middense</u>	28. Brush Size (S,M,L.):	<u>Short</u>
15. Spike Curvature:	<u>Nodding (Recurved)</u>	29. Avg 1,000 Kernel Wt (g):	<u>26</u>

30. Physiological/biochemical Traits:

Variants and frequency: A variant that is similar to 4972951 but has white seed occurs at a frequency of up to .2% (20 out 10,000 seeds). A variant that is similar to 4972951 but is 15cm to 20cm taller occurs at a frequency of up to .2% (20/10,000). A bronze head variant may occur at a frequency of .1% (10/10,000). An awnless variant may occur at a frequency of .1% (10/10,000).

6. Recognized classes of 4972951 are breeder, foundation, registered, certified, quality assured and non - certified. Monsanto Company will maintain the variety by the head-row purification method to produce breeder seed as needed and all foundation seed. Royalty fees and/ or licensing agreements are anticipated.
7. Commercial seed of 4972951 will likely be ready for commercial sale by the spring of 2015.
8. Application for a Utility Patent, PVP is anticipated for 4972951. Title V option will not be taken.
9. Application of certified seed production acreage cannot be published.

Date this application was submitted: Jan 10, 2015

Date recommended by the VRB: May 04, 2015



Wheat

WB1376CLP

1. WB1376CLP (BZ6WM09-1030) is a soft white winter wheat developed by the Monsanto LLC.
2. In early generations of WB1376CLP, single spikes were selected based on agronomics and disease resistance. Later generations were selected based on yield, quality, disease resistance, and resistance to Imazamox.
3. WB1376CLP is adapted to the hard winter wheat growing regions of the Pacific Northwest, including parts of Washington, Oregon, Idaho, and Montana.
4. Preliminary data indicates that WB1376CLP may be moderately resistant Stripe Rust, FHB, and Powdery Mildew. WB1376CLP also contains the Als1 and Als2 mutations that confer Imazamox resistance.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	<u>Soft White Winter</u>		
If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)			
2. Seasonal Growth Habit:	<u>Winter</u>	16. Awn Type:	<u>Awned</u>
3. Coleoptile Color:	<u>White</u>	17. Awn Color:	<u>Tan</u>
4. Juvenile Growth Habit:	<u>Semi-Erect</u>	18. Glume Color:	<u>White</u>
5. Leaf Color at Boot:	<u>Green</u>	19. Glume Length:	<u>Medium</u>
6. Flag Leaf at Boot:	<u>Erect, Twisted, Waxy</u>	20. Shoulder Shape:	<u>Square</u>
7. Auricle Color:	<u>White</u>	21. Shoulder Width:	<u>Wide</u>
8. Days to 50% Heading:	<u>170 (Julian)</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L. VL):	<u>Medium</u>
10. Anthoncyanin:	<u>Absent</u>	24. Glume Pubescence:	<u>Absent</u>
11. Plant Height (cm):	<u>88.9</u>	25. Seed Color:	<u>White</u>
12. Internodes:	<u>Hollow</u>	26. Seed Shape:	<u>Oval</u>
13. Spike Shape:	<u>Tapering</u>	27. Cheeks:	<u>Rounded</u>
14. Spike Density:	<u>Dense</u>	28. Brush Size (S,M,L.):	<u>Medium</u>
15. Spike Curvature:	<u>Erect</u>	29. Avg 1,000 Kernel Wt (g):	<u>25</u>

30. Physiological/biochemical Traits: WB1376CLP has Als1 and Als2 mutations conferring resistance to Imazamox.

Variants and frequency: A variant that is similar to WB1376CLP but has red seed occurs at a frequency of up to .2% (20 out 10,000 seeds). A variant that is similar to WB1376CLP but is 15cm to 20cm taller occurs at a frequency of up to .2% (20/10,000). A bronze head variant may occur at a frequency of .1% (10/10,000). An awnless variant may occur at a frequency of .1% (10/10,000).

6. Recognized classes of WB1376CLP are breeder, foundation, registered, and certified. Monsanto Company will maintain the variety by the head-row purification method to produce breeder seed as needed and all foundation seed. Royalty fees and/ or licensing agreements are anticipated.
7. Certified seed of WB1376CLP will likely be ready for commercial sale by the fall of 2015.
8. Application for Utility Patent and PVP for 4231598 are anticipated. Title V option will be taken.
9. Application of certified seed production acreage cannot be published.

Date this application was submitted: Jan 10, 2015

Date recommended by the VRB: May 04, 2015



Wheat

WB4623CLP

1. WB4623CLP (BZ9WM09-1663) is a hard red winter wheat developed by the Monsanto LLC.
2. In early generations of WB4623CLP, single spikes were selected based on agronomics and disease resistance. Later generations were selected based on yield, quality, disease resistance, and resistance to Imazamox.
3. WB4623CLP is adapted to the hard winter wheat growing regions of the Pacific Northwest, including parts of Washington, Oregon, Idaho, and Montana.
4. Preliminary data indicates that WB4623CLP may be moderately resistant Stripe Rust. WB4623CLP also contains the Als1 and Als2 mutations that confer Imazamox resistance.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	<u>Hard Red Winter</u>		
If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)			
2. Seasonal Growth Habit:	<u>Winter</u>	16. Awn Type:	<u>Awned</u>
3. Coleoptile Color:	<u>White</u>	17. Awn Color:	<u>White</u>
4. Juvenile Growth Habit:	<u>Semi-Erect</u>	18. Glume Color:	<u>White</u>
5. Leaf Color at Boot:	<u>Green</u>	19. Glume Length:	<u>Short</u>
6. Flag Leaf at Boot:	<u>Recurved, Twisted, Waxy</u>	20. Shoulder Shape:	<u>Elevated</u>
7. Auricle Color:	<u>White</u>	21. Shoulder Width:	<u>Medium</u>
8. Days to 50% Heading:	<u>170 (Julian)</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L.VL):	<u>Medium</u>
10. Anthocyanin:	<u>Absent</u>	24. Glume Pubescence:	<u>Absent</u>
11. Plant Height (cm):	<u>86.4</u>	25. Seed Color:	<u>Red</u>
12. Internodes:	<u>Semi-solid</u>	26. Seed Shape:	<u>Oval</u>
13. Spike Shape:	<u>Tapering</u>	27. Cheeks:	<u>Angular</u>
14. Spike Density:	<u>Mid Dense</u>	28. Brush Size (S,M,L.):	<u>Medium</u>
15. Spike Curvature:	<u>Inclined</u>	29. Avg 1,000 Kernel Wt (g):	<u>34</u>

30. Physiological/biochemical Traits: WB4623CLP has Als1 and Als2 mutations conferring resistance to Imazamox.

Variants and frequency: A variant that is similar to WB4623CLP but has white seed occurs at a frequency of up to .2% (20 out 10,000 seeds). A variant that is similar to WB4623CLP but is 15cm to 20cm taller occurs at a frequency of up to .2% (20/10,000). A bronze head variant may occur at a frequency of .1% (10/10,000). An awnless variant may occur at a frequency of .1% (10/10,000).

6. Recognized classes of WB4623CLP are breeder, foundation, registered, and certified. Monsanto Company will maintain the variety by the head-row purification method to produce breeder seed as needed and all foundation seed. Royalty fees and/ or licensing agreements are anticipated.
7. Certified seed of WB4623CLP will likely be ready for commercial sale by the fall of 2015.
8. Application for Utility Patent and PVP for WB4623CLP are anticipated. Title V option will be taken.
9. Application of certified seed production acreage cannot be published.

Date this application was submitted: Jan 10, 2015

Date recommended by the VRB: May 04, 2015



Wheat

WB7328

1. WB7328 is a hard white spring wheat developed by the Monsanto LLC.
2. In early generations of WB7328, single spikes were selected based on agronomics and disease resistance. Later generations were selected based on yield, quality, and disease resistance.
3. WB7328 is adapted to the hard spring wheat growing regions of the Pacific Northwest, including parts of Washington, Oregon, and Idaho.
4. Preliminary data indicates that WB7328 may be moderately resistant Stripe Rust.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind: Hard White Spring

If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)

2. Seasonal Growth Habit:	<u>Spring</u>	16. Awn Type:	<u>Awne</u>
3. Coleoptile Color:	<u>White</u>	17. Awn Color:	<u>White</u>
4. Juvenile Growth Habit:	<u>Semi-Erect</u>	18. Glume Color:	<u>White</u>
5. Leaf Color at Boot:	<u>Green</u>	19. Glume Length:	<u>Medium</u>
6. Flag Leaf at Boot:	<u>Erect, Waxy</u>	20. Shoulder Shape:	<u>Square</u>
7. Auricle Color:	<u>Purple</u>	21. Shoulder Width:	<u>Medium</u>
8. Days to 50% Heading:	<u>180 (Julian)</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L. VL):	<u>Medium</u>
10. Anthocyanin:	<u>Absent</u>	24. Glume Pubescence:	<u>Absent</u>
11. Plant Height (cm):	<u>73.7</u>	25. Seed Color:	<u>White</u>
12. Internodes:	<u>Semi-Solid</u>	26. Seed Shape:	<u>Ovate</u>
13. Spike Shape:	<u>Tapering</u>	27. Cheeks:	<u>Angular</u>
14. Spike Density:	<u>Lax</u>	28. Brush Size (S,M,L.):	<u>Medium</u>
15. Spike Curvature:	<u>Erect</u>	29. Avg 1,000 Kernel Wt (g):	<u>33</u>

30. Physiological/biochemical Traits:

Variants and frequency: A variant similar to WB7328 but is 10-15 cm taller occurs at a frequency of .2% (20 plants per 10,000). A red seed variant may occur at a frequency of up to .5% (50 seeds per 10,000). An awnless variant may occur at a frequency of .02% (2 plant per 10,000). A bronze head variant may occur at a frequency of .02% (2/10,000).

6. Recognized classes of WB7328 are breeder, foundation, registered, and certified. Monsanto Company will maintain the variety by the head-row purification method to produce breeder seed as needed and all foundation seed. Royalty fees and/ or licensing agreements are anticipated.
7. Commercial seed of WB7328 will likely be ready for commercial sale by the spring of 2016.
8. Application for a Utility Patent and PVP is anticipated for WB7328 and the Title V option will not be taken.
9. Application of certified seed production acreage cannot be published.

Date this application was submitted: Jan 10, 2015

Date recommended by the VRB: May 04, 2015



Wheat

WB7417

1. WB7417 (BZ9S09-0687W) is a hard white spring wheat developed by the Monsanto LLC.
2. In early generations of WB7417, single spikes were selected based on agronomics and disease resistance. Later generations were selected based on yield, quality, and disease resistance.
3. WB7417 is adapted to the hard spring wheat growing regions of the Pacific Northwest, including parts of Washington, Oregon, Idaho, and Montana.
4. Preliminary data indicates that WB7417 may be moderately resistant Stripe Rust.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	<u>Hard White Spring</u>		
	If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)		
2. Seasonal Growth Habit:	<u>Spring</u>	16. Awn Type:	<u>Awne</u>
3. Coleoptile Color:	<u>White</u>	17. Awn Color:	<u>White</u>
4. Juvenile Growth Habit:	<u>Semi-Erect</u>	18. Glume Color:	<u>Tan</u>
5. Leaf Color at Boot:	<u>Blue-Green</u>	19. Glume Length:	<u>Long</u>
6. Flag Leaf at Boot:	<u>Recurved, Twisted, Waxy</u>	20. Shoulder Shape:	<u>Apiculate</u>
7. Auricle Color:	<u>White</u>	21. Shoulder Width:	<u>Wide</u>
8. Days to 50% Heading:	<u>172 (Julian)</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L.VL):	<u>Long</u>
10. Anthocyanin:	<u>Absent</u>	24. Glume Pubescence:	<u>Absent</u>
11. Plant Height (cm):	<u>88.9</u>	25. Seed Color:	<u>White</u>
12. Internodes:	<u>Semi-Solid</u>	26. Seed Shape:	<u>Ovate</u>
13. Spike Shape:	<u>Oblong (Strap)</u>	27. Cheeks:	<u>Rounded</u>
14. Spike Density:	<u>Lax</u>	28. Brush Size (S,M,L.):	<u>Short</u>
15. Spike Curvature:	<u>Inclined</u>	29. Avg 1,000 Kernel Wt (g):	<u>46</u>

30. Physiological/biochemical Traits:

Variants and frequency: A variant similar to WB7417 (BZ9S09-0687W) but is 10-20 cm taller occurs at a frequency of .2% (20 plants per 10,000). A red seed variant may occur at a frequency of up to .20% (20 seeds per 10,000). An awnless variant may occur at a frequency of .01% (1 plant per 10,000). A bronze head variant may occur at a frequency of up to .1% (10/10,000). Otherwise, this variety has been uniform and stable in appearance and performance across several generations (F5 –F10) and environments.

6. Recognized classes of WB7417 are breeder, foundation, registered, and certified. Monsanto Company will maintain the variety by the head-row purification method to produce breeder seed as needed and all foundation seed. Royalty fees and/ or licensing agreements are anticipated.
7. Commercial seed of WB7417 will likely be ready for commercial sale by the spring of 2015.
8. Application for a Utility Patent and PVP is anticipated for WB7417 and the Title V option will not be taken.
9. Application of certified seed production acreage cannot be published.

Date this application was submitted: Jan 10, 2015

Date recommended by the VRB: May 04, 2015



Wheat

WB7589

1. WB7589 (BZ9S09-0735W) is a hard white spring wheat developed by the Monsanto LLC.
2. In early generations of WB7589, single spikes were selected based on agronomics and disease resistance. Later generations were selected based on yield, quality, and disease resistance.
3. WB7589 is adapted to the hard spring wheat growing regions of the Pacific Northwest, including parts of Washington, Oregon, Idaho, and Montana.
4. Preliminary data indicates that WB7589 is resistant Stripe Rust.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	<u>Hard White Spring</u>		
If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)			
2. Seasonal Growth Habit:	<u>Spring</u>	16. Awn Type:	<u>Awned</u>
3. Coleoptile Color:	<u>White</u>	17. Awn Color:	<u>White</u>
4. Juvenile Growth Habit:	<u>Semi-Erect</u>	18. Glume Color:	<u>White</u>
5. Leaf Color at Boot:	<u>Blue-Green</u>	19. Glume Length:	<u>Medium</u>
6. Flag Leaf at Boot:	<u>Recurved, Twisted, Waxy</u>	20. Shoulder Shape:	<u>Square</u>
7. Auricle Color:	<u>Purple</u>	21. Shoulder Width:	<u>Narrow</u>
8. Days to 50% Heading:	<u>174 (Julian)</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L.VL):	<u>Long</u>
10. Anthocyanin:	<u>Absent</u>	24. Glume Pubescence:	<u>Absent</u>
11. Plant Height (cm):	<u>71.1</u>	25. Seed Color:	<u>White</u>
12. Internodes:	<u>Semi-Solid</u>	26. Seed Shape:	<u>Ovate</u>
13. Spike Shape:	<u>Tapering</u>	27. Cheeks:	<u>Rounded</u>
14. Spike Density:	<u>Mid Dense</u>	28. Brush Size (S,M,L.):	<u>Short</u>
15. Spike Curvature:	<u>Nodding (Recurved)</u>	29. Avg 1,000 Kernel Wt (g):	<u>27</u>

30. Physiological/biochemical Traits:

Variants and frequency: A variant similar to WB7589 (BZ9S09-0735W) but is 10-15 cm taller occurs at a frequency of .2% (20 plants per 10,000). A red seed variant may occur at a frequency of up to .2% (20 seeds per 10,000). An awnless variant may occur at a frequency of .01% (1 plant per 10,000). A bronze head variant may occur at a frequency of .1% (10 plants per 10,000). Otherwise, this variety has been uniform and stable in appearance and performance across several generations (F7 –F10) and environments.

6. Recognized classes of WB7589 are breeder, foundation, registered, and certified. Monsanto Company will maintain the variety by the head-row purification method to produce breeder seed as needed and all foundation seed. Royalty fees and/ or licensing agreements are anticipated.
7. Commercial seed of WB7589 will likely be ready for commercial sale by the spring of 2015.
8. Application for a Utility Patent and PVP is anticipated for WB7589 and the Title V option will not be taken.
9. Application of certified seed production acreage cannot be published.

Date this application was submitted: Jan 10, 2015

Date recommended by the VRB: May 04, 2015



Wheat

WB9377

1. WB9377 (BZ903-472) is a hard red spring wheat developed by the Monsanto LLC.
2. In early generations of WB9377, single spikes were selected based on agronomics and disease resistance. Later generations were selected based on yield, quality, and disease resistance.
3. WB9377 is adapted to the hard spring wheat growing regions of the Pacific Northwest and Montana.
4. Preliminary data indicates that WB9377 may be moderately resistant Stripe Rust.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind: Hard Red Spring

If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)

2. Seasonal Growth Habit:	<u>Spring</u>	16. Awn Type:	<u>Awned</u>
3. Coleoptile Color:	<u>White</u>	17. Awn Color:	<u>White</u>
4. Juvenile Growth Habit:	<u>Semi-Erect</u>	18. Glume Color:	<u>White</u>
5. Leaf Color at Boot:	<u>Blue-Green</u>	19. Glume Length:	<u>Medium</u>
6. Flag Leaf at Boot:	<u>Recurved, Twisted, Waxy</u>	20. Shoulder Shape:	<u>Elevated</u>
7. Auricle Color:	<u>Purple</u>	21. Shoulder Width:	<u>Narrow</u>
8. Days to 50% Heading:	<u>186 (Julian)</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L.VL):	<u>Medium</u>
10. Anthocyanin:	<u>Absent</u>	24. Glume Pubescence:	<u>Absent</u>
11. Plant Height (cm):	<u>73.7</u>	25. Seed Color:	<u>Red</u>
12. Internodes:	<u>Solid</u>	26. Seed Shape:	<u>Ovate</u>
13. Spike Shape:	<u>Tapering</u>	27. Cheeks:	<u>Angular</u>
14. Spike Density:	<u>Mid Dense</u>	28. Brush Size (S,M,L.):	<u>Medium</u>
15. Spike Curvature:	<u>Inclined</u>	29. Avg 1,000 Kernel Wt (g):	<u>43</u>

30. Physiological/biochemical Traits:

Variants and frequency: A variant that is similar to WB9377 but has white seed occurs at a frequency of up to .2% (20 out 10,000 seeds). A variant that is similar to WB9377 but is 15cm to 20cm taller occurs at a frequency of up to .2% (20/10,000). A bronze head variant may occur at a frequency of .1% (10/10,000). An awnless variant may occur at a frequency of .1% (10/10,000).

6. Recognized classes of WB9377 are breeder, foundation, registered, and certified. Monsanto Company will maintain the variety by the head-row purification method to produce breeder seed as needed and all foundation seed. Royalty fees and/ or licensing agreements are anticipated.
7. Commercial seed of WB9377 will likely be ready for commercial sale by the spring of 2015.
8. Application for a Utility Patent and PVP is anticipated for WB9377.
9. Application for Plant Variety Protections will be made and the Title V option will not be taken.

Date this application was submitted: Jan 21, 2015

Date recommended by the VRB: May 04, 2015



Wheat

WB9411

1. WB9411 is a hard red spring wheat developed by the Monsanto LLC.
2. In early generations of WB9411, single spikes were selected based on agronomics and disease resistance. Later generations were selected based on yield, quality, and disease resistance.
3. WB9411 is adapted to the hard spring wheat growing regions of the Pacific Northwest, including parts of Washington, Oregon, and Idaho.
4. Preliminary data indicates that WB9411 may be moderately resistant Stripe Rust.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	<u>Hard Red Spring</u>		
If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)			
2. Seasonal Growth Habit:	<u>Spring</u>	16. Awn Type:	<u>Awne</u>
3. Coleoptile Color:	<u>White</u>	17. Awn Color:	<u>Tan</u>
4. Juvenile Growth Habit:	<u>Semi-Erect</u>	18. Glume Color:	<u>Tan</u>
5. Leaf Color at Boot:	<u>Green</u>	19. Glume Length:	<u>Medium</u>
6. Flag Leaf at Boot:	<u>Recurved, Twisted, Waxy</u>	20. Shoulder Shape:	<u>Oblique</u>
7. Auricle Color:	<u>White</u>	21. Shoulder Width:	<u>Medium</u>
8. Days to 50% Heading:	<u>183</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L.VL):	<u>Medium</u>
10. Anthocyanin:	<u>Absent</u>	24. Glume Pubescence:	<u>Absent</u>
11. Plant Height (cm):	<u>81.3</u>	25. Seed Color:	<u>Red</u>
12. Internodes:	<u>Hollow</u>	26. Seed Shape:	<u>Ovate</u>
13. Spike Shape:	<u>Tapering</u>	27. Cheeks:	<u>Angular</u>
14. Spike Density:	<u>Mid Dense</u>	28. Brush Size (S,M,L.):	<u>Long</u>
15. Spike Curvature:	<u>Inclined</u>	29. Avg 1,000 Kernel Wt (g):	<u>38</u>

30. Physiological/biochemical Traits:

Variants and frequency: A variant similar to WB9411 (BZ908-418) but is 10-15 cm taller occurs at a frequency of .2% (20 plants per 10,000). A white seed variant may occur at a frequency of up to .3% (30 seeds per 10,000). An awnless variant may occur at a frequency of .02% (2 plants per 10,000). A bronze head variant may occur at a frequency of .01% (1/10,000). Otherwise, this variety has been uniform and stable in appearance and performance across several generations (F6 –F10) and environments.

6. Recognized classes of WB9411 are breeder, foundation, registered, and certified. Monsanto Company will maintain the variety by the head-row purification method to produce breeder seed as needed and all foundation seed. Royalty fees and/ or licensing agreements are anticipated.
7. Commercial seed of WB9411 will likely be ready for commercial sale by the spring of 2015.
8. Application for a Utility Patent and PVP is anticipated for WB9411 and the Title V option will not be taken.
9. Application of certified seed production acreage cannot be published.

Date this application was submitted: Jan 10, 2015

Date recommended by the VRB: May 04, 2015



Wheat

WB9653

1. WB9653 (FA9S10-0016R) is a hard red spring wheat developed by the Monsanto LLC.
2. In early generations of WB9653, single spikes were selected based on agronomics and disease resistance. Later generations were selected based on yield, quality, and disease resistance.
3. WB9653 is adapted to the hard spring wheat growing regions of the Northern Plains, including parts of Montana, the Dakotas, and Minnesota.
4. Preliminary data indicates that WB9653 may be moderately resistant Stripe Rust.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	<u>Hard Red Spring</u>		
If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)			
2. Seasonal Growth Habit:	<u>Spring</u>	16. Awn Type:	<u>Awned</u>
3. Coleoptile Color:	<u>White</u>	17. Awn Color:	<u>White</u>
4. Juvenile Growth Habit:	<u>Semi-Erect</u>	18. Glume Color:	<u>White/Amber</u>
5. Leaf Color at Boot:	<u>Blue-Green</u>	19. Glume Length:	<u>Medium</u>
6. Flag Leaf at Boot:	<u>Recurved, Twisted, Waxy</u>	20. Shoulder Shape:	<u>Oblique</u>
7. Auricle Color:	<u>White</u>	21. Shoulder Width:	<u>Narrow</u>
8. Days to 50% Heading:	<u>182 (Julian)</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L.VL):	<u>Long</u>
10. Anthocyanin:	<u>Absent</u>	24. Glume Pubescence:	<u>Absent</u>
11. Plant Height (cm):	<u>73.7</u>	25. Seed Color:	<u>Red</u>
12. Internodes:	<u>Hollow</u>	26. Seed Shape:	<u>Ovate</u>
13. Spike Shape:	<u>Tapering</u>	27. Cheeks:	<u>Angular</u>
14. Spike Density:	<u>Dense</u>	28. Brush Size (S,M,L.):	<u>Medium</u>
15. Spike Curvature:	<u>Nodding (Recurved)</u>	29. Avg 1,000 Kernel Wt (g):	<u>26</u>

30. Physiological/biochemical Traits:

Variants and frequency: A variant that is similar to WB9653 but has white seed occurs at a frequency of up to .2% (20 out 10,000 seeds). A variant that is similar to WB9653 but is 15cm to 20cm taller occurs at a frequency of up to .2% (20/10,000). A bronze head variant may occur at a frequency of .1% (10/10,000). An awnless variant may occur at a frequency of .1% (10/10,000).

6. Recognized classes of WB9653 are breeder, foundation, registered, and certified. Monsanto Company will maintain the variety by the head-row purification method to produce breeder seed as needed and all foundation seed. Royalty fees and/ or licensing agreements are anticipated.
7. Commercial seed of WB9653 will likely be ready for commercial sale by the spring of 2015.
8. Application for a Utility Patent and PVP is anticipated for WB9653 and the Title V option will not be taken.
9. Application of certified seed production acreage cannot be published.

Date this application was submitted: Jan 10, 2015

Date recommended by the VRB: May 04, 2015



Wheat

SY Sunrise

1. SY Sunrise is a hard red winter common wheat bred and developed by Syngenta Seeds.
2. SY Sunrise was selected for average test weight, height, green leaf duration, quality and yield.
3. Syngenta has determined that SY Sunrise is adapted throughout the winter wheat growing areas of the United States Central Plains based on tests conducted in Kansas, Colorado, and Nebraska.
4. SY Sunrise has tested moderately resistant to leaf rust. It has tested moderately susceptible to stripe rust. It is susceptible to acidic soils.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	<u>Hard Red Winter</u>		
If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)			
2. Seasonal Growth Habit:	<u>Winter</u>	16. Awn Type:	<u>Awne</u>
3. Coleoptile Color:	<u>Absent</u>	17. Awn Color:	<u>White</u>
4. Juvenile Growth Habit:	<u>Erect</u>	18. Glume Color:	<u>White</u>
5. Leaf Color at Boot:	<u>Green</u>	19. Glume Length:	<u>Medium</u>
6. Flag Leaf at Boot:	<u>Erect, Twisted, Wax Absent</u>	20. Shoulder Shape:	<u>Oblique</u>
7. Auricle Color:	<u>White</u>	21. Shoulder Width:	<u>Medium</u>
8. Days to 50% Heading:	<u>128</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L. VL):	<u>M</u>
10. Anthocyanin:	<u>Absent</u>	24. Glume Pubescence:	<u>Not present</u>
11. Plant Height (cm):	<u>76</u>	25. Seed Color:	<u>Red</u>
12. Internodes:	<u>Hollow</u>	26. Seed Shape:	<u>Ovate</u>
13. Spike Shape:	<u>Tapering</u>	27. Cheeks:	<u>Rounded</u>
14. Spike Density:	<u>Lax</u>	28. Brush Size (S,M,L.):	<u>Short</u>
15. Spike Curvature:	<u>Erect</u>	29. Avg 1,000 Kernel Wt (g):	<u>36</u>

30. Physiological/biochemical Traits:

Variants and frequency: SY Sunrise has been uniform and stable since 2013. Approximately 0.8% of the plants were rogued from the Breeder's seed increase in 2010. Approximately 98% of the rogued variant plants were taller height wheat plants (8 to 15 cm), 2% were awnletted, Up to 1.0% variant plants may be encountered in subsequent generations.

6. Syngenta Seeds, Inc. maintains seed stock and certified classes of Foundation, Registered and Certified. Syngenta Seeds, Inc. will maintain the variety by the head row method to produce breeder seed as needed. Royalty fees are anticipated.
7. Certified seed will likely be available for planting in the Fall of 2016.
8. Plant Variety Protection is anticipated in 2015 and SY Sunrise may only be sold as a class of certified seed.
9. Certified acreage is not to be published by AOSCA and certifying agencies.

Date this application was submitted: Jan 09, 2015

Date recommended by the VRB: May 04, 2015



Wheat

SY Viper

1. SY Viper is a soft red winter common wheat bred and developed by Syngenta Seeds.
2. SY Viper was selected for plant height, medium maturity, and general desirable phenotype.
3. SY Viper has been tested in and found to be adapted throughout the winter wheat growing regions of southeast Missouri, eastern Arkansas, western Tennessee and Kentucky, the 'Delta' region of Mississippi, north Louisiana, eastern North Carolina, and northeastern South Carolina.
4. SY Viper has shown moderate resistance to the current races of powdery mildew and moderate susceptibility to the current races of leaf rust in area of adaptation.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind: Soft Red Winter

If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)

2. Seasonal Growth Habit:	<u>Winter</u>	16. Awn Type:	<u>Awnletted</u>
3. Coleoptile Color:	<u>White</u>	17. Awn Color:	<u>White</u>
4. Juvenile Growth Habit:	<u>Semi-Erect</u>	18. Glume Color:	<u>White</u>
5. Leaf Color at Boot:	<u>Blue Green</u>	19. Glume Length:	<u>Medium</u>
6. Flag Leaf at Boot:	<u>Erect, Twisted, Waxy</u>	20. Shoulder Shape:	<u>Oblique</u>
7. Auricle Color:	<u>White</u>	21. Shoulder Width:	<u>Narrow</u>
8. Days to 50% Heading:	<u>109</u>	22. Beak Shape:	<u>Obtuse</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L.VL):	<u>S</u>
10. Anthoncyanin:	<u>Absent</u>	24. Glume Pubescence:	<u>Absent</u>
11. Plant Height (cm):	<u>100</u>	25. Seed Color:	<u>Red</u>
12. Internodes:	<u>Hollow</u>	26. Seed Shape:	<u>Ovate</u>
13. Spike Shape:	<u>Tapering</u>	27. Cheeks:	<u>Rounded</u>
14. Spike Density:	<u>Lax</u>	28. Brush Size (S,M,L.):	<u>M</u>
15. Spike Curvature:	<u>Nodding</u>	29. Avg 1,000 Kernel Wt (g):	<u>37</u>

30. Physiological/biochemical Traits:

Variants and frequency: SY Viper has been uniform and stable since 2013. Approximately 0.09 % of the total plants were rogued from the Breeder's seed increase in 2014. Of the variant plants rogued, approximately 88.0 % were taller plants (≥ 3 inches) and 12.0 % were awned. Up to 1.0% variant plants may be encountered in subsequent generations.

6. Syngenta Seeds, Inc. maintains seed stock and certified classes of Foundation, Registered and Certified. Syngenta Seeds, Inc. will maintain the variety by the head row method to produce breeder seed as needed. Royalty fees are anticipated.
7. Certified seed will likely be available for planting in the Fall 2015.
8. Plant Variety Protection is anticipated in 2015 and SY Viper may only be sold as a class of certified seed.
9. Certified acreage is not to be published by AOSCA and certifying agencies.

Date this application was submitted: Jan 09, 2015

Date recommended by the VRB: May 04, 2015



Wheat

B08-92082 (Exp)

1. B08-92082 is a soft red winter common wheat bred and developed by Syngenta Seeds.
2. B08-92082 was selected for yield, plant height, maturity, and plant appearance.
3. B08-92082 has shown good adaptation in the wheat growing areas of eastern North Carolina and South Carolina where it has been tested.
4. B08-92082 has shown moderate resistance to the races of powdery mildew and leaf rust in these areas.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	Soft Red Winter		
If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)			
2. Seasonal Growth Habit:	Winter	16. Awn Type:	Awnletted
3. Coleoptile Color:	White	17. Awn Color:	Tan
4. Juvenile Growth Habit:	Semi-Erect	18. Glume Color:	Tan
5. Leaf Color at Boot:	Green	19. Glume Length:	Short
6. Flag Leaf at Boot:	Erect, Twisted, Waxy	20. Shoulder Shape:	Oblique
7. Auricle Color:	White	21. Shoulder Width:	Narrow
8. Days to 50% Heading:	103	22. Beak Shape:	Obtuse
9. Anther Color:	Yellow	23. Beak Length (S.M.L.VL):	S
10. Anthocyanin:	Absent	24. Glume Pubescence:	Absent
11. Plant Height (cm):	88	25. Seed Color:	Red
12. Internodes:	Hollow	26. Seed Shape:	Ovate
13. Spike Shape:	Tapering	27. Cheeks:	Rounded
14. Spike Density:	Mid dense	28. Brush Size (S,M,L.):	M
15. Spike Curvature:	Inclined	29. Avg 1,000 Kernel Wt (g):	32

30. Physiological/biochemical Traits:

Variants and frequency: B08-92082 has been uniform and stable since 2013. Approximately 0.06 % of the total plants were rogued from the Breeder’s seed increase in 2014. Of the variant plants rogued, approximately 88.0 % were taller plants (≥ 3 inches), 8.6 % were different in head color, and 3.5 % were awned. Up to 1.0% variant plants may be encountered in subsequent generations.

6. Syngenta Seeds, Inc. maintains seed stock and certified classes of Foundation, Registered and Certified. Syngenta Seeds, Inc. will maintain the variety by the head row method to produce breeder seed as needed.
7. Certified seed will likely be available for planting in the Fall 2015.
8. Plant Variety Protection is anticipated in 2015.
9. Certified acreage is not to be published by AOSCA and certifying agencies.

Date this application was submitted: Jan 09, 2015

Date recommended by the VRB: May 04, 2015



Wheat

Underwood

(Amended – Name Change)

Variety Name Underwood

Experimental Designation(s) BC03212-20

Date SGVRB first accepted this variety May 14, 2014

Date(s) any previous amendments were accepted n/a

Date this amendment was submitted Nov 19, 2014

1. Underwood is a hard red winter wheat bred and developed by Syngenta Seeds, Inc.
2. Underwood is the result of a cross made in 2003 by Syngenta Seeds, Inc. in Junction City, KS. Underwood was selected for height, straw strength, bread making quality, and yield.
3. Underwood is best adapted to irrigated acres in the western hi-plains in Nebraska and Kansas as well as high management acres in Central Kansas.
4. Underwood has excellent straw strength. Underwood is moderately susceptible to leaf rust and stripe rust. Overall bread making characteristics are good.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	<u>Hard Red Winter</u>		
	If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)		
2. Seasonal Growth Habit:	<u>Winter</u>	16. Awn Type:	<u>Awned</u>
3. Coleoptile Color:	<u>White</u>	17. Awn Color:	<u>Tan</u>
4. Juvenile Growth Habit:	<u>Erect</u>	18. Glume Color:	<u>Bronze</u>
5. Leaf Color at Boot:	<u>Green</u>	19. Glume Length:	<u>Medium</u>
6. Flag Leaf at Boot:	<u>Erect, Twisted, Waxy</u>	20. Shoulder Shape:	<u>Square</u>
7. Auricle Color:	<u>White</u>	21. Shoulder Width:	<u>Medium</u>
8. Days to 50% Heading:	<u>125</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L.VL):	<u>Medium</u>
10. Stem Color:	<u>Anthocyanin Absent</u>	24. Glume Pubescence:	<u>Absent</u>
11. Plant Height (cm):	<u>79</u>	25. Seed Color:	<u>Red</u>
12. Internodes:	<u>Hollow</u>	26. Seed Shape:	<u>Ovate</u>
13. Spike Shape:	<u>Tapering</u>	27. Cheeks:	<u>Rounded</u>
14. Spike Density:	<u>Mid-Dense</u>	28. Brush Size (S,M,L.):	<u>Short</u>
15. Spike Curvature:	<u>Inclined</u>	29. Avg 1,000 Kernel Wt (g):	<u>35</u>

30. Physiological/biochemical Traits:

Variants and frequency: Less than .8% of the plants were rogued from the breeder seed increase in Eaton, CO. Approximately 93% of the rogued variant plants were taller wheat plants (more than 8cm). We also had 4% awnless and 3% different chaff colors. Up to %1.0 variant plants may be encountered in subsequent generations.

6. Syngenta Seeds, Inc. maintains seed stock and certified classes of Foundation, Registered and Certified. Syngenta Seeds, Inc. will maintain the variety by the head row method to produce breeder seed if needed.
7. Certified seed will be available in the fall of 2015.
8. Plant Variety Protection is anticipated in 2014 and Underwood may only be sold as a class of certified seed.
9. Certified acreage is not to be published by AOSCA and certifying agencies.

Date this application was submitted: Nov 19, 2014

Date recommended by the VRB: Mar 19, 2015



Wheat

SY Valda

(Amended – Name Change)

Variety Name SY Valda

Experimental Designation(s) 06S0385-5

Date SGVRB first accepted this variety September 3, 2014

Date(s) any previous amendments were accepted n/a

Date this amendment was submitted Nov 19, 2014

1. SY Valda is a hard red spring wheat bred and developed by Syngenta Seeds, Inc.
2. SY Valda is the result of a cross made in 2006 by Syngenta Seeds, Inc. in Berthoud, Colorado. SY Valda was selected for height and leaf rust resistance.
3. SY Valda is best adapted to the spring wheat growing areas of North Dakota and Minnesota.
4. SY Valda is moderately resistant to stem rust and moderately resistant to leaf rust.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	<u>Hard Red Spring</u>	
	If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)	
2. Seasonal Growth Habit:	<u>Spring</u>	16. Awn Type: <u>Awned</u>
3. Coleoptile Color:	<u>White</u>	17. Awn Color: <u>White</u>
4. Juvenile Growth Habit:	<u>Erect</u>	18. Glume Color: <u>White/Amber</u>
5. Leaf Color at Boot:	<u>Green</u>	19. Glume Length: <u>Short</u>
6. Flag Leaf at Boot:	<u>Re-curved, Twisted, Wax Absent</u>	20. Shoulder Shape: <u>Oblique</u>
7. Auricle Color:	<u>White</u>	21. Shoulder Width: <u>Narrow</u>
8. Days to 50% Heading:	<u>57.7</u>	22. Beak Shape: <u>Acuminate</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L.VL): <u>Medium</u>
10. Stem Color:	<u>Anthocyanin Absent</u>	24. Glume Pubescence: <u>Absent</u>
11. Plant Height (cm):	<u>77</u>	25. Seed Color: <u>Red</u>
12. Internodes:	<u>Hollow</u>	26. Seed Shape: <u>Ovate</u>
13. Spike Shape:	<u>Tapering</u>	27. Cheeks: <u>Rounded</u>
14. Spike Density:	<u>Lax</u>	28. Brush Size (S,M,L.): <u>Medium</u>
15. Spike Curvature:	<u>Inclined</u>	29. Avg 1,000 Kernel Wt (g): <u>31.7</u>

30. Physiological/biochemical Traits:

Variants and frequency: Less than 0.8% of the plants were rogued from the Breeder seed increase in Yuma, Arizona. Approximately 95% of the rogued variant plants were taller height wheat plants (8 to 15 cm). Up to 1.0% variant plants may be encountered in subsequent generations.

6. Syngenta Seeds, Inc. maintains seed stock and certified classes of Foundation, Registered and Certified. Syngenta Seeds, Inc. will maintain the variety by the head row method to produce breeder seed if needed.
7. Certified seed will be available in 2016.
8. Plant Variety Protection is pending as of December, 2014.
9. Certified acreage is not to be published by AOSCA and certifying agencies.

Date this application was submitted: Nov 19, 2014

Date recommended by the VRB: Mar 19, 2015



Wheat

SY 100

1. SY 100 (M10-1100#) is a soft red winter common wheat bred and developed by Syngenta Seeds.
2. SY 100 was selected for average height, average maturity, above average appearance and average kernel soundness produced as an F1 derived double haploid.
3. SY 100 is well-adapted as to be a high yielding winter wheat in the Midwestern soft red wheat growing regions north of I-70 and in the Mid-Atlantic based on tests throughout the soft red wheat growing regions in the Eastern US.
4. SY 100 has tested moderately resistant to stripe rust, powdery mildew, and barley yellow dwarf virus. It has tested moderately susceptible to FHB, soilborne mosaic virus, and Septoria. It is susceptible to leaf rust.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	Soft Red Winter		
If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)			
2. Seasonal Growth Habit:	Winter	16. Awn Type:	Apically Awnletted
3. Coleoptile Color:	Absent	17. Awn Color:	White
4. Juvenile Growth Habit:	Erect	18. Glume Color:	White
5. Leaf Color at Boot:	Blue Green	19. Glume Length:	Long
6. Flag Leaf at Boot:	Recurved, Twisted, Waxy	20. Shoulder Shape:	Oblique
7. Auricle Color:	White	21. Shoulder Width:	Narrow
8. Days to 50% Heading:	135	22. Beak Shape:	Obtuse
9. Anther Color:	Yellow	23. Beak Length (S.M.L.VL):	L
10. Anthoncyanin:	Absent	24. Glume Pubescence:	Not present
11. Plant Height (cm):	75.9	25. Seed Color:	Red
12. Internodes:	Hollow	26. Seed Shape:	Ovate
13. Spike Shape:	Oblong (Strap)	27. Cheeks:	Rounded
14. Spike Density:	Lax	28. Brush Size (S,M,L.):	S
15. Spike Curvature:	Erect	29. Avg 1,000 Kernel Wt (g):	39.4

30. Physiological/biochemical Traits:

Variants and frequency: Up to 8 cm taller, awned. Up to 1% variants.

6. Syngenta Seeds, Inc. maintains seed stock and certified classes of Foundation, Registered and Certified. Syngenta Seeds, Inc. will maintain the variety by the head row method to produce breeder seed as needed. Royalty fees are anticipated.
7. Certified seed will likely be available for planting in the fall of 2016.
8. Plant Variety Protection is anticipated in 2015 and SY 100 may only be sold as a class of certified seed.
9. Certified acreage is not to be published by AOSCA and certifying agencies.

Date this application was submitted: Jan 09, 2015

Date recommended by the VRB: May 04, 2015



Wheat

SY Flint

1. SY Flint is a hard red winter common wheat bred and developed by Syngenta Seeds.
2. SY Flint was selected for average test weight, height, green leaf duration, quality and yield.
3. SY Flint has shown good adaptation throughout the Central Plains winter wheat growing regions based on tests conducted in Kansas
4. SY Flint has tested resistant to leaf rust and hessian fly.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Kind:	<u>Hard Red Winter</u>		
If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)			
2. Seasonal Growth Habit:	<u>Winter</u>	16. Awn Type:	<u>Awned</u>
3. Coleoptile Color:	<u>Absent/ White</u>	17. Awn Color:	<u>White</u>
4. Juvenile Growth Habit:	<u>Erect</u>	18. Glume Color:	<u>White</u>
5. Leaf Color at Boot:	<u>Green</u>	19. Glume Length:	<u>Medium</u>
6. Flag Leaf at Boot:	<u>Erect, Twisted, Wax Absent</u>	20. Shoulder Shape:	<u>Oblique</u>
7. Auricle Color:	<u>White</u>	21. Shoulder Width:	<u>Medium</u>
8. Days to 50% Heading:	<u>124</u>	22. Beak Shape:	<u>Acuminate</u>
9. Anther Color:	<u>Yellow</u>	23. Beak Length (S.M.L.VL):	<u>M</u>
10. Anthoncyanin:	<u>Absent</u>	24. Glume Pubescence:	<u>Not present</u>
11. Plant Height (cm):	<u>81</u>	25. Seed Color	<u>Red</u>
12. Internodes:	<u>Hollow</u>	26. Seed Shape:	<u>Ovate</u>
13. Spike Shape:	<u>Tapering</u>	27. Cheeks:	<u>Rounded</u>
14. Spike Density:	<u>Lax</u>	28. Brush Size (S,M,L.):	<u>Short</u>
15. Spike Curvature:	<u>Inclined</u>	29. Avg 1,000 Kernel Wt (g):	<u>36</u>

30. Physiological/biochemical Traits:

Variants and frequency: SY Flint has been uniform and stable since 2013. Approximately 0.8% of the plants were rogued from the Breeder's seed increase in 2010. Approximately 99% of the rogued variant plants were taller height wheat plants (8 to 15 cm), 1% were awnletted, Up to 1.0% variant plants may be encountered in subsequent generations.

6. Syngenta Seeds, Inc. maintains seed stock and certified classes of Foundation, Registered and Certified. Syngenta Seeds, Inc. will maintain the variety by the head row method to produce breeder seed as needed. Royalty fees are anticipated.
7. Certified seed will likely be available for planting in the Fall of 2015.
8. Plant Variety Protection is anticipated in 2015 and SY Flint may only be sold as a class of certified seed.
9. Certified acreage is not to be published by AOSCA and certifying agencies.

Date this application was submitted: Jan 09, 2015

Date recommended by the VRB: May 04, 2015



Barley

Claymore

1. Claymore (TR12733), two-rowed spring barley, was developed by WestBred/a Unit of Monsanto, from the cross CDC Copeland/Xena. (Ownership of all barley germplasm has been transferred from WestBred/Monsanto to Highland Specialty Grain).
2. Agronomically desired rows were selected, harvested, and given permanent numbers. One such selected row was given the experimental designation, BZ509-216, and later TR12733.
3. Seed from Bozeman plot was harvested in September 2010 and used to plant replicated (F6) yield trial plots near Bozeman and 5 location in Alberta, Saskatchewan and Manitoba in May, 2011. Continued yield testing of F7-F9 seed was performed in 2012-2013 in the provinces of Alberta, Saskatchewan, and Manitoba. Claymore has shown good adaptation to these areas.
4. Claymore is moderately resistant to moderately susceptible to common root rot. Claymore has the RPG1 gene for Stem Rust resistance. It also has an intermediate reaction to the surface borne smuts.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Growth Habit:	Spring	16. Plant Height (see below):	
2. Spike:	2 Row	17. Spike Shape:	Oblong
3. Coleoptile Color:	Green	18. Spike Density:	Mid-Dense
4. Juvenile Growth Habit:	Semi-Erect	19. Spike Position at Maturity:	Inclined
5. Plant Tillering:	High	20. Hairiness of Rachis Edge:	Lacking
6. Leaf Color at Boot:	Green	21. Rachilla Hair Length:	Long
7. Flag Leaf at Boot:	Erect, No Twist, Not Waxy	22. Lemma Awns:	Straight
8. Pubescence on Leaf Blade:	None	23. Length of Lemma Awns:	Long
9. Pubescence on Leaf Sheath:	None	24. Lemma Awn Surface:	Rough
10. Auricle Color:	White	25. Glume Hairiness:	Covered
11. Heading Date (see below):		26. Glume Awn Surface:	Rough
12. Stem Color:	White	27. Glume/Lemma Adherence:	Covered
13. Neck Shape:	Straight	28. Texture (if covered):	Slightly Wrinkled
14. Collar Shape:	V-Shape	29. Aleurone Color:	Colorless
15. Spike Exertion:	Full	30. Avg 1,000 Kernel Wt (g):	46.1

Heading date: July, 1 which is: 2 days (**LATER**) than: Xena

Plant height: 83 cm, cm, which is 0 cm (**SAME AS**) Xena

Physiological or biochemical traits:

Variants and their frequency: “TR12733”, 2 row barley is a stable and uniform variety in appearance and performance which has been observed over F6 to F10 generations. Claymore may contain tall variants (4-8 inches taller) at a frequency of up to 4/10000 seed. (0.04%). No other variants are known to occur.

6. Highland Specialty Grain and Crop Production Services (CPS) of Canada will maintain Breeder seed by planting head rows when necessary. The certified classes of seed shall be: Select, Foundation, Registered and Certified.
7. Certified Seed will possible be sold in the Spring of 2016.
8. Application will be made for protection in the United States of America under the Plant Variety Protection Act and in Canada under the Plant Breeder Rights Act.
9. Certified seed production acreage is not to be published by AOSCA and certifying agencies.

Date this application was submitted: Feb 11, 2015

Date recommended by the VRB: Apr 15, 2015



Barley

Oreana

1. Oreana (TR12735) two-rowed spring barley, was developed by WestBred/a Unit of Monsanto, from the cross Champion/YU501-312. (Ownership of all barley germplasm has been transferred from WestBred/Monsanto to Highland Specialty Grain).
2. Agronomically desired rows were selected, harvested, and given permanent numbers. One such selected row was given the experimental designation, BZ509-448, and later TR12735.
3. Seed from Bozeman plot was harvested in September 2010 and used to plant replicated (F6) yield trial plots near Bozeman and 5 location in Alberta, Saskatchewan and Manitoba in May, 2011. Continued yield testing of F7-F9 seed was performed in 2012-2013 in the provinces of Alberta, Saskatchewan, and Manitoba against known check varieties. Oreana has shown good adaptation to these areas.
4. Oreana has a similar reaction as Xena and is moderately resistant to moderately susceptible to common root rot. Oreana is Moderately resistant to intermediate to the surface borne smuts, it is resistant to all strains except for U. nuda but shows better reaction than Xena. Oreana has the RPG1 gene for Stem Rust resistance.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Growth Habit:	Spring	16. Plant Height (see below):	
2. Spike:	2 Row	17. Spike Shape:	Oblong
3. Coleoptile Color:	Green	18. Spike Density:	Dense
4. Juvenile Growth Habit:	Semi-erect	19. Spike Position at Maturity:	Inclined
5. Plant Tillering:	High	20. Hairiness of Rachis Edge:	Lacking
6. Leaf Color at Boot:	Green	21. Rachilla Hair Length:	Long
7. Flag Leaf at Boot:	Erect, No Twist, Not Waxy	22. Lemma Awns:	Straight
8. Pubescence on Leaf Blade:	None	23. Length of Lemma Awns:	Long
9. Pubescence on Leaf Sheath:	None	24. Lemma Awn Surface:	Rough
10.: Auricle Color:	White	25. Glume Hairiness:	Covered
11. Heading Date (see below):		26. Glume Awn Surface:	Rough
12. Stem Color:	White	27. Glume/Lemma Adherence:	Covered
13. Neck Shape:	Straight	28. Texture (if covered):	Slightly Wrinkled
14. Collar Shape:	V-Shape	29. Aleurone Color:	Colorless
15. Spike Exertion:	Intermediate	30. Avg 1,000 Kernel Wt (g):	46.1

Heading date: July, 1 which is: 2 days (**LATER**) than: Xena

Plant height: 71 cm cm, which is 12.2 cm (**SHORTER**) than: Xena

Physiological or biochemical traits:

Variants and there frequency: “TR12735”, 2 row barley is a stable and uniform variety in appearance and performance which has been observed over F6 to F10 generations. Oreana may contain a tall variant (4-8 inches taller) at a frequency of up to 4/10000 seed. (0.04%). No other variants are known to occur.

6. Highland Specialty Grain and Crop Production Services (CPS) of Canada will maintain Breeder seed by planting head rows when necessary. The certified classes of seed shall be: Select, Foundation, Registered and Certified.
7. Certified Seed will possibly be sold in the Spring of 2016.
8. Application will be made for protection in the United States of America under the Plant Variety Protection Act and in Canada under the Plant Breeder Rights Act.
9. Certified seed production acreage is not to be published by AOSCA and certifying agencies.

Date this application was submitted: Feb 11, 2015

Date recommended by the VRB: Apr 15, 2015



Barley

AAC Synergy

1. AAC Synergy (TR09208) is a two-row spring hulled malting barley developed by Agriculture and Agri-Food Canada, Brandon, Manitoba, and marketed by Syngenta Seeds USA.
2. AAC Synergy was developed by a modified bulk method with individual spikes harvested from the F₃ increase bulk plots, and grown as single F₄ hill plots in an irrigated field leaf disease nursery. Early selection was based on agronomic appearance and foliar leaf disease resistance. Lines were further selected based on agronomic characteristics, disease reaction, hull peeling, spouting resistance and malt quality analysis.
3. AAC Synergy was tested at and found to be adapted to multiple Spring Barley growing locations on the Canadian prairies including in Manitoba, Saskatchewan, and Alberta. AAC Synergy will be adapted to production areas suited to AC Metcalfe, and has a desirable malting quality profile.
4. AAC Synergy is resistant to spot-form net blotch; moderately resistant to net-form net blotch and spot blotch; moderately resistant to moderately susceptible to common root rot, covered smut, false loose smut, and stem rust (carries the *Rpg1* gene); moderately susceptible to FHB; and susceptible to scald, loose smut and speckled leaf blotch (*Septoria passerinii* Sacc.).
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Growth Habit:	<u>Spring</u>	16. Plant Height (see below):	<u>74.6</u>
2. Spike:	<u>Two-row</u>	17. Spike Shape:	<u>Strap</u>
3. Coleoptile Color:	<u>White/Green Tip Stripe</u>	18. Spike Density:	<u>Mid-Dense</u>
4. Juvenile Growth Habit:	<u>Erect to Semi-Erect</u>	19. Spike Position at Maturity:	<u>Erect to Semi-Erect</u>
5. Plant Tillering:	<u>Intermediate</u>	20. Hairiness of Rachis Edge:	<u>Covered</u>
6. Leaf Color at Boot:	<u>Green</u>	21. Rachilla Hair Length:	<u>Long</u>
7. Flag Leaf at Boot:	<u>Erect With Low Frequency, Recurved, Waxy, Not Twisted</u>	22. Lemma Awns:	<u>Straight</u>
8. Pubescence on Leaf Blade:	<u>No</u>	23. Length of Lemma Awns:	<u>Long</u>
9. Pubescence on Leaf Sheath:	<u>No</u>	24. Lemma Awn Surface:	<u>Rough</u>
10.: Auricle Color:	<u>Purplish</u>	25. Glume Hairiness:	<u>Banded</u>
11. Heading Date (see below):	<u>59.8</u>	26. Glume Awn Surface:	<u>Rough</u>
12. Stem Color:	<u>Medium green</u>	27. Glume/Lemma Adherence:	<u>Covered</u>
13. Neck Shape:	<u>Straight-Slight Curve</u>	28. Texture (if covered):	<u>Slightly wrinkled</u>
14. Collar Shape:	<u>V-Shaped Cup With Half Closed and Half Open Collar Shape</u>	29. Aleurone Color:	<u>Colorless</u>
15. Spike Exertion:	<u>Slight</u>	30. Avg 1,000 Kernel Wt (g):	<u>47.2</u>

Heading date: 59.8 which is: 1.2 days EARLIER than: CDC Copeland

Plant height: 74.6 cm, which is 1.4 cm SHORTER than AC Metcalfe

Physiological or biochemical traits:

(continued on next page)



Barley

AAC Synergy

(continued from previous page)

Variants and their frequency: No variants were identified when the Breeder Seed of AAC Synergy was developed. When the Breeder Seed plot was rogued, 10 tall plants (off-types) were removed this is the equivalent of 1.0 per 20,000 plants. Also rogued was 1 awnless off-type plant equivalent to 0.1 in 20,000 plants. Frequency of off-types was very low and not a purity concern.

6. Syngenta Seeds, Inc. or AAC maintains seed stock and certified classes of Foundation, Registered and Certified. Syngenta Seeds, Inc. will maintain the variety by the head row method to produce breeder seed as needed. Royalty fees are anticipated.
7. Certified seed will likely be available for commercial malt test production in 2015.
8. Plant Variety Protection is anticipated in 2015 and AAC Synergy may only be sold as a class of certified seed.
9. Certified acreage is not to be published by AOSCA and certifying agencies.

Date this application was submitted: Jan 09, 2015

Date recommended by the VRB: May 04, 2015



Barley

SY Tepee

1. SY Tepee is a winter Barley bred and developed by Syngenta Seeds, Inc.
2. SY Tepee is the result of a cross made in 2005 by Syngenta Seeds, Inc. in Stainton, Lincolnshire. SY Tepee was selected for malting and brewing quality.
3. SY Tepee is has been adapted to the eastern coast from Maine to South Carolina. A secondary location is the Pacific Northwest.
4. SY Tepee is resistant to type 1 BYMV. Intermediate resistance to Mildew and leaf rust. Moderately susceptible to Scald and Net Blotch. (Source: http://www.fiches.arvalis-infos.fr/fiche_variete/fiches_varietes.php?mode=fv&id_espece=515&type_var=Orge+d%27hiver&id_variete=5091)
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Growth Habit:	<u>Winter</u>	16. Plant Height (see below):	<u>74</u>
2. Spike:	<u>Two-row</u>	17. Spike Shape:	<u>Strap</u>
3. Coleoptile Color:	<u>Green</u>	18. Spike Density:	<u>Mid-Dense</u>
4. Juvenile Growth Habit:	<u>Semi-erect</u>	19. Spike Position at Maturity:	<u>Horizontal</u>
5. Plant Tillering:	<u>Intermediate</u>	20. Hairiness of Rachis Edge:	<u>Covered</u>
6. Leaf Color at Boot:	<u>Green</u>	21. Rachilla Hair Length:	<u>Long</u>
7. Flag Leaf at Boot:	<u>Erect, Twisted, Waxy</u>	22. Lemma Awns:	<u>Straight</u>
8. Pubescence on Leaf Blade:	<u>No</u>	23. Length of Lemma Awns:	<u>Long</u>
9. Pubescence on Leaf Sheath:	<u>Yes</u>	24. Lemma Awn Surface:	<u>Rough</u>
10.: Auricle Color:	<u>White</u>	25. Glume Hairiness:	<u>Covered</u>
11. Heading Date (see below):	<u>5/23</u>	26. Glume Awn Surface:	<u>Semi- Smooth</u>
12. Stem Color:	<u>White</u>	27. Glume/Lemma Adherence:	<u>Covered</u>
13. Neck Shape:	<u>Straight</u>	28. Texture (if covered):	<u>Semi-Wrinkled</u>
14. Collar Shape:	<u>Closed</u>	29. Aleurone Color:	<u>Colorless</u>
15. Spike Exertion:	<u>Full</u>	30. Avg 1,000 Kernel Wt (g):	<u>48gm</u>

Heading date: 5/23 which is: 2 days (~~EARLIER~~) (LATER) than: Charles

Plant height: 74 cm, which is 12 cm (~~SHORTER~~) (TALLER) (~~SAME AS~~) Charles

Physiological or biochemical traits:

Variants and their frequency: Variants that have been identified.

1. Plants with normal sterile spikelets taller in height by 8 to 15 cm.
 2. Plants with anthocyanin present taller in height by 8 to 15 cm.
- Up to 1% taller variant plants may be encountered in subsequent generations.

6. Syngenta Seeds, Inc. maintains seed stock and certified classes of Foundation, Registered and Certified. Syngenta Seeds, Inc. will maintain the variety by the head row method to produce breeder seed if needed.
7. Certified seed will likely be available in the Fall of 2015.
8. Plant Variety Protection has been applied for and SY Tepee may only be sold as a class of certified seed.
9. Certified acreage is not to be published by AOSCA and certifying agencies.

Date this application was submitted: Jan 09, 2015

Date recommended by the VRB: May 04, 2015



Triticale

SY TF 135

1. SY TF 135 is a Winter Triticale bred and developed by Syngenta Seeds, Inc.
2. SY TF 135 was selected for high silage/forage production relative to established checks and stripe rust tolerance, tillering ability and maturity.
3. SY TF 135 is best adapted to grazing and silage production systems in Texas and Oklahoma.
4. SY TF 135 reaction to leaf rust endemic to the southern Plains is considered tolerant. SY TF 135 is susceptible to stem rust.
5. Identifying characteristics – insert the descriptive term from the Objective Description (pages 3-5) except where indicated:

1. Ploidy:	<u>Hexaploid (2n=42)</u>	15. Awn Color:	<u>White</u>
2. Growth Habit:	<u>Winter</u>	16. Glume Pubescence:	<u>Slightly Pubescent</u>
3. Photoperiod Reaction:	<u>Sensitive</u>	17. Glume Color:	<u>White</u>
4. Winterhardiness:	<u>Med. Low</u>	18. Glume Length:	<u>Mid-Long</u>
5. Maturity:	<u>Mid-Season</u>	19. Glume Width:	<u>Narrow</u>
6. Height:	<u>Semi-Dwarf</u>	20. Glume Shoulder Shape:	<u>Oblique</u>
7. Plant Color at Boot Stage:	<u>Blue-Green</u>	21. Glume Beak Shape:	<u>Acute</u>
8. Stem Anthocyanin:	<u>Absent</u>	22. Coleoptile Color:	<u>White</u>
9. Neck Hairiness:	<u>Slight to Moderate</u>	23. Seed Shape:	<u>Elliptical</u>
10. Neck Shape:	<u>Wavy</u>	24. Seed Smoothness:	<u>Slightly-Wrinkled</u>
11. Flag Leaf at Boot:	<u>Twisted, Erect, Waxy</u>	25. Seed Brush Area:	<u>Mid-Size</u>
12. Spike Density:	<u>Mid-Dense</u>	26. Seed Brush Length:	<u>Mid-Long</u>
13. Spike Shape:	<u>Fusiform</u>	27. Seed Color:	<u>Red</u>
14. Spike Awedness:	<u>Awnletted</u>	28. Seed Relative Size:	<u>Medium</u>

Unique physiological/biochemical traits: _____

Variants and Frequency: Less than 1% of the plants were rogued from the Breeder's seed increase. Approximately 55% of the rogued variant plants were taller height plants, 45% had extra-long awns, Up to 1.0% variant plants may be encountered in subsequent generations.

6. Syngenta Seeds, Inc. maintains seed stock and certified classes of Foundation, Registered and Certified. Syngenta Seeds, Inc. will maintain the variety by the head row method to produce breeder seed as needed. Royalty fees are anticipated.
7. Certified seed will likely be available for planting in the Fall of 2015.
8. Plant Variety Protection is anticipated in 2015.
9. Certified acreage is not to be published by AOSCA and certifying agencies.

Date this application was submitted: Jan 09, 2015

Date recommended by the VRB: May 04, 2015

