was blowing when the early-spring-burned pasture was burned; there was very little grass to burn and only about half the pasture burned. Very little in the post-burned pasture actually burned due to lack of old grass and much new growth. The deferred pasture, 6, was burned in late spring and more of it burned than any of the other burnings treatments but parts of it failed to burn.

Despite greater precipitation in 1963, yields of herbage were not significantly greater than in the dry season of 1962. The growing season of 1963 ended with ample reserve of soil moisture, and growth continued well into the summer. Amounts of moisture at the beginning of the 1964 season were low in the upper 6 feet of soil, and the crops were not well established during the year. Amounts of rainfall remaining at the close of the 1964 growing season were generally somewhat smaller than a year earlier, reflecting the reduced production of dry 1964.

Range condition estimates in 1964 revealed little change from 1963. Light stocking, deferred grazing, and mid- to late-spring burning have resulted in increased grass production, however.

Supplementing Prairie Hay Rations with Urea and Trace Minerals, 1964-65 (Project 25534-46)

K. F. Smith, F. W. Boren, D. Richardson, and D. W. Laegerle

The trace minerals, cobalt, iodine, copper, and zinc were added to a prairie hay-limited sorghum grain ration in an effort to improve utilization of prairie hay. Since increased quantities of urea are being successfully used in high-energy rations, its value as a protein extender in a primarily prairie hay ration was tested.

Prairie hay and rolled sorghum grain were the basic feeds in all rations. In two of the lots, 15 and 16, these two feeds supplied the only source of protein. Lot 15 was fed a trace mineral supplement described in Footnote 1, Table 21. Lots 20 and 21 received enough urea to build their protein equivalent intake to 1.59 pounds per animal daily, one of these lots, 21, received the trace mineral supplement. Lots 22 and 23 received soybean oil meal to increase protein intake to 1.86 pounds per steer daily. Lot 25 received the trace mineral supplement.

The 89 steer calves, 8 lots of 10 steers each, used in the trial were choice-grade feeder calves purchased near Altus, Kansas.

As much prairie hay was offered the calves as they would eat up without wasting it. The grain was fed once daily, applied the only source of protein. Lot 15 was fed a trace mineral supplement described in Footnote 1, Table 21, and lots 20 and 21 were added as well as the urea and the minerals for the indicated lots. Soybean oil meal fed to lots 22 and 23 was fed once daily and mixed with the grains.

The urea supplement was unpalatable. It took from one feeding to another, 24 hours for it to be eaten. After the first two weeks 5% molasses was added but it seemed to have little effect. All the steers had been receiving some sorghum grain prior to the start of the test. The first or two times urea was fed, mixed with the sorghum grain, the steers ate it readily but they started to leave feed so that about four hours after a feeding half the feed would be left. The cattle were not accustomed to soybean oil meal; lots receiving it did not eat up their feed the first or one or two feedings but they quickly found it quite palatable. Even as soybean oil meal increased hay intake and rate of gain and reduced the amount of feed required to produce a pound of gain compared to the prairie hay-sorghum grain diet.

Performance was best in lots where soybean oil meal was fed.

This trial shows that urea is utilized in a prairie hay and limited sorghum grain diet, but less efficiently than soybean oil meal. The added cobalt, iodine, copper, and zinc seemed to have little measurable effect on the steers.