

stances, the pounds of nitrogen recovered per acre in the harvested grasses were less when yields were less.

A reduction of the available potassium supply to the point that grass production was reduced resulted also in increased protein contents. The degree depended upon the grass variety and the severity of the deficiency. Pangolagrass yields were affected most by a lack of potassium, but the bermudagrasses were also affected to a large extent. Increases in protein values were not sufficiently high to compensate for the reduced yields, and again the pounds of nitrogen recovered in the harvested grasses per acre were less where the potassium deficiency existed. Protein values of bahiagrasses and carpetgrass were not affected.

The third factor affecting the amount of protein was the grass variety. Generally speaking, the bahiagrasses and carpetgrass produced less forage and contained higher protein contents than pangolagrass and the bermudagrasses.

Under grazing conditions, because of the large quantities of fertilizer materials returned to the soil by the animals, the percent nitrogen recovered by the grass of that applied as fertilizer would be greater, and protein contents would be expected to be somewhat higher than those given in Table 5. Under a green-chop program an application of 45 pounds of nitrogen per acre would probably be satisfactory after each harvest if made a month apart during the summer. If harvests were made every five to six weeks, 60 to 75 pounds of nitrogen would be needed during the summer to maintain crude protein contents of about 10 percent.

## SUMMARY

An experiment was conducted on a flatwoods soil to compare certain growth habits, yields, and quality of various grasses.

Under a fertilization program of once-a-year application or fertilization after each cutting, pangolagrass and the bermudagrasses generally yielded more dry matter than Argentine and Pensacola bahiagrasses, which in turn were better than carpetgrass. Most of the yield advantage came during the winter months, when the bahiagrasses and carpetgrass yields were greatly reduced.

Even under heavy fertilization grass growth was greatly reduced after September or October and did not increase again until late spring.

Summer growth of all grasses except carpetgrass was good.