

Kentucky Agricultural Experiment Station
UNIVERSITY OF KENTUCKY

COMMERCIAL FEEDS IN KENTUCKY IN 1936

By J. D. TURNER, H. D. SPEARS, W. G. TERRELL and
L. V. AMBURGEY

CONTENTS

Standards	2	Minerals	16
Registration requirements	4	Special analytical data	17
Yellow tag feeds	6	Dog feeds	18
Balanced ration	7	Analyses of dog feeds	20
Evaluating feeds	10	Summary of results of in- spection and analysis, 1936.....	31
Hominy feeds	15		

As a result of the drouth and with the return to more normal economic conditions, there was marked increase in the volume of commercial feeds sold in Kentucky during 1936. It is estimated that approximately 350,000 tons were consumed, an increase over 1935 consumption of more than 125,000 tons, and at an estimated retail cost to the consumer of more than \$15,000,000. The sum paid by Kentucky feeders for commercial feeds, not including whole grains and hays, compared with the U. S. Department of Agriculture valuation of livestock in Kentucky for 1936, equals 10.3 percent of the total value of livestock in the State, including poultry.

The heavy demand and high price of feeds created much unscrupulous competition in the business among certain manufacturers. Those who adulterated and misbranded feeds were required to withdraw a large tonnage of such feeds from Kentucky markets. In several instances, it was necessary not only to prosecute but to cancel registrations. Economic frauds and cheats commonly found in cheap, trashy filler and competitive

feeds in which materials of little or no feeding value were substituted for the essential and more important and costly ingredients guaranteed, have been greatly reduced.

Fifteen suits were filed in the State courts against firms for fraudulent practices, which resulted in judicial decisions for the Department of Feeding Stuffs. In addition, 45 registrations of brands of feeds and right to ship feeds into Kentucky, representing 12 companies, were canceled because of adulteration and misbranding. When these companies took their feeds off the market, changed their formulas, made refunds and gave assurance of future compliance with the law, most of them were reinstated and placed on probation, contingent upon their co-operation and future conduct of their business in the State.

STANDARDS

Requests are frequently received for formulas for making mixed and special-purpose feeds. The Department of Feeding Stuffs has no printed formulas, but assists those interested when requested, by scrutinizing formulas submitted and making such suggestions as may be helpful. The attention of those interested is directed to the chemical standards and requirements established by the Department for special-purpose feeds and for most of the straight by-product feeds. Before any feed is accepted for registration and legalized for sale in Kentucky, it must meet these standards and other conditions.

These standards and requirements are not perfect nor do they assure a good and well balanced feed. They do, however, serve as a measure or yard-stick for the feeder in buying his feeds and aid in protecting him against economic cheats. If a feeder will observe the standards and the information printed on the State tag under which the feed is guaranteed and sold, he should have a fair knowledge of the character of the feed. In special-purpose and by-product feeds, the standard for minimum protein is placed sufficiently high to assure a reasonable amount and, thereby, require a desirable source. The fat is placed at a point to require the use of materials that have not

CHEMICAL STANDARDS

	Minimum Protein Percent	Minimum Fat Percent	Maximum Fiber Percent
1. Standard By-Products:			
Alfalfa Leaf Meal			18.00
Alfalfa Meal	13.00	1.50	32.00
Barley, Ground			6.00
Buttermilk, Dried		5.00	
Corn, Chopped, Cracked (Screened).....	8.00	3.50	3.00
Corn, Chopped, Cracked, Ground	9.00	3.75	2.50
Corn Feed Meal	8.00	3.75	4.00
Hominy Meal, Hominy Feed	10.00	7.00	6.00
Oats, Ground	11.00	4.50	12.00
Rye Middlings or Shorts	15.50	3.50	6.00
Wheat Bran	14.50	3.75	10.00
Wheat Brown Middlings or Shorts	16.00	4.00	7.50
Wheat Flour Middlings	16.00	3.50	3.50
Wheat Gray Middlings or Shorts	16.00	4.00	6.00
Wheat Mixed Feed	15.50	4.00	8.50
Wheat White Middlings or Shorts	16.00	3.50	3.50
2. Special Purpose Mixed Feeds:			
Dairy Feed	16.00	3.50	15.00
Hog Feed (Fattening)	13.00	3.50	7.00
Hog Feed (Growing)	16.00	3.50	7.00
Horse and Mule Feed	9.00	2.50	15.00
Poultry:			
All-Mash Growing Ration	15.00	4.00	6.00
All-Mash Laying Ration	15.00	4.00	7.00
All-Mash Poultry Ration	15.00	4.00	6.00
All-Mash Starting Ration	14.00	3.50	5.00
Chick Grains	9.00	2.50	3.50
Scratch Grains	9.00	3.00	5.00
Fattening Mash	13.00	4.00	6.00
Growing Mash	17.00	3.50	6.00
Laying Mash	18.00	3.50	8.00
Starting Mash	16.00	3.50	5.00
Turkey Growing Mash	17.00	3.50	7.00
Turkey Laying Mash	18.00	3.50	8.00
Turkey Starting Mash	18.00	3.50	6.00

been degermed and to exclude the use of excess fillers of low fat content. The standard on maximum fiber has for its purpose to exclude excess fillers and materials of highly fibrous nature and assure a higher percentage of nitrogen-free extract. As

another protection against fraud, a limit of 25 percent of fillers is placed on special-purpose feeds.

A great deal depends on the honesty of the manufacturer. Sometimes, the most desirable and essential ingredients for a feed are used in the smallest amount permissible, which is 3 percent, in order to get their names on the label, and cheap and less valuable materials are substituted for the major portion.

REGISTRATION REQUIREMENTS

3. *General Rules:*

(a) In making registrations, care should be exercised to make the chemical guaranties reasonably close to the actual content of the feed. In other words, arbitrary guaranties will not be accepted.

(b) If a material change is made in the guaranty of a feed, in effect lowering the value of the feed, the name of the feed must be changed also.

(c) For oil-mill and animal by-product feeds, the percentage of protein must form part of the name. For example, 41% Protein Cottonseed Meal, 34% Protein Old Process Linseed Oil Meal, 60% Protein Digester Tankage, etc.

(d) Oil-mill by-products containing hulls, screenings and similar materials, thus materially lowering the percentage of crude protein, cannot be called meals, but may be called meal and hulls, or meal and screenings, or feed, or by some proprietary name.

(e) Any feed containing less than 9% protein must be called by the name of its ingredients.

(f) In naming feeds, the terms "feed" and "ration" should be distinguished. A feed may or may not be a ration. A ration is a complete feed and does not require other feed to be fed in addition to it.

4. *Essential Organic Ingredients:*

A feedstuff must not contain less than 3% of any essential organic food ingredient stated in the guaranty. If an ingredient

so stated is found to be less than 3% the feed will be classed as misbranded.

5. *Mineral Ingredients:*

Mineral ingredients generally regarded as dietary factors essential for the normal nutrition of animals, except bone, when added to a feed must not exceed 3%.

The amount of salt in any stock feed, including poultry feeds, should not exceed 1%.

6. *Screenings:*

(a) Percentage of screenings in wheat feeds and statement whether ground or unground, must be given.

(b) When screenings are used in mixed or special-purpose feeds, the percentage must be stated, and the minimum amounts of protein and fat and the maximum amounts of fiber and ash for such screenings must be stated in the registration. Samples of such screenings may be required to be furnished on request by the Department.

(c) If all or part of the immature, broken and light grains and other seeds of commercial value have been removed from screenings, the material must be called "screenings refuse" or "screenings waste".

7. *Materials of Little or No Feeding Value:*

(a) Percentage of materials of little or no feeding value must be stated.

(b) When organic materials of little or no feeding value as concentrates are used in mixed or special-purpose feeds, the open formula must be given in the registration. The open formula will not be printed on the tag unless there is a good reason for so doing; the Department reserves the right to print it.

(c) In mixed feeds, the amount of a material or materials of little or no feeding value as a concentrate, must not exceed 25% of the mixture.

8. *False Registration and Cancellation:*

Improper registration, adulteration or misbranding of a

feed not only renders the offender liable to prosecution, but the registration may be canceled by the Department.

YELLOW TAG FEEDS

In this class are grouped all feeds containing one or more materials of little or no feeding value. These feeds are called by the trade "yellow tag" or "filler" feeds. It is by the use of such fillers, without proper declaration, in this class of feeds that most adulteration and misbranding are practiced. The most common fillers are screenings and screenings waste, cottonseed hulls, oat hulls, clipped oat by-product, barley hulls, chaff, and stem meals. These fillers are used in the lowest quality and cheapest competitive feeds. Often the feeder has materials going to waste on his own farm which have as much feed value as some of the fillers he buys in mixed feeds at handsome prices. Most states do not limit the amount of fillers in feeds nor do they require a minimum amount of essential materials. In some states, as much as 75 percent or more of the feed is composed of fillers of the cheapest kind and only a trace of essential materials is used to get them listed on the label. The protein is added by the use of cheap high-protein-carrying material.

Kentucky has a limit of 25 percent fillers and a minimum of 3 percent on essential organic materials. The feeder is protected to this extent and if he will only examine the tag carefully, he can judge the character of the feed he is buying. On the basis of quality of filler feeds sold in Kentucky as compared with those sold in some other states, the price in Kentucky varies from \$1.50 to \$3.50 a ton more than in such states. If fillers could be placed on their own merit both in feed and money value, there could be little objection to using them in commercial feeds. But when disguised in whole or in part by other materials and sold to feeders at prices not commensurate with their value, such practice becomes an economic cheat or fraud.

Poisons, especially cumulative poisons, molds, disease germs and injurious materials are more likely to be found in filler feeds that contain damaged and inferior grains and waste materials.

Careful consideration should be given by feeders when buying such materials in feeds.

BALANCED RATION

Proper breeding and feeding are two most important factors in successful stock raising. They stand in the same relation to each other as that of a heating plant and fuel. It makes little difference how modern and efficient the heating plant may be, if the fuel is not of the right kind, the results will be poor. An inverse analogy is true. The fuel may be of the best quality, but satisfactory results will not be obtained if the heating plant is improperly constructed and lacks certain essentials for its proper functioning. The same is true of livestock. If not well bred and of improved strain, quality feeds will not make up for the inefficiency of the animals. Likewise, the stock may be of the best breed and type, but if their feeds are not properly balanced and do not contain the essential materials in adequate amounts the animals will fail in health and productivity.

Originally, by a properly balanced feed, was meant one that contains digestible protein, carbohydrates and fat in the right proportions to supply the needs of the animal. Recently, however, it has been learned that certain mineral substances and later the vitamins are necessary for proper nourishment.

Animals are given feed for three purposes: first, that the animal may have sufficient feed to maintain itself; second, that it may convert the feed into useful products such as meat, milk, wool, food and work; third, that it may have such feed that will enable it to reproduce.

Feeding materials should be combined to furnish a ration that will keep animals healthy and productive. The lack of proper feeds and inadequate feeding often causes disorders in livestock and decreases production. To assure best results, the ration must furnish the necessary nutrients in right amounts such as protein for growth and repair of body tissues, nerves, glands and muscles; fat and carbohydrates for producing heat and energy; minerals for building and maintaining the skeleton,

tissues, nerves, and blood; vitamins for regulating or directing the body forces in proper utilization of the nutrients of feeds, including minerals.

Each of the nutrients is indispensable to the life, to the maintenance, to the effectiveness of reproduction, and to the practical efficiency of the animal. If a ration is lacking in any one of the essential nutrients, the animal fails to develop properly, loses its ability to reproduce and its life may be shortened. Therefore, no one of the nutrients should be neglected in providing a ration.

Protein, carbohydrates and fats are required in comparatively large amounts, usually measured in terms of pounds. Mineral substances are needed only in small amounts, measured in terms of fractions of pounds or ounces. Vitamins are needed only in exceedingly small amounts as they do not add fuel value to the diet but act only as a regulatory force of the animal body.

If the ration provides only enough material and energy to sustain the body of the animal while idle, without gain or loss of weight, the animal is considered to be on a maintenance ration. If the animal is expected to work or to produce milk, or flesh, or eggs, or wool, and other useful materials, then a ration in excess of the maintenance ration must be used, in proportion to the ability of the animal to produce, which may be called the production ration.

In the light of the present knowledge of feed requirement, it is safe to say that a ration is properly balanced when it meets the following conditions:

First, it should contain sufficient digestible and complete proteins of proper quality and kind. To meet this requirement for the different classes of stock, a select and suitable variety of materials should compose the ration.

Second, it should contain proper amounts of energy-producing substances, such as sugars, starch and fats. To assure this, materials rich in highly digestible nitrogen-free extract should be used, and highly fibrous and trashy materials used as fillers in feeds should be avoided. Highly fibrous and trashy

materials may be high in carbohydrates, but they contain a large percentage of indigestible fiber which renders them of much less value than feeds with low fiber content and high in nitrogen-free extract.

Third, it must contain a proper amount of mineral matter. It is stated elsewhere in this bulletin that most feeds, when properly balanced, should contain sufficient minerals in adequate amounts, except salt. If good leguminous hays are fed, a deficiency of calcium and phosphorus is not likely to occur. In the absence of legumes it may be necessary to supply calcium in the form of ground limestone, and calcium and phosphorus in the form of bone meal.

Fourth, it must contain the proper amount of indigestible fibrous materials, such as is furnished by the fibrous or structural parts of plants and grains. Such materials as bagasse, rice hulls and peanut hulls, however, are not desirable in feeds.

Fifth, it must contain the vitamins in adequate amounts. Modern milling has changed the composition and quality of by-product feeds in many respects. One of the changes is in the vitamin content of some products. Usually, the germ of grains, which is the richest in certain vitamins, is removed, partly or wholly, and used for some other purpose than for feed. In such instances, the vitamin content is greatly diminished in these by-product feeds. This makes it necessary to use vitamin-carrying materials such as green materials, sun-cured green-colored hays, cod liver oil, cereal grain germ, yeast, milk and milk by-products.

Sixth, it must be free from injurious substances such as poisons, especially cumulative poisons, disease germs or any thing that produces mechanical injury. Feeds containing screenings or screenings refuse, carrying poisonous weed seeds, dirt and sand, or moldy and partially decayed grains, or rice hulls, or other materials of similar nature, may prove very harmful to animals and should be avoided.

EVALUATING FEEDS

No feeder can get the best and most economical results unless he is able to evaluate his feeds. The value of a feed depends upon that portion of the nutrients which an animal can, under ordinary conditions, digest and take into its system for building, heat, energy, and repair of natural waste of the body. The wide differences in the productive value of feedstuffs are not only caused by differences in digestibility and in the amount of energy expended in the process of digestion, but also by differences in chemical composition. Example: a pound of digestible nitrogen-free extract in hays, roughages and highly fibrous materials is much less valuable to the animal than a pound digested from feedstuffs such as corn, barley and cereal grains. This is due, no doubt, to the differences in chemical constituents. Sugar and starch being easily digested have a higher value to the animal than other less soluble compounds. The same is true of proteins and fats.

The first step in evaluating feeds is for the feeder to acquire a knowledge of the functions of feed constituents—protein, fats, fiber, nitrogen-free extract, ash (or minerals), water and vitamins.

Protein is the most important as well as the most costly constituent of a feed. It is the name given to organic nitrogenous substances essential to plant and animal life. Plants have the power during growth of taking in protein-producing substances from the soil and air and converting them into protein and storing it, whereas animals build their protein from that of plants, grains and seeds, or from other animals.

No other substances can take the place of protein but, under certain circumstances, as in starvation, protein may serve as a source of heat and energy. It may be used to form fat, thus taking the place of the nutrients, fat and nitrogen-free extract. But fat and nitrogen-free extract cannot perform the function of protein. While fats and nitrogen-free extract are essential and important in feeds, usually they are abundant and can be had in a cheap form.

Protein stimulates both appetite and digestion, builds and repairs worn-out tissues, produces flesh, muscle, ligaments, glandular secretion, milk, blood, hair, hoof, hide and is found in all parts of the animal body as well as in the bones of which 25 or 30 percent is protein.

Different proteins contain different amounts of essential amino acids, and it is therefore important to select feeding materials whose protein contains sufficient amounts of the essential amino acids. Milk, eggs, meat and animal by-product materials, and certain varieties of soybeans, contain all the essential amino acids. Proteins of this nature therefore are very necessary for poultry, dogs, hogs and young animals. They are also very desirable for mature animals in a run-down condition. However, they are not necessary for general stock feeding of mature animals such as cattle, horses and sheep.

Fat produces heat and energy, its value for such being $2\frac{1}{4}$ times that of either carbohydrates or protein. Fat also helps to maintain the normal function of the digestive tract. Comparatively small amounts of fat are needed for animals, and most rations contain a sufficient amount.

Fiber is the woody portion or structural part of plants, grains, and outer grain coatings. It consists mainly of cellulose, and is the least digestible of feed nutrients. When present in large quantity, it has a retarding effect on the digestion of other nutrients and is itself only slightly digested by animals. Its chief value appears to lie in its mechanical effect produced in the intestinal tract. A high percentage of fiber in a feed is a general indication that the percentages of essential nutrients are low and the digestibility is impaired.

Nitrogen-Free Extract is composed chiefly of starch and sugar which are readily soluble and almost completely digestible. Other materials, such as the more soluble part of the cellulose, and like substances in small amount and less soluble and digestible than sugar and starch, are grouped with sugar and starch under this name. Nitrogen-free extract, and the fat present in the feed, are oxidized to maintain heat and furnish energy for

the production of work. While nitrogen-free extract does not have as great a power in this respect as fat, it is present in so much larger quantities than is fat, that its importance is far greater. Nitrogen-free extract may be converted into fat in the animal body and any excess over the immediate needs of the body is stored as fat in the tissues.

Carbohydrates consist of sugar and starch and related products, such as cellulose and gum. Compounds of this group make up the major portion of all plant substances. Their value as a nutrient depends largely upon the proportion of fiber, since fiber is considered practically indigestible.

Ash is the mineral matter or residue obtained when a feed-stuff is burned and is so determined by the chemist. The percentage is relatively small compared with protein and nitrogen-free extract. The ash of clean vegetable material contains mineral substances which the plant has taken from the soil. Some of these substances are important constituents in feeds. They form the bony structure of the animal and serve an important part in maintaining the normal functions of the nerves, blood and secretions of the body. The mineral requirement varies with different ages and kinds of animals. It is more pronounced in young than in mature animals, and in hogs and possibly poultry, than in cattle. Some feeds are rich in certain minerals and deficient in others. It follows that the same is true of rations. The mineral substance most commonly deficient is calcium. This deficiency can be made up by the use of ground limestone or bone meal, at a small cost.

Water adds nothing to the value of commercial feeds because animals receive their main supply of water from other sources. Any amount of water added to feed, other than that necessary to keep the feed in proper physical condition, reduces the value of the feed by reducing the percentages of the desirable nutrients. An excessive amount of water lowers the keeping quality of the feed.

Vitamin substances are necessary for normal health, growth and reproduction. The vitamin requirements of different ages

and classes of animals differ a great deal. Fresh green feeds and sunshine furnish abundant supply of the vitamins needed by farm animals. Supplying vitamins is not so difficult in summer, but is somewhat different in winter if green-colored hays or green feeds such as rye or wheat pasture and sunshine are not had.

In addition to a knowledge of the basic constituents of feeds, there are other factors one must understand to properly evaluate feeds. Some of the more important of these are:

The nutrients in a feed. The term nutrient is applied to any food constituent or group of constituents of the same general composition, that aid in the support of animal life. It is necessary to know the chemical analyses of feeds, as they give us definite information as to the nutrients present. The analysis, therefore, is necessarily the starting point in attempting to put a proper value on feeds.

The availability of the nutrients. Often two feed materials or two rations may have practically the same chemical analysis. However, the availability of the nutrients present may differ a great deal. Example: chemical analysis of corn shows that 100 pounds of corn contains 89 pounds of nutrients, whereas 100 pounds of oat-hull feed contains 94 pounds. The oat-hull feed contains more nutrients, but actual digestion experiments reveal the fact that 100 pounds of corn contains 85.5 pounds of available nutrients while 100 pounds of oat-hull feed contains only 42.5 pounds of available nutrients. In other words, 96.5 per cent of the total nutrients in corn is available or digestible while only 48.5 per cent of the nutrients is available in oat-hull feed.

The quality of the nutrients. Chemical analyses give us definite information as to the amount of the different nutrients in feeds, and we are able to judge the source and quality of nutrients by the use of the microscope. The chemical and microscopical examinations are, therefore, supplementary and interdependent on each other in properly evaluating feeds, as a knowledge of the source of nutrients is necessary as well as their amounts. Example: two feeds may have approximately the

same analysis and contain equal amounts of carbohydrates, say 70 percent. One may be a straight by-product feed with a fiber content of 8 percent whereas the other may contain a highly fibrous filler and a fiber content of 25 percent. The 8-percent-fiber feed contains 62 per cent nitrogen-free extract, which is a highly desirable constituent, whereas the 25-percent-fiber feed contains only 45 percent nitrogen-free extract.

The quality of the nutrients, especially of the proteins, is particularly important. Their source, therefore, should be from enough known materials to assure the presence of the proper kinds and quality to meet the requirements of the animal.

Palatability. Natural feeds that are palatable are usually safe and nutritious. There are exceptions to this such as sorghum stunted by drouth. Sometimes, after a certain period, animals refuse to eat feeds that are palatable. This may be because there is a serious nutritive deficiency such as a lack of vitamin A or deficiency in certain minerals. However, palatability is an important factor for it makes little difference how nutritious a feed may be if it lacks palatability, its value is lessened to the extent that animals refuse to eat it. Some feeds may be palatable and suitable for some classes of animals and not for others. Again, some feeds may not be palatable and satisfactory to some animals when fed alone but when combined with other feed materials may produce satisfactory results. Example: malt sprouts and distillers dried grains, when fed alone, are not relished by most stock, but when combined with other well-liked materials prove highly satisfactory. It should be kept in mind that stock do better and yield more on rations made up entirely or chiefly of palatable feeds.

Accustomed use of feeds. Familiarity is an important factor in evaluating feeds. Not infrequently will stock refuse feeds with which they are not familiar. Often such feeds that seem unpalatable become palatable and relished. Example: at first, when corn silage is placed before stock not used to it, they may refuse it. When they become accustomed to it, they relish it. Stock used to eating yellow corn seem not to like white corn

at first and vice versa. Likewise, stock used to whole grains do not relish, at first, the same grains when ground.

Grade of feed. Feeds of the same grade, including hays, often differ in feeding value. Grains vary in food content—the amount of protein, fat, nitrogen-free extract, minerals and vitamins, according to the soil and seasonal conditions in which they are grown. Their by-products and the combinations of their by-products vary also. Example: in some sections, corn is grown for high starch content; in others, for protein. Some soils and climates produce corn with higher food value than others. These are well-known facts but are often overlooked in computing rations or in comparing feeds. Unless the quality or grade be known, the comparison or evaluation of feeds will be misleading.

Experience in feeding. One feeder may be successful in feeding a certain kind of feed while another may fail with the same feed. Experience has proved that some hog and catle feeders get the best results in feeding barley, while others fail with barley and are successful only with corn. Few feeders in Kentucky are able to feed wheat successfully for lack of experience, but in some sections of the country wheat is fed satisfactorily as a substitute for corn.

There are other factors in evaluating feeds that a feeder should consider, such as bulk, the form in which feed is to be fed, the class of animals to be fed and feeds that are to be supplemented with other materials. Each of these plays an important part in properly evaluating feeds.

HOMINY FEED

Imitation hominy feeds have been given special attention during the year. Small corn mills within this State have been making imitation hominy feeds which are a blend of different corn by-products, often of inferior quality. Such feeds were sold in competition with bona fide hominy meals. To cope with the situation, sufficiently high chemical standards were adopted by the Department of Feeding Stuffs to prevent the use of cheap

and inferior products in these feeds. Feeders may be reasonably assured they are getting good quality feeds when they buy registered and properly labeled hominy feeds.

MINERALS

As has been stated, mineral nutrients are necessary for the health and growth of both plants and animals. Without them, the plant or animal perishes. Plants get their mineral requirements from the soil. Animals in turn get their minerals from plants and animals. If the soil is deficient in minerals, the plants will be deficient in them also. If plants are deficient in minerals, then a mineral supplement is necessary to supply the animal's requirements, as every ration must contain certain minerals. Most feedstuffs contain them in necessary amounts, tho these amounts may be small. In animal nutrition it is usually more desirable to supply the needed minerals in vegetable or animal tissue containing them, rather than as mineral compounds.

In some localities where feed materials are grown, mineral deficiencies may occur because of a deficiency of the same minerals in the soil. Modern methods of milling are more likely to affect by-product feeds and cause slight deficiencies when such materials form the basis of rations. Some feeds are rich in certain minerals and poor in others. Most investigators seem to be agreed, however, that the mineral content in most feeds is sufficient and that the general need of mineral supplements under normal conditions is greatly exaggerated. If mineral nutrients are needed other than salt, such are generally limited to calcium and phosphorus.

The mineral substance most likely deficient is calcium. This can be supplied by the use of proper roughages, especially the leguminous plants. If suitable roughages are not available, then calcium can be furnished in the form of ground limestone or bone meal at comparatively low cost.

Fluorine, a chemical element found in combination in rock phosphate and phosphatic limestone, is definitely known to be

harmful to stock. Minerals containing compounds of fluorine, such as ground rock phosphate, should not be used in feeds.

SPECIAL ANALYTICAL DATA

The Department has for a number of years been making analyses of various feeding materials at different stages of growth, following demand for such data. These analyses often were requested without supplying definite information with reference to the conditions under which the products were grown, such as the type of soil and the kind of season. With the idea in view of obtaining better information on the subject, the Department has started upon a continuous project to provide analytical data now lacking in Kentucky covering a variety of feeding stuffs grown on the farm.

Legumes and Grasses. Fifty samples of red clover, alfalfa, lespedeza sericea, Kentucky bluegrass, orchard grass, redtop, and timothy, grown on the Experiment Station farm at Lexington, were analyzed for feedstuff constituents, and some also for mineral content. All grasses contained approximately equal amounts of protein, 17.25 to 18.80 percent, at the 4-inch height (pasture stage). Lespedeza sericea harvested at 5 inches (pasture stage) contained 13.1 percent protein, 23.9 percent fiber, 6.7 percent ash and 0.26 percent phosphorus. Alfalfa, at the same height, contained 33.0, 16.4, 11.3 and 0.55 percent of the same constituents, respectively. All analyses are calculated as of the water-free materials.

Corn. To obtain information regarding variations in composition, thirty-one samples of high-grade shelled corn were analyzed; fourteen from cribs on farms, and seventeen of commercial origin. Wide differences were found in amounts of certain important constituents, as indicated by the following ranges: protein, 8.3 to 11.9 percent; calcium, 0.022 to 0.12 percent; phosphorus, 0.24 to 0.35 percent; potassium, 0.29 to 0.44 percent. Other important constituents were rather uniform. The least variation was in nitrogen-free extract from 79.6 to 83.4 percent. It is evident that the variation in composition of

high-grade lots of corn is sufficient to produce very different amounts of grains in livestock per unit of corn fed.

DOG FEEDS

The dog feed business has grown like mushrooms during the last few years. Its growth has been so sudden and the proportions so enormous, especially in canned feeds, that the manufacturers have lost control of it. They are divided on the ethics of the business. Few states, if any, have adequate laws to cope with its control. Its operation is in such a chaotic condition that it is a question whether it should be dignified by calling it an industry or whether the term "racket" would not be more appropriate.

It would not be fair to put all manufacturers of canned dog feeds into the category of makers of spurious and inferior products. A large number make high-class feeds but are put to a great disadvantage because of dishonest competition. Purchasers of dog feeds are warned to make proper discrimination.

Some interesting data have been gathered in the investigation and study of the problem that dog feeds present. It seems it would not be amiss to present some of them for the general information of those interested. The number of dogs in the United States is estimated at over 15,000,000. The annual cost of a ten-cent steak given each of these dogs daily would exceed \$500,000,000. Annual dog shows and costs of exhibits cost dog owners over \$120,000,000. New York State alone contributed annually more than \$900,000 in dog licenses. Owners' solicitude for the life and health of their dogs adds a tremendous cost, besides feed, to their upkeep, such as shelter, hospitals, societies, cemeteries and monuments. The annual retail sales of canned dog feed for 1936 is estimated to be at least \$30,000,000.

Dog feeds naturally divide themselves into two general divisions: dry and canned feeds. The dry feeds are made up largely of cereals and cereal by-products, supplemented with meat and meat by-products. They are made of a large variety of low-fiber, highly digestible materials, and their use is increas-

ing as their value and the method of feeding are better understood by the dog owner. Canned dog feeds are made up of meat and meat by-products, supplemented by cereals and cereal by-products, vegetables, and water.

During the year, 142 samples of canned dog feeds were collected for analysis. Complete analyses were made in many instances. The results are published in full in Table 1. The materials of canned dog feed are cooked, the individual ingredients losing much of their identity. In many instances the names of dog feeds were misleading as to their composition; the ingredients were incorrectly stated; the claims for feed value were extravagant; they were short in net weight; and the feed was misbranded. Some of them were made of the cheapest materials obtainable of both animal and vegetable sources. The samples varied from 4.8 to 13 percent protein, from 0.5 to 6 percent fat and from 0.5 to 4 percent fiber. The water content, most of which was added, varied from 65 to 85 percent. On the basis of an average cost of 6 cents a can for some of the cheapest canned dog feeds, and not considering the cheapness and questionable character of the contents of some of these feeds or cost of the container, the total possible nutrients would be worth only 0.9 cents a can while the water content would cost 5.1 cents; 1 pound, 40 cents; 100 pounds, \$40.

Table 1. Analyses of Dog Feeds.*

Manufacturer and Brand Name	Sample taken from:	Protein	Fat	Fiber	N. F. Ext.	Water	Ash	Remarks
Allied Mills, Chicago, Ill. Wayne Dog Feed Krums	Flemingsburg Mills, Flemingsburg Henderson Feed & Com- mission Co., Hender- son	30.95	6.16	4.28	---	---	---	As guaranteed
Wayne Dog Feed Blox	Edw. C. Hawkins, Paducah Fenley Grain Co., Louisville	32.45	6.55	3.33	---	---	---	Same
Austin Dog Bread & Animal Food Co., Chelsea, Mass. Austin's Puppy Biscuit	Fairway Stores, Henderson	30.00	4.00	4.00	---	---	---	Same
Ballard & Ballard Co., Louisville, Kentucky Insurance Dog Feed	Tri-State Flour & Feed Co., Ashland	30.20	6.55	3.65	---	---	---	Same
Ballard's Kennel-ets	A. & P. Tea Co., Owensboro	29.75	6.90	3.75	---	---	---	Same
Balorations, Inc., Waverly, N. Y. "Ti-O-Ga" Dog Feed	Sanders Pet Shop, Louisville	30.00	4.00	4.00	---	---	---	Same
Banner Packing Co., Des Moines, Ia. Pal Dog Ration	D. E. Edwards, Calhoun	24.00	2.30	0.85	---	---	---	Same
Battle Creek Dog Food Co., Battle Creek, Mich. Miller's A-1 Ration	Edw. M. Riedling, Louisville Same	20.00	1.00	2.00	---	---	---	Same
Miller's Quick Lunch	Tony Bezold, Newport	20.25	3.55	3.25	---	---	---	Same
		20.00	2.00	5.00	---	---	---	Same
		19.30	1.18	0.90	---	---	---	Same
		17.00	1.25	1.00	---	---	---	Same
		25.50	4.28	1.90	---	---	---	No carrots found
		8.76	4.95	0.67	---	68.50	---	Excess fiber
		8.50	2.00	2.00	---	---	---	Much too high in fiber
		16.90	2.83	2.65	---	---	---	Not labeled
		17.90	3.28	4.35	---	---	---	
		15.00	1.50	1.30	---	---	---	
		11.33	2.55	0.67	10.24	73.33	1.88	

Commercial Feeds in Kentucky in 1936

California Animal Products Co., Oakland, Calif. Calo Dog Feed	A. & P. Tea Co., Lexington	10.95	5.45	0.49	11.68	69.61	1.82	As guaranteed
	A. & P. Tea Co., Scottsville	10.23	3.94	0.49				Deficient in net weight
	A. & P. Tea Co., Danville	11.20	2.52	1.08				Excess fiber
	A. & P. Tea Co., Elizabethtown	10.10	2.82	0.45		75.50		Fish product present tho not guaranteed
	Kroger Gro. & Baking Co., Catlettsburg	7.03	3.98	0.56				Deficient in protein
	The Frederica Market, Owensboro	8.00	2.25	0.50				No carrots found
		5.05	2.56	0.71		75.60		Deficient in protein
		6.00	1.00	0.70				Fish product present tho not guaranteed
Modern Brand Dog Feed								Not labeled
Chappel Bros., Rockford, Ill. Pup-E-Ration	The Glass Co., Lexington	12.70	2.73	0.61	12.51	68.67	2.78	Deficient in net weight
	Same	10.95	3.12	0.87	13.50	67.56	4.00	Same
Ken-L-Ration	Union Store Co., Buechel	11.05	2.38	0.66		69.50		
	Eberts Grain Co., Louisville	10.00	2.00	2.00				As guaranteed
Ken-L-Biscuit		22.05	2.70	1.58				
Clover Farm Stores, Cleveland, O. Kwik-Meal Dog Feed	Clover Farm Stores, Owenton	20.00	2.00	2.00				Same
	Clover Farm Stores, Newcastle	10.85	3.11	0.48				Deficient in protein
		9.25	4.13	0.48		75.00		Deficient in net weight
Coast Fishing Co., Wilmington, California Balto Dog and Cat Feed	The Glass Co., Lexington	15.38	10.33	0.73	3.98	66.63	2.95	As guaranteed
	Buschemeyer-Ogden Pharmacy, St. Matthews	17.17	10.43	0.63				Same
		12.50	6.00	1.00		63.50		
Continental Packing Co., Covington, Kentucky Brownie's "Blue Ribbon" Brand Dog Feed	Manufacturer's Ware- house	11.77	2.05	1.42	14.50	68.94	1.41	Deficient in fat. No soybean meal or car- rots found

* Manufacturer's guaranty is printed in bold-face type.

Table 1. Analyses of Dog Feeds.*

Manufacturer and Brand Name	Sample taken from:	Protein	Fat	Fiber	N. F. Ext.	Water	Ash	Remarks
	Roby & Clemens, St. Matthews	9.82	2.06	1.38		74.00		Deficient in protein and fat. Deficient in net weight. Misbranded weight. Deficient in fat. Deficient in net weight
	Geo. W. Hill, Covington	10.50	2.56	1.37		72.50		
	Geo. C. Goode, Covington	10.50	3.50	1.50				
	Geo. C. Goode, Manufacturer's Warehouse	10.00	2.78	1.38				Deficient in protein Deficient in net weight
		11.75	5.20	1.45	14.79	65.31	1.50	No soybean meal or carrots found. Deficient in net weight
		11.44	2.58	1.27				
	A. & P. Tea Co., Owenton	15.00	4.30	1.52				Deficient in fat. Excess fiber
	A. & P. Tea Co., Louisville	13.00	5.10	1.58				Excess fiber
	A. & P. Tea Co., Morehead	12.25	4.40	1.23				Deficient in fat
		12.00	5.00	1.00				
	S. T. Frazier, Whitesburg	21.50	5.10	3.25				Excess fiber
	Haller's Pet Shop, Louisville	23.55	4.40	1.83				As guaranteed
		18.00	2.50	2.00				
	The Glass Co., Lexington	8.97	2.77	0.55	13.12	72.90	1.69	Same
	Leslie's Grocery, Buechel	7.60	1.75	0.67		71.00		Deficient in protein and fat
	Pearson Drug Co., Bowling Green	8.07	2.16	0.62				Deficient in fat
		8.30	2.90	0.26				

Doyle Packing Co., Mommence, Ill.
Bozo Dog Feed

Otter & Co.,

6.80 2.34 0.88 11.57 77.68 0.73 No soybean meal or

Doyle Packing Co., Mornence, Ill. Bozo Dog Feed	Offet & Co., Louisville	6.80	2.34	0.88	11.57	77.68	0.73	No soybean meal or hominy grits found. Deficient in net weight
White Cross Dog and Cat Feed	Wilhoit's Grocery, Frankfort	6.66	2.03	1.06		75.70		Excess fiber. Deficient in net weight. Misbranded.
		6.50	2.50	0.50				
Doyle's "Supreme Brand" Dog Feed	L. T. Tuell, West Point	4.81	0.92	0.97		77.50		Deficient in protein and fat. Deficient in net weight. Misbranded
		6.53	1.77	0.87				Deficient in fat. No carrots found
Whistle Dog Feed	C. F. Jasper & Son, Jeffersontown	6.50	2.50	0.50				Deficient in protein. No carrots found
		5.18	5.43	0.94				Excess fiber. No soybean meal found. Deficient in net weight
Roxey Rations Dog and Cat Feed	Grant Van Fleet, R. 4, Louisville	7.13	2.29	1.08	13.51	75.21	0.78	Same
		6.50	2.50	0.50				No carrots found. Deficient in net weight
Strongheart Rations Dog and Cat Feed	Bryan Hunt Co., Lexington	7.37	2.72	1.19	13.04	74.88	0.80	Deficient in net weight
		8.05	2.17	1.00		73.00		Deficient in fat. No carrots found. Deficient in net weight
Whistle Dog Feed	G. J. Schmitt, Buechel Triangle Market, Lexington	6.13	1.32	1.00		74.60		Same
		6.50	2.50	0.50				No carrots or hominy grits found
Roxey Rations Dog and Cat Feed	Geo. W. Maraman & Son, Shepherdsville	7.25	1.88	0.86		74.50		As guaranteed
		7.45	2.74	0.88				Deficient in fat. No carrots or bone found. Deficient in net weight. Misbranded
Strongheart Rations Dog and Cat Feed	C. F. Jasper & Son, Jeffersontown	6.83	3.08	0.81	12.69	75.68	0.91	
		6.50	2.50	0.50				
Whistle Dog Feed	Geo. C. Goode Co., Covington	6.94	1.69	0.96		76.00		
		7.10	1.95	0.98	14.32	74.76	0.89	
Strongheart Rations Dog and Cat Feed	A. & P. Tea Co., Louisville							
Whistle Dog Feed	Otter & Co., Louisville							

* Manufacturer's guaranty is printed in bold-face type.

Table 1. Analyses of Dog Feeds.*

Manufacturer and Brand Name	Sample taken from:	Protein	Fat	Fiber	N. F. Ext.	Water	Ash	Remarks
Doyle's De Luxe Quality Brand Dog and Cat Feed	A. & P. Tea Co., Scottsville	6.27	1.09	0.79	.....	.....	.....	Deficient in fat. Deficient in net weight
	Townsend & Crowley, Poole	6.50	2.50	0.50	.....	75.30	.....	Deficient in protein and fat. No carrots found. Deficient in net weight. Misbranded
		8.00	3.00	0.75	.....	.....	.....
The Foster Canning Co., Inc., Brooklyn, New York Lucky Dog Feed	Kroger Gro. & Baking Co., Taylorsville	8.25	2.00	0.94	.....	.....	.....	As guaranteed
	Kroger Gro. & Baking Co., Middlesboro	8.15	2.02	0.93	.....	.....	.....	Deficient in net weight
	Kroger Gro. & Baking Co., Hodgenville	8.40	1.86	0.95	.....	73.00	.....	As guaranteed
	Kroger Gro. & Baking Co., Owenton	7.32	2.44	0.85	.....	74.20	.....	Same
	Piggly-Wiggly Co., Lexington	7.90	3.60	0.80	11.20	75.70	0.80	Deficient in net weight
	National Grocery Co., Louisville	7.00	2.25	0.50	9.21	70.97	1.43	As guaranteed
		13.54	4.13	0.72	.....	.....	.....
		9.00	3.00	0.50	.....	.....	.....
		30.80	5.40	3.58	.....	.....	.....	Charcoal and alfalfa leaf meal present tho not guaranteed
		29.20	5.75	3.08	.....	.....	.....	As guaranteed
Dr. Olding Brand Pet Ration Gaines Food Co., Sherburne, N. Y. Gaines Granular Dog Feed	Haller's Pet Shop, Louisville	23.00	3.00	4.00	.....	.....	.....
	Same	43.40	6.45	2.48	.....	.....	.....	Same
General Laboratories, Inc., Des Moines, Ia. Blue Cross Dog Feed	Schlamps Food Mart, Henderson	42.25	6.28	2.40	.....	.....	.....	Same
	Frank G. Schmitt & Co., Henderson	.....	.....	.....	.....	.....	.....	Same

Glendale Canning Co., Glendale, L. I., N. Y.	42.30	6.75	2.61	30.74	7.20	10.40	No soybean cake found
Snappy Dog Feed	30.00	4.00	4.00				
Graham Food Products Co., Louisville, Ky.	8.90	1.65	1.28		71.70		Deficient in fat. Excess fiber
Ace Dog Feed	7.00	2.25	0.50				
Hales & Hunter Co., Chicago, Ill.	13.40	3.54	0.27	7.56	73.34	1.89	Deficient in protein and fat
Lucky Dog Pellets	14.00	5.00	0.50				As guaranteed
Jem Animal Food Corporation, Brooklyn, N. Y.	25.25	5.68	3.73				Caraway seed present tho not guaranteed
Bal-O-Ration	25.00	5.00	6.00				As guaranteed
Kasco Mills, Inc., Toledo, O.	24.15	3.85	1.58				Same
Kasco Complete Dog Ration	21.00	3.00	1.75				Deficient in net weight
Dr. Geo. C. Melody, Greensburg, Pa.	23.85	3.60	3.50				Same
Dr. Melody's Dog and Cat Feed	22.00	4.00	4.00				As guaranteed
	6.55	0.90	0.80				Same
	5.60	0.30	0.58				Deficient in net weight
	5.08	0.37	0.67		79.00		Same
	6.43	0.63	0.76				As guaranteed
	4.99	0.67	3.91				As guaranteed
S. E. Mighton Co., Cleveland, O.	6.60	3.06	1.27				No alfalfa meal found
Spot Dog Feed	7.62	4.94	0.94				Same
	7.13	4.35	0.88		63.00		As guaranteed
	7.00	1.75	1.75				No carrots or alfalfa found
	8.80	1.96	1.33				No wheat bran, barley or alfalfa found. Deficient in net weight. Misbranded.
"My Pal" Dog Feed	8.95	4.22	0.79	13.05	71.48	1.51	
	7.00	1.75	1.75				

* Manufacturer's guaranty is printed in bold-face type.

Table 1. Analyses of Dog Feeds.*

Manufacturer and Brand Name	Sample taken from:	Protein	Fat	Fiber	N. F. Ext.	Water	Ash	Remarks
John Morrell & Co., Ottumwa, Ia. Red Heart Dog Feed	Geo. C. Goode, Covington	11.80 12.00	6.10 5.00	0.80 1.00	4.70	73.90	2.70	As guaranteed Much too low in protein
Red Heart Dog Feed, Diet A	V. R. Lowe, Bowling Green	8.25	4.35	0.28				Deficient in net weight
Red Heart Dog Feed, Diet B	Hart Drug Co., Lexington	12.55	6.66	0.98				As guaranteed
	McKesson-Peter-Neat, Louisville	11.00 11.10 11.00	3.00 5.47 3.00	1.00 0.48 1.00		69.30		
National Biscuit Co., New York, New York "Milk Bone Brand" Crumbs	Piggly-Wiggly, Owensboro	18.40 17.00	1.53 1.00	1.30 2.50				Same
"Milk Bone Brand" Junior Dog Biscuit	Kroger Gro. & Baking Co., Lexington	19.00	2.18	1.60				Same
National Coast Products Corp., Swedesboro, N. J. King Brand Dog Feed	A. & P. Tea Co., Lexington	18.10 17.00	2.40 1.00	1.23 2.50	65.32	9.26	3.69	Same
National Grocery Co., Inc., Louisville, Ky. National Brand Dog Feed	Fairway Stores, Hartford	9.38 8.00	2.20 2.00	1.05 1.00		74.00		Same
Nyal Co., Inc., Detroit, Mich. K-rect Dog Feed	Fremd-Berry Co., Eminence Manufacturer's Ware- house Corner Drug Store, Sturgis	8.65 7.70 7.00 7.63 8.00	2.14 3.00 2.25 1.13 2.00	1.13 0.80 0.50 0.96 0.50		74.20	2.30	Excess fiber As guaranteed Deficient in fat. Deficient in net weight

Old Trusty Dog Food Co., Needham
Hts.
Mass.

Old Trusty Dog Food Co., Needham Hts., Mass.	Geo. C. Goode, Covington	10.75	3.73	0.60	12.83	71.39	0.70	Deficient in net weight
Bovex Dog Feed	Same	10.65	5.43	0.48				As guaranteed
	Conrad J. Clausen, Louisville.	10.40	4.48	0.42	14.41	69.48	0.81	Deficient in net weight
	Same	10.00	2.00	2.00				Not labeled
Old Trusty Dog Feed		17.90	1.55	1.48				
Paramount Canning Co., Kansas City, Mo.	Yopp Seed Co., Paducah	6.90	1.19	0.34				Deficient in net weight
Paramount Dog Feed	Biggs Drug Store, Henderson	4.80	1.47	0.56		82.50		Much too low in protein. Excess fiber. Deficient in net weight. Misbranded
Pedrick Laboratories, Tulsa, Okla.	Otter & Co., Louisville	6.03	3.78	0.46	12.62	75.17	1.94	Deficient in protein. Deficient in net weight
Vigo Dog Feed	O. D. Laslie, West Point	6.90	0.70	0.10				Much too high in fiber. Deficient in net weight. Misbranded
	C. B. Ragland Co., Bowling Green	9.10	1.50	4.32		75.00		Deficient in protein and fat. Deficient in net weight
Pickrell & Craig Co., Louisville, Ky.	C. F. Jasper, Jeffersonstown	6.85	2.93	0.53	10.14	78.91	0.64	Deficient in protein and fat
"Scotch Chief" Dog Feed	Smith Drug Co., Hodgenville	7.80	2.00	0.50				As guaranteed
Polk Miller Products Corp., Richmond, Va.	Campbell's Sporting Goods, Paducah	13.22	3.50	0.40		72.00		Same
Sergeant's Dog Feed		14.00	5.00	0.50				Same
Ralston Purina Co., St. Louis, Mo.	Mullins Feed Store, Corbin	25.80	2.58	1.93				Same
Purina Dog Chow	City Feed Co., Princeton	21.44	2.74	1.50				Same
	J. A. Bennett & Co., Taylorsville	24.15	7.78	3.70	47.01	9.83	7.53	Same
		23.35	7.55	3.15				Same
		23.40	8.18	3.50				Same

* Manufacturer's guaranty is printed in bold-face type.

Table 1. Analyses of Dog Feeds.*

Manufacturer and Brand Name	Sample taken from:	Protein	Fat	Fiber	N. F. Ext.	Water	Ash	Remarks
The Rath Packing Co., Waterloo, Ia. Dog-Gon Good Dog Feed	J. B. Blanton Co., Frankfort	23.90 20.00	6.95 3.00	3.30 6.00	.....	.....	.....	Same
	Blakemore Grocery Co., Shelbyville	14.14	5.30	0.63	.....	69.00	.....	Same
Republic Foods Products Co., Chicago, Ill. Vim Dog Feed	C. F. Jasper & Son, Jeffersontown	10.50	5.15	0.77	.....	.....	.....	Deficient in protein
	Same	11.80 12.00	4.84 3.00	0.42 0.75	5.58	75.80	1.56	As guaranteed
Rich Products Corporation, Rockford, Illinois Evr-Redy Dog Feed	Frank G. Schmitt & Co., Henderson	10.50	5.58	0.61	.....	70.80	.....	As guaranteed
	Central Market, Henderson	10.50 10.50	3.16 3.00	0.59 1.00	.....	.....	.....	Deficient in net weight
Rival Packing Co., Chicago, Ill. Rival Dog Feed	The Voss Co., Newport	9.30	1.90	0.50	16.30	67.50	4.50	As guaranteed
	A. & P. Tea Co., Owenton	12.38	7.17	0.88	.....	.....	.....	Same
Rival Packing Co., Chicago, Ill. Rival Dog Feed	W. H. McMurtry, Elizabethtown	11.60	2.94	0.97	.....	65.00	.....	Same
	Geo. C. Goode Co., Covington	9.35 8.00	3.50 1.00	0.72 2.00	.....	.....	.....	Wheat present tho not guaranteed
Rival Packing Co., Chicago, Ill. Rival Dog Feed	W. L. Robison, Lyndon	10.70	4.67	0.58	.....	.....	.....	As guaranteed
	Jones Bros., Danville	11.40	2.68	0.41	9.70	75.06	0.75	Deficient in net weight
Rival Packing Co., Chicago, Ill. Rival Dog Feed	Miller's Grocery, Buechel	10.28 10.00	3.47 2.50	0.53 0.50	.....	72.00	.....	As guaranteed

G. P. Rose & Co., Nashville, Tenn. Blue Ribbon Brand Dog Feed	6.68	1.56	0.51				Deficient in net weight. Not labeled.
Dr. W. J. Ross Co., Los Angeles, California Dr. Ross' Vitamin Dog and Cat Feed	8.05	3.19	0.83	69.00			Same
Sandy's Pet Foods, Inc., Chicago, Illinois Sandy's Dog Feed	10.60	3.53	0.36				Deficient in net weight
Schultz, Baujan & Co., Beardst- town, Ill. Honest Brand Dog Feed	10.37	4.20	0.42	13.19	70.83	0.99	As guaranteed
Security Mills, Knoxville, Tenn. Security Dog Feed	12.12	4.10	0.60				Same
Spratt's Patent (America) Ltd., Newark, N. J. Spratt's Puppy Cakes	10.50	3.50	1.00				Deficient in protein Excess fiber
Swift & Co., Chicago, Ill. Pard Dog Feed	28.40	4.23	4.75				As guaranteed
The ThoroBread Co., Cincinnati, O. Cincy Dog Feed	30.00	4.00	4.00				Same
ThoroBread Dog and Puppy Feed	22.70	3.55	2.38				Same
	22.00	3.50	2.50				Same
	21.50	2.60	0.90				Same
	20.80	2.53	0.80	63.84	9.64	2.39	Same
	20.00	2.00	1.50				Same
	11.42	3.71	0.46		71.00		Same
	11.82	3.30	0.77	9.49	72.00	2.62	Same
	10.50	2.50	0.50				No carrots found. Bar- ley present tho not guaranteed
	7.65	1.50	1.06		75.00		Excess fiber
	7.00	1.25	1.50				
	17.25	5.65	3.73				
	17.50	3.25	3.20				

* Manufacturer's guaranty is printed in bold-face type.

Table 1. Analyses of Dog Feeds.*

Manufacturer and Brand Name	Sample taken from:	Protein	Fat	Fiber	N. F. Ext.	Water	Ash	Remarks
ThoroBread "Meaty Brand" Dog Feed	Geo. W. Hill, Covington	9.81	3.36	1.18	---	---	---	Wheat present the not guaranteed. Deficient in net weight
Vaughan Food Products, Inc., Kansas City, Mo. Life Saver Dog Feed	Moore Feed & Seed Co., Ashland	10.32 7.00	4.06 3.00	0.80 1.00	14.09 65.33	5.40	---	No soybean oil meal found. Deficient in net weight
Victory Packing Co., Oakland, Calif. Victory Dog and Cat Feed	Bryan-Hunt Co., Lexington	13.90	4.60	0.30	6.20	73.00	2.00	Not labeled
Victory Dog and Cat Feed	J. P. Miles, Madisonville	5.55	2.11	0.62	---	77.00	---	Wheat present the not guaranteed
The Vitamont Sales Co., Butte, Montana Vitamont Blue Ribbon Dog Feed	A. & P. Tea Co., Alexandria	5.43 6.00	1.55 1.00	0.67 0.70	13.34 76.81	2.20	---	Deficient in protein
Walgreen Co., Chicago, Ill. Po-Do Dog Feed	Geo. W. Hill, Covington	13.15	3.52	0.41	6.54	75.68	0.70	Not labeled. Deficient in net weight
Wilson & Co., Chicago, Ill. Ideal Dog Feed	Fitzgerald Drug Co., Frankfort Carpenter-Dent-Sublett Co., Bowling Green Polly's Food Market, Hodgenville Mullins' Feed Store, Corbin	11.20 11.60 13.00	6.50 7.88 6.00	0.66 0.41 1.00	---	71.50	---	Deficient in protein Deficient in protein Deficient in net weight As guaranteed

* Manufacturer's guaranty is printed in bold-face type.

SUMMARY OF RESULTS OF INSPECTION AND ANALYSIS, 1936

- Acme-Evans Co., Indianapolis, Ind. Inspection samples analyzed, 22.
- Acme Wheat Middlings and Screenings, 1; too high in fiber; ground wheat bran present.
 - Acme Feed, 1; equaled guaranty.
 - Acme Hominy Feed, 2; equaled guaranty.
 - Acme Ground Oats, 1; equaled guaranty.
 - Producer Mash (With Cod Liver Oil), 1; too high in fiber.
 - Acme 18% Protein Egg Mash, 1; equaled guaranty.
 - Acme 18% Protein Egg Mash (With Cod Liver Oil), 2; equaled guaranty.
 - Acme 26% Protein Mash (Supplement), 1; equaled guaranty.
 - Producer Horse Feed, 1; equaled guaranty.
 - Acme 14% Protein Hog Fattener, 1; equaled guaranty.
 - Acme 40% Protein Hog Supplement, 1; equaled guaranty.
 - D-Light-U 16½% Protein Dairy Feed, 4; equaled guaranty.
 - Acme 20% Protein Pailfill Dairy Feed, 1; equaled guaranty.
 - Acme 24% Protein Sweet Dairy Feed, 3; 1 no alfalfa meal found.
 - Acme 32% Protein Dairy Supplement, 1; equaled guaranty.
- The Acme Mills, Hopkinsville, Ky. Inspection samples analyzed, 2.
- Heavy Work Horse and Mule Feed, 1; equaled guaranty.
 - "Acme Brand" 16% Protein Dairy Feed, 1; ground corn and brewers dried grains present though not guaranteed.
- The H. T. Adams Co., Harrodsburg, Ky. Inspection sample of Hopper Dairy Feed analyzed, 1; too low in protein, no ground barley found, corn and cob meal substituted for corn feed meal, misbranded.
- Alfocorn Milling Co., St. Louis, Mo. Inspection samples analyzed, 17.
- Wishbone All-Mash Starter and Grower, 1; corn gluten feed present though not guaranteed.
 - Wishbone All-Mash Laying Ration, 2; equaled guaranty.
 - Wishbone Laying Mash, 1; linseed oil meal present though not guaranteed.
 - Alfocorn Egg Mash, 1; too high in fiber, no linseed oil meal found
 - Alfocorn Horse Feed, 1; equaled guaranty.
 - "High Kick" Sweet Feed, 1; too low in protein.
 - Full Pail 16% Protein Dairy Feed, 8; 2 no cottonseed meal found; 2 distillers corn dried grains present though not guaranteed; 4 adulterated with grain screenings, misbranded; registration canceled—reinstated on probation.
 - Alfocorn's Dollar Mark Brand 24% Protein Dairy Feed, 2; equaled guaranty.
- E. T. Allen Co., Atlanta, Ga. Inspection samples of "Empire" 41% Protein Cottonseed Meal analyzed, 3; 1 too low in protein.

- Allied Mills, Inc., Chicago, Ill. Inspection samples analyzed, 14.
 Wayne Poultry Fattener, 1; equaled guaranty.
 Wayne Growing Mash, 1; equaled guaranty.
 Wayne Egg and Breeder Mash, 1; equaled guaranty.
 Wayne 26% Protein Mash Supplement, 1; equaled guaranty.
 Empire Mash Concentrate Supplement, 1; equaled guaranty.
 Sucrene Horse and Mule Feed, 1; too low in protein and fat.
 Wayne Sweet Mix, 1; equaled guaranty.
 Super Soy Brand Feed (Supplement), 1; equaled guaranty.
 Topper 16% Protein Dairy Feed, 2; equaled guaranty.
 Empire 20% Protein Dairy Ration, 1; too low in protein, ingredients not as guaranteed; misbranded.
 Wayne 20% Protein National Dairy Ration, 1; equaled guaranty.
 Wayne 24% Protein Dairy Feed, 2; equaled guaranty.
- Always-A-Head Mills, E. St. Louis, Ill. Inspection samples of "Dormor Brand" 16% Protein Dairy Feed analyzed, 3; 2 excess screenings present, adulterated and misbranded; registration canceled—reinstated on probation.
- Anderson & Spilman, Danville, Ky. Inspection samples analyzed, 2.
 Economy Egg Mash, 1; too low in protein.
 "Milk Maker" 24% Protein Dairy Feed, 1; equaled guaranty.
- Arcady Farms Milling Co., Chicago, Ill. Inspection samples analyzed 43.
 Sunkist Chick Grains, 1; no millet, kaffir corn or milo maize found.
 Sunkist Scratch Grains, 3; 1 no barley found, buckwheat present though not guaranteed.
 Riverside Scratch Grains, 4; ingredients not as guaranteed; adulterated and misbranded; registration canceled—reinstated on probation.
 Arcady Scratch Grains, 3; ingredients not as guaranteed; adulterated and misbranded; registration canceled—reinstated on probation.
 Arcady Wonder Complete All-Mash Chick Starter, 1; too low in fat and too high in fiber.
 Sunkist Growing Mash, 1; too high in fiber.
 Arcady Wonder Growing Mash, 1; equaled guaranty.
 Arcady Wonder Laying Mash, 2; equaled guaranty.
 Sunkist Egg Mash, 3; 2 too high in fiber, soybean oil meal present though not guaranteed.
 Wonderfat Shipping Feed, 1; ground oats substituted for oatmeal.
 Special Horse Feed, 2; too low in protein.
 Sunkist Horse Feed, 2; too low in protein; 1 excess oat hulls present, adulterated and misbranded.

- Sunkist Stock Feed, 1; no cottonseed meal found; excess screenings present; adulterated and misbranded.
- Wonder Hog Feed, 2; soybean oil meal present though not guaranteed; 1 too low in fat; 1 adulterated with screenings refuse—misbranded.
- Arcady Hog Meal, 1; too high in fiber; corn gluten feed substituted for corn oil cake meal; excess screenings present—misbranded.
- Provo 16% Protein Dairy Feed, 1; excess fillers present; adulterated and misbranded; registration canceled.
- Arcady Sweet 16% Protein Dairy Feed, 5; equaled guaranty.
- Arcady Besbet 16% Protein Dairy Feed, 3; equaled guaranty.
- Arco 24% Protein Dairy Ration, 5; 1 brewers dried grains present though not guaranteed; 1 no alfalfa meal found.
- Wonder Dairy Ration, 1; equaled guaranty.
- Armour & Co., Chicago, Ill. Inspection sample of Armour's 60% Protein Meat Meal Digester Tankage analyzed, 1; equaled guaranty.
- Ashcraft Wilkinson Co., Atlanta, Ga. Inspection samples of "Helmet Brand" 41% Protein Cottonseed Meal analyzed, 3; too high in fiber; 1 too low in protein.
- The Great Atlantic & Pacific Tea Co., New York, N. Y. Inspection samples analyzed, 17.
- Daily Growth Chick Starter, 1; too high in fiber.
- Daily Egg Scratch Feed, 1; too low in fat.
- Special Daily Egg Mash Feed, 2; 1 too high in fiber, no corn gluten meal found, soybean oil meal present though not guaranteed.
- Daily Growth Turkey Grower, 2; equaled guaranty.
- Daily Horse Feed, 1; no linseed oil meal found; only a trace of wheat bran present.
- Daily Milk 16% Protein Dairy Feed, 5; 1 no cottonseed meal found, only a trace of linseed meal present, excess screenings present, adulterated and misbranded.
- Milky Way 20% Protein Dairy Feed, 2; equaled guaranty.
- Milky Way 24% Protein Dairy Feed, 2; equaled guaranty.
- Milky Way 32% Protein Dairy Feed, 1; equaled guaranty.
- The Auburn Mills, Auburn, Ky. Inspection samples of Mixed Feed analyzed, 2; 1 no corn bran found.
- Auburn Roller Mills, Auburn, Ky. Inspection sample of Corn By-product Feed analyzed, 1; equaled guaranty.
- Aubrey & Co., Louisville, Ky. Inspection samples analyzed, 42.
- Red "A" Wheat Feed and Screenings, 3; equaled guaranty.
- Wheat Bran, 1; equaled guaranty.

- Hominy Feed, 4; equaled guaranty.
Corn Feed Meal, 1; equaled guaranty.
Aubrey's 18% Protein Corn Germ Meal, 1; equaled guaranty.
Brewers 24% Protein Dried Grains, 1; equaled guaranty.
Red "A" Distillers 28% Protein Corn Dried Grains, 2; equaled guaranty.
Red "A" Distillers Corn Dried Grains and Molasses, 1; too high in fiber.
Aubrey's 41% Protein Cottonseed Meal, 1; equaled guaranty.
Aubrey's 41% Protein Soybean Cake Meal, 1; equaled guaranty.
Red "A" 50% Protein Meat Scraps, 1; much too low in protein.
Red Bird Baby Chick Starting Mash (With Cod Liver Oil), 2; too high in fiber.
Rainbow Laying Mash (With Cod Liver Oil), 1; too high in fiber.
Supreme Laying Mash (With Cod Liver Oil), 1; equaled guaranty.
Red "A" Turkey Fattening Mash, 1; much too high in fiber.
Rainbow Turkey Mash, 1; too low in protein.
Dandy Horse Feed, 1; too low in protein.
Red "A" Sheep Feed, 1; cottonseed meal present though not guaranteed.
Alfalfa Meal, Oat Hull Feed, Cottonseed Hulls and Molasses, 1; equaled guaranty.
Monarch 16½% Protein Dairy Feed, 9; 5 too low in protein; 2 excess oat hulls present.
Dandy 20% Protein Dairy Feed, 1; equaled guaranty.
Ful-O-Cream Brand 24% Protein Dairy Feed, 4; 1 soybean oil meal present though not guaranteed.
Supreme Brand 24% Protein Dairy Feed, 1; too low in protein.
Rainbow 34% Protein Dairy Feed, 1; much too low in protein.
Ballard & Ballard Co., Louisville, Ky. Inspection samples analyzed, 44.
Ballard's Bran, 3; equaled guaranty.
Ballard's Mixed Wheat Feed and Screenings, 2; equaled guaranty.
50% Protein Meat and Bone Scraps, 2; too low in protein.
Ballard's Insurance Growing Grains, 1; equaled guaranty.
Insurance All-Mash Starting and Growing Feed, 1; equaled guaranty.
Insurance Growing Mash, 1; equaled guaranty.
Insurance Egg Mash, 1; equaled guaranty.
Guardian Laying Mash, 5; 2 too high in fiber.
Insurance Turkey Starter, 1; equaled guaranty.
Ballard's Insurance Turkey and Game Bird Ration, 1; equaled guaranty.
Guardian Horse and Mule Feed, 2; too high in fiber.

- Insurance Hog Ration, 2; too high in fiber, alfalfa meal present though not guaranteed.
- Milk Insurance 16% Protein Sweet Dairy Feed, 3; 1 oat hull feed present though not guaranteed, misbranded.
- Pioneer 16% Protein Sweet Dairy Feed, 8; equaled guaranty.
- Guardian 16% Protein Sweet Dairy Feed, 1; equaled guaranty.
- Pioneer 20% Protein Sweet Dairy Feed, 2; equaled guaranty.
- Pioneer 24% Protein Sweet Dairy Feed, 1; no lespedeza straw meal found; excess oat hulls present.
- Guardian 24% Protein Sweet Dairy Feed, 1; equaled guaranty.
- Insurance 24% Protein Sweet Dairy Feed, 1; equaled guaranty.
- Milk Insurance 24% Protein Sweet Dairy Feed, 5; 3 too low in protein.
- Bardstown Mills, Bardstown, Ky. Inspection sample of Royal Mill Feed analyzed, 1; equaled guaranty.
- Baughman Milling Co., Stanford, Ky. Inspection samples of Banner Mixed Feed analyzed, 2; 1 too low in protein, excess wheat screenings present.
- Beaty Brothers, Science Hill, Ky. Inspection sample of Wheat Mixed Feed and Screenings analyzed, 1; too low in protein and fat, wheat flour present.
- Beaver Dam Milling Co., Beaver Dam, Ky. Inspection sample of 16% Protein Dairy Feed analyzed, 1; ingredients not as guaranteed, misbranded.
- Benson Valley Milling Co., Frankfort, Ky. Inspection samples of Miracle Brand 16½% Protein Dairy Feed analyzed, 2; ground barley and oats present though not guaranteed.
- W. C. Binns, Herndon, Ky. Inspection samples analyzed, 2.
- Eclipse Mixed Feed, 1; too low in protein.
- Eclipse Hog Feed, 1; too low in fat.
- Blanton Milling Co., Indianapolis, Ind. Inspection samples analyzed, 2.
- "Perfect Brand" 18% Protein Starting and Growing Mash (With Cod Liver Oil), 1; too high in fiber, ground oats substituted for oatmeal.
- "Perfect Brand" Horse Feed, 1; equaled guaranty.
- Blish Milling Co., Seymour, Ind. Inspection samples analyzed, 2.
- Woodstock Bran, 1; too high in fiber.
- Colonial Wheat Mixed Feed and Screenings, 1; equaled guaranty.
- Bourbon Hatchery, Paris, Ky. Inspection sample of Bourbon Stock Mineral analyzed, 1; too low in calcium.
- Bowling Green Milling Co., Bowling Green, Ky. Inspection samples analyzed, 2.

- Monroe's Gray Wheat Shorts and Screenings, 1; too high in fiber.
"Ideal Brand" Feed, 1; no corn products found.
- Bowling Green Sweet Feed Mill Co., Bowling Green, Ky. Inspection sample of "Home Made" Growing Mash analyzed, 1; too low in protein.
- The Brode Corporation, Memphis, Tenn. Inspection samples of "Owl Brand" 41% Protein Prime Cottonseed Meal analyzed, 2; too low in protein.
- Chas. Broeker & Co., Owensboro, Ky. Inspection samples analyzed, 3.
Hominy Feed, 2; equaled guaranty.
XX Mixed Feed, 1; equaled guaranty.
- Browder Milling Co., Fulton, Ky. Inspection samples analyzed, 3.
"Biddie's Choice" Laying Mash, 1; equaled guaranty.
"Big Sixteen" Dairy Feed, 2; equaled guaranty.
- The Buckeye Cotton Oil Co., Cincinnati, O. Inspection samples analyzed, 8.
Buckeye 41% Protein Cottonseed Meal, 6; 1 too low in protein; 4 too low in fat; 3 too high in fiber.
41% Protein Soybean Oil Meal, 2; equaled guaranty.
- Buffalo Springs Distilling Co., Stamping Ground, Ky. Inspection sample of Distillers Corn Dried Grains analyzed, 1; equaled guaranty.
- Buhner Fertilizer Co., Seymour, Ind. Inspection sample of Buhner's King 60% Protein Tankage analyzed, 1; equaled guaranty.
- Bundy Brothers Mill Co., Medora, Ind. Inspection samples analyzed, 10.
Hominy Feed, 5; equaled guaranty.
Mixed Wheat Feed and Screenings, 1; equaled guaranty.
Jumbo Laying Mash, 3; 2 too low in protein; 1 no linseed oil meal found.
Combination Stock Feed, 1; no ground oats found.
- Burnside Milling Co., Burnside, Ky. Inspection samples of Mixed Feed analyzed, 2; 1 too low in protein, excess corn bran present.
- Cadick Milling Co., Grandview, Ind. Inspection samples of Shipstuff analyzed, 2; equaled guaranty.
- Cadiz Milling Co., Cadiz, Ky. Inspection sample of Sunbeam Mixed Wheat Feed and Screenings analyzed, 1; too low in protein.
- Calhoun Sweet Feed Co., Calhoun, Ky. Inspection sample of "Golden Rule" Stock Feed analyzed, 1; equaled guaranty.
- Campbellsville Milling Co., Campbellsville, Ky. Inspection sample of Mixed Wheat Feed and Screenings analyzed, 1; too low in protein and fat, wheat flour present.

- Cape County Milling Co., Jackson, Mo. Inspection samples of Capco Gray Wheat Shorts and Screenings analyzed, 2; equaled guaranty.
- Carlisle Mill & Supply Co., Carlisle, Ky. Inspection sample of Old Kentucky Mill Feed analyzed, 1; too low in protein and fat and too high in fiber.
- Central Soya Co., Decatur, Ind. Inspection sample of 41% Protein Soybean Oil Meal analyzed, 1; equaled guaranty.
- Checkerboard Elevator Co., St. Louis, Mo. Inspection sample of Wheat Middlings analyzed, 1; equaled guaranty.
- Christian County Mills, Hopkinsville, Ky. Inspection sample of Hominy Feed analyzed, 1; equaled guaranty.
- The Cincinnati Grain & Hay Co., Cincinnati, O. Inspection samples analyzed, 12.
- Hominy Feed, 3; 1 too low in fat.
- "No Better" Growing Mash, 1; no linseed oil meal found, soybean oil meal and alfalfa leaf meal present though not guaranteed.
- "No Better" Egg Mash, 1; no corn gluten feed or linseed oil meal found; soybean oil meal present though not guaranteed.
- "Standard Brand" Egg Mash, 1; too high in fiber, excess charcoal present.
- "No Better" Hog Ration, 1; much too high in fiber, excess charcoal present, alfalfa meal present though not guaranteed.
- "No Better" Sheep Feed, 1; too low in protein and fat and too high in fiber.
- "Standard Brand" 16% Protein Dairy Sweets, 2; too low in fat; 1 too low in protein; 1 soybean oil meal present though not guaranteed.
- "No Better" Sweet Dairy Feed, 1; too low in protein; no linseed oil meal found.
- "No Better" Dry Dairy Ration, 1; too low in protein.
- Citizens Milling Co., Somerset, Ky. Inspection sample of Wild Rose Mixed Feed analyzed, 1; equaled guaranty.
- City Milling Co., Rineyville, Ky. Inspection sample of Mixed Wheat Feed analyzed, 1; too low in protein.
- Clarkson Milling Co., Clarkson, Ky. Inspection sample of Mixed Wheat Feed analyzed, 1; too low in protein.
- Climax Roller Mills, Shelbyville, Ky. Inspection samples of Climax Farm Feed analyzed, 2; equaled guaranty.
- Clinton Hatchery, Clinton, Ky. Inspection sample of "New Deal" Laying Mash analyzed, 1; equaled guaranty.
- Coffey Distilling Co., Louisville, Ky. Inspection sample of "Coffey Brand" Distillers Corn Dried Grains analyzed, 1; equaled guaranty.
- Cogar Grain & Coal Co., Harrodsburg, Ky. Inspection sample of

- Cogar's Stock Feed analyzed, 1; ground barley and wheat screenings present though not guaranteed.
- E. A. Cohen, Greenville, Ky. Inspection sample of "Pride of Muhlenberg" 27% Protein Dairy Feed Supplement analyzed, 1; equaled guaranty.
- H. C. Cole Milling Co., Chester, Ill. Inspection sample of Omega Wheat Bran analyzed, 1; equaled guaranty.
- Clell Coleman & Sons, Burgin, Ky. Inspection samples analyzed, 3.
Coleman's White Middlings and Shorts, 1; equaled guaranty.
"Coleman's Favorite" Mixed Feed, 1; equaled guaranty.
Coleman's Laying Mash, 1; equaled guaranty.
- The Columbus Rendering Co., Columbus, O. Inspection samples analyzed, 5.
Coreco 50% Protein Meat and Bone Scraps, 2; equaled guaranty.
Coreco 60% Protein Digester Tankage, 3; 1 too low in protein.
- Corum's Sweet Feed Mill, Ashbyburg, Ky. Inspection sample of Green River 16% Protein Dairy Feed analyzed, 1; much too high in fiber.
- Crenshaw Oil Co., Crenshaw, Miss. Inspection sample of Wylodine Brand 41% Protein Cottonseed Meal analyzed, 1; equaled guaranty.
- Crescent Mills, Cynthiana, Ky. Inspection sample of Crescent Mixed Feed analyzed, 1; too low in protein, excess corn bran present.
- Crescent Roller Mills Co., Taylorsville, Ky. Inspection samples analyzed, 3.
Crescent Mixed Feed, 1; too low in protein and too high in fiber.
Shipstuff, 2; equaled guaranty.
- Crown Jewel Milling Co., Cynthiana, Ky. Inspection sample of Mixed Feed analyzed, 1; equaled guaranty.
- Cumminsville Roller Mills, Cumminsville, Ky. Inspection sample of Shipstuff analyzed, 1; equaled guaranty.
- Dairyman's Feed & Supply Co., Mayfield, Ky. Inspection sample of "Daily Cackle" Laying Mash analyzed, 1; equaled guaranty.
- The Dewey Brothers Co., Blanchester, O. Inspection samples of 28% Protein Distillers Corn Dried Grains analyzed, 2; 1 too low in fat.
- W. C. Dicken, Mentor, Ky. Inspection samples analyzed, 4.
"Sunny Grain Brand" Chick Grower, 2; equaled guaranty.
"Sunny Grain Brand" Laying Mash, 1; too high in fiber.
"Sunny Grain Brand" Dairy Feed, 1; equaled guaranty.
- Dixie Mills Co., E. St. Louis, Ill. Inspection samples analyzed, 20. All registrations canceled.
- S. F. Scratch Feed, 1; no buckwheat found, only small amount of oats present.
- Holsum Developing Grains, 1; buckwheat and kaffir corn present though not guaranteed.

- Dixie Chicken Fat, 1; too high in fiber.
Dixie Egg Mash, 1; no linseed oil meal found.
Holsum Horse Feed (25% Grain), 3; ingredients not as guaranteed; adulterated and misbranded.
Holsum Horse Feed (35% Grain), 1; much too high in fiber, ingredients not as guaranteed, adulterated and misbranded.
Holsum Horse Feed (70% Grain), 1; equaled guaranty.
16% Protein Diamond Dairy Feed, 5; ingredients not as guaranteed, adulterated and misbranded.
Dixie 16% Protein Dairy Feed, 1; excess filler present, adulterated and misbranded.
16½% Protein Holsum Dairy Feed, 1; equaled guaranty.
Holsum 24% Protein Dairy Feed, 4; 1 no corn meal found; 2 no bone meal or calcium carbonate found.
Dossey-Clay-Howard Milling Co., Fountain Run, Ky. Inspection sample of shipstuff analyzed, 1; equaled guaranty.
Dunlop Milling Co., Clarksville, Tenn. Inspection sample of Wheat Middlings and Screenings analyzed, 1; equaled guaranty.
Dutschke Milling Co., Cannelton, Ind. Inspection samples analyzed, 2.
All-Mash No. 2, 1; equaled guaranty.
Mixed Feed, 1; equaled guaranty.
The Early & Daniel Co., Cincinnati, O. Inspection samples analyzed, 43
Ground Barley, 1; too high in fiber.
Corn Feed Meal, 1; too high in fiber, adulterated with ground corn-cob, weed seeds and corn blowings, misbranded; feed withdrawn.
Hominy Meal, 3; 1 too low in fat.
Tuxedo Farm Feed, 1; equaled guaranty.
Cincy Scratch, 1; equaled guaranty.
Tuxedo Starting Mash, 1; equaled guaranty.
Tuxedo Starter-Grower-Developer Mash, 1; equaled guaranty.
Tuxedo Starting and Growing All-Mash, 1; equaled guaranty.
Cincy Egg Mash, 3; equaled guaranty.
Tuxedo Egg Mash, 4; equaled guaranty.
Tuxedo Fiddlers Egg Mash, 1; equaled guaranty.
Cincy Chop, 2; equaled guaranty.
Tuxedo Bulky Feed, 1; equaled guaranty.
Tuxedo Pig Meal, 1; equaled guaranty.
Tuxedo Pork Maker, 1; equaled guaranty.
Tuxedo Hog Ration, 19% Protein, 2; 1 too high in fiber.
Tuxedo Big Forty Supplement, 1; equaled guaranty.
Tuxedo 16% Protein Dairy Feed, 3; 2 too low in fat; 1 excess fillers present, adulterated and misbranded.

- Tuxedo Special 16% Protein Dairy Feed, 6; 1 no corn gluten meal found.
- Cerealia Sweets, 1; equaled guaranty.
- Tuxedo 20% Protein Dairy Feed, 3; equaled guaranty.
- Tuxedo 24% Protein Dairy Feed, 2; equaled guaranty.
- Tuxedo Special Twenty-Four Protein Dairy Feed, 2; equaled guaranty.
- Elkton Roller Mills, Elkton, Ky. Inspection sample of Shipstuff analyzed, 1; equaled guaranty.
- The F. L. Emmert Co., Cincinnati, O. Inspection sample of "Buffalo Brand" Brewers Dried Grains analyzed, 1; equaled guaranty.
- John W. Eshelman & Sons, Lancaster, Pa. Inspection samples analyzed. 17.
- Eshelman Red Rose Growing Mash, 1; equaled guaranty.
- Eshelman Red Rose Laying Mash, 2; equaled guaranty.
- Eshelman Maintenance 20% Protein Laying Mash, 1; equaled guaranty.
- Eshelman 32% Protein Mixing Ration (Supplement), 1; equaled guaranty.
- Eshelman Lancaster 60% Grain Horse Feed, 1; equaled guaranty.
- Eshelman Red Rose Pig and Hog Meal, 1; equaled guaranty.
- Eshelman Pennsy 16% Protein Dairy Feed, 4; 3 too high in fiber; 2 excess fillers present, adulterated and misbranded.
- "Maintenance Brand" 16% Protein Dairy Feed, 2; equaled guaranty.
- Eshelman Red Rose 24% Protein Dairy Feed, 1; equaled guaranty.
- Eshelman Challenge Dairy Feed, 3; 1 too low in protein; 1 too high in fiber.
- Estes Milling Co., Science Hill, Ky., Inspection sample of Estes Mixed Wheat Feed analyzed, 1; equaled guaranty.
- Excelsior Milling Co., Minneapolis, Minn. Inspection samples analyzed, 5.
- "Camel Fancy Brand" Mixed Wheat Feed, 2; equaled guaranty.
- "Camel Fancy Brand" Mixed Wheat Feed and Screenings, 3; 1 too low in fat.
- Exchange Milling Co., Sturgis, Ky. Inspection sample of Mixed Feed analyzed, 1; too low in protein.
- Falls Cities Cooperative Milk Producers Association, Louisville, Ky. Inspection sample of Cooperative 20% Protein Sweet Dairy Feed analyzed, 1; too high in fiber.
- Farm Bureau Milling Co., Columbus, O. Inspection sample of Farm Bureau "Mermash Brand" 16% Protein Poultry Mash analyzed, 1; too high in fiber.

- Farmers Corn Mill & Feed Co., McKenzie, Tenn. Inspection sample of 20% Protein Dairy Feed analyzed, 1; equaled guaranty.
- Farmers Mill, Clay, Ky. Inspection sample of Winter Wheat Mixed Feed and Screenings analyzed, 1; equaled guaranty.
- Farmers Mill Co., Columbia, Ky. Inspection samples of Shipstuff analyzed, 1; too low in protein, wheat flour present.
- Farmers Milling Co., Somerset, Ky. Inspection samples analyzed, 3.
Mixed Feed, 1; equaled guaranty.
Farmers Stock Feed, 2; 1 too low in protein.
- Farmers Supply Co., Danville, Ky. Inspection sample Ground Corn and Cob analyzed, 1; equaled guaranty.
- Farmers Union Mill, Versailles, Ky. Inspection samples analyzed, 2.
Mill Feed, 1; too low in protein, excess corn bran present.
Sheep Feed, 1; wheat middlings present though not guaranteed.
- J. H. Fedders & Sons, Covington, Ky. Inspection samples of Hominy Feed analyzed, 5; 1 too high in fiber.
- Ferncliff Feed & Grain Co., Louisville, Ky. Inspection samples analyzed, 15.
Cracker Jack Corn Feed Meal, 2; equaled guaranty.
P. D. Q. Starting and Growing Mash, 1; equaled guaranty.
P. D. Q. Fattening Mash, 1; no rolled oats found.
Cracker Jack Egg Mash, 1; equaled guaranty.
P. D. Q. Egg Mash, 1; equaled guaranty.
Sweet Sixteen Dairy Feed, 5; 1 too high in fiber.
Cracker Jack 24% Protein Sweet Dairy Ration, 2; equaled guaranty.
Ferncliff 24% Protein Dairy Ration, 2; equaled guaranty.
- Henry Fischer Packing Co., Louisville, Ky. Inspection samples analyzed, 3.
50% Protein Ground Cracklings, 1; too low in protein—inferior product.
"Mellwood Brand" 60% Protein Digester Tankage, 2; 1 too low in protein; 1 much too low in protein—inferior product.
- Flaherty Roller Mills Co., Vine Grove, Ky. Inspection samples analyzed, 2.
Mixed Feed, 1; too low in fat.
Flavo Egg Mash, 1; too low in protein.
- Flemingsburg Mills, Flemingsburg, Ky. Inspection samples analyzed, 2.
Mixed Wheat Feed, 1; equaled guaranty.
Egg Mash, 1; no molasses found, ground oats present though not guaranteed.
- Henry Fruechtenicht, Louisville, Ky. Inspection samples analyzed, 3.
28% Protein Distillers Corn Dried Grains, 1; equaled guaranty.

- Brewers Dried Grains, 1; too low in protein and too high in fiber.
Producer 24% Protein Dairy Feed, 1; too low in protein, no linseed oil meal found.
- Garden Street Mill & Elevator Co., Louisville, Ky. Inspection sample of "Garden Brand" 16% Protein Dairy Feed analyzed, 1; too low in fat and too high in fiber.
- Garland Milling Co., Greensburg, Ind. Inspection sample of Garland Mixed Wheat Feed and Screenings analyzed 1; equaled guaranty.
- Garrard Mills, Lancaster, Ky. Inspection sample of Glen Lily Mixed Feed analyzed, 1; too low in fat.
- General Mills, Minneapolis, Minn. Inspection sample of North Star Dairy Ration analyzed, 1; excess screenings present, adulterated and misbranded.
- Georgia Distributing Co., Atlanta, Ga. Inspection samples analyzed, 5.
"Gold Dust Brand" 41% Protein Cottonseed Meal, 4; too high in fiber; 1 too low in protein.
41% Protein Peanut Meal, 1; equaled guaranty.
- Germantown Milling Co., Germantown, Ky. Inspection sample of Mixed Wheat Feed analyzed, 1; equaled guaranty.
- Glass Milling Co., Wilmore, Ky. Inspection sample of Bouquet Mixed Feed analyzed, 1; no corn bran found.
- Glenmore Distilleries Co., Owensboro, Ky. Inspection sample of Glenmore Distillers Corn Dried Grains analyzed, 1; equaled guaranty.
- Edward F. Goeke Sons, Evansville, Ind. Inspection samples analyzed, 14.
Hominy Feed, 2; too low in fat.
"Eg-go" Egg Ration, 1; too low in protein, no dried buttermilk found.
"Goeke's Ultra Lifer Brand" All-Mash, 1; too high in fiber.
"New Deal" All-Mash, 1; too high in fiber.
Standard Horse and Mule Feed, 1; alfalfa meal present though not guaranteed.
"Big Gee" Horse and Mule Feed, 1; equaled guaranty.
"New Deal" 16% Protein Dairy Ration, 6; 3 too high in fiber; 2 too low in protein, lespedeza meal substituted for alfalfa meal; 1 no wheat bran found; 1 excess oat hull feed present, adulterated and misbranded.
- Goeke's Sweet Stock Feed, 1; equaled guaranty.
- Goldcamp Mill Co., Ironton, O. Inspection samples analyzed, 5.
Universal Feed, 1; equaled guaranty.
Mixed Stock Feed, 1; equaled guaranty.
"Gold-Co" 16% Protein Dairy Feed, 2; 1 excess filler present, adulterated and misbranded.
"Milk-O-Brand" 24% Protein Dairy Feed, 1; equaled guaranty.

Grayson Milling Co., Grayson, Ky. Inspection samples analyzed, 7.

"K-Y" 20% Protein Egg Mash, 2; 1 too low in protein; 1 no ground oats found.

"K-Y" Stock Feed, 2; equaled guaranty.

"K-Y" 16½% Protein Dairy Feed, 2; equaled guaranty.

"K-Y" 24% Protein Dairy Feed, 1; equaled guaranty.

Gwinn Brothers & Co., Huntington, W. Va. Inspection sample of Wheat Middlings and Screenings analyzed, 1; equaled guaranty.

The Gwinn Milling Co., Columbus, O. Inspection samples of Gwinn's Wheat Feed and Screenings analyzed, 2; equaled guaranty.

Hales & Hunter Co., Chicago, Ill. Inspection samples analyzed, 9.

Morning Glory Chick Starter, 1; too high in fiber.

Morning Glory Growing Mash, 1; too high in fiber.

Red Comb Crate Fattener, 1; equaled guaranty.

Morning Glory Egg Mash, 2; equaled guaranty.

Gold Flake Dairy Feed, 2; equaled guaranty.

Red Horn 20% Protein Dairy Feed, 1; brewers dried grains, malt sprouts, and distillers corn dried grains present though not guaranteed.

Red Horn 24% Protein Dairy Feed, 1; malt sprouts present though not guaranteed.

Hall Milling Co., St. Louis, Mo. Inspection sample of Rex Wheat Mixed Feed analyzed, 1; equaled guaranty.

Arnold Hansford, Somerset, Ky. Inspection sample of Hansford's Wheat Mixed Feed and Screenings analyzed, 1; too low in protein, wheat flour present.

Hanson Roller Mills, Hanson, Ky. Inspection sample of "White Frost" Mixed Wheat Feed and Screenings analyzed, 1; too low in fat.

J. C. Harris & Co., Atlanta, Ga. Inspection samples of 41% Protein Cottonseed Meal analyzed, 3; 1 deficient in protein; 2 too high in fiber.

P. H. Harsha Milling Co., Portsmouth, O. Inspection samples analyzed, 4.

Harsha's Middlings and Screenings, 1; too low in protein, wheat flour present.

Cracked Corn, 1; too low in protein.

Magnolia Mixed Feed, 1; equaled guaranty.

Special 16% Protein Dairy Feed, 1; buckwheat hulls present though not guaranteed, misbranded.

Edwin C. Hawkins, Paducah, Ky. Inspection sample of Topsy Mixed Feed analyzed, 1; too low in protein and fat, corn screenings present though not guaranteed, misbranded.

Haycrafts Feed Store, Leitchfield, Ky. Inspection sample of "Grayson County" Laying Mash analyzed, 1; equaled guaranty.

- Haydon Mill & Grain Co., Springfield, Ky. Inspection samples analyzed, 2.
Economy Feed, 1; too low in protein.
"Lay Quick" Economy Laying Mash, 1; equaled guaranty.
- Henderson Elevator Co., Henderson, Ky. Inspection samples analyzed, 3.
Bullitt's All-Purpose Poultry Mash, 1; equaled guaranty.
Bullitt's Special Dairy Feed, 2; too low in fat.
- V. E. Herter & Co., Dayton, O. Inspection samples analyzed, 12.
Eagle Starting and Growing All-Mash, 1; too high in fiber.
Yankee Laying Mash, 2; equaled guaranty.
Eagle Horse and Mule Feed, 1; wheat bran, wheat middlings and oat hull feed present though not guaranteed, misbranded.
Our Economy Dairy Feed, 7; 1 ingredients not as guaranteed, adulterated and misbranded—feed withdrawn; 2 too low in fat; 4 no corn gluten meal found, distillers corn dried grains present though not guaranteed.
Eagle Dairy Feed, 1; wheat bran, cottonseed meal and ground oats present though not guaranteed.
- Hickman Manufacturing & Feed Co., Hickman, Ky. Inspection sample of Corn Bran analyzed, 1; equaled guaranty.
- H. G. Hill Co., Nashville, Tenn. Inspection sample of Flapper Growing Mash analyzed, 1; too low in protein and fat and too high in fiber.
- Hirst & Begley Linseed Works, Chicago, Ill. Inspection samples of 37% Protein Old Process Linseed Oil Meal analyzed, 2; equaled guaranty.
- Hodgenville Roller Mills, Hodgenville, Ky. Inspection sample of Lincoln Mixed Wheat Feed analyzed, 1; equaled guaranty.
- Home Mill & Grain Co., Mt. Vernon, Ind. Inspection sample of Winter Wheat Bran analyzed, 1; equaled guaranty.
- Hoosier Mineral Feed Co., Greenwood, Ind. Inspection samples analyzed, 2.
Hoosier Poultry Mineral, 1; equaled guaranty.
Sheep Mineral, 1; equaled guaranty.
- Hopkinsville Milling Co., Hopkinsville, Ky. Inspection sample of Sunflower Wheat Shorts and Screenings analyzed, 1; too low in protein and too high in fiber.
- Horse Cave Mills, Horse Cave, Ky. Inspection sample of Wheat Bran and Shorts analyzed, 1; too low in protein.
- Humphreys-Godwin Co., Memphis, Tenn. Inspection sample of "Dixie Brand" 41% Protein Cottonseed Meal analyzed, 1; equaled guaranty.
- Igleheart Bros., Evansville, Ind. Inspection sample of Winter Wheat

Shorts and Screenings analyzed, 1; too high in fiber. ground wheat bran present.

Illinois Cereal Mills., Inc., Paris, Ill. Inspection samples of 12% Protein Hominy Feed analyzed, 5; 4 too low in protein and fat, misbranded.

J. E. M. Milling Co., Frankfort, Ky. Inspection samples analyzed, 7. Capitol Egg Mash, 1; too low in protein.

Capitol 16% Protein Dairy Feed, 3; brewers dried grains present though not guaranteed; 1 no cottonseed meal found.

Capitol 24% Protein Dairy Feed, 3; 1 too low in protein.

C. L. Jewell & Son, Louisville, Ky. Inspection sample of Hominy Feed analyzed, 1; too low in fat.

Joslin-Schmidt Corporation, Cincinnati, O. Inspection samples analyzed, 2.

Abattoir Brand 50% Protein Regular Meat Scraps, 1; excess bone present.

Abattoir Brand 60% Protein Digester Tankage, 1; equaled guaranty.

Kasco Mills, Toledo, O. Inspection samples analyzed, 24.

Oc-Sak Scratch Grains, 1; too low in fat, only traces of oats, buckwheat, and milo maize present, misbranded.

Apex Starter Mash, 1; too high in fiber.

Kasco Farm Feed, 2; ground oats present though not guaranteed; 1 too low in protein.

Expeller Process Soybean Oil Meal, 1; equaled guaranty.

Oc-Sak Laying Mash, 2; equaled guaranty.

Oc-Sak Horse Feed, 2; 1 lespedeza product substituted for alfalfa meal, misbranded.

Oc-Sak Hog Meal, 1; too low in protein.

Kasco 16% Protein Dairy Feed, 8; 4 excess fillers present, adulterated and misbranded; registration canceled—reinstated on probation.

Kasco 20% Protein Milk Maker, 2; 1 malt sprouts present though not guaranteed.

Kasco Mormilk 24% Protein Dairy Feed, 2; equaled guaranty.

Oc-Sak 24% Protein Dairy Feed, 2; 1 too low in protein.

Keller Hay & Grain Co., Newport, Ky. Inspection samples analyzed, 2. Hominy Meal, 1; too high in fiber.

"Matzos" Meal, 1; equaled guaranty.

Kemo Mills, Toledo, O. Inspection sample of Kayo All-Mash Laying Ration analyzed, 1; too high in fiber.

The Kentucky Chemical Manufacturing Co., Covington, Ky. Inspection samples analyzed, 2.

- "K-C" 60% Protein Digester Tankage, 1; equaled guaranty.
- "K-C" Special 50% Protein Meat and Bone Scraps, 1; equaled guaranty.
- Kentucky Feed Mills, Louisville, Ky. Inspection samples of Premo Laying Mash analyzed, 1; no corn gluten meal found.
- R. U. Kevil & Sons, Princeton, Ky. Inspection sample of Mixed Feed analyzed, 1; wheat middlings present though not guaranteed.
- F. W. Kibler Milling Co., Mt. Orab, O. Inspection samples analyzed, 3.
- Kibler's Chick Starter, 1; dried buttermilk present though not guaranteed.
- Kibler's Egg Mash, 1; alfalfa leaf meal present though not guaranteed.
- Kibler's Star Dairy Feed, 1; equaled guaranty.
- King Midas Mill Co., Minneapolis, Minn. Inspection sample of Standard Wheat Feed and Screenings analyzed, 1; equaled guaranty.
- Chas. A. Krause Milling Co., Milwaukee, Wis. Inspection samples analyzed, 16.
- Economy Egg Mash, 1; equaled guaranty.
- Kookoo Egg Mash, 1; equaled guaranty.
- "Blue Top" Egg Mash, 1; equaled guaranty.
- Badger 16% Protein Sweet Dairy Feed, 8; 5 ingredients not as guaranteed, adulterated and misbranded; feed withdrawn; registration canceled—reinstated on probation.
- Sweet Cud 20% Protein Dairy Ration, 3; 1 excess screenings present, adulterated and misbranded.
- Economy Brand 24% Protein Dairy Ration, 2; 1 no brewers dried grains or malt sprouts found, excess filler present, adulterated and misbranded.
- The Kroger Grocery & Baking Co., Cincinnati, O. Inspection samples analyzed, 12.
- Wesco Scratch Feed, 1; equaled guaranty.
- Wesco Starting and Growing Mash, 1; equaled guaranty.
- Wesco Egg Mash, 3; 1 too high in fiber.
- Wesco 16% Protein Dairy Feed, 2; equaled guaranty.
- Wesco 20% Protein Dairy Feed, 2; malt sprouts present though not guaranteed; 1 corn gluten meal and linseed oil meal present though not guaranteed, excess fillers present.
- Wesco 24% Protein Dairy Feed, 3; 1 too low in fat.
- Labrot & Graham, Inc., Frankfort, Ky. Inspection sample of 29% Protein Distillers Corn Dried Grains analyzed, 1; equaled guaranty.
- Lake County Oil Mill, Tiptonville, Tenn. Inspection sample of 41% Protein Cottonseed Meal analyzed, 1; equaled guaranty.

- Lancaster Milling Co., Lancaster, Ky. Inspection samples analyzed, 3.
20% Protein Egg Mash, 1; equaled guaranty.
"Old Mill" Mixed Feed, 1; equaled guaranty.
Lamico Mixed Feed, 1; too high in fiber, distillers corn dried grains and ground oats present though not guaranteed.
- The Larrowe Milling Co., Detroit, Mich. Inspection samples analyzed, 5.
Larro Egg Mash, 2; equaled guaranty.
Larro Pig Feed, 1; equaled guaranty.
Larro, The Ready Ration for Dairy Cows, 2; equaled guaranty.
- The Larabee Flour Mills Co., Kansas City, Mo. Inspection sample of "Sunfed" Winter Wheat Bran and Screenings analyzed, 1; too high in fiber.
- Lawrenceburg Roller Mills Co., Lawrenceburg, Ind. Inspection samples analyzed, 4.
"Farm King" Bran and Screenings, 1; equaled guaranty.
Snowflake Middlings and Screenings, 1; equaled guaranty.
"Town Talk" Flour Middlings and Screenings, 1; too low in protein and too high in fiber.
"Farm King" Fancy Mixed Wheat Feed and Screenings, 1; equaled guaranty.
- Lewisport Mill Co., Lewisport, Ky. Inspection sample of "Farmer's Choice" Feed analyzed, 1; equaled guaranty.
- Lexington Roller Mills Co., Lexington, Ky. Inspection samples analyzed, 14.
Kentucky Queen Starting Mash, 1; equaled guaranty.
Kentucky Queen Growing Mash, 1; equaled guaranty.
Kentucky Queen Starting and Growing All-Mash, 1; too low in fat, charcoal present though not guaranteed.
Kentucky Queen Double X Egg Mash, 2; equaled guaranty.
Thoroughbred Mill Feed, 2; equaled guaranty.
"Bossie" Feed, 2; 1 much too low in protein, no corn gluten feed found.
Thoroughbred Hog Ration, 1; ground oats present though not guaranteed.
Thoroughbred 20% Protein Dairy Feed, 2; equaled guaranty.
Thoroughbred 24% Protein Dairy Feed, 2; 1 much too low in protein.
- Lincoln Milling Co., Crab Orchard, Ky. Inspection sample of Blue Bird Feed analyzed, 1; too low in protein and fat and too high in fiber, ground oats present though not guaranteed.
- G. W. Lofton & Son, Providence, Ky. Inspection sample of Winter Wheat Gray Shorts and Screenings analyzed, 1; too high in fiber.
- Loretto Mill Co., Loretto, Ky. Inspection sample of Shipstuff and

- Screenings analyzed, 1; too low in protein and fat, wheat flour present.
- The Loudonville Milling Co., Loudonville, O. Inspection sample of Soft Winter Wheat Middlings and Screenings analyzed, 1; too low in protein and too high in fiber.
- Louisa Supply Co., Louisa, Ky. Inspection samples of Standard Feed analyzed, 2; too low in protein.
- Louisville Cereal Mill Co., Louisville, Ky. Inspection samples analyzed, 6.
- Nonesuch Hominy Feed, 3; 1 too low in protein and fat.
- Nonesuch Feed, 3; 2 too low in protein; 1 much too low in protein and fat, misbranded.
- Louisville Provision Co., Louisville, Ky. Inspection sample of "Luproco" 50% Protein Digester Tankage analyzed, 1; inferior quality.
- L. B. Lovitt & Co., Memphis, Tenn. Inspection samples of "Lovit Brand" 41% Protein Cottonseed Meal analyzed, 3; 1 too high in fiber.
- Lynn Grove Milling Co., Lynn Grove, Ky. Inspection sample of Wheat Bran and Shorts analyzed, 1; too low in protein and fat.
- Marianna Sales Co., Memphis, Tenn. Inspection samples of "White Mule Brand" 41% Protein Cottonseed Meal analyzed, 2; equaled guaranty.
- Marion Milling Co., Marion, Ky. Inspection samples of "Feeders Favorite" Mixed Feed analyzed, 2; 1 too high in fiber.
- Mayfield Sweet Feed Mill, Mayfield, Ky. Inspection sample of 19% Protein Laying Mash (With Cod Liver Oil) analyzed, 1; equaled guaranty.
- Gentry McCauley, Versailles, Ky. Inspection samples analyzed, 2.
- "Pleez-U" Sheep Feed, 1; equaled guaranty.
- "Pleez-U" Dairy Feed, 1; equaled guaranty.
- McKenzie Milling Co., McKenzie, Tenn. Inspection sample of "My-T-Good Brand" 16% Protein Dairy Feed analyzed, 1; too low in fat; no corn gluten feed or soybean oil meal found; lespedeza straw meal substituted for alfalfa meal; adulterated and misbranded.
- The Mennel Milling Co., Toledo, O. Inspection sample of Memo Wheat Middlings and Screenings analyzed, 1; equaled guaranty.
- Middlesboro Milling Co., Middlesboro, Ky. Inspection samples analyzed, 5.
- "Hi-Grade Brand" Mixed Feed, 2; equaled guaranty.
- Reliable Mixed Hog Feed, 1; no cottonseed meal found, distillers corn dried gains present though not guaranteed.
- "Good Value Brand" 16% Protein Dairy Feed, 2; 1 no oat hull feed found; 1 no calcium carbonate found.

- Monarch Milling Co., Mt. Sterling, Ky. Inspection sample of Mixed Feed analyzed, 1; too low in protein, excess corn bran present.
- Morganfield Hardware & Grocery Co., Morganfield, Ky. Inspection sample of "Star Brand" Hog Mineral analyzed, 1; equaled guaranty.
- Mountain City Mill Co., Chattanooga, Tenn. Inspection samples of Blue Stock Feed analyzed, 3; too low in protein; 1 too low in fat.
- Mt. Vernon Milling Co., Mt. Vernon, Ind. Inspection samples of "Poco" Hominy Feed analyzed, 3; 1 too low in fat.
- Munfordville Milling Co., Munfordville, Ky. Inspection sample of Mixed Feed analyzed, 1; no corn bran found.
- Nancy Milling Co., Nancy, Ky. Inspection sample of Mixed Wheat Feed analyzed, 1; too low in protein.
- Nappanee Milling Co., Nappanee, Ind. Inspection sample of Nappanee Wheat Mixed Feed and Screenings analyzed, 1; equaled guaranty.
- Nashville Cotton Oil Mill, Nashville, Tenn. Inspection sample of 41% Protein Cottonseed Meal analyzed, 1; too low in protein.
- The National Milling Co., Toledo, O. Inspection samples analyzed, 2. Tolio Wheat Middlings and Screenings, 1; too high in fiber.
- Namico Wheat Middlings and Screenings, 1; equaled guaranty.
- National Oats Co., E. St. Louis, Ill. Inspection samples analyzed, 6. Red-3 Reground Oat Hulls, 1; too low in fat and too high in fiber. Corno 18% Protein Laying Mash (With Cod Liver Oil), 1; equaled guaranty.
- Nutro Sweet Feed, 1; equaled guaranty.
- Nutro 16% Protein Dairy Feed, 2; equaled guaranty.
- Corno 24% Protein Dairy Feed, 1; equaled guaranty.
- The Neumond Co., St. Louis, Mo. Inspection sample of Neumond 28% Protein Distillers Corn Dried Grains analyzed, 1; equaled guaranty.
- Noblesville Milling Co., Noblesville, Ind. Inspection sample of N. M. Co.'s Wheat Bran analyzed, 1; too high in fiber.
- Northfield Milling Co., Minneapolis, Minn. Inspection sample of "Orient Fancy Brand" Wheat Mixed Feed and Screenings analyzed, 1; equaled guaranty.
- Nowak Milling Corporation, Hammond, Ind. Inspection samples analyzed, 13. Domino Chick Pel-ets, 1; equaled guaranty. Domino All-Mash Starter and Grower, 1; too high in fiber. Domino Growing Mash, 1; soybean meal present though not guaranteed. Marathon Laying Mash, 1; soybean oil meal present though not guaranteed. Domino Laying Mash, 1; equaled guaranty. Domino Steer Feed, 1; no linseed oil meal found, wheat bran present though not guaranteed.

- Union Dairy Feed, 1; wheat bran and soybean oil meal present though not guaranteed, excess screenings refuse present, adulterated and misbranded; registration canceled—reinstated on probation.
- Domino Butterine Dairy Feed, 2; no linseed oil meal found; excess screenings present; adulterated and misbranded; registration canceled—reinstated on probation; 1 wheat bran and soybean oil meal present though not guaranteed.
- Cream-O-Lene Dairy Feed, 2; 1 too low in protein, no linseed oil meal found, wheat bran and soybean oil meal present though not guaranteed, misbranded.
- Domino 24½% Protein Dairy Feed, 2; 1 excess salt present.
- Old Lewis Hunter Distillery Co., Cynthiana, Ky. Inspection sample of 28% Protein Distillers Corn Dried Grains analyzed, 1; equaled guaranty.
- Owensboro Milling Co., Owensboro, Ky. Inspection samples analyzed, 8.
- “TruTesT Brand” Hominy Feed, 1; equaled guaranty.
- “TruTesT Brand” Growing Mash, 1; too low in fat.
- Star Horse and Mule Feed, 1; too high in fiber.
- “TruTesT Brand” Horse Feed, 1; equaled guaranty.
- D and H Stock Feed, 1; too low in protein and too high in fiber.
- Star Dairy Feed, 2; 1 whole oats present though not guaranteed.
- “TruTesT Brand” 24% Protein Dairy Feed, 1; equaled guaranty.
- Paramount Feed Mills, Louisville, Ky. Inspection samples analyzed, 6.
- Paramount Egg Mash, 1; linseed oil meal present though not guaranteed.
- Paramount 16% Protein Dairy Feed, 3; 2 too high in fiber.
- Paramount 24% Protein Dairy Feed, 2; equaled guaranty.
- I. E. Payne, Eubank, Ky. Inspection sample of Farmers Choice Feed analyzed, 1; too low in protein, wheat flour present.
- Pembroke Roller Mills, Pembroke, Ky. Inspection samples of Mixed Feed analyzed, 1; equaled guaranty.
- Phoenix Flour Mills, Evansville, Ind. Inspection sample of Fancy Shorts and Screenings analyzed, 1; equaled guaranty.
- Phoenix Milling Co., Providence, Ky. Inspection samples of Mixed Feed analyzed, 2; too low in fat; wheat middlings present though not guaranteed; 1 too low in protein, excess corn bran present.
- The R. C. Poage Milling Co., Ashland, Ky. Inspection samples analyzed, 12.
- Pomco All-Mash Starter and Grower (With Cod Liver Oil), 1; too low in protein.
- Pomco Complete Growing Mash, 1; too high in fiber.

- Vim Brand 18% Protein Laying Mash (With Cod Liver Oil), 1; too low in protein.
- Pomco 20% Protein Laying Mash (With Cod Liver Oil, 1; equaled guaranty.
- Vim Farm Feed, 1; equaled guaranty.
- Pomco Hog and Pig Feed, 1; equaled guaranty.
- Vim 16% Protein Dairy Feed, 2; equaled guaranty.
- Pomco 16% Protein Dairy Feed, 2; equaled guaranty.
- Vim 24% Protein Dairy Feed, 1; equaled guaranty.
- Pomco 24% Protein Dairy Feed, 1; equaled guaranty.
- The H. E. Pogue Distillery Co., Maysville, Ky. Inspection sample of Distillers Corn Dried Grains analyzed, 1; too low in fat.
- Poole Milling Co., Poole, Ky. Inspection sample of Mixed Feed analyzed, 1; equaled guaranty.
- Pratt Food Co., Hammond, Ind. Inspection samples analyzed, 7.
- Utility Growing Mash, 1; equaled guaranty.
- Pratt's Growing Mash, 1; equaled guaranty.
- Iroquois Growing Mash, 1; equaled guaranty.
- Utility All-Mash Starter and Grower, 1; equaled guaranty.
- Pratt's Cak-Cak Egg Mash, 1; equaled guaranty.
- Pratt's Laying Mash, 1; equaled guaranty.
- Pratt's Complete Brand Rabbit Pellets, 1; too low in protein.
- Purcell Seed Co., Evansville, Ind. Inspection samples analyzed, 5.
- "New Idea" Egg Mash, 2; too high in fiber; 1 no soybean oil meal found.
- "New Idea" All-Mash Poultry Ration, 3; equaled guaranty.
- Quaker Oats Co., Chicago, Ill. Inspection samples analyzed, 4.
- Quaker Ful-O-Pep Chick Starter, 1; equaled guaranty.
- Buckeye Feed, 1; equaled guaranty.
- "Vim Brand" Oat Hull Feed and Molasses, 2; equaled guaranty.
- C. B. Ragland & Co., Nashville, Tenn. Inspection samples of Old Time Dairy Feed analyzed, 3; 2 too high in fiber; 1 no corn feed meal or soybean oil meal found; not labeled.
- Ralston Purina Co., St. Louis, Mo. Inspection samples analyzed, 28.
- Purina Chick Startena, 2; equaled guaranty.
- Purina Chicken Fatena, 1; too high in fiber.
- Purina Growing Chow, 1; equaled guaranty.
- Purina Chick Growena (All-Mash), 1; equaled guaranty.
- Purina Lay Chow, 1; equaled guaranty.
- Purina Family All-Mash Laying Ration, 1; equaled guaranty.
- Purina Turkey Growing and Fattening Chow, 2; equaled guaranty.
- Purina Turkey Startena, 1; equaled guaranty.
- Purina Bulky Las Chow, 1; equaled guaranty.
- Purina Fox Chow, 1; equaled guaranty.

- Purina Pig and Hog Chow (Supplement), 1; equaled guaranty.
Purina Hog Fatena, 1; equaled guaranty.
Purina Steer Fatena, 1; equaled guaranty.
Purina Calf Starting Chow, 1; equaled guaranty.
Purina Rabbit Chow (Complete Ration), 1; equaled guaranty.
Purina Omolene, 2; equaled guaranty.
Purina Dry and Freshening Cow Chow, 1; equaled guaranty.
"Protana Brand" 16% Protein Dairy Feed, 4; equaled guaranty.
Purina Milking Cow Chow (24% Protein), 2; equaled guaranty.
Protana 24% Protein Dairy Feed, 2; 1 alfalfa meal and brewers dried grains present though not guaranteed.
- Randolph Milling Co., Bandana, Ky. Inspection sample of O-Joy analyzed, 1; too low in fat.
- Read Phosphate Co., New Albany, Ind. Inspection samples analyzed, 2.
Read's Red Diamond 50% Protein Meat Scrap, 1; excess bone present.
Read's Red Diamond 60% Protein Digester Tankage, 1; equaled guaranty.
- Red River Mills, Adairville, Ky. Inspection samples of Shipstuff analyzed, 2; 1 too low in protein and fat, wheat flour present.
- Renfro Supply Co., Williamsburg, Ky. Inspection sample of Renfro's Special Dairy Feed analyzed, 1; equaled guaranty.
- R. D. Riedling, Louisville, Ky. Inspection samples analyzed, 4.
Distillers 28% Protein Corn Dried Grains, 1; equaled guaranty.
Magnolia Chick Starter and Growing Mash, 1; equaled guaranty.
Happy Cow Feed, 2; equaled guaranty.
- Roberts Cotton Oil Mill, Cairo, Ill. Inspection sample of 41% Protein Soybean Oil Meal analyzed, 1; equaled guaranty.
- Robinson Milling Co., Somerset, Ky., Inspection sample of Mixed Feed analyzed, 1; too low in protein, excess corn bran present.
- P. M. Rountree, Benton, Ky. Inspection sample of Wheat Bran, Shorts and Screenings analyzed, 1; equaled guaranty.
- Rush County Mills, Rushville, Ind. Inspection sample of Hominy Feed analyzed, 1; too low in fat.
- Salt Lick Roller Mills, Salt Lick, Ky. Inspection samples analyzed 2.
"Perfect Brand" Mixed Wheat Feed, 1; too low in protein, wheat flour present.
"Perfect Brand" X Mixed Feed, 1; equaled guaranty.
- Sandusky Bros., Harrodsburg, Ky. Inspection sample of Mixed Feed analyzed, 1; equaled guaranty.
- Schultz, Baujan & Co., Beardstown, Ill. Inspection samples analyzed, 16.
Corn Feed Meal, 1; equaled guaranty.
Sunbeam Wheat Middlings and Screenings, 1; equaled guaranty.

- Sunbeam Mixed Wheat Feed and Screenings, 1; equaled guaranty.
- "Sweet Clover Brand" Scratch Feed, 1; buckwheat present though not guaranteed.
- "Critic Brand" Starting Mash, 1; too high in fiber.
- "Critic Brand" Poultry Fattening Feed, 1; equaled guaranty.
- "Honest Brand" Egg Mash, 1; equaled guaranty.
- "Critic Brand" Horse and Mule Feed, 1; equaled guaranty.
- "Critic Brand" 80% Grain Horse and Mule Feed, 1; too low in fat.
- "Critic Brand" Pork Maker, 1, equaled guaranty.
- "Sweet Clover Brand" 16% Protein Dairy Feed, 1; soybean oil meal present though not guaranteed.
- "Honest Brand" 16% Protein Dairy Feed, 2; 1 no brewers dried grains found; soybean oil meal present though not guaranteed.
- "Critic Brand" 20% Protein Dairy Feed, 1; equaled guaranty.
- "Critic Brand" 24 % Protein Dairy Feed, 2; equaled guaranty.
- Scientific Milling Co., E. St. Louis, Ill. Inspection sample of Ivory Scratch Feed analyzed, 1; adulterated with weed seeds, misbranded; registration canceled.
- Scioto Farm Bureau Co-operative Ass'n., Lucasville, O. Inspection sample of White Hominy Feed analyzed, 1; equaled guaranty.
- Security Mills, Knoxville, Tenn. Inspection samples analyzed, 6.
- Security Chick Ration, 1; equaled guaranty.
- Blue Jay Laying Mash, 1; soybean oil meal present though not guaranteed.
- Security Turkey Starter, 1; too low in fat.
- Security Pig Feed, 1; too high in fiber, molasses present though not guaranteed.
- Blue Eagle Dairy Feed, 1; excess screenings present, adulterated and misbranded.
- Security Special 24% Protein Dairy Feed, 1; equaled guaranty.
- Shepherdsville Roller Mills, Shepherdsville, Ky. Inspection sample of 16% Protein Dairy Feed analyzed, 1; equaled guaranty.
- Simpson County Mills, Franklin, Ky., Inspection sample of Mixed Feed analyzed, 1; equaled guaranty.
- Slaughters Milling Co., Slaughters, Ky. Inspection sample of Wheat Mixed Feed and Screenings analyzed, 1; too low in protein and fat.
- J. Allen Smith & Co., Knoxville, Tenn. Inspection samples analyzed, 2.
- Peerless Brand Feed, 1; equaled guaranty.
- Butter Fat Brand Feed, 1; too low in protein.
- Smithfield Milling Co., Smithfield, Ky. Inspection samples of Mixed Feed analyzed, 3; 1 too low in protein.
- The Southern Cotton Oil Co., Memphis, Tenn. Inspection sample of Gold Seal Brand 41% Protein Cottonseed Meal analyzed, 1; equaled guaranty.

- Woodford Spears & Sons, Paris, Ky. Inspection sample of Bourbon Mixed Feed analyzed, 1; equaled guaranty.
- Standard Milling Co., Elkton, Ky. Inspection sample of Mixed Feed analyzed, 1; too low in protein, no corn bran found.
- Star Milling Co., Clinton, Ky. Inspection samples analyzed, 2.
Wheat Shorts, 1; equaled guaranty.
"Farmers Friend" 16% Protein Dairy Feed, 1; too low in protein and fat and too high in fiber, ingredients not as guaranteed, adulterated and misbranded.
- Star Roller Mills, Cloverport, Ky. Inspection sample of Star Laying Mash analyzed, 1; no soybean oil meal found, cottonseed meal present though not guaranteed.
- Sunshine Feed Mills, Nashville, Tenn. Inspection sample of Dandelion 16% Protein Dairy Feed analyzed, 1; ingredients not as guaranteed, adulterated and misbranded; feed withdrawn.
- Sunnyside Milling Co., Evansville, Ind. Inspection samples of Winter Wheat Shorts and Screenings analyzed, 2; 1 too high in fiber.
- D. B. Sutherland & Sons, Bloomfield, Ky. Inspection sample of Sutherland's Mixed Feed analyzed, 1; too low in protein and too high in fiber.
- Swift & Co., Chicago, Ill. Inspection samples analyzed, 2.
Swift's 50% Protein Meat and Bone Scraps, 1; equaled guaranty.
Swift's 60% Protein Digester Tankage, 1; too low in protein.
- Taylor Feed & Grain Co., Louisville, Ky. Inspection sample of "Just Rite Brand" 20% Protein Sweet Dairy Feed analyzed, 1; equaled guaranty.
- Tell City Flouring Mills, Tell City, Ind. Inspection samples analyzed, 2.
"Hoosier" Special Mix, 1; equaled guaranty.
"Hoosier" Dairy Feed, 1; equaled guaranty.
- Thomson's Mill, Madisonville, Ky. Inspection sample of Thomson's Special Egg Mash, 1; much too low in protein.
- Trimble Milling Co., Milton, Ky. Inspection sample of Shipstuff analyzed, 1; equaled guaranty.
- W. Trow Co., Madison, Ind. Inspection sample of Trow's Bran and screenings analyzed, 1; wheat middlings and corn bran present; misbranded.
- The Ubiko Milling Co., Cincinnati, O. Inspection samples analyzed, 24.
Corn Meal, 1; equaled guaranty.
White Hominy Feed, 1; equaled guaranty.
Ground Oats, 1; too high in fiber.
Ubiko All-Mash Starter, 1; equaled guaranty.
Sunbeam All-Mash Growing Ration, 1; equaled guaranty.
Ubiko Fattening Mash, 1; too high in fiber.
Sunbeam Laying Mash, 2; 1 too low in protein.

- Ubiko All-Mash Complete Laying Ration, 1; equaled guaranty.
- Ubiko Mash Balancer, 1; too high in fiber.
- Honeycomb Sweet Feed, 1; equaled guaranty.
- Ubiko Rabbit Pellets Feed, 1; equaled guaranty.
- Ubiko 36% Protein Hog Supplement, 1; too high in fiber.
- Ubiko Pig and Sow Ration, 1; too high in fiber.
- "Clover Bloom" Sweet 16% Protein Dairy Feed, 4; 3 distillers corn dried grains substituted for corn gluten feed.
- 20% Protein Sunbeam Dairy Ration, 1; equaled guaranty.
- 24% Protein Sunbeam Dairy Ration, 2; equaled guaranty.
- 24% Protein Dry Union Grains Dairy Ration, 2; equaled guaranty.
- 32% Protein Sweet Union Grains Dairy Ration (Supplement), 1; too low in protein.
- The Union National Mill, Springfield, O. Inspection samples of "William Tell" Wheat Middlings and Screenings analyzed, 2; 1 too low in protein.
- The United Supply Co., Lynch, Ky. Inspection samples analyzed, 2.
- Usco Egg Mash, 1; too high in fiber.
- Usco Dairy Ration 24% Protein, 1; equaled guaranty.
- Valier & Spies Milling Corp., St. Louis, Mo. Inspection samples analyzed, 2.
- Grey Wheat Shorts and Screenings, 1; equaled guaranty.
- Valier's Mixed Wheat Feed and Screenings, 1; equaled guaranty.
- Van Meter-Terrell Feed Co., Lexington, Ky. Inspection samples analyzed, 2.
- Viola Cow Feed, 1; no alfalfa meal found.
- Viola Sheep Feed, 1; equaled guaranty.
- John Wachtel Co., Indianapolis, Ind. Inspection sample of John Wachtel Co.'s 50% Protein Meat and Bone Meal analyzed, 1; equaled guaranty.
- James Walsh & Co., Lawrenceburg, Ind. Inspection sample of Walsh Distillers 28% Protein Corn Dried Grains analyzed, 1; too high in fiber.
- Washburn Crosby Co., Louisville, Ky. Inspection sample of "Sonny South" Wheat Bran analyzed, 1; equaled guaranty.
- Washburn Crosby Co., Minneapolis, Minn. Inspection sample of Washburn's Gold Medal Hard Wheat Adrian Red Dog analyzed, 1; equaled guaranty.
- Weis Packing Co., Maysville, Ky. Inspection samples of Weis 50% Protein Digester Tankage analyzed, 1; equaled guaranty.
- Weisenberger Sanitary Flour Mills, Midway, Ky. Inspection samples analyzed, 2.
- Repeater Laying Mash, 1; too low in protein.
- Repeater Feed, 1; two low in protein, corn bran present.

- Wiedlocher & Sons, Springfield, Ill. Inspection samples analyzed, 3.
"Faultless Brand" Growing Mash, 1; soybean oil meal present though not guaranteed.
"Faultless Brand" Egg Mash, 1; no linseed oil meal found, soybean oil meal and charcoal present though not guaranteed.
Congress 16% Protein Dairy Feed, 1; no linseed oil meal found.
- Williamstown Roller Mills, Williamstown, Ky. Inspection samples analyzed, 4.
Mixed Feed, 3; 2 no corn bran found.
Mixed Wheat Feed and Screenings, 1; corn bran present.
- Winchester Roller Mills, Winchester, Ky. Inspection samples of "Perfection Brand" Mixed Feed analyzed, 2; 1 too low in protein.
- Woolcott Milling Co., Harrisburg, Ill. Inspection sample of Mixed Feed analyzed, 1; equaled guaranty.
- Ziliak & Schafer Milling Co., Evansville, Ind. Inspection samples analyzed, 3.
Target Egg Mash, 1; equaled guaranty.
Lamey's Special Dairy Feed, 2; 1 too low in protein, adulterated with excess filler, misbranded.