Cox, S.R., M. Peel, B. Waldron, and E. Creech. Maximizing forage production with grass-legume mixtures of tall fescue, orchardgrass, meadow brome, alfalfa, birdsfoot trefoil, and cicer milkvetch in three ratios. Joint annual meeting of the Western Society of Crop Science Western Wheat Workers; 2012 July 11-13; Pullman, WA.

Cox, S.R., M.D. Peel, B. Waldron, and E. Creech. Forage production of grass-legume mixes in three ratios with tall fescue orchardgrass, meadow brome, alfalfa, birdsfoot trefoil, and cicer milkvetch. ASA, CSSA, and SSSA, International Annual Meetings; 2012 Oct. 21-24.

Abstract for both meetings.

Rising nitrogen prices have resulted in renewed interest mixed grass-legume pastures to reduce cost. Our objective was to determine optimal species combinations of binary grass-legume mixtures to maximize forage production in the Intermountain Western US. Tall fescue (TF), orchardgrass (OG), and meadow brome (MB), were grown with alfalfa (AF), birdsfoot trefoil (BF), and cicer milkvetch (CM) in grass:legume mixes at 25:75, 50:50, 75:25 percent combinations and harvested four times during the growing season. Seasonal forage production of unfertilized TF, MB, and OG monocultures was 1.45, 1.02 and 0.96 Mg/ha respectively. Tall fescue, OG, and MB grass-legume mixes averaged 6.0, 5.0, and 14.0% higher forage production than their respective grass monocultures. The highest seasonal forage production of TF combinations was 1.62 Mg/ha TF:AF (50:50), 1.63 Mg/ha TF:BF (75:25), and 1.64 Mg/ha TF:CM (75:25). Highest forage production of OG combinations was 1.10 Mg/ha OG:AF (50:50), 1.09 Mg/ha OG:BF (75:25), and 0.99 Mg/ha OG:CM (75:25). Highest seasonal forage production of MB combinations was 1.23 Mg/ha MB:AF (50:50), 1.25 Mg/ha MB:BF (75:25), and 1.11 Mg/ha MB:CM (75:25). Individual harvests showed a similarly higher yield of the mixtures over the monocultures. Relative species composition had an overall effect on total forage yield. Mixtures with CM and BF were most productive when they constituted 25% of the mix, and AF at 50% of the mix.