

Factors Involved in Udder Edema

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Udder edema is a disorder of the mammary gland characterized by an excessive accumulation of fluid in the intercellular tissue spaces. Pathologically, edema can be classified as either localized or generalized. Udder edema should be thought of as a localized disease because of the factors involved in the development of the disease.

Blood flow to the mammary gland increases dramatically near parturition associated with pending lactation, and anatomical limits in the venous system may restrict drainage from the mammary gland. Cows affected with udder edema have a significant elevation of mammary vein (subcutaneous abdominal) blood pressure at the time of parturition when compared to nonaffected cows. Cows affected with udder edema also have a significant elevation of mammary vein blood pressure at parturition when compared to 2 weeks before parturition and 2 weeks following parturition. Elevation of venous blood pressure apparently is an

important factor involved with the development of udder edema.

Statistical analysis of total serum protein, albumin, and globulin values of cows affected with udder edema compared to nonaffected cows revealed no significant differences. Globulin values were significantly decreased in both groups (affected and nonaffected) of cows at parturition when compared to 2 weeks before parturition and 2 weeks following parturition. This suggests that globulin levels decrease in the serum because of colostrum formation, but total serum protein levels are not a factor in udder edema. Edema fluid (EF) from cows affected with udder edema was analyzed for total protein and compared to serum total protein (P). The EF/P ratio was below .5, which suggests that increased vascular permeability is not a factor in udder edema.

Fescue Toxic Syndrome Update

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Tall Fescue (*Festuca arundinacea* Schreb.) is presently grown on approximately 35 million acres in the South Central United States. It is a versatile plant used for livestock feed, lawns, turf and conservation purposes. Tall fescue is a long-lived grass that is adapted to a wide range of soil and climatic conditions. It is relatively easy to establish and tolerant of poor grazing management.

Analysis of tall fescue for chemical components which reflect forage quality indicates that tall fescue compares favorably to other transition zone grasses. However, animal performance from grazing tall fescue has been very erratic and frequently less than desired by many livestock producers.

“Summer syndrome,” “summer slump,” “fescue toxicity” and “fescue toxicosis” are terms which have been widely used to denote poor animal performance by cattle grazing tall fescue during summer. Characteristic of this condition is reduced feed intake, decreased rate of gain and/or milk production, rough hair coat, rapid breathing, increased body temperature and a generally unthrifty condition. In

recent years, this condition has been shown to be associated with an endophytic fungus.

The Endophyte

“Fescue fungus,” “endophyte,” “fungal endophyte,” and “fescue endophyte” have all been used to denote the organism in question. Endo (within) + phyte (plant) means a plant that lives within another plant. In this case, the plant is a fungus (*Epichloe typhina*, recently renamed *Acremonium coenophialum*) that lives within tall fescue. Regardless of terminology used, it is generally accepted that we are all dealing with the same organism which will henceforth be referred to in this paper as the endophyte.

Endophyte and Summer Syndrome – In June 1973, a most unique and important farm visit was made by Dr. Joe Robbins, USDA, Athens, Georgia, to the farm of Mr. A. E. Hays, Mansfield, Georgia. The Hays farm consisted of fescue pastures being grazed by two separate herds of Angus cattle. One herd exhibited nearly all the signs associated with