

MFRP: 2010 Seasonal Forage Quality Variation of 12 Cool-Season Grass Species Used for Pasture

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There are over three million acres of permanent and improved pastures in Minnesota. Cool-season perennial grasses are the foundation of productive pastures in Minnesota and throughout much of the U.S. Pastures are a valuable source of affordable feed from spring to fall and also provide needed perennial ground cover. Newer varieties of cool-season forage grasses have recently been developed with improved yield and persistence in livestock pastures of the Midwest. Forage quality of cool-season grasses can be influenced by environmental conditions and are known to vary throughout the growing season. Little is known about yield and quality changes during the growing season for these newer cool-season grass varieties. Characterizing seasonal patterns in cool-season forage grass yield and quality in a northern climate should lead to improved species selection and pasture management in livestock pastures.

Many newer cool-season pasture grasses are being marketed for dairy and beef cattle production systems. Some species such as the ryegrasses, meadow fescue, and meadow brome have been selected for high overall forage quality. Although high soluble carbohydrate content enhances grass consumption and promotes dairy and beef cattle performance, fructans have been experimentally shown to induce laminitis in horses. Seasonal fluctuations in soluble carbohydrate content likely influence the risk for laminitis in grazing horses. In a USDA survey on laminitis, ~46% of cases were associated with spring pasture grazing. Seasonal fluctuations have been preliminarily measured in the southern U.S., but not in a northern climate where the “seasonal” effect is more pronounced and much more likely to influence the incidence and severity of laminitis. Characterizing seasonal patterns in forage soluble carbohydrate content in a northern climate should lead to improved management of horses prone to laminitis and other metabolic and digestive disorders.

Objectives were to evaluate yield, persistence, and forage quality of twelve cool-season forage grasses throughout the growing season under horse grazing.