DEVICE FOR SAMPLING FORAGE

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 device, 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 \( \frac{3}{8} \) 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

Notes

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

GROWTH-REGULATORS have been used on several crop plants in reducing excessive vegetative organs due to unfavorable conditions. For example, of canning string beans with dilute concentrations of growth-regulators gave appreciable increases in fruit (green pod). Sprays were usually negative. In contrast, in the few instances in which similar treatments were applied to lima beans and dry shell beans, grow-regulators gave appreciable increases in fruit set and yield. Although in which the seed comprises the crop, results have been negative. Apparently, on crop plants in which the seed comprises the crop, growth-regulators are successful in inducing fruit set and yield.

Eaton was unsuccessful in retaining a large number of active shedding with sodium 4-chlorophenoxyacetic acid.

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6 Eaton was unsuccessful in retaining a large number of active shedding with sodium 4-chlorophenoxyacetic acid.

Figure 1—Forage sampling device, shown fitted to an electric drill in lower view.