A review of the literature on the use of nitrogen fertilizers on pasture land would be so extensive that this discussion is being confined to Ohio conditions and Ohio experiments. The splendid and well-known works of Vinall, Fink, et al., Brown, and many others are therefore omitted from discussion. Also, for the sake of brevity, detailed descriptions of the Ohio experiments referred to are being omitted.

In recent years it has become rather generally recognized that the margin of profit in most phases of livestock production is dependent upon the extent to which good pasture is utilized in its production. There are probably no other means of so greatly reducing the cost of production of livestock and livestock products as through improvement in the production and grazing of farm pastures. We are here considering the place of nitrogen fertilizers in such a pasture improvement program. In this respect we are concerned with the following questions:

1. When do nitrogen fertilizers give increased growth?
2. How much increased growth do they give?
3. What is the analysis of this increase?
4. Does it pay for the cost of production?
5. What is the place of nitrogen fertilizer in a well-balanced program?

EXPERIMENT 1

In 1928 there was begun at Columbus a study of the effect of nitrogen fertilizers on Kentucky bluegrass sod. This involved, among other things, different rates of application. The area was of rather high productivity at the beginning of the experiment, consequently increases were not so great as in some other experiments, being only 2,195 pounds of dry matter and 631 pounds of protein where 200

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3Reference by number is to "Literature Cited", p. 862.