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# FORAGE-LIVESTOCK FIELD DAY REPORT - 1998

## TEXAS A&M UNIVERSITY AGRICULTURAL RESEARCH and EXTENSION CENTER at OVERTON

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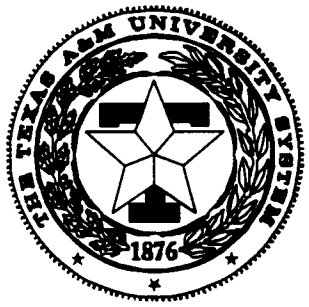


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# COASTAL BERMUDAGRASS AND COASTAL BERMUDAGRASS-COWPEA MIXTURE FOR DOES NURSING FAWNS

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**Background.** Most non-native deer species are seasonal breeders with fawns born from late May to early July. Even non-seasonal breeders such as the axis are managed to fawn in late spring in northeast Texas to maximize fawn survival from birth to weaning. Warm-season perennial grasses such as bermudagrass and bahiagrass form the basis of pasture systems in the southeastern US. However, the forage quality or digestibility of these grasses is lower than legumes and cool-season grasses. Research in New Zealand with red deer suggests that does nursing fawns require pasture that has a minimum digestibility of 64% and protein of 16%. Because of the temperate climate in New Zealand, high-quality, cool-season forages such as perennial ryegrass, white clover, and red clover are grown. If this level of forage quality is required for lactating does, warm-season perennial grasses will need to be supplemented in some way to meet their nutritional requirements.

A grazing study was conducted at the Overton Research and Extension Center in 1997 to compare doe-fawn performance on Coastal bermudagrass, Coastal bermudagrass plus supplement, and a Coastal bermudagrass-cowpea mixture. The supplement was a 1 part soybean meal:2 parts cracked corn that was to be fed at 1 lb/doe/day to provide additional protein and energy starting in July. Iron and clay cowpea was added to bermudagrass as another way to improve the quality of the forage diet. Stocking rate was 10 does (8 fallow and 2 axis) per acre. A 2 acre pasture was used for the Coastal bermudagrass-cowpea treatment that was divided into four equal pastures for a four-pasture rotation. This was done to help maintain the cowpea in the mixture. Each time the deer were rotated to a new pasture, four forage samples were collected to estimate available forage and botanical composition. The other two grazing treatments were 1 acre each and sampled about every 2 weeks. Soil test results of the pasture area indicated high phosphorus and moderate nitrogen and potassium levels. All pastures were fertilized with 63 lb of nitrogen and potassium on May 27. One half of the Coastal bermudagrass and Coastal bermudagrass plus supplement pastures were mowed to a 2-in. stubble on July 15 because grass production exceeded the animal's needs. This was done in order to keep part of the pastures in an immature, high quality growth stage. Does were weighed on May 22 at the beginning of the study before fawns were born. Does and fawns were weighed on August 12 and September 5 when the study was terminated.

**Research Findings.** Does in the Coastal bermudagrass plus supplement treatment stayed in moderate condition during the study, so they never received any supplement. Available forage always exceeded 1500 lb dry matter per acre in all treatments. Therefore, the stocking rate of 10 does per acre

was too low. Does in the Coastal bermudagrass-cowpea mixture selectively grazed the cowpea. Cowpea was essentially eliminated from the mixture after the first grazing period in each of the four pastures. Because of excess grass production, one of the four small pastures was dropped from the pasture rotation system. Deer were rotated weekly on the remaining three pastures.

Since no supplement was fed to the Coastal bermudagrass plus supplement treatment, doe and fawn performance was combined with the Coastal bermudagrass only group and compared to the does and fawns rotated on the Coastal bermudagrass-cowpea pasture. Two does from the Coastal-cowpea treatment lost their fawns so their weights were not included. Does from both groups lost about 13 lb during the grazing study (Table 1). Most, if not all of the weight lost, was associated with birth of the fawns. Weight loss is reported separately for the fallow and axis does within each treatment. Fallow does lost 50% more weight than axis does. Fallow deer are native to the Mediterranean region around Turkey, Iraq, and Iran. Axis deer are native to tropical India and may be better adapted to subtropical forages grown in eastern Texas. Red deer raised in New Zealand are native to northern Europe, a temperate region with cool-season forages, and therefore may require a higher quality forage than either fallow or axis deer. This may explain why fallow and axis does in this study performed satisfactorily on bermudagrass. Birth weight and weight gain of the fawns were similar for both groups. The following autumn only 2 fallow does from the Coastal bermudagrass treatments did not rebreed.

**Application.** Well managed warm-season perennial grasses were satisfactory for lactating fallow and axis does. Feeding a protein-energy supplement may reduce the weight loss of does and increase weight gains of fawns. Mixing summer legumes such as cowpea with warm-season grasses will not work because the deer will selectively graze the cowpea and eliminate it from the pasture.

Table 1. Weight of fallow and axis does and their fawns while grazing Coastal bermudagrass or cowpea-Coastal bermudagrass mixture 1997.

| Pasture System | Does | | | | Fawns | | |
|---|---|---|---|---|---|---|---|
| | May 22 | Aug. 12 | Sept. 5 | Weight Loss | Birth | Aug. 12 | Sept. 5 |
| | ----------lb---------- | | | | | | |
| **Coastal bermudagrass (20)†** | 111.8 | 98.3 | 98.6 | -13.2 | 9.4 | 31.5 | 36.9 |
| Fallow (16) | 108.7 | 94.0 | 94.3 | -14.4 | | | |
| Axis (4) | 124.0 | 115.5 | 115.8 | -8.2 | | | |
| **Cowpea-Coastal (18)** | 109.8 | 101.2 | 97.2 | -12.6 | 9.4 | 29.1 | 35.4 |
| Fallow (15) | 108.0 | 93.5 | 94.5 | -13.5 | | | |
| Axis (3) | 118.7 | 109.0 | 110.3 | -8.4 | | | |

†Number of animals.