DEVICE FOR SAMPLING FORAGE1

FOR many years research workers have been seeking a more reliable method for the sampling of forages, principally as hay, for feeding experiments in which hay constituted a major part of the ration that was fed to the experimental animals. The ideal sampling technique should provide for:

1. Obtaining a sample in which the leaf-stem ratio is the same as that in the forage as it is fed.
2. A device which is simple in construction to make for ease in carrying out the sampling operation.
3. A device utilizing either manual or electric power.
4. Expedient of the sampling procedure and reduction of the experimental error due to sampling.

The writers and Dr. George Fleming have developed a device2 to be known as the Penn State Forage Sampler, by which a core sample of forage can be obtained with comparative ease. Satisfactory core samples have been obtained of forage stored as: (1) baled hay, (2) loose long hay, (3) chopped hay, and (4) grass silage. Obviously, the weight of forage removed as a core sample varied directly with the density of the forage which was sampled.

As shown in figure 1, the forage sampler is made up of three parts, namely, cutting head, barrel, and adapter between power source and barrel. The cutting head, inside diameter of 0.75 inches, is made of case-hardened steel with the actual cutting surface composed of a large number of small, specially designed cutting teeth. It is fastened into one end of the barrel with a small set-screw, thus allowing it to be replaced if the teeth should become severely damaged by being ground against a hard material. The barrel is made of thin-wall, seamless, cold drawn steel tubing approximately 18 inches in length with an inside diameter of 1.027 inches. Because the inside diameter of the cutting head is smaller than that of the barrel, the core sample, as it is taken, travels upward inside the barrel and remains there until removed.

The adapter is made of hard aluminum alloy with the larger end of a diameter to give a sliding fit in the end of the barrel opposite to the cutting head. This end is fitted with a bronze spring and pin which fits into a hole in the side of the barrel. The depressible pin provides for ease in disengagement of the adapter from the barrel for the removal of the sample of forage. The smaller end of the adapter has a diameter of .37 inches which is accommodated by the chucks of the ordinary bit brace, breast drill, and electric power drills of sizes not smaller than 3/8 inches. The lower speed type of electric hand drill is the most desirable to use with this core sampler.

The device for sampling forages, described above, is to be used by farmers throughout Pennsylvania in conjunction with a forage testing service that is being developed by the

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Notes

EFFECT OF SIX GROWTH REGULATORS ON POD SET AND SEED DEVELOPMENT IN MIDWEST SOYBEANS1

GROWTH-REGULATORS have been effective on several crop plants in reducing excessive loss of reproductive organs due to unfavorable conditions. Dusting plants of canning string beans with dilute concentrations of certain grow-regulators gave appreciable increases in yield of the fruit (green pod). Sprays were usually detrimental. In contrast, in the few instances in which similar dust or spray treatments were applied to lima beans and dry shell beans, in which the seed comprises the crop, results have been negative. Apparently, on crop plants in which growth-regulators are successful in inducing fruit development, seed formation is usually decreased.

Eaton was unsuccessful in retaining a larger number of cotton bolls by dusting or spraying plants during periods of active shedding with sodium 4-chlorophenoxyacetate or naphthaleneacetic acid.

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1 Contribution from the Department of Agronomy, Purdue University Agricultural Experiment Station, Lafayette, Indiana, and the U. S. Regional Soybean Laboratory, Urbana, Illinois; Journal Paper No. 1320, Purdue University Agricultural Experiment Station; Journal Paper No. 324, U. S. Regional Soybean Laboratory. Received Nov. 24, 1958.