



United States Department of Agriculture



Natural  
Resources  
Conservation  
Service



# NRCS – Agency information and Plant Materials Centers

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[nrcs.usda.gov/](https://nrcs.usda.gov/)

# Who is NRCS



- **Federal agency**
  - United States Department of Agriculture
    - Farm Production and Conservation
      - Farm Service Agency
      - Natural Resources Conservation Service
      - Risk Management Agency
- **Conservation Partner to:**
  - Soil and Water Conservation Districts
  - Nevada Department of Forestry
  - Nevada Department of Wildlife
  - NGO's- Pheasants Forever, Local conservation groups,
  - The list goes on....



# History of NRCS

- **1933 the Soil Erosion Service was established**
- **Changed to the Soil Conservation Service (SCS) in 1935**
- **1994 SCS's name was changed to the NRCS**



# SWAPPAH+E



▶ **Soil**

▶ **Water**

▶ **Air**

▶ **Plants**

▶ **Animals**

▶ **Humans**

▶ **Energy**





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# Conservation Planning



**Help our customers care for and protect the land by finding a balance between their economic goals and the needs of the natural environment by creating sustainable systems that not only produce abundant agricultural products, but also a quality environment.**

—SWAPAH+E



# Conservation Planning- Process

- You will meet with your local planners to assess your property and the resource concerns.
- Based on the resource concerns you will come up with a plan to address those concerns



# Incentive Programs



**Rules for the new Farm Bill are forthcoming**



# Practices Available within Programs

**Fencing- exclusion and cross-fence**

**Watering Systems- Wells, pumps, livestock pipeline, water troughs**

**Agricultural Waste Management- Heavy Use Areas  
Composting Facilities**

**Vegetative practices- residue & tillage management, cover crops, conservation crop rotation**

**Wildlife Habitat- brush management, wildlife friendly fencing, habitat enhancement**



# Technical Assistance



## Technical staff have background in:

- Engineering
- Soil science
- Biology
- Range Science
- Archeology
- Plant Materials



You are here: Web Soil Survey Home

### Search

Enter Keywords

All NRCS Sites

### Browse by Subject

- ▶ Soils Home
- ▶ National Cooperative Soil Survey (NCSS)
- ▶ Archived Soil Surveys
- ▶ Status Maps
- ▶ Official Soil Series Descriptions (OSD)
- ▶ Soil Series Extent Mapping Tool
- ▶ Soil Data Mart
- ▶ Geospatial Data Gateway
- ▶ eFOTG
- ▶ National Soil Characterization Data
- ▶ Soil Geochemistry Spatial Database
- ▶ Soil Quality
- ▶ Soil Geography
- ▶ Geospatial One Stop

The simple yet powerful way to access and



## Welcome to Web Soil Survey (WSS)



Web Soil Survey (WSS) provides soil data and information produced by the National Cooperative Soil Survey. It is operated by the USDA Natural Resources Conservation Service (NRCS) and provides access to the largest natural resource information system in the world. NRCS has soil maps and data available online for more than 95 percent of the nation's counties and anticipates having 100 percent in the near future. The site is updated and maintained online as the single authoritative source of soil survey information.

### Four Basic Steps

**1** Define.



Click to view larger image.

Use the **Area of Interest** tab to define your area of interest.

**2** View.

Click the **Soil Map** tab

### I Want To...

- [Start Web Soil Survey \(WSS\)](#)
- [Know the requirements for running Web Soil Survey – will Web Soil Survey work in my web browser?](#)
- [Know the Web Soil Survey hours of operation](#)
- [Find what areas of the U.S. have soil data](#)

### Announcements/Events

- [Web Soil Survey 2.3 has been released! View description of new features.](#)
- [Web Soil Survey Release History](#)

### I Want Help With...

- [Getting Started With Web Soil Survey](#)
- [How to use Web Soil Survey](#)
- [How to use Web Soil Survey Online Help](#)
- [Known Problems and Workarounds](#)
- [Frequently Asked Questions](#)
- [Citing Web Soil Survey as a source of soils data](#)

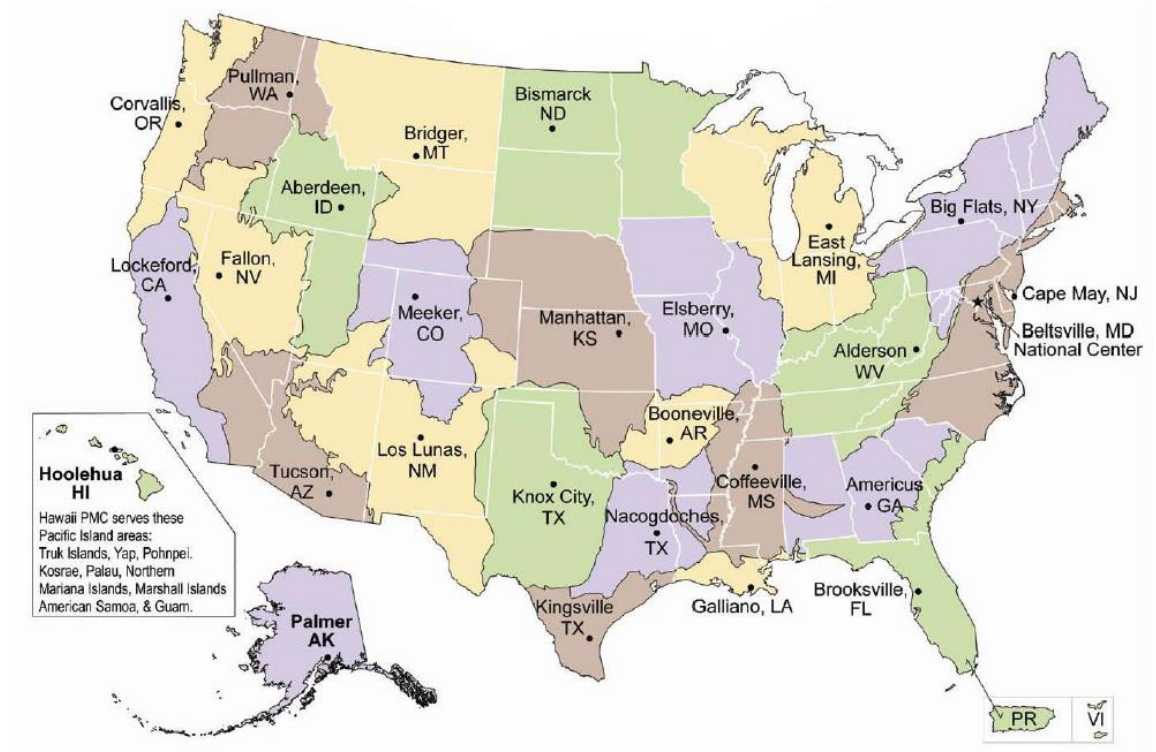


# What are Plant Materials Centers?

Dust Bowl era program  
Erosion concerns

- 25 PMCs
- Strategically located

Plant Materials for  
Agricultural and Rangeland  
Conservation.

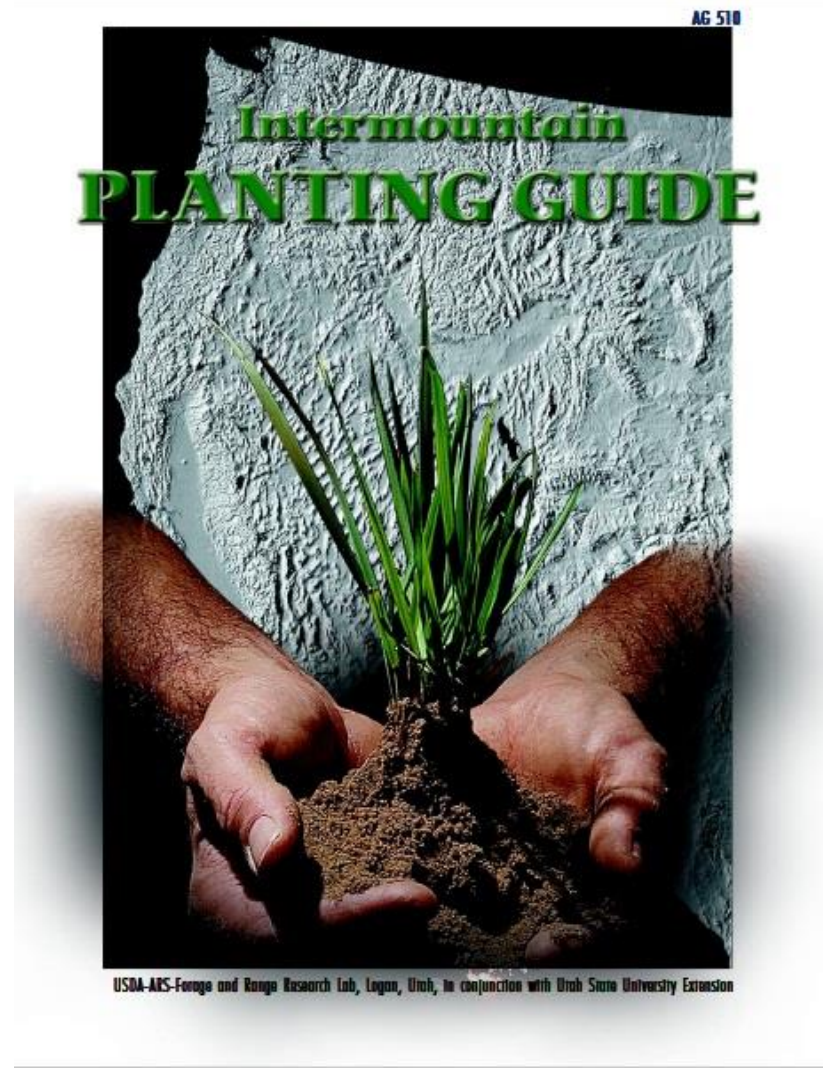




# What We Produce

Products include:

- Publications:
  - Technical Notes
  - Manuals
  - Guides
  - Other publications



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[nrcs.usda.gov/](http://nrcs.usda.gov/)



# What We Produce

Products include:

- Publications
- Trainings



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# What We Produce

## Products include:

- Publications
- Trainings
- Plant Releases
  - ARS Partners

## National Success:

-Since the 1930s-

- 740 plant releases
- 600 currently produced
- \$3.65 private sector dollars earned for every dollar invested.



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[nrcs.usda.gov/](https://nrcs.usda.gov/)

# How we develop plant materials

## Four types of releases

### Source Identified

- Local Ecotype
- Collected from natural stands
- NDA certified
- 1 year
- Natural Only

### Tested

- Parents tested
- Proven genetic superiority for a trait.
- Heritability of the trait is stable.
- 3-6 years
- Natural or Genetically Manipulated

### Selected

- Phenotypic selections
- Untested parentage
- Heritability of traits unknown
- 1 – 2 year
- Natural or Genetically Manipulated

### Cultivar

- Clearly distinguished by a characteristic
- Is uniform in those characteristics
- Retains the characteristics when reproduced
- 7-11+ years
- Natural or Genetically Manipulated



# How we develop plant materials

## Some Additional Differences



### Source Identified

- Limited genetic drift
- Local Ecotype
- No selection
- Unknown characteristics
- Fastest to develop
- Space Constraints

### Purpose:

Priority for reseeding local ecosystem

### Tested and Cultivar

- Some genetic drift
- Usually not local ecotype
- Agriculture focus
- Known characteristics
- Slow to develop
- Space constraints

### Purpose:

Regional seeding when local ecotype is not available.



# How we develop plant materials

## Example

Indian Ricegrass – 6 Releases

3 Cultivars

3 Tested Germplasm

- All sourced outside of Nevada.

Regionally tested

'Nezpar' higher elevations

'Paloma' lower elevations

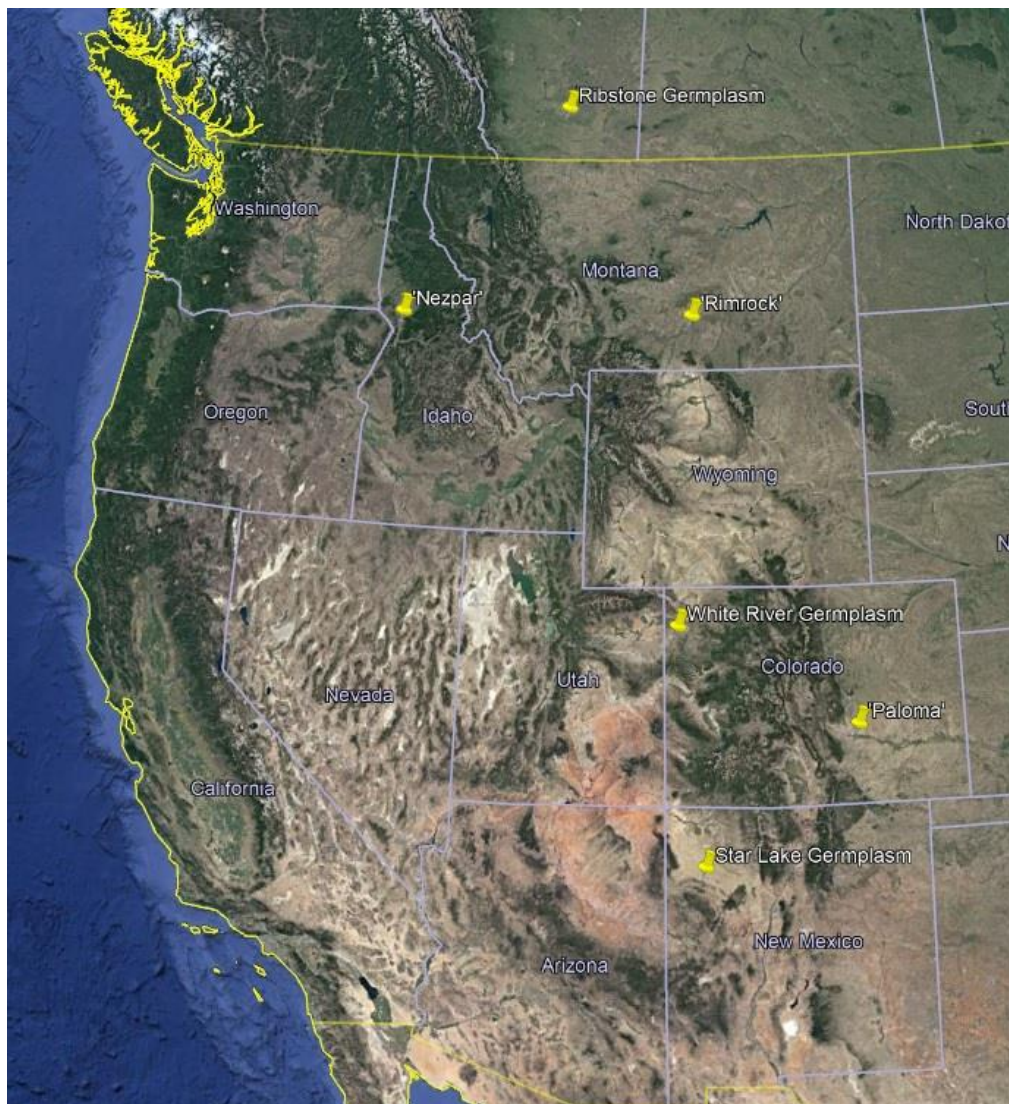
White River Germplasm

Reduced Dormancy

Ribstone Germplasm

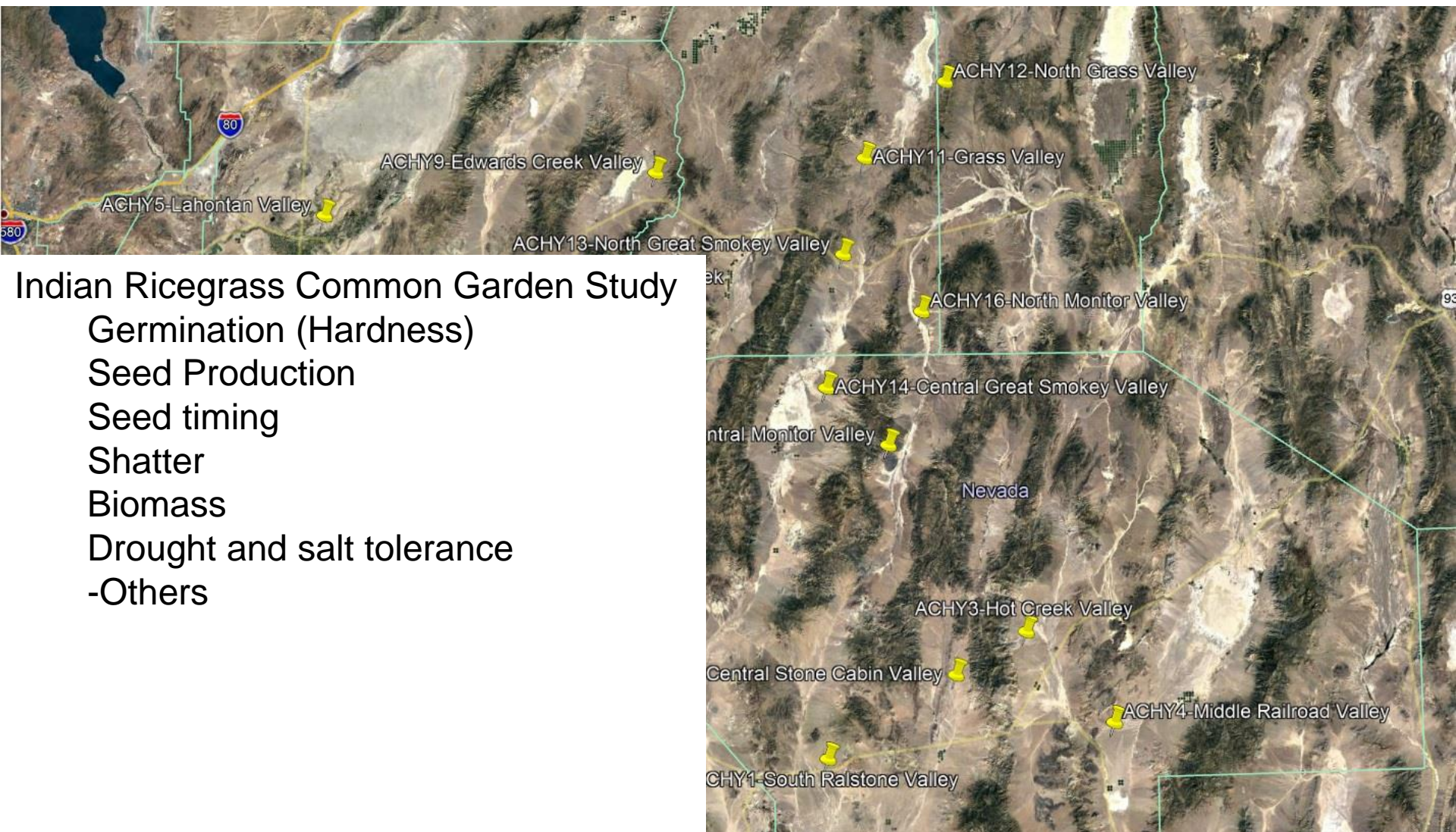
Acute glume pair angles

-seed retention



# How we develop plant materials

## Example



### Indian Ricegrass Common Garden Study

Germination (Hardness)

Seed Production

Seed timing

Shatter

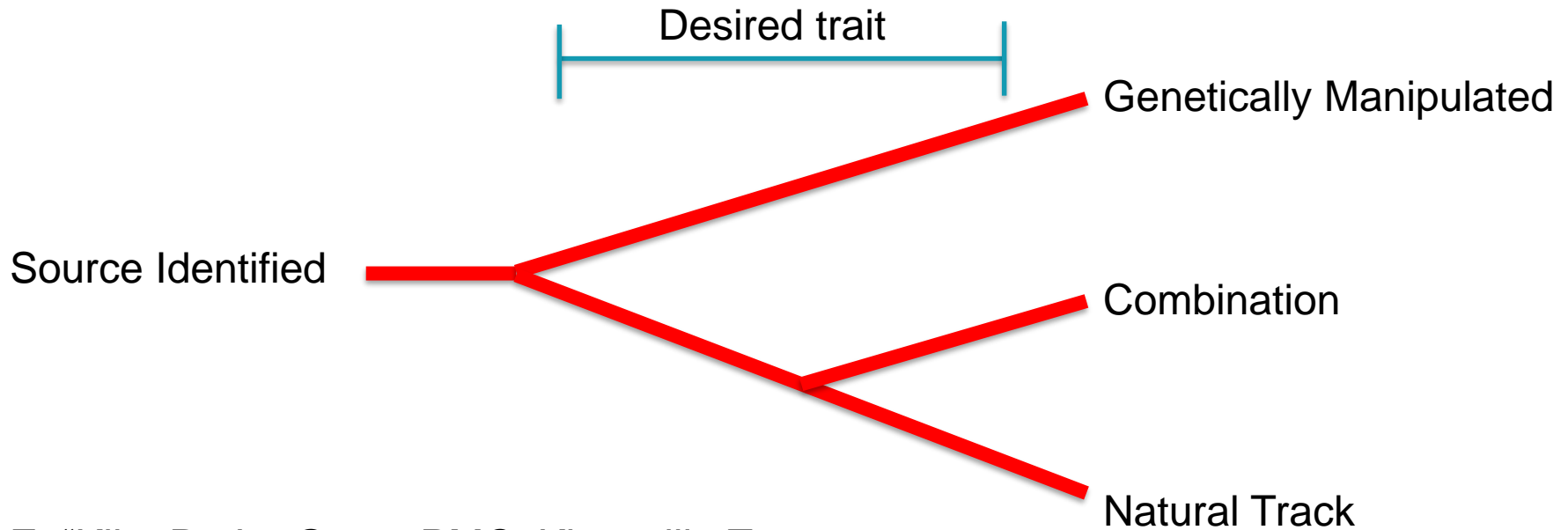
Biomass

Drought and salt tolerance

-Others

# How we develop plant materials

## Example



E. “Kika De La Garza PMC, Kingsville, Texas

- Starr Germplasm Longspike silver bluestem
- Equal portions of five natural track germplasm





# How we develop plant materials

## Example

### Final Product is a Plant Release

- Foundation Planting Maintained by PMC
- Pre-Harvest and Post-Cleaning certified
  - <1% Weed Seed
  - <15% inert material

### Producer access depends on PMC

- Third party in State
  - Crop Improvement Organization
  - Land Grant University
- Paperwork varies

Plant Guides list which PMC maintains releases.



# Data compiled into Plant Guide



## Plant Guide Example:

### Adaptation

- Prefers sandy soils

### Establishment

- Two types of dormancy
- 30 seeds per square ft
- 1-3 inch deep in coarse soils

### Management

- Broadleaf herbicide after 4-6 leaf stage.


### Seed harvest and storage

- 4-6 year old seed works best

### Commercial Releases Available

- 'Nezpar', 'Paloma', etc.

Plant Guides exist for most conservation plants.



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Natural Resources Conservation Service


## Plant Guide

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### INDIAN RICEGRASS

*Achnatherum hymenoides* (Roem. & Schult.) Barkworth  
Plant Symbol = ACHY

*Contributed by:* USDA NRCS Idaho Plant Materials Program and USDA Agricultural Research Service, Forage and Range Research Laboratory, Logan, Utah



'Nezpar' Indian ricegrass. Photo by Dan Ogle, USDA-NRCS (retired).

**Alternate Names**  
*Common Alternate Names:* Indian mountain-ricegrass, Indian millet, wye, silky mountain rice, sandgrass

**Scientific Alternate Names:** *Oryzopsis hymenoides*, *Stipa hymenoides*

**Use**  
*Grazing:* Indian ricegrass is one of the most important native forage grasses on western desert and semi-desert rangelands (Forest Service, 1937). Indian ricegrass is used by domestic cattle, sheep and horses and is highly palatable during most of the year with the exception of late spring when seed heads are forming. It provides valuable forage for cattle in winter especially in salt desert communities and it supplies a source of green feed

for domestic livestock early in the spring before most other native grasses have started to produce new growth (Timmenstein, 1999). It is not typically used as hay.

**Erosion control/reclamation:** Indian ricegrass is drought tolerant and has a fibrous root system, which makes it desirable for erosion control and reclamation in areas receiving 8 to 14 inches annual precipitation in many arid and semiarid areas in the western United States. However, it is not highly effective in controlling sand movement on dunes (Timmenstein, 1999). It is one of the first species to establish on cut-and-fill slopes. It does not compete well with aggressive introduced grasses during the establishment period but is very compatible with less aggressive native species.

**Wildlife:** Indian ricegrass is highly palatable to wildlife. It is preferred forage for elk in all seasons and for deer and antelope in spring, late fall, and winter (Timmenstein, 1999). Indian ricegrass provides poor cover for big game but fair to good cover for birds and small mammals. The seed of Indian ricegrass is readily eaten by many species of birds and rabbits. Desert rodents (mice, ground squirrels, prairie dogs and rats) also utilize Indian ricegrass for food and cover (Timmenstein, 1999).

**Other uses/values:** Indian ricegrass can be used in low rainfall locations for horticultural value and in dry floral arrangements because of the large-seeded panicle (Timmenstein, 1999). A company in Montana markets an all-purpose baking flour and flour blend of Indian ricegrass as a gluten-free food product (Amazing Grains, 2013).

**Status**  
Indian ricegrass is listed as endangered in the state of Minnesota. Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g., threatened or endangered species, state noxious status, and wetland indicator values).

**Description**  
*General:* Grass Family (Poaceae). Indian ricegrass is a cool season, native bunchgrass which grows 30-50 cm tall. The sheath is open and auricles are absent. The ligule is membranous, acute and 6 mm long. The leaves are 1-2 mm wide and 15-25 cm long and usually tightly rolled, giving the plant a slightly wiry appearance. The inflorescence is a wide spreading panicle with a single flower at the end of each hair-like branch. The glumes are 3 to 5 nerved, 6-8 mm long and papery. The lemmas are about 3 mm long, densely pilose and the awn is nearly straight and 3-6 mm long (Majerus, 2009; Skinner, 2010).

# Where to find Plant Guides

USDA Plants Database:  
[Plants.usda.gov](http://Plants.usda.gov)

Search by:  
 Common Name  
 Scientific Name  
 Symbol

The screenshot shows the USDA Plants Database website. At the top, there are logos for USDA and NRCS. Below the logos is a navigation bar with links: Home, About PLANTS, Team, Partners, What's New, NPDT, Help, and Contact Us. A banner image displays various plants. The main content area is divided into several sections:

- Search:** A search box with a dropdown menu set to "Scientific Name" and a "Go" button. Below the search box are links for "State Search", "Advanced Search", and "Search Help".
- PLANTS Topics:** A list of topics including Alternative Crops, Characteristics, Classification, Cover Crops, Culturally Significant, Distribution Update, Documentation, Fact Sheets & Plant Guides, Introduced, Invasive, and Noxious Plants, Threatened & Endangered, and Wetland Indicator Status.
- Image Gallery:** A link to "50,000+ Plant Images".
- Download:** Links for "Complete PLANTS Checklist", "State PLANTS Checklist", and "Advanced Search Download Symbols for Unknown".
- Plant of the Week:** A section featuring a photo of a mango tree and the text "mango Mangifera indica L. Click on the photo for a full plant profile."
- Spotlights:** Two featured articles: "2016 National Wetland Plant List" and "NRCS pollinator references and documents-Updated".
- I Want To...:** A list of user actions such as "See a list of the plants in my state", "Learn about the wetland plants in my region", "Learn about all the endangered plants of the U.S.", "Learn about noxious and invasive plants", "Search for and view images of plants", "Read and print abstracts about important conservation plants", "Download data or posters", "Contribute plant distribution information to PLANTS", "Get ecological descriptions of sites from around the country", and "View the USDA Plant Hardiness Zone Map".
- I Want Help:** A list of help topics including "Introduction to PLANTS", "Frequently Asked Questions", and "Citing the PLANTS".





- Search**  
Name Search
- Scientific Name
- State Search
  - Advanced Search
  - Search Help
- PLANTS Topics**
- Alternative Crops
  - Characteristics
  - Classification
  - Cover Crops
  - Culturally Significant
  - Distribution Update
  - Documentation
  - Fact Sheets & Plant Guides
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  - State PLANTS Checklist
  - Advanced Search Download
  - Symbols for Unknown Plants
  - NRCS State GSAT Lists
  - NRCS State Plants Lists
- Related Tools**
- Crop Nutrient Tool
  - Ecological Site Information System
  - PLANTS Identification Keys
  - Plant Materials Web Site
  - Plant Materials Publications
  - USDA Plant Hardiness Map

You are here: Home / Plant Profile

- GENERAL IMAGES SYNONYMS CLASSIFICATION LEGAL STATUS WETLAND RELATED LINKS

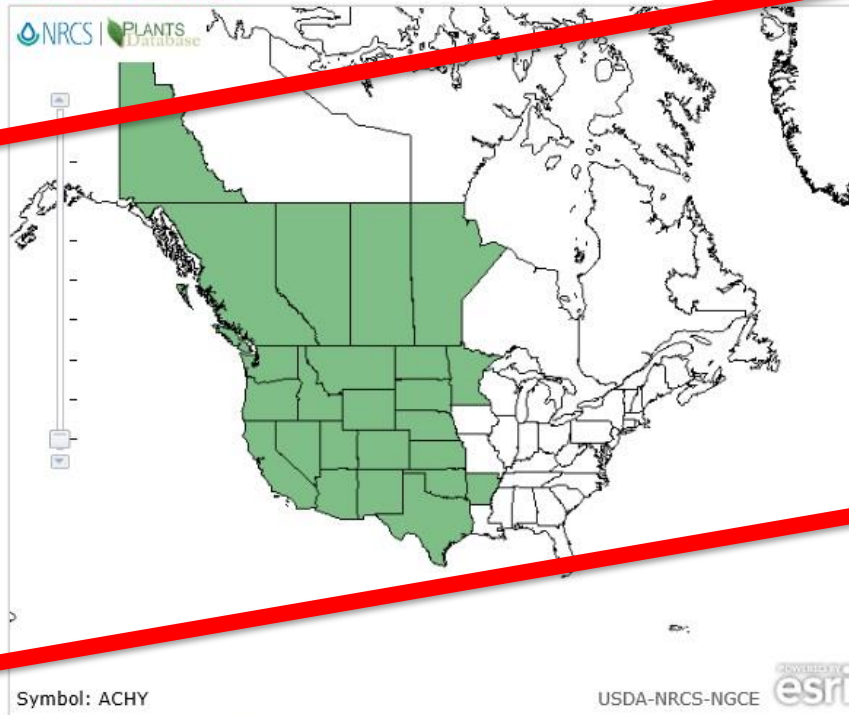
***Achnatherum hymenoides* (Roem. & Schult.) Barkworth**  
Indian ricegrass

Show All

1108 documents



About our new maps



General Information	
<b>Symbol:</b>	ACHY
<b>Group:</b>	Monocot
<b>Family:</b>	Poaceae
<b>Duration:</b>	Perennial
<b>Growth Habit:</b>	Graminoid
<b>Native Status:</b>	CAN N L48 N
<b>Characteristics</b>	
<b>Plant Guide (pdf) (doc)</b>	PM Publications
<b>Data Source and Documentation</b>	

Native Status:

L48 
  AK 
  HI 
  PR 
  VI 
  NAV 
  CAN 
  GL 
  SPM 
  NA

Note: Customize seeding rate by your seed size  

Indian Ricegrass	Elevation (Location)	# Seeds/lb	Seeds/ft <sup>2</sup> at 1lb/a	# of lb/a for 30 seeds/ft <sup>2</sup>	# seeds/ft <sup>2</sup> at 8 lb/a
'Nezpar'	Idaho	112,671	2.6	11.6	21
'Rimrock'	Montana	113,375	2.6	11.5	21
Ribstone Germplasm	Alberta	121,419	2.8	10.8	22
'Paloma'	Colorado	124,259	2.9	10.5	23
ACHY9-Edwards Creek Valley	5336	141,277	3.2	9.2	26
White River Germplasm	Colorado	142,163	3.3	9.2	26
ACHY4-Railroad Valley	4969	149,670	3.4	8.7	27
Star Lake Germplasm	New Mexico	158,014	3.6	8.3	29
ACHY3-Hot Creek Valley	5624	196,746	4.5	6.6	36
ACHY2-Central Stone Cabin Valley	5847	202,455	4.6	6.5	37
ACHY6-Lahontan Valley 2	3949	242,513	5.6	5.4	45
ACHY5-Lahontan Valley	3926	296,405	6.8	4.4	54
ACHY16-North Monitor Valley	6476	303,344	7.0	4.3	56
ACHY12-North Grass Valley	5946	310,616	7.1	4.2	57
ACHY8-Bench Creek	4915	385,957	8.9	3.4	71
ACHY1-South Ralston Valley	5408	397,807	9.1	3.3	73
ACHY10-Smith Creek Valley	6051	399,559	9.2	3.3	73
ACHY15-Central Monitor Valley	7078	403,111	9.3	3.2	74
ACHY11-Grass Valley	6217	421,860	9.7	3.1	77
ACHY14-Central Great Smokey Valley	5792	425,822	9.8	3.1	78
ACHY7-Fairview Valley	4542	546,386	12.5	2.4	100
ACHY13-North Great Smokey Valley	5878	652,518	15.0	2.0	120

\* The plant guide on Indian Ricegrass Recommends 30 seeds per square ft., or a seeding rate of 8 lbs/a

## In addition to Plant Guides:

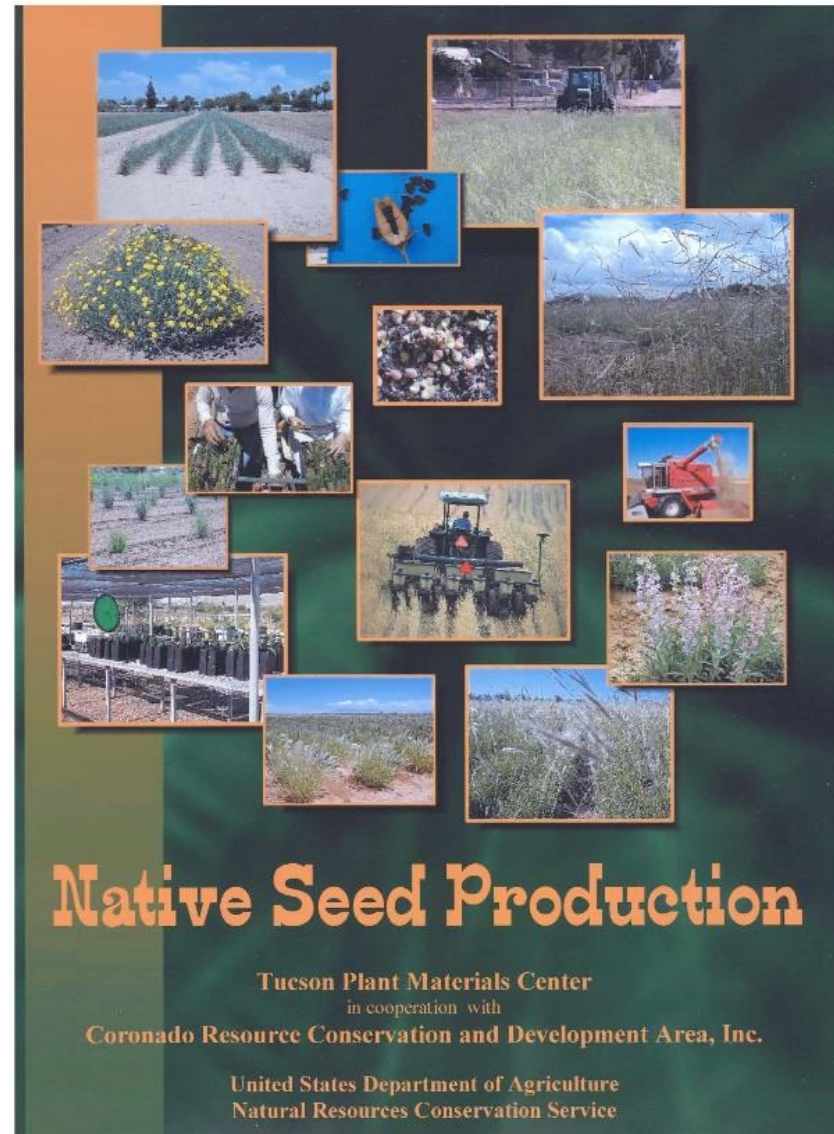
### Manual: Native Seed Production

- Developed by Tucson PMC
- General information

Can be found on the National PMC website

- Under AZPMC Publications

[https://www.nrcs.usda.gov/Internet/FSE\\_PLANT\\_MATERIALS/publications/azpmcpu5603.pdf](https://www.nrcs.usda.gov/Internet/FSE_PLANT_MATERIALS/publications/azpmcpu5603.pdf)



## In addition to Plant Guides:

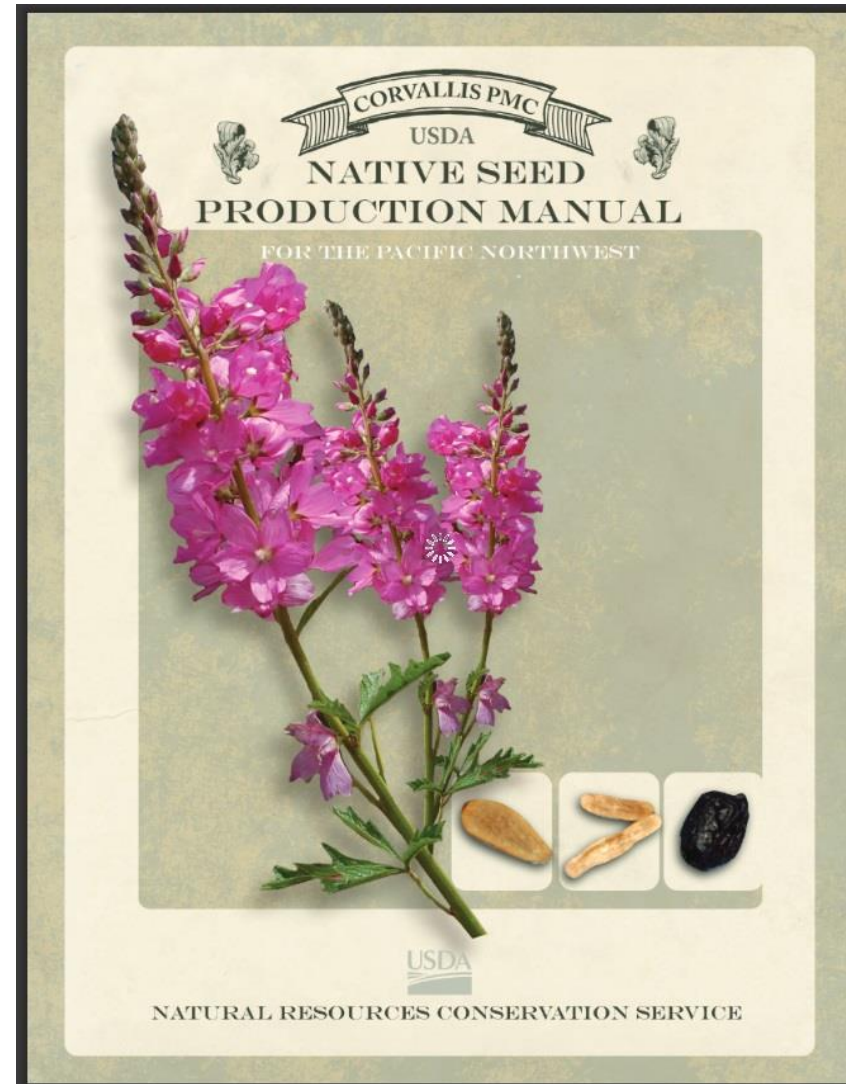
Manual: Native Seed Production for PNW

- Developed by ORPMC
- Some General Information
- Specific information for selected species

Can be found on the National PMC website

- Under ORPMC Publications

[https://www.nrcs.usda.gov/Internet/FSE\\_PLANT\\_MATERIALS/publications/orpmcpu12767.pdf](https://www.nrcs.usda.gov/Internet/FSE_PLANT_MATERIALS/publications/orpmcpu12767.pdf)





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# Any Questions?



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## To File a Program Complaint

If you wish to file a Civil Rights program complaint of discrimination, complete the USDA Program Discrimination Complaint Form (PDF), found online at [http://www.ascr.usda.gov/complaint\\_filing\\_cust.html](http://www.ascr.usda.gov/complaint_filing_cust.html), or at any USDA office, or call (866) 632-9992 to request the form. You may also write a letter containing all of the information requested in the form. Send your completed complaint form or letter to us by mail at U.S. Department of Agriculture, Director, Office of Adjudication, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, by fax (202) 690-7442 or email at [program.intake@usda.gov](mailto:program.intake@usda.gov).

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Persons with disabilities who wish to file a program complaint, please see information above on how to contact us by mail directly or by email. If you require alternative means of communication for program information (e.g., Braille, large print, audiotope, etc.) please contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

## Supplemental Nutrition Assistance Program

For any other information dealing with Supplemental Nutrition Assistance Program (SNAP) issues, persons should either contact the USDA SNAP Hotline Number at (800) 221-5689, which is also in Spanish or call the State Information/Hotline Numbers.

## All Other Inquiries

For any other information not pertaining to civil rights, please refer to the listing of the USDA Agencies and Offices for specific agency information.

