

## DIURNAL VARIATION OF NITROGEN IN FLOOD MEADOW VEGETATION

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Nitrogen is a primary dietary nutrient of forage. Past research has shown that crude protein concentration in flood meadow vegetation declines about one-half of a percent per week after it reaches its peak (generally in late June or early July). We have not previously looked at the nitrogen trend throughout a day's time. If such a trend is present, then the time of cutting for hay or the time of application (within a day) of a chemical such as paraquat may have an influence on the level of crude protein in the hay. This is particularly true if the chemical is either enhanced or degraded in activity by darkness or light, such as is the case with paraquat.

This study reports the nitrogen levels of three flood meadow vegetation types when sampled up to seven times during the daylight hours.

### PROCEDURES

Plots were established in (1) a pure Juncus spp., (2) Carex spp. - Poa spp., and (3) a Carex spp. - Elymus spp. site. In the first two named sites the vegetation was sampled from 0400 to 2200 hours at three-hour intervals. In the latter named site samples were taken at 0700, 1300, and 1900 hours. At each time of harvest, an area of 7.9 by 19.7 inches was clipped, dried at 120°F, ground through a Wiley mill, and subsequently analyzed for nitrogen concentration. Each site study was conducted with plots allocated completely at random, with 5 to 8 replications harvested on July 13 and 14, 1978.

### RESULTS AND DISCUSSION

There were no significant fluctuations of nitrogen throughout the time of 0400 to 2200 hours in this study. Nitrogen means averaged 1.16, 1.10 and 1.18, respectively, for the pure Juncus, the Carex-Poa, and the Carex-Elymus site. Their respective standard errors were 0.02, 0.04, and 0.01 percent.

It is inferred from this that the nitrogen concentration of meadow vegetation throughout the daylight hours is not a significant factor that would interact with the time of cutting the vegetation or the application of chemicals for the preservation of the vegetation.