The Best Yielding Forage Grasses for Irrigated Conditions

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Forage grass cultivars developed for humid regions usually perform well in our semiarid region when adequate irrigation is available. However, as it seems we are experiencing more dry years than normal and more pressure is put on available water resources, it makes sense to choose irrigated forage grasses that are stable under full as well as limited irrigation.

The Agricultural Research Service Forage and Range Laboratory in Logan, Utah conducted a study to evaluate eight cool season grass species for forage yield and stability under five irrigation levels plus natural precipitation (33.5, 28.9, 23.2, 20.1 and 14.2 inches) during a 2 year evaluation. The species included in the study were a meadow brome x smooth brome hybrid, 'Matua' rescuegrass (brome), 'Fleet' and 'Regar' meadow brome, 'Ambassador' orchardgrass, 'Zero Nui' and 'Bastion' perennial ryegrass, 'RS-H' and 'Newhy' RS hybrid wheatgrass, 'BR3' and 'Manchar' smooth brome, and 'Forager' and 'Fawn' tall fescue.

The plots were harvested to simulate intensive rotational grazing to a 3 inch stubble height at the first harvest and when regrowth height was 10 to 12 inches for the later harvests. The plots were fertilized before the first harvest and after the second, fourth, and final harvest with 50 pounds Nitrogen per acre.

Tall fescue, meadow brome and orchardgrass had the highest yields and were stable across the irrigation levels in the study. Perennial ryegrass, RS hybrid wheatgrass and smooth brome had the lowest forage yields in this study.

Although this study showed orchardgrass to be stable and it produced fairly high yields even at 14.2 inches of natural precipitation and irrigation, experience shows that orchardgrass should not be recommended for areas with less than 18 inches of annual precipitation. Another species to consider which was not included in this study is intermediate wheatgrass which is adapted to areas receiving a minimum of 12 inches annual precipitation. It is ideally suited for areas with limited irrigation water availability and forage yield increases are impressive when additional irrigation is provided.

For further information, refer to ARS Fact Sheet BLW001, June 7, 2002. Selection of the Best Cool-Season Pasture Grass Species: Based on Forage Yield and Yield-Stability. Blair Waldron, Kay Asay, Kevin Jensen, and Michael Peel. USDA-ARS, Forage and Range Research Lab, Logan, UT.

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