

Low-Maintenance Turfgrass Evaluation

Cool-Season and Warm-Season Trials

2008 Progress Report

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2006 2007 2008

Low-Maintenance Turfgrass Evaluation

Cool-Season and Warm-Season Trials

2008 Progress Report



**Wytheville
Harrisonburg
Blackstone**

**Kentland
Orange**

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VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

ROADSIDE VEGETATION MANAGEMENT

2006 2007 2008

Low-Maintenance Turfgrass Evaluation

Cool-Season and Warm-Season Trials

Low-maintenance vegetative evaluations are conducted for, and in cooperation with, the Virginia Department of Transportation. The primary purpose is to identify seeded species and/or cultivars that will perform under the harsh and varied environmental conditions found alongside roadsides in Virginia and the mid-Atlantic geographic region.

The minimal input management practices utilized in these trials differ traditional fine turf evaluation trials. Moisture is exclusively dependent upon rainfall events, with no supplemental irrigation available. Seeding rates are reduced, mowing occurs two to three times yearly, and other than an establishment application, fertility does not occur. The management parameters utilized make these tests unique in evaluating establishment and persistence performance.

Entries are evaluated for a period of three years duration to evaluate establishment and persistence capabilities. This duration evaluates each entry's ability to tolerate soil and environmental extremes. Fertility and liming, based on soil test results, are applied at the time of seeding. Weed control is done on as needed basis to maintain the integrity of the evaluation process. At the end of the three year period, desirable vegetative cover must meet or exceed 70%.

Virginia possesses a range of climactic zones, from the mountains of the western part of the state, to the coastal conditions of the east. To address this variation, each trial is located at three sites around the state to evaluate their performance under different climate conditions.

Wytheville
Harrisonburg
Blackstone

Kentland
Orange



ROADSIDE VEGETATION MANAGEMENT

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2006 Year 2 Data

Tall Fescue (*Festuca arundinacea*)

	Mountain	North Piedmont	South Piedmont		Mountain	North Piedmont	South Piedmont	
Apache III	90.00	88.33	90.00	Lexington	85.00	76.67	85.00	
Aristotle	81.67	80.00	93.33	Magellan	95.00	88.33	91.67	
ATF 1235	98.33	93.33	91.67	Ninja II	100.00	81.67	90.00	
Avenger	83.33	91.67	90.00	Padre	93.33	95.00	93.33	
Barlexas II	98.33	76.67	83.33	Paraiso	96.67	91.67	95.00	
Barrera	88.33	68.33	81.67	Rhizing Star	91.67	80.00	86.67	
Bingo	93.33	81.67	88.33	Scorpion II	96.67	93.33	86.67	
Bonsai 3000	100.00	80.00	85.00	Serengeti	96.67	91.67	93.33	
Cochise II	100.00	83.33	96.67	Shelby	100.00	86.67	96.67	
Constitution	93.33	90.00	90.00	Shenandoah II	90.00	93.33	91.67	
Coyote II	95.00	75.00	78.33	Silverhawk	100.00	80.00	88.33	
Dakota	100.00	83.33	90.00	Sitka	93.33	73.33	90.00	
Dynamic	88.33	81.67	90.00	Six Point	90.00	95.00	90.00	
EA 171	95.00	73.33	90.00	Solara	95.00	85.00	86.67	
Einstein	95.00	91.67	91.67	SR 8550	98.33	78.33	80.00	
Falcon IV	100.00	96.67	88.33	STR 8LMM	96.67	93.33	83.33	
Fidelity	100.00	95.00	86.67	Tahoe	96.67	83.33	83.33	
Finelawn Elite	98.33	88.33	86.67	Taos	88.33	85.00	88.33	
Firebird	90.00	75.00	83.33	Tar Heel II	100.00	86.67	83.33	
Firenza	98.33	86.67	76.67	Tempest	88.33	80.00	88.33	
Five Point	81.67	73.33	85.00	TF 66	88.33	83.33	88.33	
Forrest Green	100.00	88.33	96.67	Titanium	90.00	78.33	88.33	
Gooden	76.67	85.00	88.33	Trooper	98.33	93.33	96.67	
Grande II	98.33	90.00	91.67	Turbo	88.33	70.00	85.00	
Greenkeeper	96.67	86.67	85.00	Tuxedo	90.00	86.67	85.00	
Houndog 5	96.67	70.00	91.67	Virtuosa	91.67	80.00	81.67	
Houndog 6	83.33	73.33	81.67	Wpeze	88.33	83.33	88.33	
Inferno	95.00	95.00	83.33	2 nd Millenium	95.00	91.67	85.00	
Jaguar 4	95.00	73.33	83.33					
Kalahari	90.00	80.00	85.00	Species Average	93.48	84.14	87.82	N = 58

2006 Year 2 Data

Fine Fescues

Mountain North Piedmont

Mountain North Piedmont

Hard Fescue (*Festuca brevipila*)

Aurora II	88.33	100.00
Aurora Gold	96.67	98.33
Berkshire	83.33	100.00
Chariot	71.67	96.67
Ecostar	91.670	100.00
Fire Fly	86.67	98.33
Gotham	93.33	100.00
Granite	90.00	95.00
Harpoon	85.00	100.00
Heron	75.00	100.00
Nordic	98.33	100.00
Reliant II	93.33	100.00
Rescue 911	88.33	95.00
Rhino	95.00	100.00
Ridu	80.00	95.00
Stonehenge	91.67	100.00
Viking	98.33	98.33

Species Average 88.63 98.63 N = 17



Sheeps Fescue (*Festuca ovina*)

Azure	100.00	93.33
Blacksheep	88.33	100.00
Dall	86.67	93.33
MX-07	95.00	96.67
Quatro	90.00	95.00
Whisper	95.00	95.00

Species Average 92.50 95.56 N = 6



2006 Year 2 Data

Fine Fescues

Mountain North Piedmont

Red Fescue (*Festuca rubra rubra*)

Aruba	85.00	88.33
Audubon	81.67	88.33
Beacon	68.33	91.67
Cindy Lou	83.33	85.00
Crossbow	63.33	83.33
Florentine GT	76.67	85.00
Foxfire	86.67	90.00
Foxy	63.33	85.00
Gibraltar	66.67	86.67
Inverness	60.00	83.33
Loxia	83.33	91.67
Navigator	78.33	93.33
SeaBreeze GT	61.67	86.67
Trapeze	78.33	95.00
Wendy Jean	81.67	88.33
Weston	80.00	93.33
WP 888	85.00	90.00



Species Average **75.49** **88.75**
N = 17



Mountain North Piedmont



Chewings Fescue (*Festuca rubra commutata*)

Ambrose	90.00	85.00
Culumbra II	91.67	88.33
Chancellor	91.67	90.00
Compass	90.00	85.00
J-5	93.33	95.00
Jamestown IV	93.33	83.33
Longfellow II	90.00	93.33
Musica	86.67	73.33
Salisbury	85.00	80.00
Treasure	88.33	91.67
Zodiac	88.33	78.33

Species Average **89.85** **85.76** N = 11

2006 Year 2 Data

Perennial Ryegrass (*Lolium perenne*)

	Mountain	North Piedmont		Mountain	North Piedmont
Acappella	55.00	13.33	Palmer IV	40.00	13.33
Apple GL	23.33	11.67	Palmer V	48.33	21.67
Barlennium	21.67	10.00	Panther GLS	53.33	18.33
Buena Vista	15.00	20.00	Peregrine	35.00	18.33
Cabo II	40.00	20.00	Phenom	13.33	28.33
Covet	53.33	13.33	Pinnacle II	30.00	11.67
Cruiser	28.33	23.33	Prelude GLS	18.33	13.33
Delaware XL	36.67	20.00	Prelude IV	11.67	15.00
Edison	41.67	15.00	Presidio	55.00	23.33
Esquire	16.67	26.67	Primary	35.00	30.00
Fiji	46.67	23.33	Priority	55.00	20.00
Flash II	25.00	18.33	Prototype	31.67	23.33
Frontier	41.67	21.67	Repell GLS	25.00	10.00
Fusion	43.33	20.00	Revenge GLX	45.00	20.00
Gator 3	26.67	15.00	Roadster	58.33	28.33
Gray Star	43.33	16.67	Saint	33.33	20.00
IS-PR 268	35.00	21.67	Silver Dollar	46.67	23.33
Icon	63.33	11.67	SR 4550	28.33	11.67
Kokomo 2	45.00	16.67	Stellar	16.67	15.00
Line Drive GLS	21.67	25.00	Wayfarer	43.33	21.67
MBH2	26.67	21.67	WP 13206	35.00	10.00
MDP-Darkstar II	30.00	18.33	WP 17018	38.33	10.00
Monterey 3	45.00	28.33			
Overdrive	31.67	26.67	Species Average	36.49	18.90
Palace	61.67	23.33		N = 47	



2006 Year 2 Data

Kentucky Bluegrass (*Poa pratensis*)

	Mountain	North Piedmont		Mountain	North Piedmont
A98-689	90.00	68.33	Hunnington	93.33	63.33
Alexa	93.33	60.00	Kingfisher	95.00	43.33
Appalachian	95.00	68.33	Liberator	85.00	45.00
Avid	93.33	60.00	Midnight	93.33	58.33
Bariris	80.00	46.67	Mongoose	90.00	43.33
Baron	95.00	50.00	Moonlight	86.67	90.00
Blue Chip	90.00	56.67	Moonshine	88.33	70.00
Cadet	90.00	60.00	Mystere	81.67	83.33
Comrade	90.00	56.67	Mystique	96.67	60.00
Concerto	85.00	63.33	NA-3261	88.33	60.00
Corsair	80.00	50.00	NA-3271	90.00	71.67
Deep Blue	90.00	53.33	Preakness	65.00	71.67
Denali	85.00	58.33	Princeton 105	65.00	65.00
Diva	93.33	50.00	PST-1121	93.33	38.33
Durham	93.33	51.67	Rhythm	86.67	61.67
Dynamo	88.33	41.67	Shamrock	90.00	56.67
Eagleton	85.00	46.67	Wildhorse	88.33	56.67
Evora	86.67	23.33	1B7-308	86.67	51.67
Glenmont	91.67	45.00	Species Average	87.98	55.78
Guinness	86.67	58.33			N = 38



2006 Year 2 Data

Other Species

Mountain North Piedmont South Piedmont

Hybrid Bluegrass (*Poa pratensis* x *P. arachnifera*)

	Mountain	North Piedmont	South Piedmont	
Armadillo	90.00	100.00	95.00	
Fahrenheit 90	73.33	38.33	88.33	
Long Horn	70.00	50.00	76.67	
SPTR 2LM95	78.33	83.33	75.00	
Species Average	77.92	67.92	83.75	N = 4

Texas Bluegrass (*Poa arachnifera*)

	Mountain	North Piedmont	South Piedmont
Fire and Ice	88.33	93.33	95.00

Agrostis spp.

	Mountain	North Piedmont	South Piedmont
Cobra 2 Creeping Bentgrass	58.33	30.00	
GolfStar Idaho Bentgrass	51.67	60.00	
SR 7150 Colonial Bentgrass	55.00	70.00	
Streaker Red Top	55.00	53.33	
Tiger II Colonial Bentgrass	65.00	73.33	
Species Average	57.00	57.33	N = 5

Alkaligrass

	Mountain	North Piedmont	South Piedmont
Fulfs	28.33	0.00	
Fulfs II	15.00	0.00	
Salty	30.00	0.00	
Species Average	24.44	0.00	N = 3



2006 Year 2 Data

By Company

Mountain N.Piedmont S.Piedmont

American Grass Seed Producers

Silverhawk Tall Fescue	100.00	80.00	88.33
Shelby Tall Fescue	100.00	86.67	96.67
Whisper Sheeps Fescue	95.00	95.00	
Roadster P. Ryegrass	58.33	28.33	
Saint P. Ryegrass	33.33	20.00	

Ampac Seed

Cochise II Tall Fescue	100.00	83.33	96.67
Ninja II Tall Fescue	100.00	81.67	90.00
Stonehenge Hard Fescue	91.67	100.00	
Gibraltar Red Fescue	66.67	86.67	
Delaware XL P. Ryegrass	36.67	20.00	
Phenom P. Ryegrass	13.33	28.33	
Comrade K. Bluegrass	90.00	56.67	
Duo <i>Festulolium</i>	0.00	23.33	

Barenbrug, USA

Barlexas II Tall Fescue	98.33	76.67	83.33
Barrera Tall Fescue	88.33	68.33	81.67
TF 66 Tall Fescue	88.33	83.33	88.33
Barlennium P. Ryegrass	21.67	10.00	
Pinnacle II P. Ryegrass	30.00	11.67	
Bariris K. Bluegrass	80.00	46.67	
Baron K. Bluegrass	95.00	50.00	

Blue Mountain Seeds

Wildhorse K. Bluegrass	88.33	56.67	
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Mountain N.Piedmont S.Piedmont

Burlingham Seeds

Magellan Tall Fescue	95.00	88.33	91.67
Tempest Tall Fescue	88.33	80.00	88.33
Turbo Tall Fescue	88.33	70.00	85.00
Musica Chewings Fescue	86.67	73.33	
Zodiac Chewings Fescue	88.33	78.33	
Buena Vista P. Ryegrass	15.00	20.00	
Overdrive P. Ryegrass	31.67	26.67	
Avid K. Bluegrass	93.33	60.00	
Dynamo K. Bluegrass	88.33	41.67	

Cascade International Seed Company

Dakota Tall Fescue	100.00	83.33	90.00
EA 171 Tall Fescue	95.00	73.33	90.00
Taos Tall Fescue	88.33	85.00	88.33
Salisbury Chewings Fescue	85.00	80.00	
Harpoon Hard Fescue	85.00	100.00	
Weston Red Fescue	80.00	93.33	
Frontier P. Ryegrass	41.67	21.67	
MDP-Darkstar II P. Ryegrass	30.00	18.33	
Deep Blue K. Bluegrass	90.00	53.33	
PST-1121 K. Bluegrass	93.33	38.33	
1B7-308 K. Bluegrass	86.67	51.67	

Caudill Seed

Forrest Green Tall Fescue	100.00	88.33	96.67
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2006 Year 2 Data

By Company

Mountain N.Piedmont S.Piedmont

Columbia River Seed

Cadet K. Bluegrass	90.00	60.00
Corsair K. Bluegrass	80.00	50.00
A98-689 K. Bluegrass	90.00	68.33
NA-3261 K. Bluegrass	88.33	60.00
NA-3271 K. Bluegrass	90.00	71.67

Columbia Seeds

Einstein Tall Fescue	95.00	91.67	91.67
Lexington Tall Fescue	85.00	76.67	85.00
Sitka Tall Fescue	93.33	73.33	90.00
Tahoe Tall Fescue	96.67	83.33	83.33
Rhino Hard Fescue	95.00	100.00	
Jamestown IV Chewings Fescue	93.33	83.33	
Crossbow Red Fescue	63.33	83.33	
Trapeze Red Fescue	78.33	95.00	
Covet P. Ryegrass	53.33	13.33	
Edison P. Ryegrass	41.67	15.00	
Palace P. Ryegrass	61.67	23.33	
Primary P. Ryegrass	35.00	30.00	
Priority P. Ryegrass	55.00	20.00	
Presidio P. Ryegrass	55.00	23.33	

Mountain N.Piedmont S.Piedmont

DLF International Seeds

Bingo Tall Fescue	93.33	81.67	88.33
Houndog 5 Tall Fescue	96.67	70.00	91.67
Houndog 6 Tall Fescue	83.33	73.33	81.67
Rhizing Star Tall Fescue	91.67	80.00	86.67
Solara Tall Fescue	95.00	85.00	86.67
Ridu Hard Fescue	80.00	95.00	
Quatro Sheeps Fescue	90.00	95.00	
Longfellow II Chewings Fescue	90.00	93.33	
Cindy Lou Red Fescue	83.33	85.00	
Esquire P. Ryegrass	16.67	26.67	
Gator 3 P. Ryegrass	26.67	15.00	
IS-PR 268 P. Ryegrass	35.00	21.67	
MBH2 P. Ryegrass	26.67	21.67	
Appalachian K. Bluegrass	95.00	68.33	
Evora K. Bluegrass	86.67	23.33	
Rhythm K. Bluegrass	86.67	61.67	
Cobra 2 Creeping Bentgrass	65.00	30.00	
Tiger II Colonial Bentgrass	53.33	73.33	

Evergreen Seed Company, LLC

Gooden Tall Fescue	76.67	85.00	88.33
Wpeze Tall Fescue	88.33	83.33	88.33
WP 888 Red Fescue	85.00	90.00	
WP 13206 P. Ryegrass	35.00	10.00	
WP 17018 P. Ryegrass	38.33	10.00	

2006 Year 2 Data

By Company

Mountain N.Piedmont S.Piedmont

Grassland Oregon

Kalahari Tall Fescue	90.00	80.00	85.00
Serengeti Tall Fescue	96.67	91.67	93.33
Cabo II P. Ryegrass	40.00	20.00	
Fiji P. Ryegrass	46.67	23.33	
Kokomo 2 P. Ryegrass	45.00	16.67	
Armadillo Hybrid Bluegrass	90.00	100.00	95.00
Durham K. Bluegrass	93.33	51.67	
Mongoose K. Bluegrass	90.00	43.33	

Integra Seeds, Inc.

Firenza Tall Fescue	98.33	86.67	76.67
Virtuosa Tall Fescue	91.67	80.00	81.67
Acappella P. Ryegrass	55.00	13.33	
Concerto K. Bluegrass	85.00	63.33	

Jacklin-Simplot

Inferno Tall Fescue	95.00	95.00	83.33
Jaguar 4 Tall Fescue	95.00	73.33	83.33
Ecostar Hard Fescue	91.67	100.00	
Rescue 911 Hard Fescue	88.33	95.00	
MX-07 Sheeps Fescue	95.00	96.67	
Aruba Red Fescue	85.00	88.33	
Audubon Red Fescue	81.67	88.33	
Monterey 3 P. Ryegrass	45.00	28.33	
Revenge GLX P. Ryegrass	45.00	20.00	
Blue Chip K. Bluegrass	90.00	56.67	
Liberator K. Bluegrass	85.00	45.00	
Streaker Red Top	83.33	53.33	
GolfStar Idaho Bentgrass	63.33	60.00	
Reubens Canada Bluegrass	83.33	63.33	
Fults Alkaligrass	28.33	0.00	

Mountain N.Piedmont S.Piedmont

Landmark Native Seed

Fults II Alkaligrass	15.00	0.00	
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Landmark Seed

Dynamic Tall Fescue	88.33	81.67	90.00
Fidelity Tall Fescue	100.00	95.00	86.67
Blacksheep Sheeps Fescue	88.33	100.00	
J-5 Chewings Fescue	93.33	95.00	
Wendy Jean Red Fescue	81.67	88.33	

Lesco, Inc

Magellan Tall Fescue	95.00	88.33	91.67
Padre Tall Fescue	93.33	95.00	93.33
Gotham Hard Fescue	93.33	100.00	
Foxfire Red Fescue	86.67	90.00	
Prototype P. Ryegrass	31.67	23.33	
Wayfarer P. Ryegrass	43.33	21.67	
Glenmont K. Bluegrass	91.67	45.00	
Shamrock K. Bluegrass	90.00	56.67	

Mountain View Seeds

Constitution Tall Fescue	93.33	90.00	90.00
Titanium Tall Fescue	90.00	78.33	88.33
Chariot Hard Fescue	71.67	96.67	
Heron Hard Fescue	75.00	100.00	
Navigator Red Fescue	78.33	93.33	
Flash II P. Ryegrass	25.00	18.33	
Stellar P. Ryegrass	16.67	15.00	
Cadet K. Bluegrass	90.00	60.00	
Fahrenheit 90 Hybrid Bluegrass	73.33	38.33	88.33

2006 Year 2 Data

By Company

Mountain N. Piedmont S. Piedmont

Mountain N. Piedmont S. Piedmont

New Seed, Inc.

Lexington Tall Fescue	85.00	76.67	85.00
Jamestown IV Chewings Fescue	93.33	83.33	
Cruiser P. Ryegrass	28.33	23.33	

Oregro Seeds, Inc.

Paraiso Tall Fescue	96.67	91.67	95.00
Trooper Tall Fescue	98.33	93.33	96.67
Granite Hard Fescue	90.00	95.00	
Dall Sheeps Fescue	86.67	93.33	
Chancellor Chewings Fescue	91.67	90.00	
Denali K. Bluegrass	85.00	58.33	

ProSeeds Marketing

Falcon IV Tall Fescue	100.00	96.67	88.33
Finelawn Elite Tall Fescue	98.33	88.33	86.67
Five Point Tall Fescue	81.67	73.33	85.00
Scorpion II Tall Fescue	96.67	93.33	86.67
Shenandoah II Tall Fescue	90.00	93.33	91.67
Six Point Tall Fescue	90.00	95.00	90.00
Foxy Red Fescue	63.33	85.00	
Nordic Hard Fescue	98.33	100.00	
Reliant II Hard Fescue	93.33	100.00	
Viking Hard Fescue	98.33	98.33	
Azure Sheeps Fescue	100.00	93.33	
Ambrose Chewings Fescue	90.00	85.00	
Culumbra II Chewings Fescue	91.67	88.33	
Palmer IV P. Ryegrass	40.00	13.33	
Palmer V P. Ryegrass	48.33	21.67	
Panther GLS P. Ryegrass	53.33	18.33	
Line Drive GLS P. Ryegrass	21.67	25.00	
Prelude GLS P. Ryegrass	18.33	13.33	
Prelude IV P. Ryegrass	11.67	15.00	
Repell GLS P. Ryegrass	25.00	10.00	
Alexa K. Bluegrass	93.33	60.00	
Diva K. Bluegrass	93.33	50.00	
Eagleton K. Bluegrass	85.00	46.67	
Guinness K. Bluegrass	86.67	58.33	
Hunnington K. Bluegrass	93.33	63.33	
Mystere K. Bluegrass	81.67	83.33	
Mystique K. Bluegrass	96.67	60.00	
Preakness K. Bluegrass	65.00	71.67	
Princeton 105 K. Blue	65.00	65.00	
Salty Alkaligrass	30.00	0.00	

Species Averages

Tall Fescue	93.48	84.14	87.82	N = 58
Hard Fescue	88.63	98.63		N = 17
Sheeps Fescue	92.50	95.56		N = 6
Chewings Fescue	89.85	85.76		N = 11
Red Fescue	75.49	88.75		N = 17
Perennial Ryegrass	36.49	18.90		N = 47
Kentucky Bluegrass	87.98	55.78		N = 38
Alkaligrass	24.44	0.00		N = 3
Agrostis species	69.33	57.33		N = 5
Texas Bluegrass	88.33	93.33	93.33	N = 1
Hybrid Bluegrass	77.92	67.92	83.75	N = 4

2006 Year 2 Data

By Company

Mountain N. Piedmont S. Piedmont

Seed Research of Oregon

Grande II Tall Fescue	98.33	90.00	91.67
SR 8550 Tall Fescue	98.33	78.33	80.00
STR 8LMM Tall Fescue	96.67	93.33	83.33
Peregrine P. Ryegrass	35.00	18.33	
SR 4550 P. Ryegrass	28.33	11.67	
Kingfisher K. Bluegrass	95.00	43.33	
SPTR 2LM95 Hybrid Bluegrass	78.33	83.33	75.00
SR 3210 Blue Fescue	80.00	88.33	
SR 7150 Colonial Bentgrass	81.67	70.00	

The Scotts Company

Coyote II Tall Fescue	95.00	75.00	78.33
Greenkeeper Tall Fescue	96.67	86.67	85.00
Berkshire Hard Fescue	83.33	100.00	
Treasure Chewings Fescue	88.33	91.67	

Turf Merchants, Inc.

Bonsai 3000 Tall Fescue	100.00	80.00	85.00
Firenza Tall Fescue	98.33	86.67	76.67
2 nd Millenium Tall Fescue	95.00	91.67	85.00
Fire Fly Hard Fescue	86.67	98.33	
Fire and Ice Texas Bluegrass	88.33	93.33	95.00

Mountain N. Piedmont S. Piedmont

Turf-Seed Inc.

Apache III Tall Fescue	90.00	88.33	90.00
Tar Heel II Tall Fescue	100.00	86.67	83.33
Aurora II Hard Fescue	88.33	100.00	
Aurora Gold Hard Fescue	96.67	98.33	
Florentine GT Red Fescue	76.67	85.00	
Inverness Red Fescue	60.00	83.33	
SeaBreeze GT Red Fescue	61.67	86.67	
Gray Star P. Ryegrass	43.33	16.67	
Silver Dollar P. Ryegrass	46.67	23.33	
Midnight K. Bluegrass	93.33	58.33	
Moonlight K. Bluegrass	86.67	90.00	
Moonshine K. Bluegrass	88.33	70.00	
Long Horn Hybrid Bluegrass	70.00	50.00	76.67

Wetsel Seed

ATF 1235 Tall Fescue	98.33	93.33	91.67
Firebird Tall Fescue	90.00	75.00	83.33
Loxia Red Fescue	83.33	91.67	
Fusion P. Ryegrass	43.33	20.00	
Icon P. Ryegrass	63.33	11.67	

Z Seeds, LLC

Avenger Tall Fescue	83.33	91.67	90.00
Tuxedo Tall Fescue	90.00	86.67	85.00
Compass Chewings Fescue	90.00	85.00	
Beacon Red Fescue	68.33	91.67	
Apple GL P. Ryegrass	23.33	11.67	

2008 Germination Data

Tall Fescue (*Festuca arundinacea*)

	Mountain	North Piedmont	South Piedmont		Mountain	North Piedmont	South Piedmont
AST7002				DTT-43-08			
30 days	8.33	11.67	23.33	30 days	5.00	6.67	21.67
60 days	21.67	25.00	31.67	60 days	15.00	25.00	43.33
AST7003				DTT-95-08			
30 days	5.00	10.00	25.00	30 days	5.00	6.67	20.00
60 days	16.67	26.67	43.33	60 days	18.33	25.00	33.33
Bullseye				Escalade			
30 days	13.33	11.67	25.00	30 days	6.67	15.00	28.33
60 days	23.33	33.33	51.67	60 days	31.67	31.67	50.00
Crossfire 3				Forrest Green			
30 days	6.67	8.33	18.33	30 days	6.67	5.00	21.67
60 days	15.00	21.67	38.33	60 days	23.33	16.67	40.00
Darlington				GA-51			
30 days	6.67	5.00	18.33	30 days	18.33	11.67	31.67
60 days	21.67	20.00	30.00	60 days	33.33	38.33	70.00
DTT-20-08				Hemi			
30 days	5.00	5.00	16.67	30 days	10.00	10.00	25.00
60 days	18.33	15.00	31.67	60 days	21.67	33.33	56.67
DTT-21-08							
30 days	5.00	5.00	18.33				
60 days	16.67	16.67	28.33				

Tall Fescue Averages				
30 days	8.59	10.45	23.46	N = 26
60 days	23.46	27.95	46.47	

2008 Germination Data

Tall Fescue (*Festuca arundinacea*)

	Mountain	North Piedmont	South Piedmont		Mountain	North Piedmont	South Piedmont
IS-TF-138				RKCL			
30 days	8.33	8.33	21.67	30 days	8.33	13.33	21.67
60 days	21.67	28.33	43.33	60 days	26.67	28.33	50.00
IS-TF-152				SC-1			
30 days	6.67	11.67	25.00	30 days	11.67	15.00	26.67
60 days	23.33	30.00	56.67	60 days	26.67	33.33	53.33
Kentucky 32				Shenandoah III			
30 days	6.67	13.33	30.00	30 days	15.00	15.00	25.00
60 days	31.67	31.67	50.00	60 days	28.33	33.33	53.33
Mustang 4				Tahoe II			
30 days	11.67	13.33	25.00	30 days	6.67	18.67	21.67
60 days	23.33	30.00	46.67	60 days	23.33	31.67	55.00
MVS 3609				Talladega			
30 days	6.67	13.33	26.67	30 days	11.67	11.67	21.67
60 days	21.67	31.67	55.00	60 days	28.33	28.33	55.00
Paraiso				Turbo RZ			
30 days	8.33	08.33	23.33	30 days	11.67	11.67	26.67
60 days	28.33	26.67	35.00	60 days	23.33	28.33	51.67
PI 14576E1							
30 days	8.33	13.33	21.67				
60 days	26.67	36.67	55.00				

Tall Fescue Averages				
30 days	8.59	10.45	23.46	N = 26
60 days	23.46	27.95	46.47	

2008 Germination Data

Fine Fescues

	<i>Mountain</i>	<i>North Piedmont</i>	<i>South Piedmont</i>		<i>Mountain</i>	<i>North Piedmont</i>	<i>South Piedmont</i>
Hard Fescue (<i>Festuca brevipila</i>)				Chewings Fescue (<i>Festuca rubra commutata</i>)			
Granite				Chancellor			
30 days	1.67	5.00	8.33	30 days	0.00	5.00	30.00
60 days	10.00	20.00	25.00	60 days	6.67	26.67	35.00
Henry				Compass			
30 days	1.67	5.00	16.67	30 days	1.67	5.00	11.67
60 days	5.00	23.33	30.00	60 days	3.33	18.33	21.67
Heron				Frazer			
30 days	1.67	5.00	15.00	30 days	6.67	5.00	23.33
60 days	3.33	11.67	31.67	60 days	15.00	26.67	30.00
Reliant IV				Jamestown IV			
30 days	1.67	5.00	16.67	30 days	3.33	5.00	18.33
60 days	10.00	18.33	30.00	60 days	10.00	16.67	30.00
Rhino				Windward			
30 days	3.33	6.67	11.67	30 days	0.00	0.00	5.00
60 days	8.33	25.00	28.33	60 days	1.67	8.33	11.67
Spartan 2				Chewings Fescue Averages			
30 days	1.67	5.00	16.67	30 days	2.33	4.00	17.67
60 days	6.67	16.67	26.67	60 days	7.33	19.33	25.67
Warwick							
30 days	0.00	0.00	5.00				
60 days	3.33	15.00	20.00				
Hard Fescue Averages							
30 days	1.67	4.52	12.86				
60 days	06.67	18.57	27.38				

2008 Germination Data

Fine Fescues

Mountain North Piedmont South Piedmont

Red Fescue (*Festuca rubra rubra*)

Cardinal

30 days	3.33	8.33	26.67
60 days	6.67	18.33	41.67

Epic

30 days	6.67	13.33	28.33
60 days	11.67	21.67	41.67

SilverLawn

30 days	5.00	13.33	31.67
60 days	15.00	25.00	40.00

Red Fescue Averages

30 days	5.00	11.67	28.89
60 days	11.11	21.67	41.11



2008 Germination Data

Other Species

	<i>Mountain</i>	<i>North Piedmont</i>	<i>South Piedmont</i>		<i>Mountain</i>	<i>North Piedmont</i>	<i>South Piedmont</i>
Perennial Ryegrass (<i>Lolium perenne</i>)				Kentucky Bluegrass (<i>Poa pratensis</i>)			
Colosseum				A01-299			
30 days	23.33	18.33	68.33	30 days	3.33	5.00	16.67
60 days	31.67	55.00	71.67	60 days	8.33	11.67	16.67
				90 days			
CT01BG				Front Page			
30 days	18.33	23.33	73.33	30 days	1.67	0.00	20.00
60 days	30.00	70.00	73.33	60 days	5.00	5.00	20.00
				90 days			
Palace				Volt			
30 days	21.67	15.00	66.67	30 days	5.00	5.00	28.33
60 days	30.00	45.00	68.33	60 days	8.33	13.33	21.67
				90 days			
Phenom				Species Average			
30 days	16.67	20.00	66.67	30 days	3.33	3.33	21.67
60 days	28.33	43.33	66.67	60 days	7.22	10.00	21.67
Primary							
30 days	21.67	23.33	71.67				
60 days	31.67	61.67	71.67				
Species Average							
30 days	20.33	20.00	69.33				
60 days	30.33	55.00	70.33				

2008 Germination Data

Other Species

	<i>Mountain</i>	<i>North Piedmont</i>	<i>South Piedmont</i>
EDD Tufted Hairgrass			
30 days	0.00	11.67	26.67
60 days	1.67	21.67	38.33
90 days			
Orca Orchardgrass			
30 days	11.67	20.00	56.67
60 days	26.67	56.67	56.67
90 days			
Spike Bentgrass (<i>Agrostis exarata</i>)			
30 days	1.67	13.33	76.67
60 days	10.00	51.67	80.00
90 days			

2008 Germination Data By Company

	<i>Mountain</i>	<i>North Piedmont</i>	<i>South Piedmont</i>		<i>Mountain</i>	<i>North Piedmont</i>	<i>South Piedmont</i>
Allied Seeds				Ampac Seed Company			
AST7002 TallFescue				IS-TF-138 Tall Fescue			
30 days	8.33	11.67	23.33	30 days	8.33	8.33	21.67
60 days	21.67	25.00	31.67	60 days	21.67	28.33	43.33
AST7003 Tall Fescue				IS-TF-152 Tall Fescue			
30 days	5.00	10.00	25.00	30 days	6.67	11.67	25.00
60 days	16.67	26.67	43.33	60 days	23.33	30.00	56.67
DTT-20-08 Tall Fescue				RKCL Tall Fescue			
30 days	5.00	5.00	16.67	30 days	8.33	13.33	21.67
60 days	18.33	15.00	31.67	60 days	26.67	28.33	50.00
DTT-21-08 Tall Fescue				Phenom Perennial Ryegrass			
30 days	5.00	5.00	18.33	30 days	16.67	20.00	66.67
60 days	16.67	16.67	28.33	60 days	28.33	43.33	66.67
DTT-43-08 Tall Fescue				Front Page Kentucky Bluegrass			
30 days	5.00	6.67	21.67	30 days	1.67	0.00	20.00
60 days	15.00	25.00	43.33	60 days	5.00	5.00	20.00
DTT-95-08 Tall Fescue							
30 days	5.00	6.67	20.00				
60 days	18.33	25.00	33.33				

2008 Germination Data By Company

	<i>Mountain</i>	<i>North Piedmont</i>	<i>South Piedmont</i>		<i>Mountain</i>	<i>North Piedmont</i>	<i>South Piedmont</i>
Burlingham Seeds				Columbia Seeds			
Bullseye Tall Fescue				Darlington Tall Fescue			
30 days	13.33	11.67	25.00	30 days	6.67	5.00	18.33
60 days	23.33	33.33	51.67	60 days	21.67	20.00	30.00
Hemi Tall Fescue				Tahoe II Tall Fescue			
30 days	10.00	10.00	25.00	30 days	6.67	18.67	21.67
60 days	21.67	33.33	56.67	60 days	23.33	31.67	55.00
Turbo RZ Tall Fescue				Talladega Tall Fescue			
30 days	11.67	11.67	26.67	30 days	11.67	11.67	21.67
60 days	23.33	28.33	51.67	60 days	28.33	28.33	55.00
A01-299 Kentucky Bluegrass				Rhino Hard Fescue			
30 days	3.33	5.00	16.67	30 days	3.33	6.67	11.67
60 days	8.33	11.67	16.67	60 days	8.33	25.00	28.33
Caudill Seed				Jamestown IV Chewings			
Forrest Green Tall Fescue				30 days	3.33	5.00	18.33
30 days	6.67	5.00	21.67	60 days	10.00	16.67	30.00
60 days	23.33	38.33	70.00	Palace P. Ryegrass			
				30 days	21.67	15.00	66.67
				60 days	30.00	45.00	68.33
				Primary P. Ryegrass			
				30 days	21.67	23.33	71.67
				60 days	31.67	61.67	71.67

2008 Germination Data By Company

	<i>Mountain</i>	<i>North Piedmont</i>	<i>South Piedmont</i>		<i>Mountain</i>	<i>North Piedmont</i>	<i>South Piedmont</i>
Derry Warehouse Company				Lewis Seed Company			
GA-51 Tall Fescue				SC-1 Tall Fescue			
30 days	18.33	11.67	31.67	30 days	11.67	15.00	26.67
60 days	33.33	38.33	70.00	60 days	26.67	33.33	53.33
Ioka Farms Marketing				Mountain View Seed			
PI 4576E1 Tall Fescue				MVS3609 Tall Fescue			
30 days	8.33	13.33	21.67	30 days	6.67	13.33	26.67
60 days	26.67	36.67	55.00	60 days	21.67	31.67	55.00
Henry Hard Fescue				Heron Hard Fescue			
30 days	1.67	5.00	16.67	30 days	1.67	5.00	15.00
60 days	5.00	23.33	30.00	60 days	3.33	11.67	31.67
Frazer Chewings Fescue				Compass Chewings Fescue			
30 days	6.67	5.00	23.33	30 days	1.67	5.00	11.67
60 days	15.00	26.67	30.00	60 days	3.33	18.33	21.67
Silverlawn Red Fescue				Cardinal Red Fescue			
30 days	5.00	13.33	31.67	30 days	3.33	8.33	26.67
60 days	15.00	25.00	40.00	60 days	6.67	18.33	41.67
Colosseum Perennial Ryegrass				Volt Kentucky Bluegrass			
30 days	23.33	18.33	68.33	30 days	5.00	5.00	28.33
60 days	31.67	55.00	71.67	60 days	8.33	13.33	21.67
CT01BG Perennial Ryegrass							
30 days	18.33	23.33	73.33				
60 days	30.00	70.00	73.33				

2008 Germination Data By Company

	<i>Mountain</i>	<i>North Piedmont</i>	<i>South Piedmont</i>		<i>Mountain</i>	<i>North Piedmont</i>	<i>South Piedmont</i>
Oregro Seeds, Inc				PickSeed			
Escalade Tall Fescue				Crossfire 3 Tall Fescue			
30 days	6.67	15.00	28.33	30 days	6.67	8.33	18.33
60 days	31.67	31.67	50.00	60 days	15.00	21.67	38.33
Kentucky 32 Tall Fescue				Mustang 4 Tall Fescue			
30 days	6.67	13.33	30.00	30 days	11.67	13.33	25.00
60 days	31.67	31.67	50.00	60 days	23.33	30.00	46.67
Paraiso Tall Fescue				Spartan 2 Hard Fescue			
30 days	8.33	8.33	23.33	30 days	1.67	5.00	16.67
60 days	28.33	26.67	35.00	60 days	6.67	16.67	26.67
Granite Hard Fescue				Windward Chewings Fescue			
30 days	1.67	5.00	8.33	30 days	0.00	0.00	5.00
60 days	10.00	20.00	25.00	60 days	1.67	8.33	11.67
Warwick Hard Fescue				Orca Orchardgrass			
30 days	0.00	0.00	5.00	30 days	11.67	20.00	56.67
60 days	3.33	15.00	20.00	60 days	26.67	56.67	56.67
Chancellor Chewings Fescue							
30 days	0.00	5.00	30.00				
60 days	6.67	26.67	35.00				

2008 Germination Data By Company

Mountain North Piedmont South Piedmont

ProSeeds Marketing

Shenandoah III Tall Fescue			
30 days	15.00	15.00	25.00
60 days	28.33	33.33	53.33
Reliant IV Hard Fescue			
30 days	1.67	5.00	16.67
60 days	10.00	18.33	30.00
Epic Red Fescue			
30 days	6.67	13.33	28.33
60 days	11.67	21.67	41.67
EDD Tufted Hairgrass			
30 days	0.00	11.67	26.67
60 days	1.67	21.67	38.33
Spike Bentgrass			
30 days	1.67	13.33	76.67
60 days	10.00	51.67	80.00

2007 Year 2 Data

Warm-Season Species

Mountain North Piedmont

Bermuagrass (*Cynodon dactylon*)

IS-CD 5	75.00	98.33
IS-CD 7	76.67	100.00
Mohawk	58.35	100.00
NuMex Sahara	81.67	100.00
SWI-1012	100.00	100.00
Transcontinental	100.00	100.00

Species Average 84.52 99.76 N=6

Centipedegrass (*Erimechloa ophiuroides*)

Centi-Seed	21.67	45.00
TifBlair	18.33	75.00

Species Average 20.00 60.00 N=2

Zoysiagrass (*Zoysia japonica*)

Zenith	56.67	70.00
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Other

Durana White Clover	13.33	100.00
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2007 Year 2 Data

By Company

	<i>Mountain</i>	<i>North Piedmont</i>
<i>DLF International Seeds</i>		
IS-CD 5 Bermudagrass	75.00	98.33
IS-CD 7 Bermudagrass	76.67	100.00
<i>Pennington Seed Inc.</i>		
Mohawk Bermudagrass	58.35	100.00
NuMex Sahara	81.67	100.00
SWI-1012 Bermudagrass	100.00	100.00
Zenith Zoysiagrass	56.67	70.00
Durana White Clover	13.33	100.00
<i>Patten Seed Co.</i>		
Centi-Seed Centipedegrass	21.67	45.00
TifBlair Centipedegrass	18.33	75.00
Zenith Zoysiagrass	56.67	70.00
<i>The Scotts Company</i>		
Transcontinental Bermuda	100.00	100.00

2006 2007 2008

Low-Maintenance Turfgrass Evaluation

Rainfall Data for Cool-Season and Warm-Season Trials (inches)

<i>Month</i>	<i>Wytheville</i>	<i>Kentland</i>	<i>Harrisonburg</i>	<i>Orange</i>	<i>Blackstone</i>
January	0.59	0.92	0.75	0.54	0.81
February	0.63	1.75	1.74	1.55	1.56
March	0.60	2.01	1.09	1.04	2.58
April	1.20	3.80	2.81	2.15	1.53
May	1.55	2.14	2.34	2.67	2.29
June	0.92	2.19	0.99	1.31	2.47
July	2.48	5.57	2.05	0.55	2.77
August	0.28	2.75	2.15	2.14	1.78
September	0.48	1.34	2.13	3.11	3.91
October	0.02	0.88	0.49	0.47	0.00
November	0.83	1.63	1.75	1.53	1.59
December	1.23	1.26	1.56	1.51	2.53
Totals	10.81	26.24	19.85	18.57	23.82

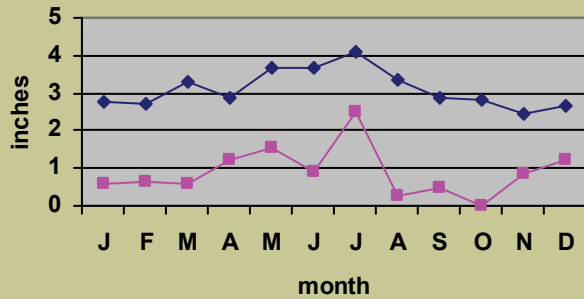
**Wytheville
Harrisonburg
Blackstone**

**Kentland
Orange**

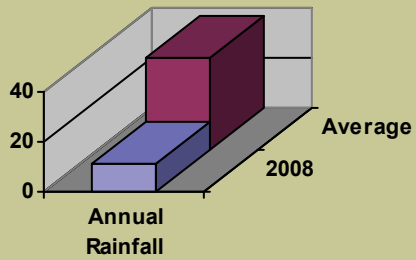


2006 2007 2008

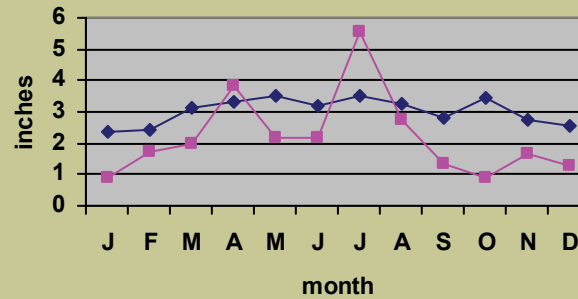
Wytheville¹



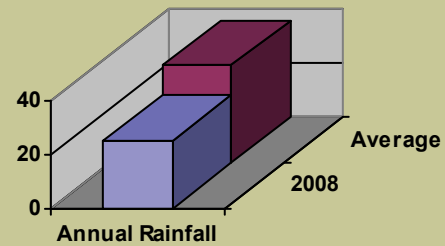
◆ Average ■ 2008



Kentland²



◆ Average ■ 2008



Rainfall Data

1. *Wytheville*
2008 Cool-Season Mountain Location
2. *Kentland*
2007 Warm-Season Mountain Location

Wytheville
Harrisonburg
Blackstone

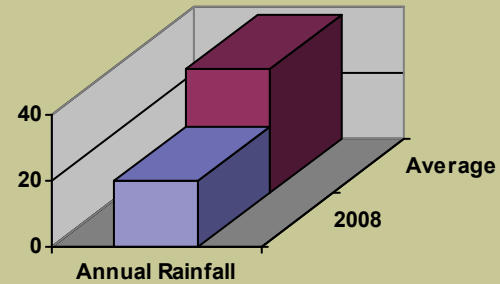
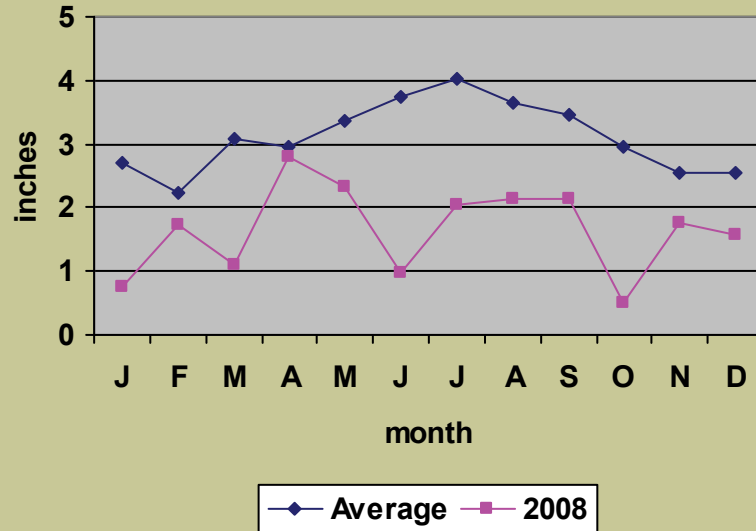
Kentland
Orange



ROADSIDE VEGETATION MANAGEMENT

2006 2007 2008

Harrisonburg¹



**Wytheville
Harrisonburg
Blackstone**

**Kentland
Orange**

Rainfall Data

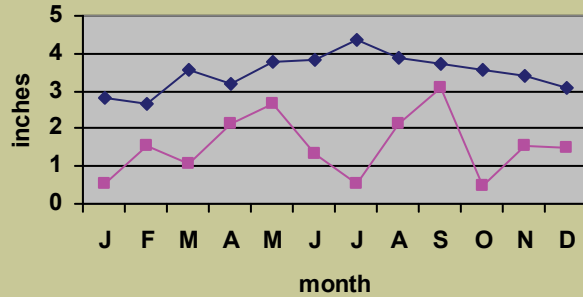
- Harrisonburg
2008 Cool-Season Mountain Location*



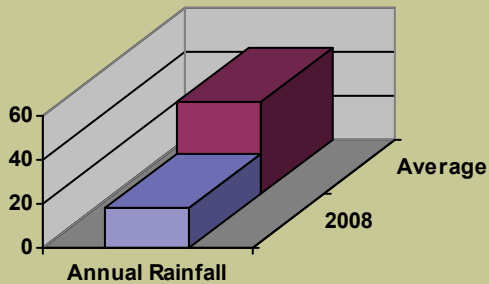
ROADSIDE VEGETATION MANAGEMENT

2006 2007 2008

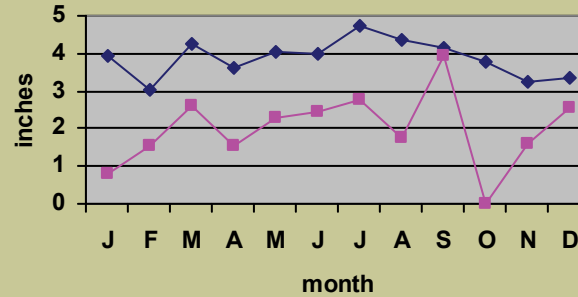
Orange¹



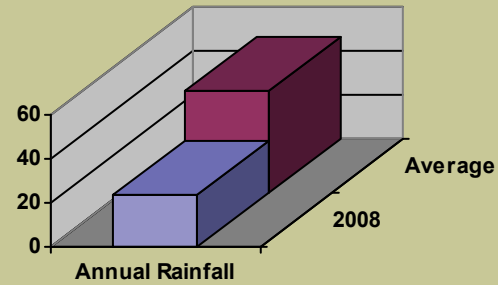
◆ Average ■ 2008



Blackstone²



◆ Average ■ 2008



Rainfall Data

1. Orange
 - 2006 Cool-Season N. Piedmont Location
 - 2007 Warm-Season N. Piedmont Location
 - 2008 Cool-Season N. Piedmont Location
2. Blackstone
 - 2006 Cool-Season S. Piedmont Location
 - 2008 Cool-Season S. Piedmont Location

**Wytheville
Harrisonburg
Blackstone**

**Kentland
Orange**



ROADSIDE VEGETATION MANAGEMENT