MOISTURE CONTENT AND SHRINKAGE OF FORAGE.¹

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INTRODUCTION.

The relation of the amount of moisture in hay at the time it is put into the stack or mow and that which it contains when taken out for sale or for feeding some months later has been investigated at various times by a number of experiment stations. In some instances the determinations were made by weighing the hay at the time it was stacked or put into the barn and again when it was taken out, the difference being considered as loss of moisture. In other cases the moisture content of the hay was determined by sample, the difference in the moisture content at time of putting up the hay and of samples taken later being considered as representing the loss of moisture in the bulk. Some investigators report the loss during storage merely as shrinkage, but most of those who have studied the problem assume that the loss is of moisture only and have so reported it. A few experiment stations have studied the moisture content of forage plants at different stages of development, and some tests (18)² have been conducted to determine the rate of loss of moisture in very early stages of curing, beginning immediately after cutting. One or two workers have also begun investigations to ascertain a satisfactory method for correcting forage yields (10, 19) and a little work has been done in determining the amount of shrinkage which can be attributed to an actual loss of dry matter. The data on these last-named points are very inadequate, so that more information is much needed.

A mass of information on moisture content is also contained in reports of the chemical analyses of both green and field-cured forage plants, but unfortunately care is not always used by the chemist to protect the sample from drying after it has been brought into the laboratory. This is due to the fact that the percentages of food constituents are often computed on a dry-matter basis and the percentage of moisture in the sample is therefore only incidental.

¹ A digest of the literature relating to the moisture content and shrinkage of forage. Received for publication December 15, 1915.
² Figures in parentheses refer to publications similarly numbered in the literature cited at the end of this paper.