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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.

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OF
AGRICULTURE AND THE MECHANIC ARTS.

NEW HAMPSHIRE
AGRICULTURAL EXPERIMENT STATION

DURHAM, N. H.

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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.....	Mizer Hillard Co., Wilkes Barre, Pa.....	10.-12.00	9.92	7.5-9.00	10.33	1.60
Hominy Feed.....	Mystie 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	7.60	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.....	Buckeye Cotton Oil Co., Cincinnati, O.....	41.-43.00	39.90	6.-8.00	8.00	1.85
Ruckeye Cotton-Seed Meal.....	Exchange Cotton and Linseed Meal Co.....	39.-41.00	41.15	6.5-7.00	8.90	1.90
Rose Brand Cotton-Seed Meal.....	S. P. Davis, Little Rock, Ark.....	41.-43.00	40.63	7.-9.00	10.40	1.90
Good Luck.....	Humphrey Godwin Co., Memphis, Tenn.....	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.....	Imperial Cotton Milling Co.....	41.00	41.20	9.00	9.35	1.90
Prime Cotton-Seed Meal.....	C. C. Johnson & Co., Memphis, Tenn.....	41.00	33.69	8.00	8.37	1.85
Soper's Choice Cotton-Seed Meal.....	J. E. Soper Co., Boston, Mass.....	41.00	41.07	8.00	8.30	1.90
Cleveland Flax Meal.....	Amer. Linseed Co., Chicago.....	36.-40.00	37.63	1.-3.00	2.60	2.00
Linseed Oil Meal.....	Mann Bros., Buffalo, N. Y.....	36.-40.00	38.50	1.-3.00	4.10	2.10
Old Process Oil Meal.....	C. R. Luce, Milwaukee, Wis.....	34.-37.00	35.80	6.-7.00	7.10	2.15
Ground Flax Flakes.....	J. Loring & Co., Watertown, Mass.....	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.....	27.80	9.98	1.50
Deatron Distillers' Dried Grains.....	J. W. Biles Co., Cincinnati, O.....	22.-26.00	26.06	8.-10.00	10.37	1.70
Union Grains.....	"	24.00	24.44	7.00	6.60	1.80
Two Ex (XX) Grains.....	"	127.-30.00	30.58	8.-12.00	9.98	1.75
Holstein.....	Hottelott & Co., Milwaukee, Wis.....	27.-30.00	25.37	8.-12.00	5.80	1.45

Results of the Feed Inspection.—Concluded.

	Brand.	Manufactured by.	Protein.		Fat.		Cost per 100 lbs.
			Guarant.-teed.	Fond.	Guarant.-teed.	Fond.	
Stock and Miscellaneous Feeds.							
Extra Good Stock Feed		Griswold & MacKinnan, St. Johnsbury, Vt.	7.63	8.25	2.37	3.95	1.65
Special Provender		" " "	7.63	7.32	12.97	3.25	1.65
Haskell's Stock Feed		W. H. Haskell, Toledo, Ohio.	8.-10.00	9.21	4.-5.00	6.00	1.70
Stock Husted Feed		Husted Milling Co., Toledo.	8.-10.00	8.42	4.-5.00	8.47	1.65
Imperial Corn, Oats and Barley Chop.		Imperial Grain & Milling Co., Toledo.	8.90	8.90	3.70	3.70	1.65
Imperial Regal Stock Feed		" " "	8.00	6.62	8.70	2.90	1.50
Imperial Steamed and Cooked Feed.		" " "	10.-12.00	8.65	4.-5.00	1.70	1.85
New Era Stock Feed		Naves & Colby, Boston, Mass.	10.-12.00	9.36	4.-5.00	6.25	1.70
Growing Feed		Park & Pollard Co., Boston, Mass.	14.-15.00	17.11	3.-4.00	4.10	2.25
Furina Mill Feed		Furina Mills, St. Louis, Mo.	11.00	11.14	3.50	3.50	2.00
Schumacher Stock Feed.		Quaker Oats Co.	10.00	10.62	8.25	3.10	1.65
Victor Feed		" " "	7.50-9.00	8.74	3.-4.00	3.30	1.50
Jas. Brown Stock Feed.		St. Albans Grain Co.	9.-12.00	9.65	4.-5.00	9.30	1.60
Stott's Winner Chop Feed.		David Stott, Detroit, Mich.	9.50	7.32	5.00	5.10	1.50
Star Feed.		Toledo Elevator Co., Toledo, O.	7.00	8.43	5.50	5.60	1.45
Toledo Stock Feed.		" " "	9.-12.00	11.45	3.-5.00	6.71	1.55
Beef Scraps and Poultry Feeds.							
Beef Scraps		Amer. Agr. Chemical Co.	40.-60.00	56.20	5.-6.00	15.89	2.75
Beef Scraps		Beech Soap Co., Lawrence, Mass.	40.00	38.53	20.00	20.00	2.75
Beef Scraps		" " "	30.00	21.20	10.00	11.30	1.75
Beech Meat and Bone Meal		Jos. Bree & Sons, Boston, Mass.	43.-50.00	47.89	12.-15.00	11.95	2.75
Bree's Ground Beef Scraps		Bowker's Fert. Co., Boston, Mass.	40.00	40.63	5.00	6.65	2.00
Ground Scraps.		C. S. Page, Hyde Park, Vt.	55.-65.00	56.85	10.-15.00	15.09	3.25
Beef Scraps		John C. Dow Co., Boston, Mass.	48.-50.00	40.11	12.-15.00	11.05	2.55
Essex Beef Scraps.		Essex Fert. Co., Boston, Mass.	40.-50.00	37.75	6.-12.00	10.02	2.70
Beef Scraps		W. D. Higgins, So. Frammingham, Mass.	45.-65.00	28.53	10.00	11.10	2.35
Beef Scraps		Hinckley Rendering Co., Somerville, Mass.	35.-50.00	33.55	6.-12.00	6.25	2.50
Dried Beef Pulp.		Larrows Milling Co., Detroit, Mich.	8.00	8.65	5.00	1.97	1.35
Swift's Beef Scraps		Manchester Rendering Co.	40.-50.00	45.30	8.-12.00	14.00	2.40
Animal Meal		" " "		32.92		3.40	
Animal Meal		Nathan Tufts & Son., Boston, Mass.		33.80		4.90	2.00
Beef Scraps.		Park & Pollard Co., Boston, Mass.	60.-80.00	53.30	10.-13.00	16.95	3.00
Blue Ribbon Beef Scraps.		Farmeter & Polsey, Boston, Mass.	40.-50.00	41.11	8.-12.00	10.40	2.45
Beef Scraps		" " "	40.-50.00	45.23	6.-12.00	13.65	3.25

Beef Scraps and Poultry Feeds.

Swift's Meat and Bone Meal.....	35-45.00	43.50	3.-10.00	11.86	2.50
Pure Beef Scraps.....	55.00	44.02	12.00	14.00	2.50
Pure Beef Scraps.....	40.-50.00	44.42	10.-15.50	5.55	2.50

Poultry Feeds.

Chick Food.....	10.54	11.19	3.40	2.90	2.50
Poultry Feed.....	15.-17.00	15.67	4.-5.00	7.50	2.00
Scratching Grain.....	10.-12.00	10.44	3.-4.00	3.-4.00	2.00
Wilmington Chick Feed.....	14.00	10.29	8.00	1.26	2.20
Wilmington Poultry Mash.....	12.-14.00	13.50	3.50	1.20	2.10
Wilmington Scratch Feed.....	10.00	11.58	5.00	3.60	2.20
Queen Poultry Mash.....	10.00	10.27	3.00	3.20	2.50
Globe Scratch Feed.....	11.00	12.48	2.50	4.20	2.00
Extra Good Scratch Feed.....	10.00	11.37	2.50	3.10	2.00
Competition Scratch Feed.....	10.00	10.00	3.00	3.90	2.10
Husted Chick Feed.....	11.00	11.60	3.00	1.45	2.00
Husted Laying Mash.....	12.-14.00	9.96	4.-5.00	4.60	1.90
Husted Scratch Feed.....	15.-17.00	10.44	4.-5.00	1.86	2.00
All Grain Poultry Feed.....	11.-13.00	11.11	3.-4.00	4.60	1.85
All Grain Poultry Mash.....	12.00	11.97	3.00	1.25	2.00
All Grain Scratch Feed.....	17.00	17.29	5.50	2.55	2.25
Dry Mash Feed.....	17.00	17.20	5.50	3.00	2.20
Gritless Chick Feed.....	11.00	10.77	3.50	4.90	2.00
Intermediate Chick Feed.....	20.-23.00	26.98	3.00	3.15	2.25
Scratch Feed.....	13.77	15.79	2.77	4.75	2.35
Amer. Poultry Feed.....	10.00	11.28	3.00	3.00	2.50
Schumacher's Little Chick Feed.....	10.00	10.44	3.00	3.50	2.25
High Grade Scratching Feed.....	12.-14.50	12.04	3.5-4.50	6.22	1.80
Wyandotte Chick Feed.....	10.00	9.49	2.50	3.00	2.00
	10.00	10.49	3.00	3.00	2.15
	8.25	8.30	2.25	2.35	2.25

Calf Feeds.

Triangle Calf Feed.....	22.00	20.02	10.00	10.20	2.75
Schumacher's Calf Meal.....	19.-21.00	19.92	8.-9.50	8.15	3.50
Grayson Calf Meal.....	21.00	23.22	5.00	5.90	3.00
Blatchford's Calf Meal.....	25.00	28.82	5.00	5.23	3.50

Swift's Lowell Fert. Co.....
 H. K. Webster Co., Lawrence, Mass.....
 Whitman & Pratt, Lowell, Mass.....

Cyphers Incubator Co., Buffalo.....
 Buffalo Cereal Co.....
 C. M. Cox.....
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 Albert Dickinson & Co.....
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 Great Western Cereal Co.....
 Griswold & Mackman.....
 Husted Milling Co.....
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 H. O. Co.....
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 Park & Pollard Co.....
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 Quaker Oats Co.....
 ".....
 H. K. Webster Co., Lawrence, Mass.....
 Ross Bros., Worcester, Mass.....

Flint Mills Co., Milwaukee.....
 Quaker Oats Co.....
 Great Western Cereal Co.....
 Blatchford's Calf Meal Co., Waukegan, Ill.....

AVERAGE COMPOSITION OF COMMON CATTLE FOODS.

	Water.	Ash.	Protein.	Soluble Carbohy- drates.	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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