the two soils, the more fertile Chippewa soil produced distinctly larger amounts of dry matter, but the percentage of nitrogen was no higher than on the Canfield soil.

Corn grown for ensilage in Ohio, in rows 42 inches apart, harvested in September, usually analyzes about 1% of nitrogen on a dry matter basis. At the closer spacing of this test, or when seeded with a grain drill in subsequent tests, the corn, sampled in September, has been characterized by a nitrogen content of only 0.6% of the dry matter.

A crop with such a low nitrogen content ordinarily would not be considered suitable for green manure purposes. It is being used experimentally on heavy soils with the aim of incorporating sufficient bulk of coarse organic matter to improve the drainage and aeration of the plowed horizon. With potatoes as the test crop, any procedure which improves the aeration has proved beneficial. The anticipated nitrogen deficiency arising from the presence of the corn residue in the soil has been corrected by a moderate increase in the proportion of nitrogen in the potato fertilizer.—JOHN BUSHNELL, Ohio Agricultural Experiment Station, Wooster, Ohio.

AN INEXPENSIVE PHOTO-ELECTRIC COLORIMETER FOR PHOSPHORUS DETERMINATION

To increase the sensitivity of the colorimetric quick test for available phosphorus in soil, the apparatus illustrated here was built. A standard beam of light is projected through a fixed quantity of the blue solution in a standard flat-sided, glass jar and on to the lens of a photographer's photo-electric exposure meter. By using for comparison solutions of known phosphorus content the dial of the meter can

![Diagram of the colorimeter](image)

FIG. 1.—Inexpensive photo-electric colorimeter for phosphorus.