

## 2014 Aberdeen Plant Materials Center Progress Report of Activities November 2014

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Aberdeen Plant Materials Center Home Farm

### Who We Are

The mission of the USDA NRCS Plant Materials Program is to develop and transfer effective state-of-the-art plant science technology to meet customer and resource needs. The Aberdeen Plant Materials Center (PMC) was established in 1939 to evaluate and select plant materials and techniques for establishment and management of plants for use in resource conservation activities in the Western United States.

There are 27 PMCs nationwide, each serving a specific geographic and ecological area. The Aberdeen PMC serves portions of the Intermountain West including southern Idaho, western Utah, northern Nevada, western Wyoming and eastern Oregon.

Following the direction of the new Plant Materials Center Improvement Effort, Aberdeen's primary areas of focus will be improving habitat for at-risk wildlife species such as sage-grouse. We will also continue our work on improving range and pasture productivity and increasing plant species diversity on Intermountain rangelands. A new role of the Aberdeen PMC will be investigating plants and technologies for improving soil health in Intermountain agricultural lands.

For more information on any PMC projects, please call or email the center with the information at the top of the page.

### Staffing Changes

Loren St. John, Team Leader for the PMC, retired this May after 22 years at the PMC. Our thanks go to Loren for his vision and leadership that helped make Aberdeen a highly respected and recognized center for plant knowledge. As of October, the new PMC manager is Derek Tilley, our former PMC agronomist.

### Native Forbs

We are pleased to announce the official release of Amethyst Germplasm hoary tansyaster (*Machaeranthera canescens*). This fall-blooming forb can be used in areas receiving less than 12 inches mean annual precipitation and will be useful in pollinator CRP and sage-grouse habitat plantings. Seed allocations are available through the University of Idaho Foundation Seed program and Utah Crop Improvement Association.



A green sweat bee foraging on Amethyst hoary tansyaster for pollen.

The PMC continues to increase early generation seed of Wyeth buckwheat (*Eriogonum heracleoides*). Also known as whorled buckwheat, it is a useful forb in sage-grouse and

pollinator habitat as well as rangeland restoration plantings. Once enough seed is produced, this accession will be named and officially released for commercial seed production.

### Radish Bolting

One of the workhorse species for cover crop plantings is the radish. Radishes provide excellent cover and produce a large taproot capable of penetrating hard soil pans. Typical plantings in August produce good above ground growth and root development before being killed by frost in the winter; however if planted too early in the season, the radish will simply bolt and put out flowers instead of developing a robust plant. This year we evaluated five radish varieties to determine which may be amenable to earlier planting dates for use in full-season cover crop seedings. The final report for this study will be available this winter.



The plant on the left was seeded in late June and quickly put energy into flower and seed production, while the plant on the right was planted in early August and put energy into root growth.

### Soil Health and Cover Crop Tour

In June, the PMC hosted a soil health and cover crop tour. Marlon Winger, NRCS Idaho State Agronomist spoke and demonstrated how to improve soil health in conjunction with Idaho agriculture. In the afternoon we toured the new PMC cover crop display planting to get a look at the many available species that can be used in our area. The display included 35 species arranged into blocks of cool season grasses, cool season broadleaf plants, legumes, warm season broadleaf plants, and warm season grasses.



Marlon Winger (Idaho State Agronomist) speaks at the PMC soil health tour.

### Corn Interseeding

What is the best way to add cover crops to a corn field to improve post-harvest grazing? This summer the PMC addressed that question with a corn interseeding trial at the Fish and Game farm. A 4-way cover crop mix consisting of turnip, oat, red clover and field pea was seeded between rows of Roundup-ready corn using three techniques: drilled, broadcast at a standard rate, or broadcast at 2 times the standard rate. Above-ground forage samples were collected in late October to see how much forage each treatment provided. The data are currently being analyzed. For more information or for a copy of the final report, contact the PMC.



Turnip tops are visible between corn rows. Following corn harvest these cover crops create valuable forage in grazing systems.

### Pollinator Plantings

In 2011, the PMC established 5 acres of pollinator habitat at the Fish and Game farm for display and to research management requirements involved in pollinator friendly plantings. Species planted included blue flax, small burnet, western yarrow, annual sunflower, hoary tansyaster, falcate alfalfa, and three native grasses. We observed fair establishment of the target species, but there was also significant weed pressure. In 2012 the field provided

excellent pollinator forage with all planted species present. Over the last two years however the planting has shown an increase in the presence of invasive weeds. The lack of herbicides available for use in pollinator plantings to control broadleaf weeds is a major concern. We are planning to maintain this planting through 2021 to follow trends in species composition.



Blue flax, sainfoin, yarrow and small burnet can be seen in this photo of the PMC pollinator planting in 2012.

In 2013 we planted six commercially available wildflower seed mixes designed for use in western North America into non-replicated plots to determine which species are well adapted to conditions in the PMC service area and contribute to pollinator foraging. As it turns out, not all mixes are created equally. Some have a variety of native and introduced annuals and perennials for a showy display. Others are designed to represent native western plant communities or to be highly drought tolerant. Clear objectives and an understanding of the species composition are vital to choosing the most appropriate mixture.



One of the wildflower mixes planted in 2013. Several native and introduced species can be seen.

### **Breeder, Foundation, and Cooperative Seed Production**

The Aberdeen PMC produces the highest quality conservation seed available, and is responsible for the production of Breeder and Foundation seed of 18 plant releases. In 2014 the PMC had seed production fields of

Anatone Select and 'Goldar' bluebunch wheatgrass, 'Delar' small burnet, 'Bannock' thickspike wheatgrass, 'Regar' meadow brome, 'Appar' blue flax, 'Vavilov II' Siberian wheatgrass, Amethyst hoary tansyaster, Richfield firecracker penstemon and Maple Grove Lewis flax. This year the PMC shipped 2,145 pounds of seed to commercial seed growers. Seed growers should contact the University of Idaho Foundation Seed program or the Utah Crop Improvement Association to request Foundation or early generation Certified seed.



'Regar' meadow brome seed production field.

The PMC has been working with Yellowstone National Park since 2009 to produce seed for restoration in the Park. In 2014 we produced seed of Sandberg bluegrass and bluebunch wheatgrass. The grasses are being used to restore lands within the Park that had previously been in production agriculture many years ago.

The PMC is similarly working with Grand Teton National Park to increase seed of source collections from the Park to be used for restoration projects. The PMC is currently growing Idaho fescue for the Park for restoring lands that were previously in production agriculture. Next year we will be installing new fields of blue wildrye, mountain brome and three native forbs, sulphurflower buckwheat, showy goldeneye and one-flower sunflower.

### **Forage Kochia**

Rangeland wildfires are an ever-growing problem in the Intermountain West. The PMC recently installed a study to demonstrate and evaluate accessions of forage kochia (*Bassia prostrata*) in an alternate row seeding with Hycrest II crested wheatgrass in a simulated green stripping or fire break planting. 'Snowstorm' forage kochia was released in 2012 by the USDA Agricultural Research Service in Logan, Utah for improved stature, productivity, and nutritional content compared to 'Immigrant'. Five accessions including Snowstorm and Immigrant were planted in replicated plots in May 2012 at the PMC Fish and Game Farm. Evaluations are being made measuring plant vigor, density and height.



'Snowstorm' forage kochia.

### Off-Center Testing

In November 2010 the PMC planted an off-center trial on the Curlew National Grassland in Southeastern Idaho in cooperation with the USDA Forest Service. The trial includes 63 accessions of native and introduced grasses, forbs, and shrubs adapted to the 12 to 16 inch precipitation zone in Southern Idaho and Northern Utah. This site is a valuable resource for Conservation District cooperators, NRCS field staff, Forest Service, BLM and other land managers to get a firsthand look at the plant releases available for conservation seedings on the eastern Idaho Plateaus. Contact the PMC for further information.



Fish Creek bottlebrush squirreltail at the Curlew Off-Center Test site.

In the fall of 2013 the PMC planted a seeding rate study at an off-center site at Skull Valley, Utah. The trial will evaluate the use of higher seeding rates in extreme arid conditions (less than 8" precipitation). Twelve native and introduced species were planted at the standard rate and a 2X rate in a side-by-side comparison. Early data indicate that doubling the seeding rate did not consistently result in significantly greater establishment. Therefore the additional cost for the extra seed may not be justified by the results. A second site is being prepared for a duplicate planting at Coffee Point, Idaho, 25 miles northwest of Aberdeen. This site will be planted in the fall of 2015.

### Technology Transfer - New Publications

A number of new or revised publications were completed during the past year – a few are mentioned below:

#### Technical Notes

- Technical Note 62. Challis, Idaho Field Planting Summary: 1980-2013
- Technical Note 63. Evaluation of Perennial Grasses Used in Cross Wind Trap Strips in Easter Idaho
- Technical Note 65. Planning and Implementing a Seeding in Sage-Grouse Country

#### Plant Guides

- Leafy spurge
- Rocky Mountain penstemon
- Dahurian wildrye
- Meadow deathcamas
- Plains Pricklypear
- Purple three-awn
- Shadscale saltbush

#### Website

All Aberdeen PMC publications can be downloaded from the following web-sites:

<http://www.id.nrcs.usda.gov/programs/plant.html>

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