

ONA REPORTS

published in

THE FLORIDA CATTLEMAN AND LIVESTOCK JOURNAL

December 2002

How Good is your Pasture Grass after a Freeze?

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Studies were conducted over three years at the Range Cattle REC to determine the response of grasses to fall fertilization, forage accumulation, and the effect of a freeze on forage quality. Grasses were Floralta limpograss, Florakirk and Tifton-85 bermudagrass, Florico and Florona stargrass and Tifton-9, Pensacola, Argentine, and Paraguay 22 bahiagrass. All grasses were cut back to a 3 in stubble (staged) on 1 October and 15 November. At each date half of the grasses were fertilized and half received no fertilizer. Grasses were grown until the first freeze (< 32 F). Plants were sampled day of freeze, 1, 2, and 4 wk afterwards to measure yield and changes in nutritive value.

From either 1 October or 15 November until the January freeze all grasses accumulated on average 1.3 and 0.4 ton/acre dry matter (DM), respectively. Limpograss averaged 1.9 and 0.8 ton/acre, stargrasses and bermudagrasses 1.6 and 0.6, and bahiagrasses 0.7 and 0.3 ton/acre for 1 October and 15 November staging, respectively.

During the fall/winter period all grasses averaged accumulating 1.3 and 0.5 ton/acre DM with and without fertilizer, respectively. Limpograss averaged 2.0 and 0.7, stargrasses and bermudagrasses 1.7 and 0.6, and bahiagrasses 0.6 and 0.4 ton/A with and without fertilizer, respectively. Fertilizing limpograss, stargrasses, and bermudagrasses in early to mid- October produced an additional 1.7 to 2.0 ton/acre DM, compared with 0.6 to 0.7 ton/acre with no fertilizer. There was no benefit to fertilizing bahiagrass during the fall.

Crude Protein concentration decreased very little for all grasses from the day of the freeze to 4-wk afterwards. Limpograss averaged 9.2 % CP at time of freeze and 1 wk afterwards, but decreased to 8.5 %, at 2 and 4 wk after the freeze. Stargrasses and

bermudagrasses averaged 12.4, 11.4, 10.3, and 10.1 % CP at time of freeze, 1, 2, and 4 wk afterwards, respectively. Bahiagrass averaged 11.5, 10.9, 10.5, and 10.4 % CP between day of freeze and 4 wk afterwards.

Forage digestibility, unlike CP, decreased drastically after a freeze. Limpograss averaged 63 % on day of freeze, 59 % 1 and 2 wk following a freeze, and 54 % after 4 wk. Stargrasses and bermudagrasses averaged 58, 53, 50, and 40 % digestibility at time of freeze, 1, 2, and 4 wk afterwards, respectively. Bahiagrass averaged 59, 53, 52, and 44 % from day of freeze to 4 wk following the freeze. Forage digestibility tends to decrease immediately following a freeze for all grasses, however, the amount of decrease depends upon the grass. Floralta limpograss decreased the least, stargrass, bermudagrass, and bahiagrass decreased most drastically following a freeze.

This information shows that tropical grasses can be stockpiled in the fall for winter grazing. Unlike bahiagrass, the stargrasses, bermudagrasses, and limpograss will all respond to fall fertilization. Bahiagrass must be fertilized by early September if forage accumulation is desired. Following a freeze, CP concentration in the standing forage will remain stable for up to 4 wk. Digestibility of standing forage drops within 1 to 2 wk after a freeze, followed by a drastic drop within 4 wk. The amount of this latter drop depends on the type of grass.