RESEARCH UPDATES

MINNESOTA - Maximize Forage Use in Horse Pastures with Mixtures *Krishona Martinson and Craig Sheaffer, University of Minnesota*

Perennial grasses are the foundation of horse pastures in the Midwest and North Central United States. Horses are selective grazers, and recent research has shown that horses have a strong preference for Kentucky bluegrass, timothy, and meadow fescue. However, horse pastures are rarely planted to a single species. Planting mixtures is common; however, mixtures are rarely evaluated under horse grazing. The objective of this research, conducted at the University of Minnesota, was to evaluate horse preference of perennial grass pasture mixtures.

Research was conducted in 2011 and 2012 in St. Paul, MN. Four adult horses grazed eight commercially marketed and four experimental perennial grass pasture mixtures. Mixtures contained four to six of the following species; orchardgrass, reed canarygrass, meadow fescue, Kentucky bluegrass, perennial ryegrass, smooth bromegrass, meadow bromegrass, timothy, or festulolium. Individual plots were 1.8 x 6.0 m, and horses were given access to the entire plot area (37 x 22 m). Grazing was initiated when most grasses averaged 20 cm. Horses grazed the area for five days, averaging 4 hours each day. This grazing length was selected to achieve a minimum average residual height of 9 cm to avoid overgrazing. After grazing, manure was removed, plots were mowed to 9 cm and allowed to regrow. Horses were given ad libitum access to water, housed in a dry lot, and fed grass-alfalfa hay when not grazing. Immediately after grazing, plots were visually assessed for percent of available forage removal on a scale of 0 (no grazing activity) to 100 (100% of existing vegetation grazed to a 9 cm height) to determine horse preference.

Horses showed distinct preferences among the mixtures. Mixtures that included meadow fescue, Kentucky bluegrass, perennial ryegrass, and timothy were the most preferred with \geq 86% of the forage removed by horse grazing. Deviating from this combination reduced horse preference. Simply adding orchardgrass to the most preferred mixtures reduced horse preference to 71%. Removing meadow fescue or Kentucky bluegrass and timothy from the most preferred mixtures and adding meadow bromegrass and/or orchardgrass resulted in the least preferred mixtures with a preference of 55%. This agrees with previous research that showed horses did not prefer orchardgrass or meadow bromegrass.

Mixtures containing meadow fescue, Kentucky bluegrass, perennial ryegrass, and timothy promoted uniform grazing by horses. However, yield, persistence, and forage nutritive value of mixtures should be taken into consideration when determining cool-season grass mixtures to plant in horse pastures.