

CONNECTICUT AGRICULTURAL EXPERIMENT STATION.

Bulletin 23.—March 11, 1879.

ANALYSES OF HAY.

- XLVIII. Cut first week in July, 1877. From dry, rich upland, plowed about forty years ago. Consists of fine grasses. Large amount of Kentucky blue-grass (*poa pratensis*), and timothy (*phleum pratense*). Considerable red and white clover, a little red top (*agrostis*).
- XLIX. Cut second week in July, 1877, from rich, moist upland. Mostly timothy and Kentucky blue-grass. Some red-top.
- L. Cut last week in July, 1877, from rich, moist upland. Mostly timothy. Some red-top.
- LI. Cut last week in July, 1877

from moist upland. Mostly red-top and timothy.

LII. Cut first week in August, 1877 from intervale meadow, sometimes overflowed. Coarser than the preceding four. Mostly timothy and red-top, some red clover and white weed (*chrysanthemum vulgare*).

LIII. Cut about the middle of August, 1877, from wet lowland, sometimes overflowed. Contains a good deal of sedge grass (*carex sterilis*), and some fern. Other weeds, such as brunella vulgaris. Very little timothy.

All the above were sent by Hon. T. S. Gold, West Cornwall. Except in case of XLVII the meadows have never been plowed or seeded.

LVII. Cut July 1, 1878, when about one-fourth part was in bloom. Very heavy rank grass. Almost all timothy, a very little Kentucky blue grass.

LVIII. Cut July 11, 1878. A half or more had ripened enough so that the seeds would scatter out a

little in handling. The grass was of the same species as LVII.

LVII and LVIII, were both sent by J. W. Sanborn Esq, Hanover, New Hampshire, from the Agricultural College farm, and cut from the driest part of a fine heavy clay yielding two, and under good culture, three to four tons of hay per acre.

The water contents of these hays when received at the laboratory was as follows:

	Per cent.	Per cent.
XLVII.....	14.86	LII.....13.55
XLIX.....	13.08	LIII.....15.08
L.....	15.38	LVII..... 8.97
LI.....	12.97	LVIII..... 9.29

All but the last two were received apparently in about the usual marketable condition.

To render the result comparable with other analyses on record, they are all reckoned on a water content of fourteen and three-tenths per cent. For comparisons, are given Wolffe's averages of German hay from Menzel and Lengerke's Kalendar for 1879. See also report of this station for 1878, page 57.

WEST CORNWALL, Ct., 1877.

HANOVER, N. H.

GERMANY AND AUSTRIA.

TIME OF CUTTING.	WEST CORNWALL, Ct., 1877.						HANOVER, N. H.		GERMANY AND AUSTRIA.		
	XLVIII.	XLIX.	L.	LI.	LII.	LIII.	LVII.	LVIII.	Inferior.	Medium.	Extra.
	July, 1st week.	July, 2d week.	July, 4th week.	July, 4th week.	August, 1st week.	August, middle.	July 1st, 1878.	July 11th, 1878.			
Water.....	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	16.0
Ash.....	5.1	4.7	4.6	4.9	5.1	5.4	4.1	3.8	5.0	6.2	7.7
Albuminoids.....	10.6	7.0	6.9	7.5	9.0	6.7	6.2	5.3	7.5	9.7	13.5
Fiber.....	24.9	26.9	26.8	26.3	24.9	26.2	25.3	27.5	33.5	26.3	19.3
Non-nitrogenous Extract..	42.4	45.4	45.4	45.3	44.9	46.1	48.1	47.2	38.2	41.4	40.4
Fat.....	2.7	1.7	2.0	1.7	1.8	1.3	2.0	1.9	1.5	2.5	3.0

Mr. Gold states that his samples stand in our list above, in about the order of their value, as judged practi-

fact does not appear to be fully authenticated, it is possible that Mr. Gold's samples, which were received

inferior German hay in respect to albuminoids. The three samples produced on "wet lowland," LIII,

cally, beginning with XLVII. The crops were light, owing to the weather of 1877. XLVII and LIII yielded not over one ton per acre. The others yielded one and a half to two tons. All were harvested at what was regarded as the right time or stage of growth except LIII which was let stand too long. The hay was of very good quality, as compared with that of former years, but contained a less proportion of timothy.

The two samples sent by Mr. Sanborn have been employed in some feeding trials, the results of which he will publish in due time.

It is thought by some authorities, that hay deteriorates on long keeping to a degree that affects its chemical composition. Although such a

at the station in November 1877, and have been but recently analyzed, are not as rich nutritively, as when new. Mr. Sanborn's samples cannot have suffered seriously from keeping.

The most obvious result of the above figures is that the New England samples are of inferior quality as compared to those of Germany and Austria which have been analyzed in the European Experiment Stations. Of forty-six of the more recent analyses which are given in Dietrich and Koenig's tables, 1874, the lowest figures for albuminoids is 7.6 per cent, the average is 10.1 and the maximum is 14.4. But one of the New England samples is above the German medium quality, and but three of them surpass or equal the

or on land that "needs draining." LVII and LVIII, are most deficient in albuminoids. The early cut is scarcely better than the later mowed, as shown by analysis and the feeding records give no greater actual value to the former, while the early cutting is reckoned to diminish the crop on seventy-five acres by some twenty tons. These poorer hays are scarcely more than sufficient for the mere support of mature animals at rest and require addition of a proportion of highly albuminoid food, such as beans, linseed or cotton cake in order to make them economical fodder for growing, working or milk animals.

S. W. JOHNSON, *Director.*