Nitrate leaching under management intensive grazing in the Intermountain West. (A05-miller193246-Poster)

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Abstract:

Management intensive grazing (MIG), a system in which livestock are rotated every 12 to 24 hours through a series of small paddocks, increases forage production and allows for higher stocking rates. The manure and high inorganic fertilization rates used in MIG increase the potential for nitrate leaching. This study examines nitrogen leaching under eight grass-legume mixtures using MIG in the Intermountain West. The grasses and legumes used were meadow brome (Bromus riparius Rehm), perennial ryegrass (Lolium perenne L.), tall fescue (Festuca arundinacea), orchard grass (Dactylis glomerata L.), birdsfoot trefoil (Lolium perenne L.), and white clover (Trifolium repens L.). Porous ceramic cup soil water lysimeters were installed at 60 and 90 cm depths. Leachate was collected weekly during the growing season and analyzed for nitrate concentration. First-year data showed significant differences among the grass-legume mixtures. Both orchard grass mixtures produced leachate with significantly higher nitrate concentrations than the other grass-legume mixtures. Nitrate concentrations for orchard grass were well above the EPA standards for drinking water throughout the season.

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Presentation Information:

Presentation Date: Monday, November 11, 2002
Presentation Time: 2:00-4:00 pm
Poster Board Number: 333

Keywords:

Leaching, Nitrate, Management Intensive Grazing