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EFFECT OF STOCKING RATE ON RED DEER FAWNS GRAZING ANNUAL RYEGRASS

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Background. Stocking rate, or the number of animals on a set land area over a given time period, is the main factor influencing the performance of animals grazing pastures. As stocking rate increases, the amount of available forage per animal decreases. This decrease in available forage per animal causes a decrease in animal performance which is usually weight gain. Understanding this relationship between stocking rate and animal performance for a given forage and animal type is important for managing pastures and animals. TAM 90 annual ryegrass was overseeded on a lightly disked Coastal bermudagrass pasture at 30 lb/acre on September 28, 1999. Pastures were fertilized according to soil test. After grazing ryegrass for a week, red deer fawns that were weaned in October 1999, were weighted and placed on pasture February 14, 2000. Pastures were sampled and deer weighed every 28 days.

Research Findings. Over 2000 lb/acre of forage was available on all pastures in February and March (Table 1). With the spring flush of growth, available forage by April 10 increased on the 6 and 8 hd/acre pastures, stayed the same on the 10 hd/acre pasture, and decreased on the 12 hd/acre pasture. Available forage continued to decrease slightly on the two highest stocking rates in May but was never low enough to have a large impact on animal gain. Protein percentage ranged from 20 to 29% in February, March, and April. In early May protein percentage was substantially lower on the 6 and 8 hd/acre pastures than the 10 and 12 hd/acre pastures. Because the two low stocking rates had twice the available forage, it was more mature and therefore lower in protein. Stocking rate did affect animal performance but did not have a large influence because forage availability was never below 1500 lb/acre. Gain/head and average daily gain (ADG) decreased as stocking rate increased (Table 2). Although individual animal gain decreased with increasing stocking rate, total animal gain/acre increased. If grazing had begun 2 to 4 weeks earlier when forage availability was lower, stocking rate would have had a greater effect on animal performance.

Application. If individual animal performance is most important, such as growing out bucks to be sold as breeding stock, the low stocking rate of 6 hd/acre would be best. If total gain/acre is more important with an accompanying decrease in individual animal performance, a higher stocking rate should be used.

Table 1. Available annual ryegrass and its protein percentage at four stocking rates of weaned red deer fawns.

Stocking rate	Feb 14	Mar 13	Apr 10	May 8	May 25
	-----Dry Matter (lb/acre)-----				
6	2190	2420	5330	4420	2620
8	2540	2020	3460	4620	3160
10	2300	2230	2240	1940	1580
12	3920	2370	1820	1720	1500
	-----Protein (%)-----				
6	25.4	23.3	20.0	17.9	16.6
8	28.8	21.1	22.4	15.2	16.1
10	27.4	22.7	24.2	28.2	19.6
12	27.0	24.7	24.1	27.0	17.5

Table 2. Weight gain of weaned red deer fawns at four stocking rates on annual ryegrass.

Stocking rate	Gain/hd	ADG	Gain/acre
hd/acre	lb/hd	lb/hd/day	lb/acre
6	64.5	0.65	387
8	55.0	0.55	440
10	54.3	0.54	543
12	48.3	0.48	580