THE EFFECT OF CERTAIN MANAGEMENT PRACTICES
ON THE AMOUNT OF NITROGEN IN A SOIL

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FROM 1923 to 1934, an experiment was conducted on the Kentucky Agricultural Experiment Station farm at Lexington in which small plats were handled or cropped as follows:

Plats 1 and 4 kept bare by scraping.
Plats 2 and 5 in continuous bluegrass.
Plats 3 and 6 in continuous bluegrass and white clover.
The plats were 16 feet square, were in a line, separated by 3-foot bluegrass strips, and were numbered consecutively.

In September, 1923, and again in the following February, plats 2 and 5 were seeded to bluegrass and plats 3 and 6 to bluegrass and white clover. White clover also was reseeded in plats 3 and 6 several times during the experiment.

Thru 1928, the vegetation on these plats was not disturbed except that it was removed when thought necessary to maintain the stand. The dates when this was done and the amounts of dry material and nitrogen removed are shown in Table 1. After 1928 the vegetation was clipped from time to time with a lawn mower and left on the plats.

Care was taken to remove any legume plants appearing in plats 2 and 5 but, in the main, the other volunteer plants which survived the clipping treatments were allowed to grow. The stand of bluegrass on these plats varied from good at the beginning of the experiment to fair at the close, but the bluegrass became rapidly less vigorous from the beginning of the experiment and, after 1928, the larger part of the growth was mainly volunteer annual grasses, particularly crabgrass. However, because of insufficiency of available nitrogen, none of the plants in these plats made vigorous growth after the first few years of the experiment.

Considerable sweet clover grew on plats 3 and 6 in 1925 until the middle of July when it was killed by cutting. It was left on the plats. Before cutting, it was 3 to 4 feet high and covered the ground fairly well. Other than the sweet clover just mentioned, the vegetation on these plats during the experiment was mainly bluegrass and white clover. Because of the several reseedings, white clover perhaps formed a larger part of the total vegetation than in the average bluegrass pasture but, in the main, the amount and composition of the plant growth on these plats was very similar to that in an average bluegrass pasture in this section. The comparatively vigorous growth of vegetation on these plats contrasted sharply with the weak growth on plats 2 and 5, particularly after the first few years of the experiment.

The quantities of vegetable material removed from the plats on May 28, 1926, and May 25 and July 26, 1928 (Table 1) are comparable.

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