PERENNIAL COOL-SEASON GRASS HAY TRIAL IDENTIFIES **ALFALFA OPTIONS**

Situation

Although alfalfa makes excellent hay for livestock, its stand longevity is generally only five to seven years with reduced production starting after year three. Replacing a depleted alfalfa field with a new alfalfa crop generally requires the field to be tilled and planted to an alternative crop such as millet for a year or two before the field can be returned to alfalfa. If the field is flood irrigated, additional operations for leveling are required, further increasing hay production costs. Another issue for some alfalfa producers is depredation of the fields by antelope and deer.

Cool-season perennial forage grasses could produce comparable yields of good-quality forage (hay and/or grazing) over an extended number of years and reduce hay production costs. Determining potential of some of these grasses in replacing alfalfa as a forage source for this region was initiated in 2003 at the Victoria Station Ranch (Larry Vignaroli, owner) along Clear Creek in northern Johnson County, and on the Neltje Ranch (Ray Daly, operator) along lower Piney Creek in southern Sheridan County.

Nine grasses ('Luna' and 'Mandan' pubescent wheatgrass, 'Critana' thickspike wheatgrass, 'Rosana' western wheatgrass,

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'NewHy' hybrid wheatgrass, 'Bozoisky-select' Russian wildrye, 'Regar' meadow bromegrass, 'Manchar' smooth bromegrass, and 'Hycrest' crested wheatgrass) were seeded into replicated plots at the two ranch sites in May 2003. The sites were irrigated and fertilized, weeds controlled, and following sample collection for hay yield estimates, sites were harvested.

The Northeast Area range educator based in Johnson County provided annual yield data from the 10-year trial to hay producers and others through the *Land and Livestock Newsletter*. Forage quality data was furnished as was information on irrigation timing and nitrogen fertilization timing and rates.

Impacts

Five of the nine grasses produced similar to higher hay yields all 10 years from a single harvest in late June compared to that of two harvests (June and August) for alfalfa (Wyoming Agricultural Statistics 2004-2012, Johnson and Sheridan counties).

A survey was sent to recipients of the *Land and Livestock Newsletter* in August 2014 asking how results of this grass hay trial may have benefited them. Of those who responded, 90 percent indicated the information was of benefit. They became aware of other grasses for hay production instead of the standard grass of the region – 'Manchar' smooth bromegrass. Some respondents indicated they planted new fields to a meadow bromegrass based on the hay yield data from this trial and were very happy with its performance. Others stated they would plant more acreage to a grass instead of alfalfa and that the information would help them with species and variety selection.

Results of this trial and the previous positive feedback from hay producers of this region inspired the educator to apply for a Wyoming Department of Agriculture – Agriculture Producer Research Grant in 2013 to investigate hay yield production of two varieties each of seven perennial cool-season grass species under full and limited irrigation. The Wyoming Department of Agriculture commissioners funded the request. In addition, the Wyoming Agricultural Experiment Station matched the awarded funds. The project will be at the Sheridan Research and Extension Center's Adams Ranch next to Sheridan College.

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