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NEW HAMPSHIRE
AGRICULTURAL EXPERIMENT STATION
DEPARTMENT OF CHEMISTRY

Results of the Feed Inspection
For 1910

MADE FOR THE
STATE BOARD OF AGRICULTURE

BY B. E. CURRY AND T. O. SMITH

NEW HAMPSHIRE COLLEGE
OF
AGRICULTURE AND MECHANIC ARTS
DURHAM, N. H.

NEW HAMPSHIRE COLLEGE
OF
AGRICULTURE AND THE MECHANIC ARTS.

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AGRICULTURAL EXPERIMENT STATION

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The bulletins of the Experiment Station are published at irregular intervals, and are sent *free* to all residents of New Hampshire requesting them.

The Inspection of Feeding-Stuffs.

Each year, as has been pointed out heretofore in these reports, the inspection of commercial feeding-stuffs is becoming more important. There has been a steady increase for a number of years in the number of brands of feeds inspected by the State Board of Agriculture. This year there were 135 brands of feed offered for sale in New Hampshire from which official inspection samples were taken.

It has been pointed out before in these columns that our present feed laws are not adequate to meet the present needs of both the producer or jobber and the consumer. The inadequacy of our present laws are intensified at present by the fact that the laws in all of the neighboring states are more rigid and effective. For instance, when a carload of cotton-seed meal goes into the State of Maine, no part of it can be offered for sale until it has been properly inspected. It is not, therefore, an easy proposition to sell 37 per cent. cotton-seed meal for 41 per cent. in the State of Maine. In New Hampshire the present methods of inspection do not enable the consumer to know about his feed until several months after it has been paid for and when rebates are not to be obtained. The consumers of commercial feed-stuffs should rise up and demand better laws and a strict enforcement of the same. Feed jobbers evidently are thoroughly conversant with the New Hampshire methods of inspection. This is shown by comparing the last report of the New Jersey station with the results herein reported. New Jersey reports 340 brands of feeds, 8.5 per cent. of which had deficiencies in protein or fats. In New Hampshire 32 per cent. of the brands were deficient in protein alone. About 28 per cent. were deficient in fat. Seventeen samples were deficient in both fat and protein. Whether this represents carelessness on the part of the sellers or whether New Hampshire is to become or has become the dumping-ground for inferior feed-stuffs remains to be seen. At any rate it is perfectly logical to expect to find

inferior products offered for sale unless some changes are made in the present methods. It is very doubtful if alone the publicity given to poor articles will longer answer the public needs.

Twelve brands of cotton-seed meal have been sampled and analyzed. Fifty per cent. of these did not satisfy the guarantee with respect to protein. In one case the deficiency amounted to 18 per cent., while in two others the deficiencies were a little more than 13 per cent. These represent pretty fair margins for profit and loss. On the other hand, one sample showed a protein content of more than 7 per cent. greater than the guarantee. Two dollars per ton represented the difference in the selling price of the poorest and best meals. This is a matter which both the consumer and seller might well think about. It is obvious that something should be done that would give the consumer an opportunity to know what he buys. A revision of the present law together with some changes in the analytical facilities would meet these needs. The dealer in high grade feeding stuffs should be as insistent as the consumer for these changes. The results would be his best advertisements.

The growth of the poultry business has been accompanied by a great flood of poultry feeds. These are compounded from many grains and seeds, charcoal, meal scraps, bone shells, etc. Without discussing the merits of the different brands of these feeds a few general remarks may be in order. Some of these feeds are made from a good quality of grains. Others are a mixture of screenings and inferior grains. A careful inspection of these mixtures will usually enable one to determine something about the quality. Usually the price is sufficient to cover the cost of a high grade article. The prices of the best mixtures are little different from the prices of the inferior mixtures.

The beef scraps and animal meals while numerous, do not call for any particular comment. Because of the general nature of the materials which go into these, the composition is necessarily more or less variable. In general all of these meal mixtures are by-products of packing house industries and have become important as poultry feeds. Because of the general composition of these products, proper sampling is difficult at best and small deviations from the guarantee are not particularly significant.

Among the feeds one sample of alfalfa meal has been reported.

The price at which his feed was offered for sale together with its composition furnishes data for the feeder to think about. The average composition of good dry clover hay is 12 per cent. protein and 3 per cent. fat. It is very obvious from these data that clover hay is not properly appreciated by our feeders.

In the preparation of this report analytical assistance has been rendered by Messrs. C. H. and J. E. Robinson. The results of the inspection appear in the following table:

RESULTS OF THE FEED INSPECTION.

Brand.	Manufactured by.	Protein.		Fat.		Cost per 100 lbs.
		Guaran- teed.	Found.	Guaran- teed.	Found.	
Alfalfa Meal.....	M. E. Peters Co., Omaha, Neb.....	9.-14.00	14.92	.5-1.00	1.90	1.60
Hominy Feed						
Wirthmore Hominy Meal.....	C. M. Cox Co., Boston, Mass.....	9.5-12.00	11.41	7.5-9.00	10.00	1.70
Hominy Meal.....	Miner Hillard Co., Wilkes Barre, Pa.....	10.-12.00	9.92	7.5-9.00	10.33	1.60
Hominy Feed.....	Mystic Milling Co., Sioux City, Ia.....	12.00	10.89	9.00	6.60	1.60
Blue Ribbon Hominy.....	J. E. Soper Co., Boston, Mass.....	10.00	10.18	8.00	8.00	1.65
Standard Hominy Meal.....	Standard Cereal Co., Chillicothe, O.....	11.50	11.17	8.00	8.30	1.65
Hominy Feed.....	Patent Cereal Co., Geneva, N. Y.....	10.-11.00	10.79	7.-8.00	7.50	1.65
Cotton-Seed Meal.						
Choice Cotton-Seed Meal.....	Amer. Cotton Oil Co.....	41.00	35.22	9.00	9.10	1.75
Dover Brand Cotton-Seed Meal.....	F. M. Brode & Co., Memphis, Tenn.....	38.-41.00	35.63	7.-9.00	6.00	1.95
Owl Brand Cotton-Seed Meal.....	".....	41.-43.00	39.90	6.-8.00	8.00	1.85
Buckeye Cotton-Seed Meal.....	Buckeye Cotton Oil Co., Cincinnati, O.....	39.-41.00	41.15	6.5-7.00	8.90	1.90
Rose Brand Cotton-Seed Meal.....	Exchange Cotton and Linseed Meal Co.....	41.-43.00	40.63	7.-9.00	10.40	1.90
Good Luck.....	S. P. Davis, Little Rock, Ark.....	38.00	45.61	9.00	10.45	1.95
Dixie Brand Cotton-Seed Meal.....	Humphrey Godwin Co., Memphis, Tenn.....	38.5-43.00	39.45	7.-9.00	16.20	1.75
Cotton-Seed Meal.....	Hunter Bros. Milling Co.....	41.00	37.82	7.50	8.45	1.90
Imperial Cotton-Seed Meal.....	".....	41.00	41.20	9.00	9.35	1.90
Prime Cotton-Seed Meal.....	Imperial Cotton Milling Co.....	41.00	33.69	8.00	9.37	1.85
Soper's Choice Cotton-Seed Meal.....	C. C. Johnson & Co., Memphis, Tenn.....	41.00	41.07	8.00	8.00	1.90
Cleveland Flax Meal.....	J. E. Soper Co., Boston, Mass.....	36.-40.00	37.63	1.-3.00	2.60	2.00
Linseed Oil Meal.....	Amer. Linseed Co., Chicago.....	36.-40.00	38.50	1.-3.00	4.15	2.10
Old Process Oil Meal.....	Mann Bros., Buffalo, N. Y.....	34.-37.00	35.80	6.-7.00	7.10	2.15
Ground Flax Flakes.....	C. R. Luce, Milwaukee, Wis.....	17.34	17.55	17.37	15.85	1.25
Oil Cake Feed.....	J. Loring & Co., Watertown, Mass.....	16.00	19.19	7.00	6.00	1.90
Brewers' and Distillers' Grains.						
Brewers' Grains.....	S. E. Faithful, Boston, Mass.....	22.-26.00	27.80	8.-10.00	9.98	1.50
Dearborn Distillers' Dried Grains.....	J. W. Biles Co., Cincinnati, O.....	24.00	26.06	7.00	6.60	1.70
Union Grains.....	".....	27.-30.00	24.44	8.-12.00	9.98	1.80
Two Ex (XX) Grains.....	".....	27.-30.00	30.58	8.-12.00	9.98	1.75
Holstein.....	Hottelott & Co., Milwaukee, Wis.....	27.00	25.87	6.00	5.80	1.45

Gluten Feeds.				
Cream of Corn Gluten Feed.....	25.00	25.09	2.50	4.45
Clinton Feed.....	23.00	24.24	3.00	3.80
Buffalo Gluten Feed.....	24.00	25.85	2-5.00	4.70
Crescent Gluten Feed.....	24.00	26.23	2.50	1.43
Globe Gluten Feed.....	24.00	26.63	2.50	2.60
Cedar Rapids Gluten Feed.....	23.00	23.00	4.00	4.50
Bay State Gluten Feed.....	22.00	21.75	4.00	5.67
Molasses Feed.				
Sucrose Dairy Feed.....	16.50	16.50	3.50	5.40
Sugaroto Dairy Feed.....	16.00	14.36	3-5.00	2.05
Molac Dairy Feed.....	16.00	15.68	3-4.00	3.40
Holstein Sugar Feed.....	15.00	14.45	3.00	3.00
Husted Molasses Feed.....	18.00	18.74	4-6.00	4.14
Quaker Dairy Molasses Feed.....	16.00	17.76	3.70
Quaker Molasses Dairy Feed.....	16.00	16.17	3.30
Horse Feeds.				
Sugaroto Horse Feeds.....	12.00	11.78	3.50	5.45
Viko Horse Feeds.....	16.00	17.60	6.00	7.60
Horse Feed.....	10.00	10.53	4-5.00	4.00
All Grain Horse Feed.....	12.00	12.42	4.50	1.17
Pearl, Horse and Cow Feed.....	7-9.00	7.50	2.5-5.00	2.18
Dairy Feeds.				
Unicorn Dairy Ration.....	26.00	27.03	8.00	5.00
Ajax Flakes.....	31-33.00	28.54	12-14.00	11.50
Empire State Dairy Feed.....	28.00	32.60	9-12.00	10.35
Daisy Dairy Feed.....	15.00	20.05	3.00	3.85
Husted Dairy Feed.....	20.00	22.99	4-5.00	5.90
All Grain Milk Feed.....	14.00	16.28	4.00	4.07
Badger Dairy Feed.....	16.00	13.99	3.5-4.50	2.87
Empire State Dairy Feed.....	32.00	24.80	11.33	1.50
Prize Dairy Feed.....	18.00	17.55	3.00	1.65
Paragon Dairy Feed.....	28-30.00	29.31	5-7.00	1.40
Creamery Feed.....	18-20.00	19.92	4-5.00	1.60
Jersey Mixed Feeds.....	10-12.00	11.45	2.50-3.50	1.75
Ajax Milling Co., Buffalo.....	26.00	27.03	8.00	5.00
Clark Bros. & Co., Peoria, Ill.....	31-33.00	28.54	12-14.00	11.50
Great Western Cereal Co., Chicago.....	28.00	32.60	9-12.00	10.35
Husted Milling Co., Buffalo.....	15.00	20.05	3.00	3.85
H. O. Co., Buffalo.....	20.00	22.99	4-5.00	5.90
Chas. A. Krause Milling Co.....	14.00	16.28	4.00	4.07
J. D. Page & Co., Syracuse, N. Y.....	16.00	13.99	3.5-4.50	2.87
Molasses Feed Co., Milwaukee.....	32.00	24.80	11.33	1.50
St. Albans Grain Co.....	18.00	17.55	3.00	1.65
Buffalo Cereal Co.....	28-30.00	29.31	5-7.00	1.40
Ind. Milling Co., Terre Haute, Ind.....	18-20.00	19.92	4-5.00	1.60
.....	10-12.00	11.45	2.50-3.50	1.75
Stock and Miscellaneous Feeds.				
Queen Stock Feed.....	10-12.00	10.27	4-5.00	6.90
Chop Feed.....	7-8.00	8.03	3-4.00	5.43
Stock Feed.....	8.00	8.60	4-5.00	1.55
Charlestock Feed.....	6-9.00	7.41	3-5.00	6.95
Wirthmore Stock Feed.....	9-12.00	8.93	4-5.00	2.85
Colonial Growing Feed.....	15-18.00	11.89	5-7.00	1.60
Colonial Developing Feed.....	10.00	10.75	3.00	6.60
Boss Chop Feed.....	9.50	9.61	3.00	2.00
Sterling Stock Food.....	10.00	10.09	4.00	2.25
.....	9.50	9.61	4.00	4.10
.....	10.00	10.09	4.00	1.65

AVERAGE COMPOSITION OF COMMON CATTLE FOODS.

	Water.	Ash.	Protein.	Soluble Carbohydrates.	Fibre.	Fat.
Alfalfa.....	8.4	7.4	14.3	46.0	25.0	14.0
* Hay, red top.....	8.9	5.2	7.9	47.4	26.6	1.9
* Hay, Timothy.....	13.2	4.4	5.9	45.0	29.0	2.5
* Hay, clover.....	15.3	6.2	12.3	38.1	24.8	3.3
* Hay, Hungarian.....	7.7	6.0	7.5	49.0	27.7	2.1
* Oat fodder.....	8.9	6.2	7.6	45.1	29.3	2.8
* Rye fodder, in bloom.....	8.5	5.9	9.7	43.4	30.2	2.3
* Corn stover.....	40.1	3.4	3.8	31.9	19.7	1.1
† Corn silage.....	80.5	1.5	1.6	10.0	5.8	0.6
* Corn, N. H. Flint.....	10.1	1.5	11.6	70.2	1.1	5.5
* Corn, Western Dent.....	10.6	1.5	10.3	70.4	2.2	5.0
* Corn meal.....	15.0	1.4	9.2	68.7	1.9	3.8
¶ Hominy feed.....	9.0	2.8	11.0	65.0	3.6	8.6
* Oats, whole.....	11.0	3.0	11.8	59.7	9.5	5.0
¶ Corn and oats, pure.....	12.0	2.2	9.8	68.5	3.3	4.2
§ Wheat bran, spring.....	10.6	6.0	16.3	53.0	9.4	4.7
§ Wheat bran, winter.....	11.7	5.9	15.2	54.8	8.5	3.9
¶ Wheat middlings, white.....	11.3	2.7	15.8	62.5	3.5	4.2
Wheat middlings, brown.....	10.6	3.8	17.8	57.0	5.5	5.3
¶ Wheat feed.....	10.8	4.3	17.0	58.1	5.1	4.7
Gluten feed.....	8.6	1.2	26.3	53.4	6.9	3.6
Gluten meal.....	8.8	0.7	35.5	50.3	1.6	3.1
‡ Distillers' Grains.....	8.8	1.8	32.1	34.9	11.0	11.4
Brewers' Grains.....	8.0	3.8	23.1	49.4	10.8	4.9
‡ Malt sprouts.....	11.0	5.8	27.1	42.6	11.9	1.6
¶ Linseed meal, old process.....	9.8	5.5	33.9	35.7	7.3	7.8
¶ Linseed meal, new process.....	9.1	5.8	35.2	38.4	8.5	3.0
¶ Cottonseed Meal.....	6.9	7.2	44.6	25.1	5.6	10.6

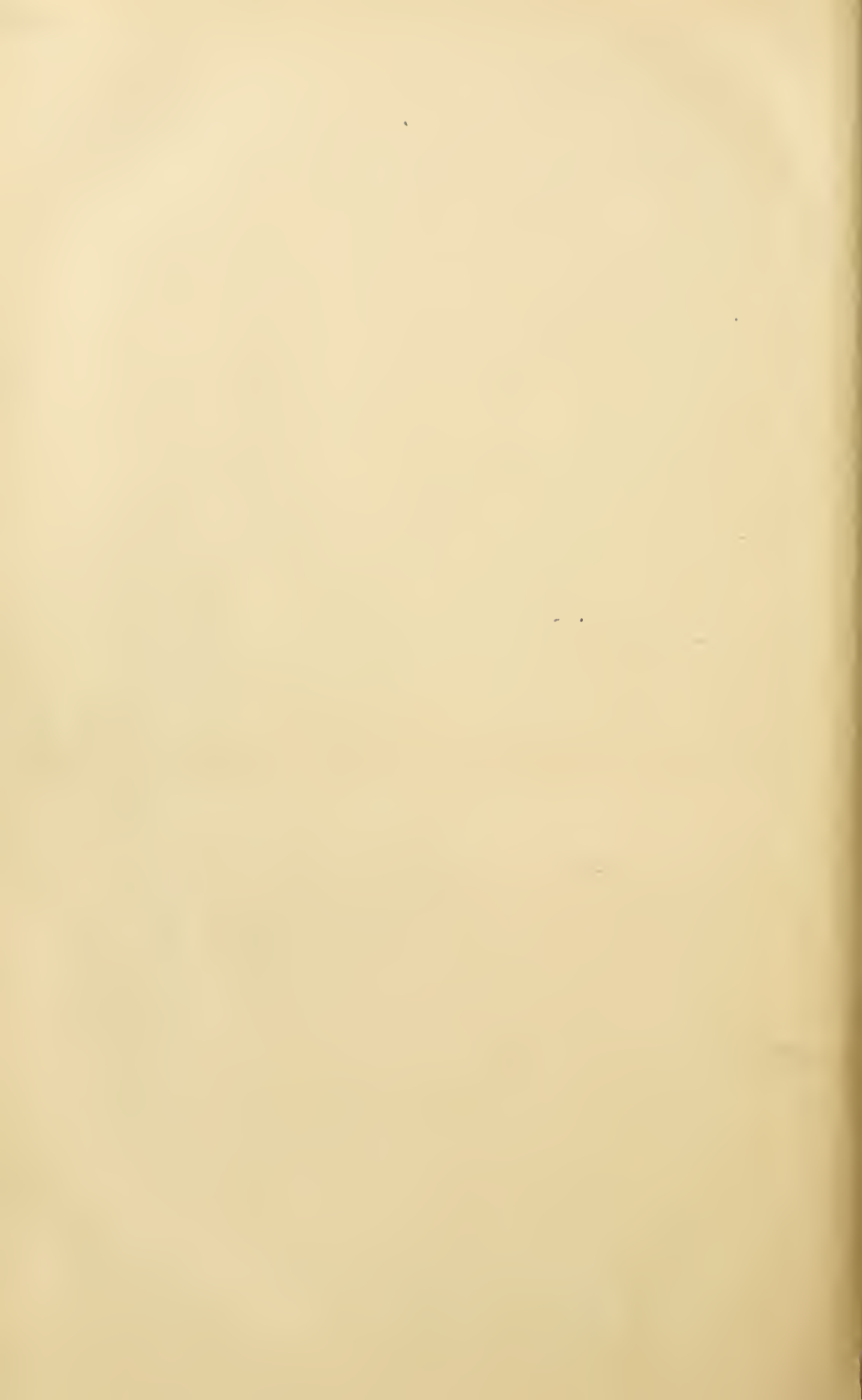
* Composition of American Feeding Stuffs. Jenkins and Winton.

† Analyses made at the N. H. Expt. Sta., 1895-1899.

§ Penn. Expt. Sta. Bull., No. 48.

¶ Compiled from Feed Inspection Reports of various states.

‡ Hatch Expt. Sta. Bull., No. 94.



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