TIME OF CUTTING TIMOTHY: EFFECT ON THE PROPORTION OF LEAF BLADES, LEAF SHEATHS, STEMS, AND HEADS AND ON THEIR CRUDE PROTEIN, ETHER EXTRACT, AND CRUDE FIBER CONTENTS

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The proportion and chemical composition of the morphological parts found in the portion harvested for hay of the various leguminous hay plants when cut at different stages of maturity have been determined by a number of investigators. As a result of these studies the percentage of leaves has been used as an important factor in appraising the quality and feed value of legume hays. Similar detailed studies have never been made of the grasses used for hay. This paper presents some preliminary studies with reference to the proportion of leaf blades, leaf sheaths, stems, and heads of timothy harvested at different stages of maturity and their respective crude protein, ether extract, and crude fiber contents.

A review of the literature showed that a number of the agricultural experiment stations had collected data on the relation between time of cutting and yield of timothy hay per acre. Waters reported, in addition to the yields, the composition of timothy hay cut at different stages of maturity. Trowbridge, et al., reported on the yields and composition of the heads, stalks with attached leaves, stubble, and bulbs for timothy cut at different stages of maturity. The stalks with attached leaf sheaths and leaf blades were not studied individually by these investigators, although they cited a need for such information.

PROCEDURE

During the summer of 1936 samples of ordinary timothy were collected at the Timothy Breeding Station, Bureau of Plant Industry, U. S. Dept. of Agriculture, Wooster, Ohio, for use in a percentage distribution and composition study of the various vegetative parts of the timothy plant that are utilized in the production of hay.

The several samples were cut during progressive stages of maturity and cured in the shade under such conditions that little, if any, of the plant parts were lost during drying. The five progressive stages of maturity were as follows: Nearly fully headed, early bloom, just past full bloom, about 10% of the heads straw colored, and heads mature. At Wooster during the season of 1936 these stages of

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