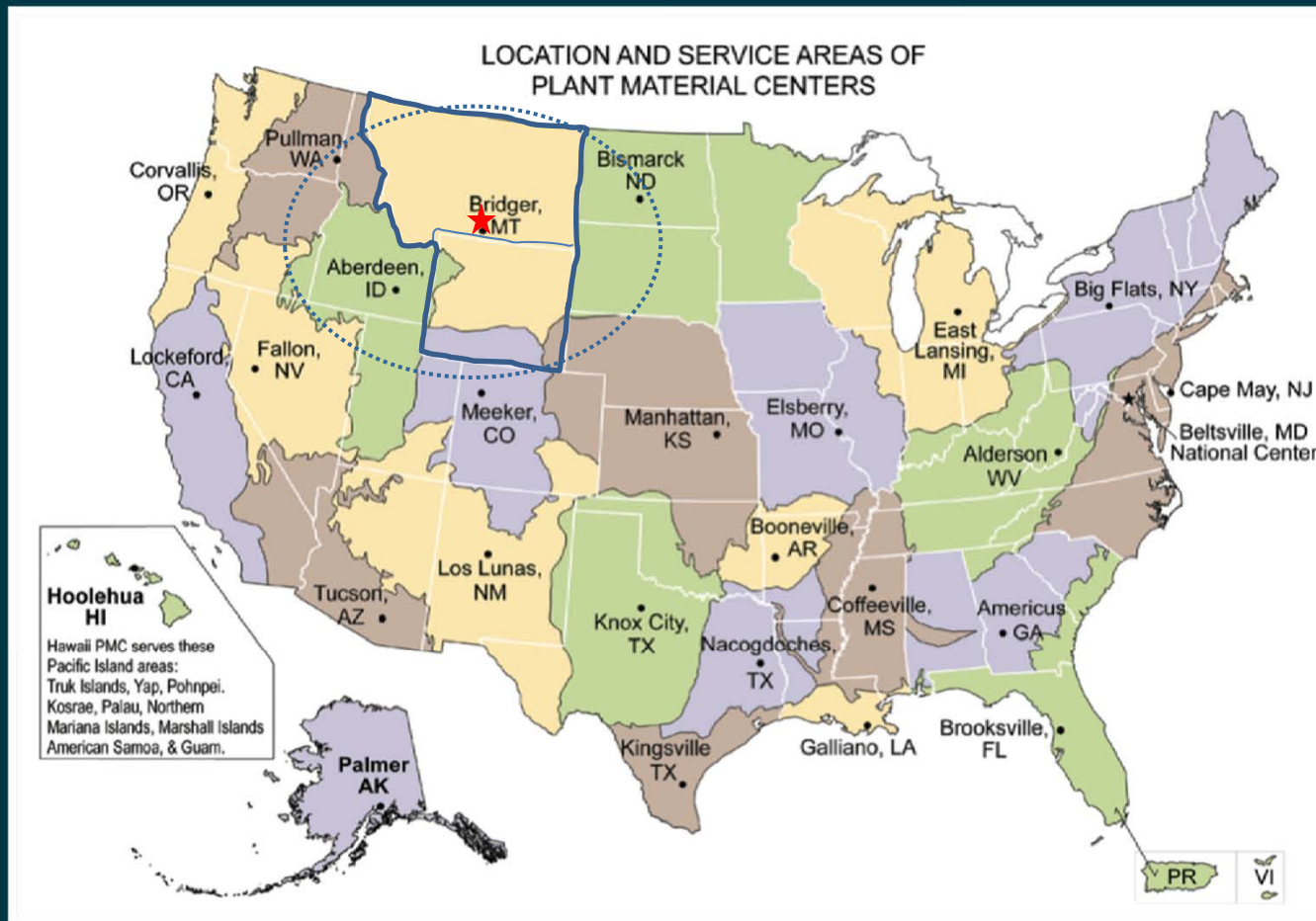


Native Plant Materials Selection at the Bridger Plant Materials Center by Susan R. Winslow



Bridger PMC June 2011

BPMC Serves Montana & Wyoming Provides regional support to PMCs in CO-ID-ND-WA





Forages

Saline

Energy Issues

BPMC Long Range Plan
Solve Conservation Problems
with Plant Solutions

Pollination

Windbreaks



Native Habitats

Cultural Species

Disturbed Lands



Plant Selection Process

- define conservation need & specific plant use
 - extent of impact, potential vegetation
- identify appropriate species
 - collect & assemble seed across geographic area
- test for adaptability & applicability
 - establish selection criteria
 - evaluate performance
- select best performers & increase for distribution
 - based on desirable heritable traits
- release "new" material to commercial production industry

“Improved” Plant Materials?

developed varieties genetic manipulation

plant breeding for desirable traits

selected material non-genetic manipulation

observed superior performance over time

germplasm pre-varietal categories

progeny-tested for heritable traits

shorter-duration performance testing

unevaluated

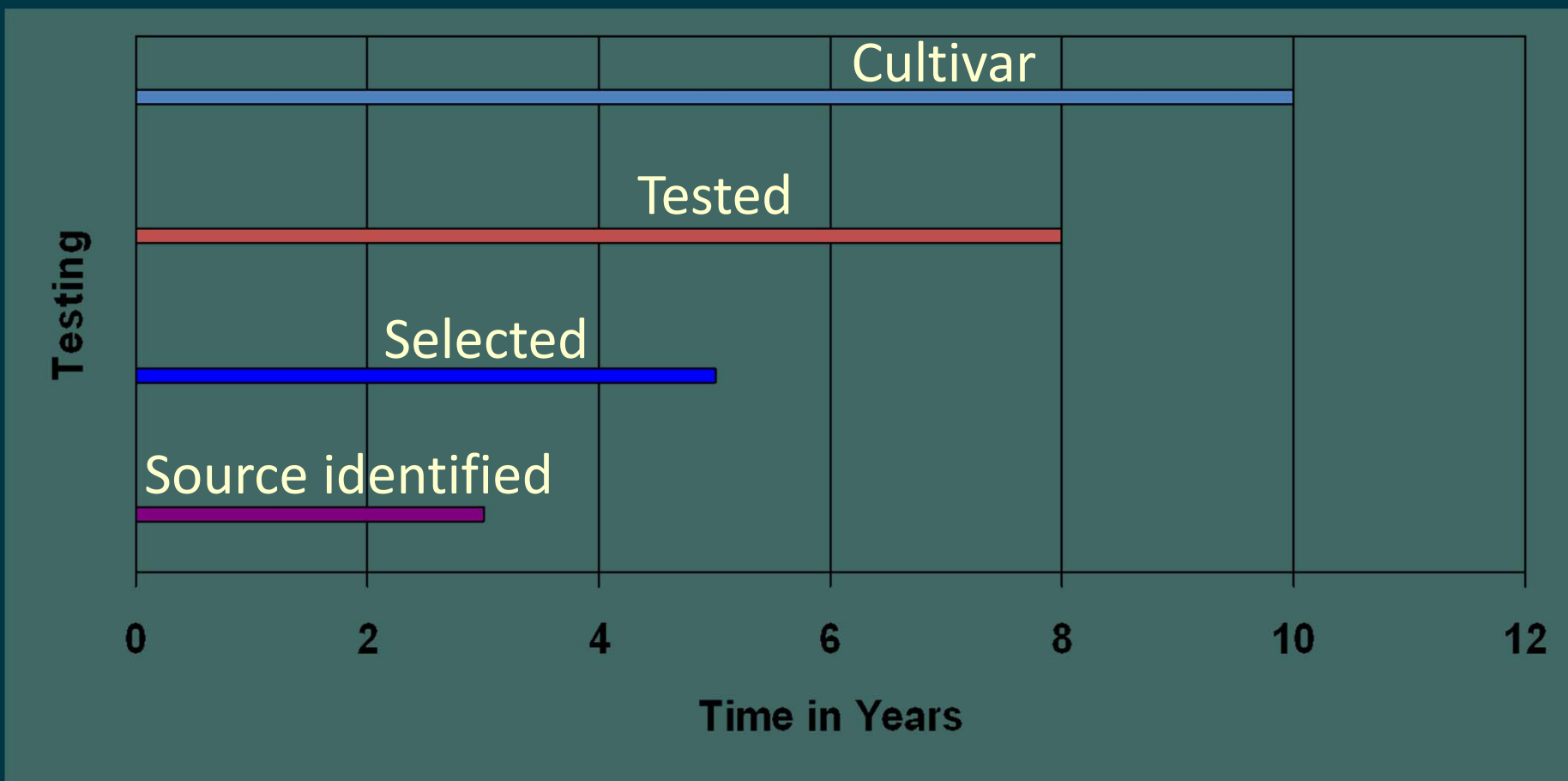
THE AOSCA NATIVE PLANT CONNECTION



Association of
Official Seed
Certifying Agencies

www.aosca.org

Release Types & Timeframes



Plant Release Selection Process

1. Define conservation need & specific plant use what is extent of impact & what is potential vegetation?

Ecological Site Description: MLRA 34A, Sandy 10-14" PPT
Wyoming big sagebrush, needle and thread,
thickspike wg, Indian ricegrass, phacelia, etc.



Plant Release Selection Process

1. Define conservation need & specific plant use

2. Identify appropriate species

collect and assemble seed across geographic area



Plant Release Selection Process

1. Define conservation need & specific plant use
2. Identify appropriate species
3. Test for adaptability & applicability
establish selection criteria & evaluate performance



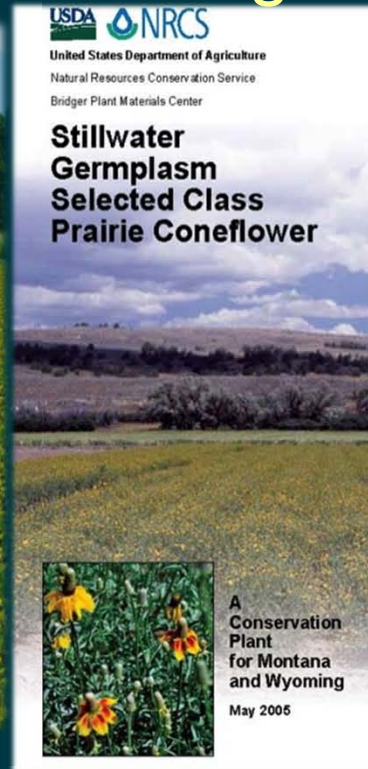
Plant Release Selection Process

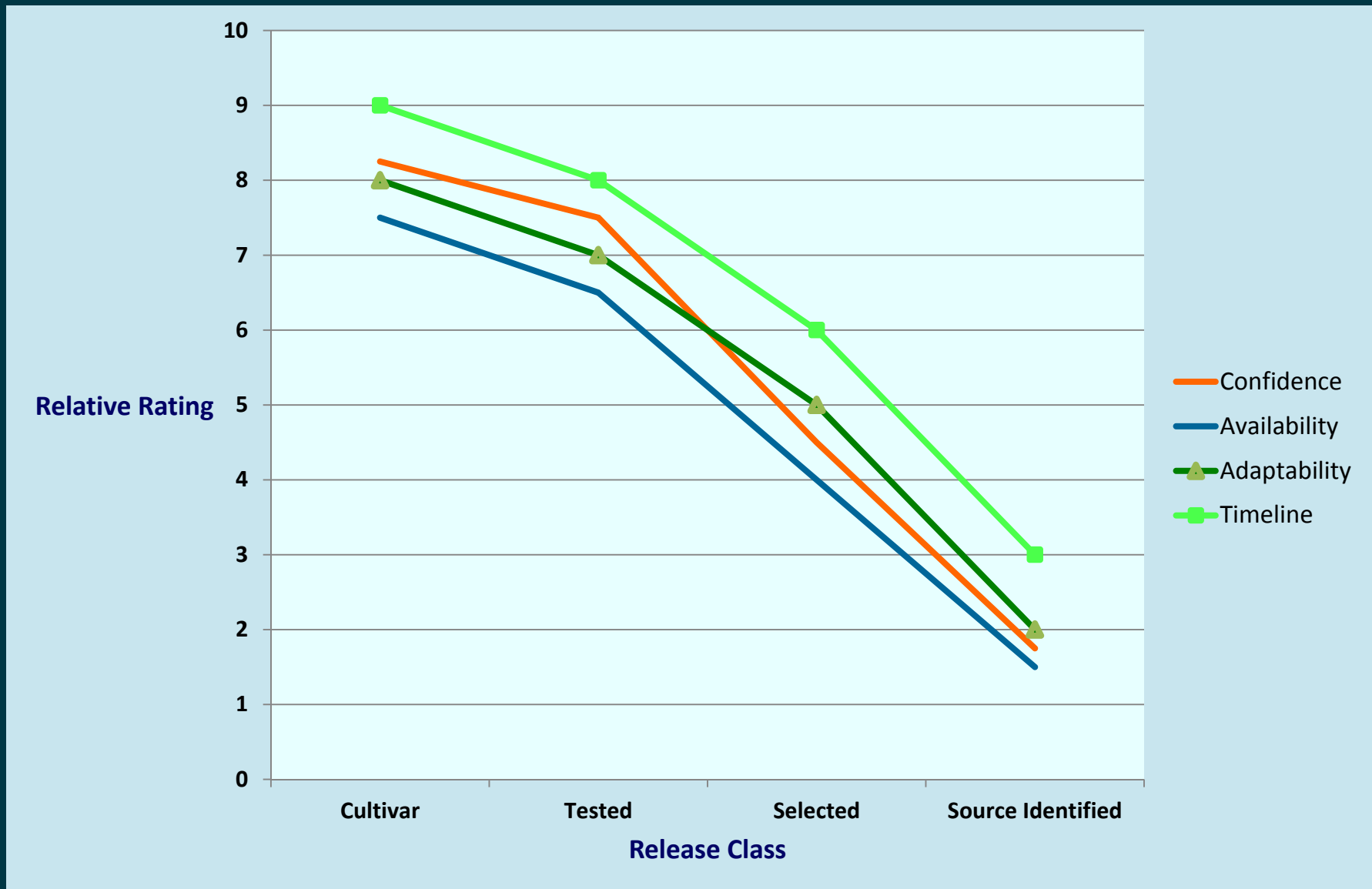
1. Define conservation need & specific plant use
2. Identify appropriate species
3. Test for adaptability & applicability
4. **Select top performers** based on desirable/heritable traits



Plant Release Selection Process

1. Define conservation need & specific plant use
2. Identify appropriate species
3. Test for adaptability & applicability
4. Select top performers
5. Increase for distribution/demonstration
6. Release “new” material to commercial growers







Benefits of *Variety/Cultivar* when

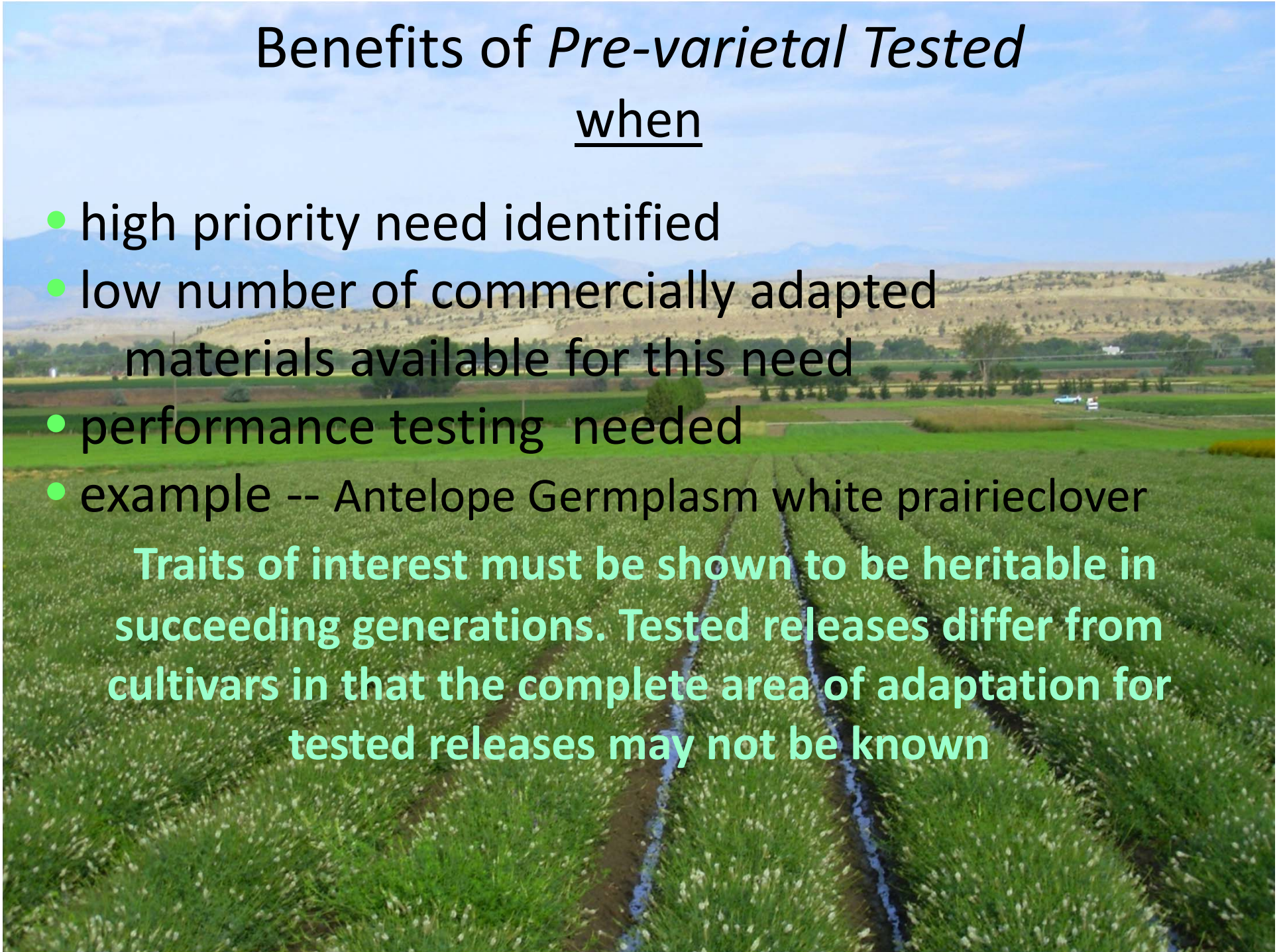
- high priority need identified over a broad area
- limited number of commercially adapted materials is available for that area
- suitable performance testing has been conducted
- example -- 'Critana' thickspike wheatgrass

Cultivars are intensively evaluated for a longer period of time over a wider selection of sites and their range of adaptation has been fully documented

Benefits of *Pre-varieta* Tested when

- high priority need identified
- low number of commercially adapted materials available for this need
- performance testing needed
- example -- Antelope Germplasm white prairieclover

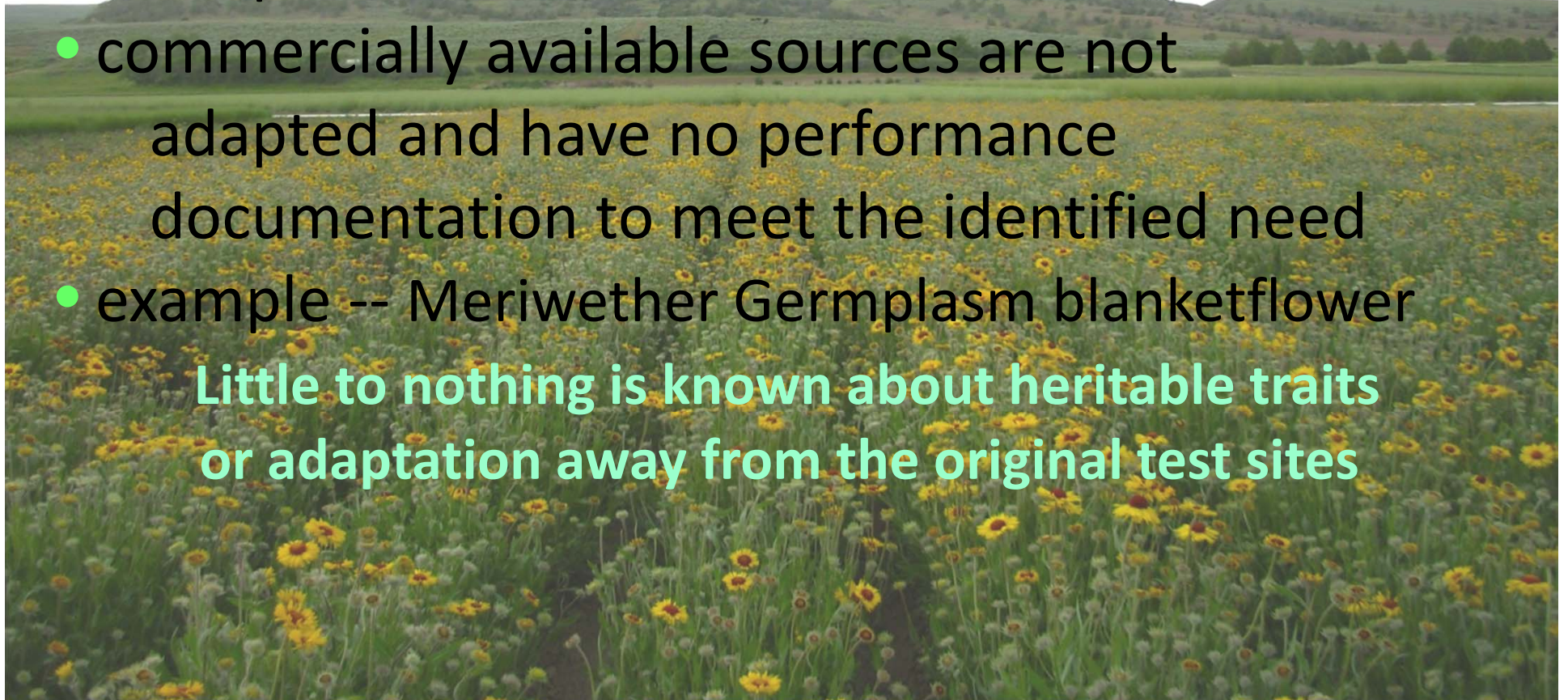
Traits of interest must be shown to be heritable in succeeding generations. Tested releases differ from cultivars in that the complete area of adaptation for tested releases may not be known



Benefits of *Pre-variatal Selected* when

- high priority need identified
- lack of or low availability of commercial adapted materials for identified need
- commercially available sources are not adapted and have no performance documentation to meet the identified need
- example -- Meriwether Germplasm blanketflower

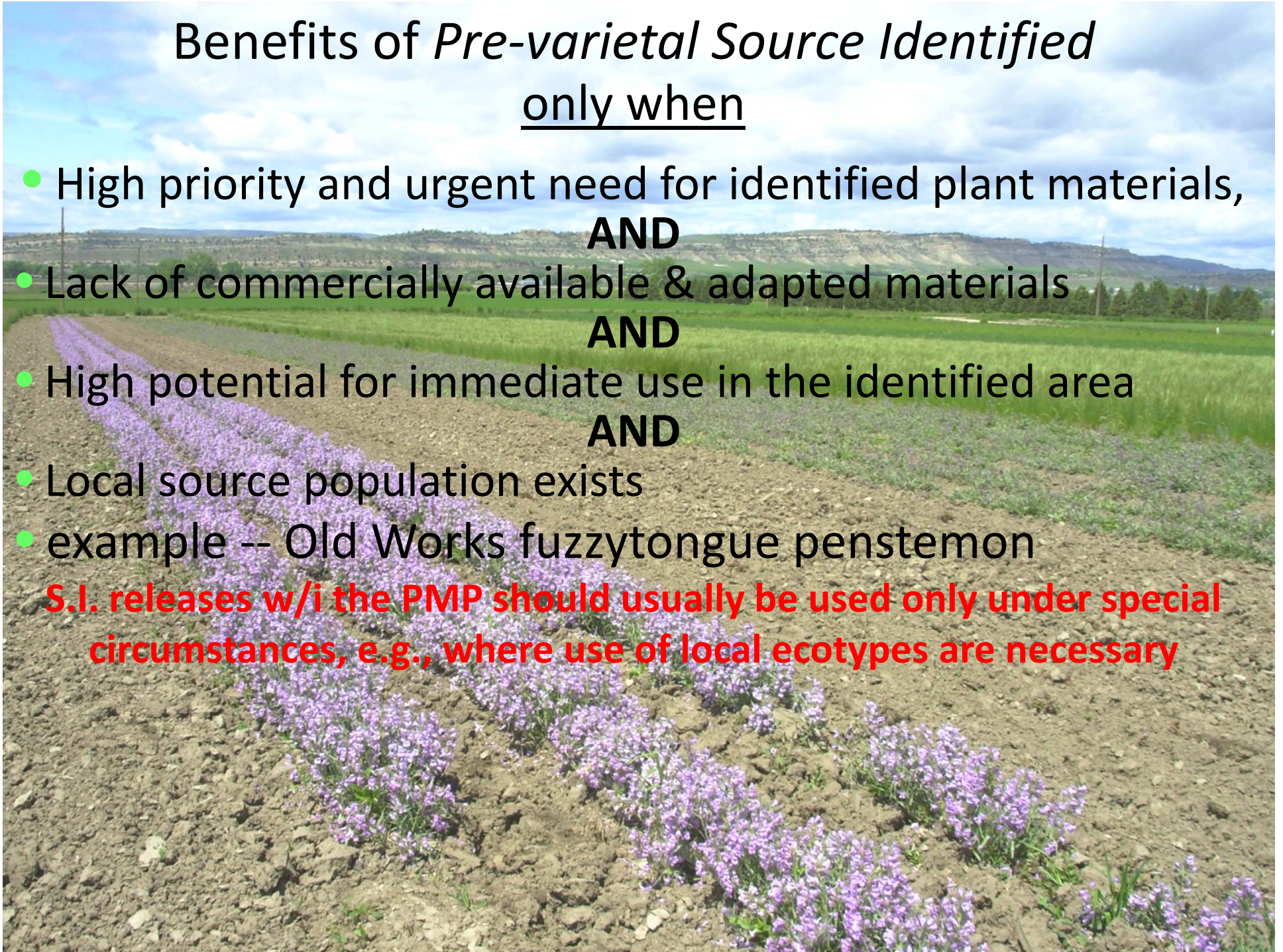
Little to nothing is known about heritable traits or adaptation away from the original test sites



Benefits of *Pre-variatal Source Identified* only when

- High priority and urgent need for identified plant materials,
AND
- Lack of commercially available & adapted materials
AND
- High potential for immediate use in the identified area
AND
- Local source population exists
- example -- Old Works fuzzytongue penstemon

S.I. releases w/i the PMP should usually be used only under special circumstances, e.g., where use of local ecotypes are necessary



www.wyseedcert.com

UNIVERSITY OF WYOMING
College of Agriculture

Seed Certification Service
Serving Wyoming Since 1932

Wyoming's Authority for Seed Certification



In Cooperation with the Wyoming
Crop Improvement Association

This Site Best Viewed at 800 by 600 pixels

Seed Certification

Read about our programs and services as well as a list of acres in the program by crop type.

Seed Certification Forms

Foreword Statement

Approved Conditioners

Calendar of Events

Meeting Information

Foundation Seed

Seed Classes

Seed Testing

Certification Fees

WCIA Board Directors

Wyoming Hay and Seed List

Field and Seed Standards

The Grower Handbook includes field and seed standards for all crops.

Crop Information

Includes isolation calculation examples, hybrid alfalfa pollen counts, a link to the PVP office database, and other helpful information.

Certified Seed Directory

You may also contact us and we will be happy to send you a free copy.

Shoshone Sainfoin

Variety release document. Details on ordering Foundation Seed on the link to the left.

Wyoming State Seed Law

Wyoming Seed Regulations

2010 Cooperative Dry Bean

Nursery Data and Discussion
Discussion and data for the trial conducted at the Powell Research and Extension Center.

Please

WY Seed Certification Staff

Mike Moore, Manager
Debbie Nuss, Admin Associate
Christine Rathbun, Office Assistant
Jolene Sweet, Field Inspector

Seed Certification Address

Seed Certification Office
747 Road 9
Powell, WY 82435

Questions? Please Contact Us

Telephone:
Local: (307) 754-9815
Free: 1-800-923-0080
Fax: (307) 754-9820

or E-mail to:

mdmoore@uwyo.edu



Montana Seed Growers Association

- Home
- Directories
- Newsletter
- Seed Standards
- Forms
- Board of Directors
- Links
- Contact us

The Winter Wheat Directory for 2011 is now online. Please look under the Directory tab.

Thanks,
MSGA



<http://ag.montana.edu/msga/index.html>



MONTANA STATE SEED LAB

- Home
- Services
- Sample Submission
- Sampling Procedures
- Links
- Contact Us

Montana State Seed Lab
 PO Box 173145
 Room 40 Marsh Lab
 Bozeman, MT 59717-3145

Phone: (406) 994-2141
 Fax: (406) 994-3786

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jessica.scott1@msu.montana.edu

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westfall@montana.edu

Lucy Cooke, CSA Purity and Germination, Viability Supervisor
lcooke@montana.edu

University of Wyoming

Seed Analysis Laboratory



Seed Testing in Wyoming

Read a description of our lab and some reasons to test your seed.

Services

Sampling

Submitting Samples

How Much Seed to Send

Wyoming Seed Law

Wyoming Seed Regulations

Links to Related Sites

Seed Testing Price List

Click here to view the price list for seed tests.

Other Fees for Testing and Services

Click here to view the charges for special tests, hourly rates, and other services offered by the lab.

[Click here to pay your bill online](#)

Seed Lab Staff

[Gil Waibel](#), Director, R.S.T.
[R. Denny Hall](#), R.S.T.
[Jill Rice](#), Lab Assistant
[Crystal May](#), Lab Assistant
[Tonya Espinosa](#), Lab Assistant

Staff Pictures

Seed Lab Address

749 Road 9
 Powell, WY 82435

Questions? Please Contact Us

Telephone: (307) 754-4750
 or E-mail to: seed-lab@uwyo.edu

Federal Seed Law--Seed Shipments Seed Analysis Requirements

In-State test date w/in 1 year
 Out of State test date w/in 6 months

Montana State Seed Lab

PO Box 173145

Bozeman, MT 59717-3145

Laboratory Report of Analysis

| Account No. | Date Received | Date Completed | Lab Number |
|-------------|---------------|----------------|------------|
| 2333 | 03/07/12 | 03/23/12 | 12-2753 |

Sender's Information*

Product: **Stillwater Germplasm**
 Kind: **Coneflower, upright prairie**
 Genus/Species: **Ratibida columnifera**
 Lot Number: **SFD-11-FLD13ST**
 Class: **Sel Gen 1**

*The information provided here is that of the sender and not of the laboratory.

| Purity Analysis | | | | Viability Analysis | | | | PLS% |
|-----------------------------|-----------------------------|--------------|-----------|--------------------|-----------|--------|--------------|-------|
| Pure Seed Components | In 2.5027 grams. | Purity | Germ Date | Germination % | Dormant % | Hard % | Total Viable | |
| Coneflower, upright prairie | <i>Ratibida columnifera</i> | 99.73% | 03/23/12 | 98 | -N- | -N- | 98 | 97.74 |
| Purity Grams Required | 2 | Weed Seed | 0.00% | | | | | |
| Noxious Grams Required | 20 | Crop Seed | 0.00% | | | | | |
| Grams Submitted | 36 | Inert Matter | 0.27% | | | | | |

Other Crop Seeds: **None Found**

Noxious Weed Seeds: **None Found**

States: MT

In 20 Grams.

(P)Prohibited Noxious (R)Restricted Noxious

Weed Seeds: **None Found**

Other Determinations

Coneflower, upright prairie TZ test: **99 %**

Status: **None.**

Additional Sender's Information*

Origin: MT, MSGA Certification number 115-G1-6185N

Tests Requested: Purity, Germination, TZ test. No other tests requested.

Services Requested: **Rush.**

WARRANTY: We warrant that the purity and germination test results reported on this form have been carried out in accordance with AOSA rules unless otherwise specified. Test results reflect the condition of the submitted sample and may not reflect the condition of the seed lot from which the sample was taken.
 DISCLAIMER OF WARRANTIES: WE MAKE NO OTHER WARRANTIES OF ANY KIND, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Signature:

Bridget Westfall, RST

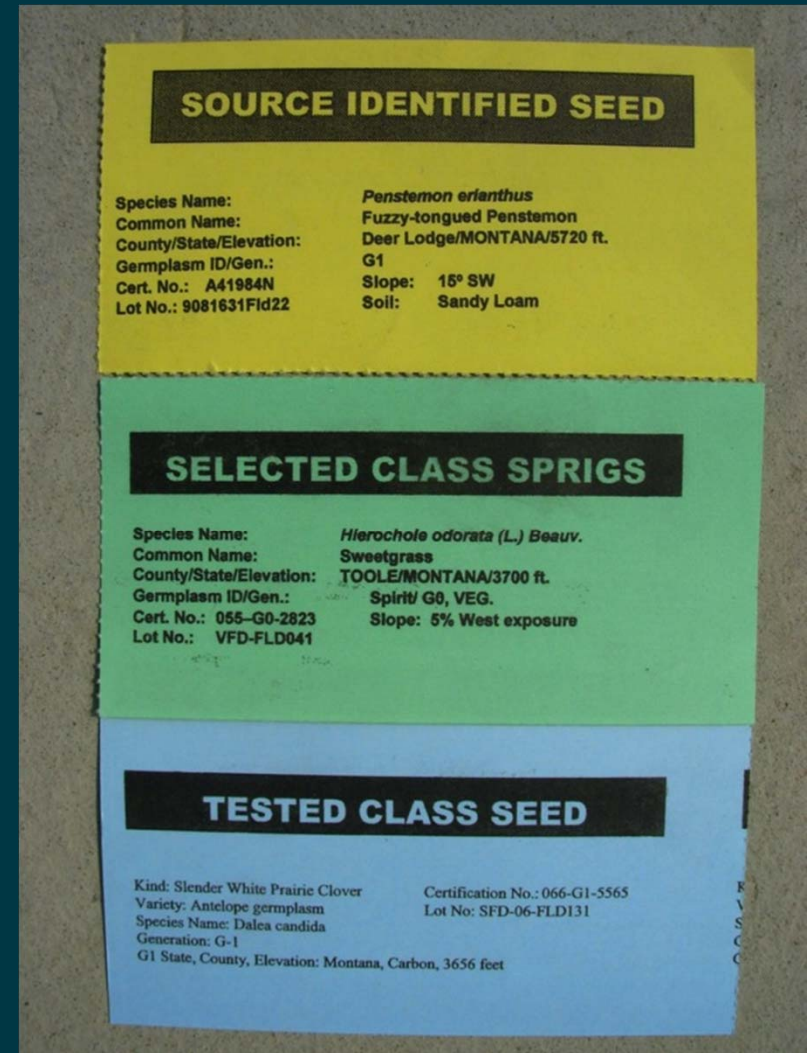


Page 1 of 1 Printed: 03-23-12 16:25:31

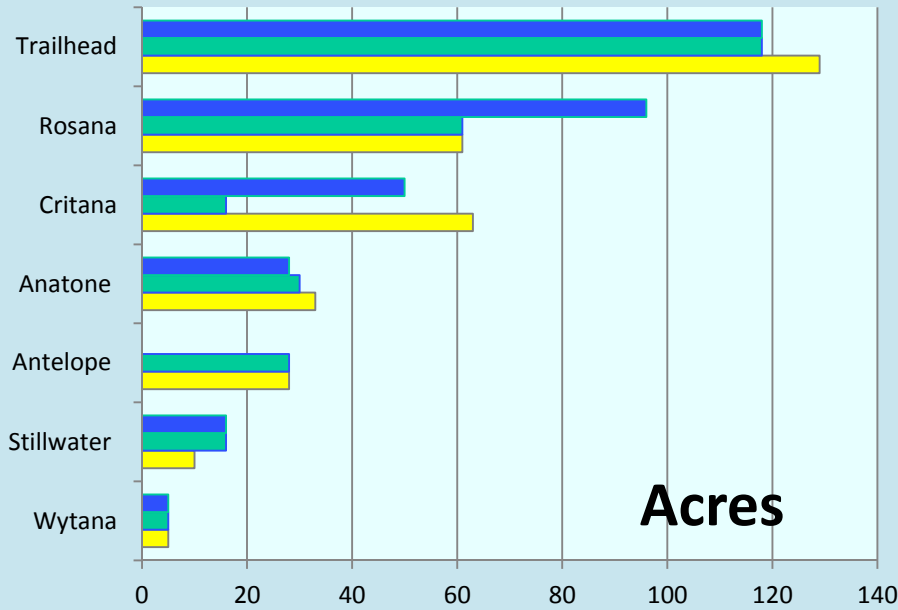
Benefits Truth in Labeling

- color of the seed tags
- seed certification agencies

Cultivar/Variety



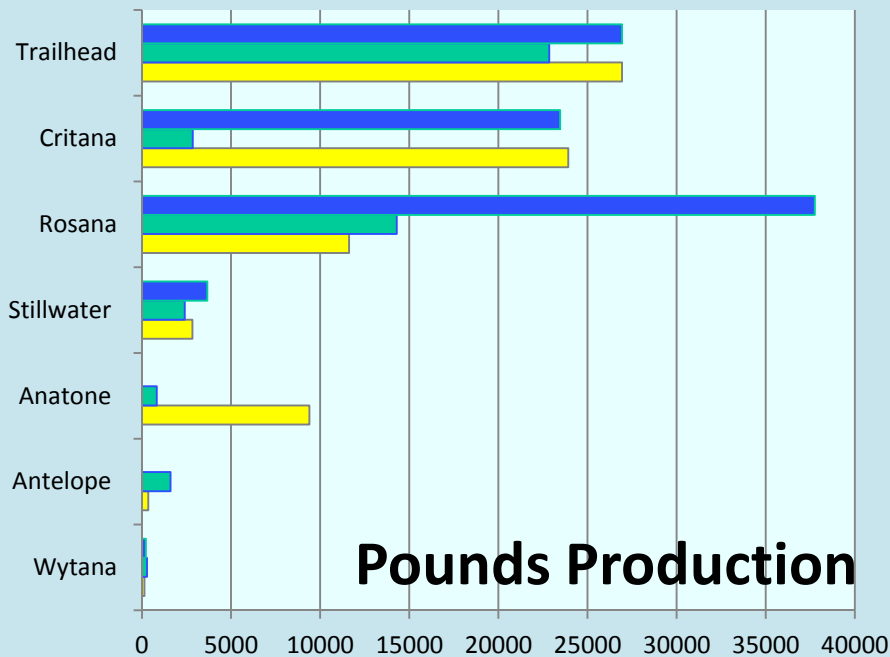
Pre-Varietal



■ 2008
■ 2009
■ 2010

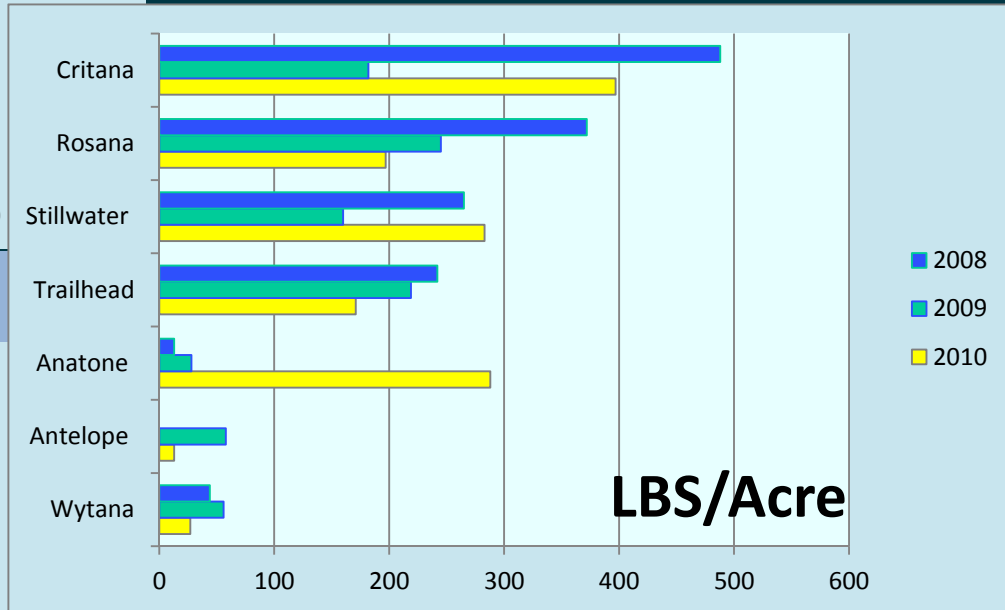
Acres

Montana Seed Growers Assoc.



■ 2008
■ 2009
■ 2010

Pounds Production

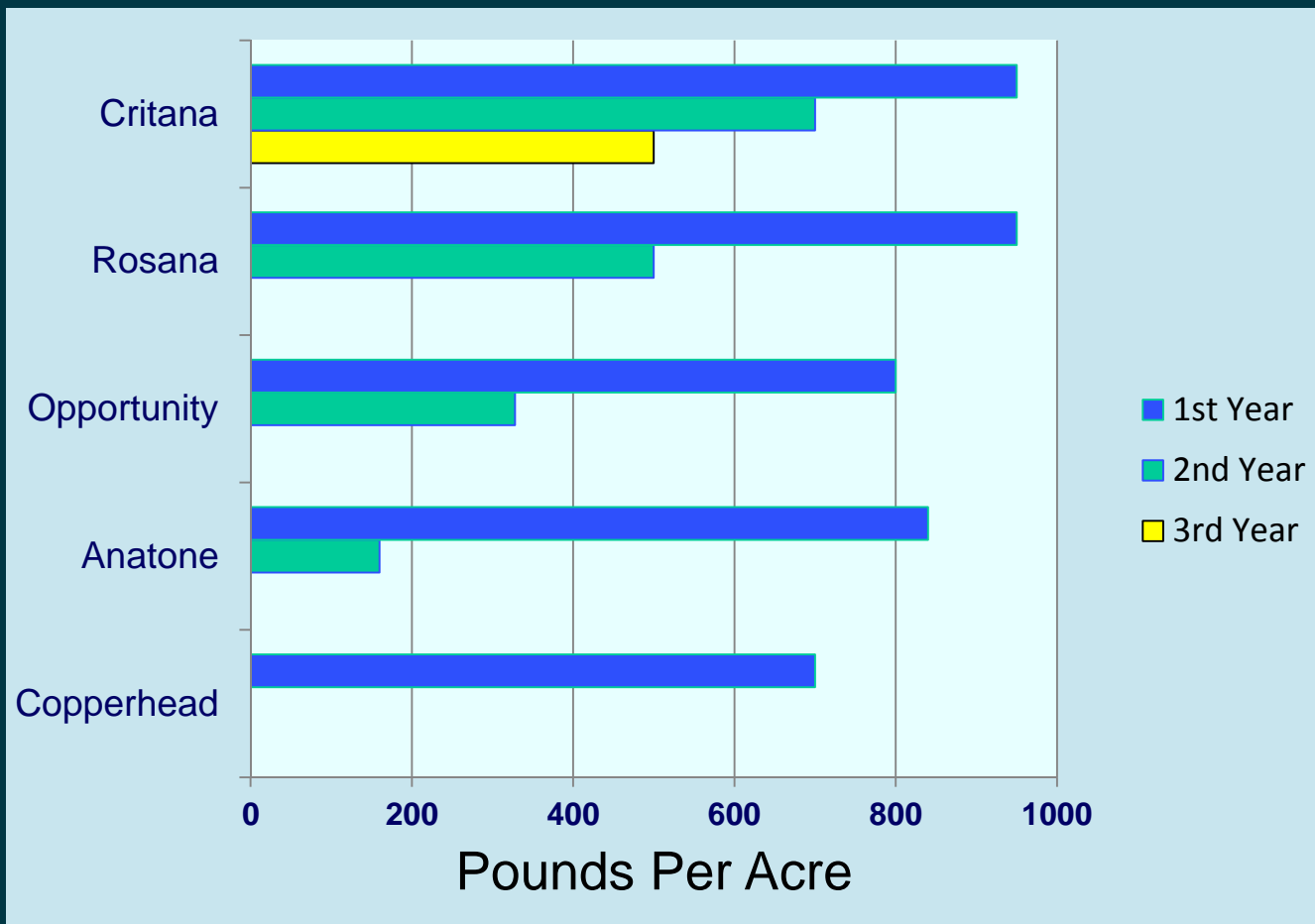


■ 2008
■ 2009
■ 2010

LBS/Acre

**Current Retail Value
\$4.50 to \$35/PLS LB**

Wyoming Seed Certification Service



Improved Plant Materials

Benefit of Side-by-Side Comparisons



Technology Transfer



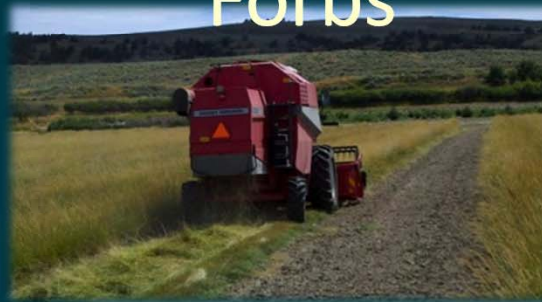
Cultural & Establishment

Weed control in wildflowers
Acid & Heavy-metal environments
Semi-arid environments
Seed coat treatments
Windbreaks/shelterbelts
Forage production
Forb selection



Crop Management

- Irrigation
- Seed harvest
- Herbicide applications
- Seed processing
- Stand longevity
- Weed Control
- Forbs



Emerging Issues

Forbs

Shrubs

Pollinator-friendlies

Conservation effects

Cover crops

Soil quality

Russian olive removal

Fire

Future generations

No-till in furrow irrigation

Energy



- PM Releases 1939 through 2011: 712 total
- Est. 550 still active in commercial production
- Bridger PMC 34 releases
- Life forms: Grass, Grass-like, forbs, shrubs, trees
- Commercial value ~\$100 million per year

Improved Conservation Plant Materials Released by NRCS and Cooperators through December 2007

...for erosion control, wildlife, restoration and more...



USDA  **NRCS**
United States Department of Agriculture
Natural Resources Conservation Service

Helping People Help the Land...

Questions?

For more information visit these websites

<http://plant-materials.nrcs.usda.gov/mtpmc/>

<http://www.plant-materials.nrcs.usda.gov/>



Thanks to all the organizers and participants involved in the
Wyoming Native Seed Issues Workshop!



Keep On Truckin!

1952 Ford--Oldest vehicle in NRCS fleet