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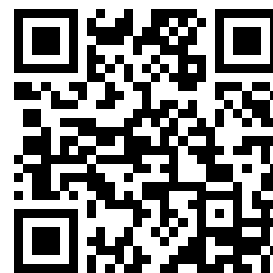
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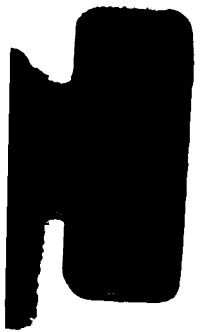
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THE FORMULA FEED INDUSTRY IN 1969

Preliminary Report

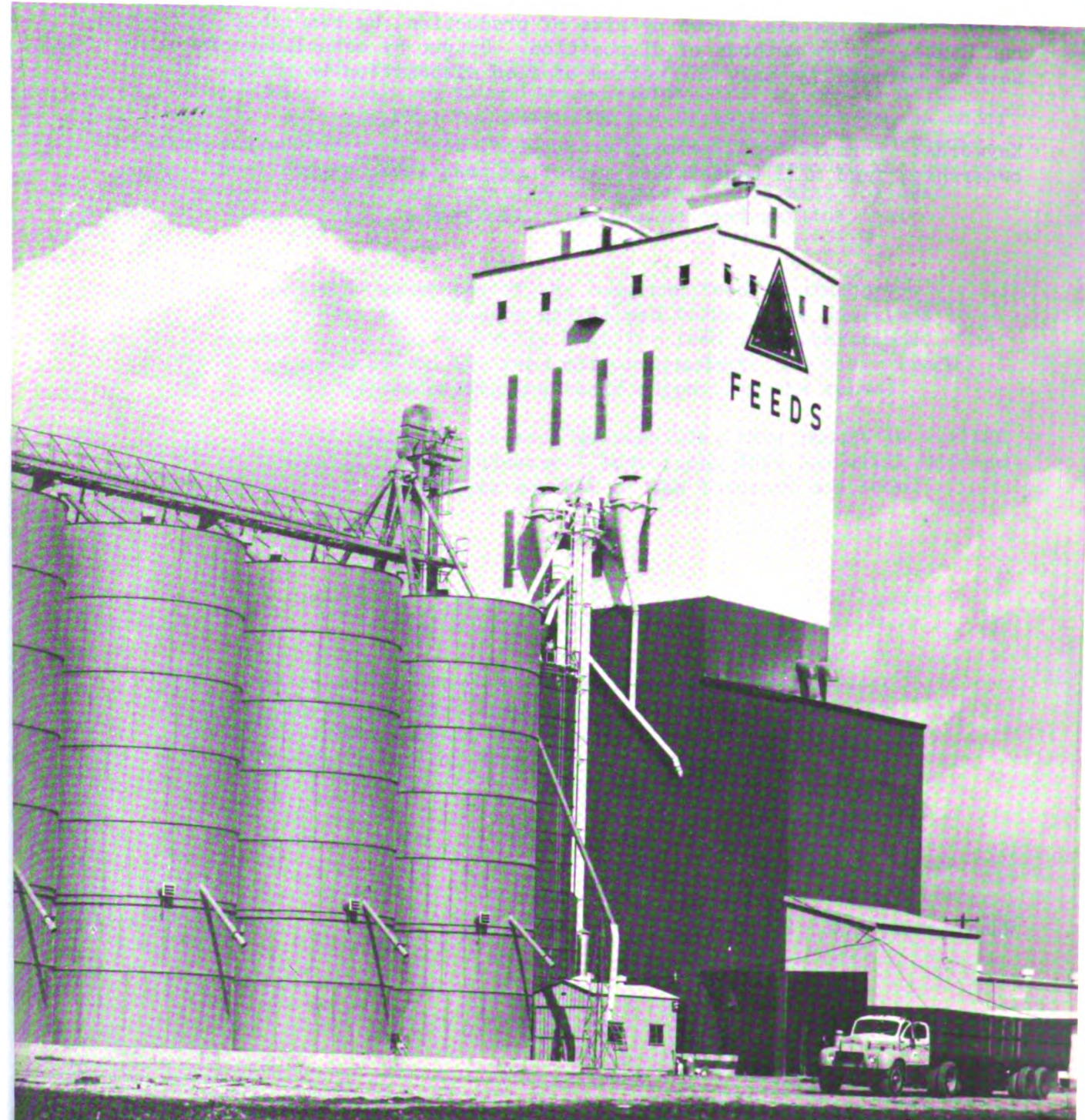
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ABSTRACT

This preliminary report of a survey of the formula feed industry summarizes the physical output, potential capacity, and number of U.S. establishments manufacturing prepared livestock and poultry feeds in 1969. Production is shown for primary and secondary feed processing. Primary feed is further classified as complete, supplement, and premix (a carrier for microingredients) feeds. Output is also shown by size of production, by ownership, by region and State, and by methods of disposition. Output by establishments using several methods or only one method of feed disposition is given.

Keywords: Formula feed, primary production, secondary production, mill ownership, feed mill capacities, marketing practices, bagged feed.

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PREFACE

This preliminary report presents data from a mail survey of all known U.S. milling establishments, whether they mill feed for sale, for use in their own feeding operations, or for custom grinding and mixing operations. The report, therefore, includes data from feed mills associated with such large enterprises as cattle feedlots, hog-feeding operations, dairy herds, and poultry and egg operations, as well as from commercial mills. The data were obtained for civil defense purposes, and are also suitable for descriptive and economic analysis of the industry. Although this is a one-time survey, some questions will be updated from time to time for civil defense needs.

The overall survey was made jointly by the Economic Research Service and the Agricultural Stabilization and Conservation Service (ASCS), which has departmental responsibility for emergency and disaster preparedness under provisions of the Defense Production Act of 1950, as amended. The Economic Research Service prepared this report. ASCS updated and expanded the mailing list, working through State and county ASCS offices. ASCS also followed through to get replies from individual firms who delayed mailing their responses.

The Market Research Committee of the American Feed Manufacturers Association reviewed the questionnaire and helped to word the questions to conform with operating records generally kept for feed mill operations. The authors express appreciation to the feed mill respondents and their trade associations for their understanding and their support of the survey.

To make the study available as soon as possible, this report is limited to an overall description of the industry. Additional data for civil defense purposes and for analysis of various aspects of the industry are being assembled.

Only broad comparisons between tables in this report should be made, because the data have not been expanded to overcome omissions in answers by respondents.

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SUMMARY

Formula feed production in 1969 totaled 96 million tons, of which primary formula feed production totaled 61 million tons, and secondary formula feed production, 28 million tons; 7 million tons were not specified.

A total of 7,267 establishments with 8,034 mills produced 1,000 tons or more in 1969. Included in this group are 1,221 mobile mills which produced about 2.8 million tons of manufactured feed. Mobile mill establishments producing less than 1,000 tons per year were not included.

Feed mill establishments reported a total production capacity of 145 million tons for 1969. Establishments producing less than 10,000 tons reported the highest amount of unused capacity, while output from establishments producing 25,000 tons or more exceeded their rated capacity, based on a year of forty-eight 40-hour weeks.

Corporations produced 65 percent of the total reported tonnage of formula feed, farmer cooperatives about 20 percent, and single owners and others 15 percent.

Primary feed production was classified by type of feed: poultry feeds accounted for 40 percent; dairy, beef, and sheep feed, 40 percent; hog feed, 15 percent; and other feed, 5 percent. Ninety percent of poultry feed was complete feed, as was 80 percent of dairy, beef, and sheep feed and 60 percent of hog feed. Hog feed accounted for about a third of all primary supplement feed production.

THE FORMULA FEED INDUSTRY IN 1969

A Preliminary Report

by

Earl F. Hodges, George C. Allen, Gary A. Davis 1/

INTRODUCTION

Today's formula feed industry provides many products and services and is interrelated with livestock and poultry production. The Census of Manufactures, under the standard industry classification (SIC) 2042, includes in its formula feed data only establishments whose largest source of gross income is from feed manufacturing. This has meant somewhat less than full coverage of all feed milling activity.

Some multiproduct firms that manufacture feed receive more gross income from some other nonfeed activity. Still other firms with milling facilities do not sell feed but process it for use in their own livestock and poultry operations. This survey was designed to include these additional categories while at the same time identifying establishments that reported feed manufacturing as their largest source of gross income.

This report provides information on the: (1) number of establishments milling feeds, (2) quantity of formula feeds manufactured, (3) size distribution of milling establishments, (4) type of ownership of manufacturing establishments in the industry, and (5) disposition of formula feeds.

For this report, the following definitions and descriptions are used:

1. A feed-milling establishment usually consists of one or more stationary mills operating at a single location together with any mobile mills based at that location. It may also consist of one or more mobile mills not associated with any stationary mill but based at one location. An establishment is not necessarily the same as a business firm, which may include a number of establishments. The feed-milling activities of establishments are classified as: (1) primary feed formulation and (2) secondary feed formulation.

1/ Agricultural Economists, Farm Production Economics Division, ERS.

2. Primary feed formulation is processing and mixing single feed ingredients, except that a premix (described below) is sometimes used at a rate of less than 100 pounds per ton of finished feed. Examples of specific feed ingredients are feed grains, mill byproducts, oilseed meals, and animal proteins.

3. Secondary feed formulation is processing and mixing one or more ingredients with formula feed supplements. Supplements are usually used at a rate of 300 pounds or more per ton of finished feed, depending on protein content of the supplement and percentage of protein desired in the finished feed.

4. Formula feeds contain two or more ingredients that are processed or mixed according to specifications. Total volume of formula feeds in this survey includes customer-owned grains that have been processed and mixed.

In this report, primary feeds are also grouped into complete feeds, supplements, and premixes.

5. Complete feeds contain all nutrients needed in the nonroughage portion of the diet by the kind of livestock and poultry for which the feed is designed. Some complete feeds may contain processed roughages.

6. Supplements are formula feeds used with other feed ingredients to improve the nutritive balance of the diet. They are intended to be fed separately in controlled amounts, or offered free-choice as a dietary supplement to other feeds, or mixed with other ingredients to formulate a complete feed. Including the tonnage of supplements used with other ingredients to manufacture complete feed with the tonnage of complete feed constitutes double counting, because it is first counted in primary formulation and then in secondary formulation.

7. Premixes are formulations of one or more microingredients--such as vitamins, trace minerals, or drugs--mixed with a carrier. The purpose of the premix is to distribute microingredients evenly throughout a formula feed. Premix is usually added at a rate of less than 100 pounds per ton of finished feed. It presents a very small percentage (less than 1 percent) of the total quantity of formula feeds. Premix tonnage may be counted twice in formula feed manufacture, first in the original manufacture and second if used in complete or supplement feeds by a feed manufacturer.

8. Feeding own animals includes formula feed fed to livestock owned by the owner of the feed mill. It also includes feed fed to a feed manufacturer's livestock or poultry under contract arrangements on farms of contracting growers.

9. Custom feeding is the business of feeding livestock belonging to others, usually in a large-scale feedlot. The owner of the livestock pays for the feed, plus a fee for caring for the animals.

10. Custom grinding and mixing is the business of grinding customer-owned feed ingredients and usually includes mixing supplements with them. This is mainly a service provided to farmers feeding their own animals. However, toll milling (milling performed for other feed manufacturers) was included in this category.

The mailing list used in the 1970 survey was developed from a register of mills kept by the Food and Drug Administration. This list was updated and expanded by county ASCS personnel, who deleted enterprises which have gone out of existence, and added new enterprises and livestock and poultry operations with feed mills. The total list contained 13,226 establishments.

FEED MANUFACTURING ESTABLISHMENTS

Of the 13,226 questionnaires sent to feed mill establishments, 12,069 usable questionnaires were returned (table 1). About 4,800 establishments produced less than 1,000 tons. They reported only their volume of milling by type of livestock or poultry feed.

The 7,267 establishments that milled 1,000 tons or more of formula feed reported their operations in detail. A third of these establishments reported feed manufacturing as their main source of gross income (table 6). The primary sources of income most frequently listed by the remaining establishments were farm supplies, grain merchandising, cattle feeding, hog feeding, and grain storage.

Of these larger establishments, 3,168 were owned by corporations and produced 65 percent of all formula-feed output. Corporations produced more than half the total output in all regions except the Lake States and the Northern Plains.

Farmer cooperatives owned 1,615 feed-milling establishments and produced 20 percent of all formula-feed output. Farmer cooperatives were common in the Northeast, Lake States, and Corn Belt.

The 2,151 other feed-milling establishments were owned by partnerships, single proprietors, and others. They produced 15 percent of the total output, and were more common than farmer cooperatives in the Southern Plains and Mountain Regions.

QUANTITY OF FORMULA FEED

Formula feed production reported for 1969 totaled about 96 million tons, including 61 million tons produced by all primary formulation and 28 million tons produced by secondary formulation (table 2). Of the remainder, about 4.4 million tons was produced by establishments that failed to separate

primary and secondary production, and about 2.5 million tons was produced by establishments with an output of less than 1,000 tons.

In 1969, establishments that manufactured 50,000 tons or more accounted for about half of the total formula feed produced (table 4). However, establishments of that size accounted for only about a third of the formula feed in the Lake States, Corn Belt, and Northern Plains Regions. In those three regions, the predominant size establishment had an output of less than 10,000 tons.

A total output of nearly 21 million tons of bagged formula feed was reported by 4,597 establishments (table 5). The percentage distribution of bagged production by establishment size group was not greatly different from that for all formula feed, with two distinct exceptions. In the Corn Belt, establishments producing 50,000 tons or more accounted for a larger percentage of the region's bagged feed production--about half, compared with a third of all formula feed. In the Mountain Region, the larger establishments reported only about a fifth of the region's bagged formula feed production, compared with half of all formula feed.

In 1969, establishments reporting formula feed production as their primary source of gross income produced about 50 million tons (table 6). This is about 54 percent of the production reported by all establishments producing 1,000 tons or more of formula feed, and about 75 percent of that reported by those that indicated formula feed as one of the three largest sources of gross income.

About a third of the primary feed production came from establishments producing 100,000 tons or more, and a fourth from establishments producing 50,000 to 99,999 tons (table 8).

Of 58 million tons milled in primary feed formulation by establishments reporting type and kind of feed, about 40 percent was for poultry, about 40 percent for dairy, beef, and sheep, and about 15 percent for hogs. Primary feed comprised at least two-thirds of all feed reported milled in each region except in the Lake States, Corn Belt, and Northern Plains Regions. In these regions, especially in the Corn Belt and Northern Plains, tonnage of formula feed was more evenly distributed between primary and secondary feed manufacturing.

MILLING CAPACITY

About 90 percent of the establishments reported milling capacity for a 40-hour week. Full capacity was computed on the basis of output for a year of 48 such weeks (table 11).

Direct comparisons of data on actual production and capacity are approximate because the data have not been adjusted for underreporting. In

general, smaller establishments had much more underutilized physical milling capacity than larger ones. For example, only a fourth of the rated capacity in the 1,000- to 9,999-ton size class was used, but over 150 percent was used in the 100,000-ton and over class.

Single owners used a smaller percentage of capacity than did corporations and cooperatives (table 12). Partnerships were in between. These proportions appear to depend on differences in size of operations.

METHOD OF DISPOSITION

Method of disposition refers to the purpose for which the feed was milled. In this study, information was obtained for five methods of disposition: wholesale, retail, feeding own animals, custom feeding, and custom grinding and mixing.

Information on disposition was obtained for 96 percent of the tonnage of feed reported (table 13). Nearly half moved through wholesale and retail channels; about a fifth was fed to animals owned by feed manufacturers; about a fifth was custom ground and mixed; and a tenth was custom fed.

Several regional differences in disposition were apparent. Commercial sales stood out as a larger percentage of total disposition in the Northeast, Corn Belt, and Pacific Regions. Largely because of contract production of broilers and eggs and operation of large cattle feedlots, feeding own animals was important in the Southeast, Delta, Southern Plains, and Mountain Regions.

Custom feeding was prominent in the Southern and Northern Plains and the Mountain States. Custom grinding and mixing are particularly important in the Corn Belt, Lake States, and Northern Plains, where purchased supplements are combined with home-produced grains.

Nearly 3,000 feed manufacturing establishments reported that they use only one method of distributing feed. These establishments accounted for about 42 percent of all manufactured feeds as reported by method of disposition (table 14). Combined, wholesale and retail channels accounted for slightly more than two-fifths of the tonnage, while feeding own animals claimed over one-fourth. Custom feeding and custom grinding and mixing made up slightly more than one-eighth and one-sixth, respectively.

Table 1.--Selected summary data for the formula feed industry, 48 States, 1969

Item	Feed manufacturing establishments reporting	Formula feed reported
	Number	Tons
Operating establishments (reporting).....	13,226	---
Establishments with sufficient data.....	12,069	96,449,257
Producing 1,000 tons or more.....	7,267	93,984,422
Stationary establishments.....	6,813	91,141,896
Mobile mill (only) establishments <u>1/</u>	454	2,842,526
Producing less than 1,000 tons.....	4,802	2,464,835
Production by type of feed:		
Dairy feed.....	2,569	546,049
Beef feed.....	2,824	670,503
Sheep feed.....	416	18,927
Hog feed.....	3,418	912,841
Turkey feed.....	92	20,232
Broiler feed.....	226	8,518
Layer feed.....	1,992	206,986
All other.....	1,431	80,779
Total <u>2/</u>	4,802	2,464,835
Establishments with output of 1,000 tons or more:		
1,000 - 9,999 tons.....	5,463	20,120,814
10,000 - 24,999 tons.....	985	14,464,318
25,000 - 49,999 tons.....	381	13,251,600
50,000 - 99,999 tons.....	276	19,251,637
100,000 tons and over.....	162	26,896,053
Total.....	7,267	93,984,422
Ownership and production:		
Corporations.....	3,168	58,342,380
Partnership.....	666	5,310,922
Single owner.....	1,464	7,863,329
Farmer cooperative.....	1,615	18,482,319
Other.....	21	183,250
Total.....	6,934	90,182,200
Channels of feed disposition:		
Wholesale.....	1,208	22,379,545
Retail.....	3,274	18,555,534
Feed to own animals.....	1,846	20,169,328
Custom feeding.....	1,348	11,220,370
Custom grinding and mixing.....	4,806	20,431,179
Total <u>2/</u>	NA	92,755,956

1/ 1,221 mobile mills were reported in the survey. Of this total, 344 were associated with stationary establishments and 877 with mobile mill only establishments.

2/ Number of establishments reporting exceeds total because a single establishment often produces more than one kind of feed, or uses more than one channel of feed disposition.

NA = Not available.

Table 2.—Number of feed manufacturing establishments and production of formula feeds, by region and State, 1969 1/

State and region	Establishments reporting	Production of formula feed reported				Total reported
		Primary production	Secondary production	Unspecified 2/	Total	
	Number	Tons	Tons	Tons	Tons	
Maine.....	17	487,668	15,000	1,187	503,855	
New Hampshire.....	6	165,162	---	---	165,162	
Vermont.....	16	792,900	1,000	2,760	796,660	
Massachusetts.....	16	200,443	20,581	13,060	234,084	
Rhode Island 3/.....						
Connecticut.....	5	257,264	---	---	257,264	
New York.....	394	2,275,582	359,487	194,858	2,829,927	
New Jersey.....	35	352,563	10,689	14,878	378,130	
Pennsylvania.....	439	1,712,016	692,654	188,337	2,593,007	
Delaware.....	32	672,761	12,350	10,596	695,607	
Maryland.....	94	1,004,974	158,648	155,409	1,319,031	
Northeast.....	1,054	7,921,333	1,270,309	581,085	9,772,727	
Michigan.....	365	409,755	642,210	307,423	1,359,388	
Wisconsin.....	678	1,208,731	2,128,970	907,224	4,244,925	
Minnesota.....	637	1,552,743	1,506,525	350,572	3,409,840	
Lake States.....	1,680	3,171,229	4,277,705	1,565,219	9,014,153	
Ohio.....	736	1,224,099	1,705,645	298,140	3,227,874	
Indiana.....	662	1,186,985	2,138,926	358,327	3,684,238	
Illinois.....	732	2,601,038	1,392,529	315,057	4,308,624	
Iowa.....	992	3,650,207	2,345,472	382,267	6,377,946	
Missouri.....	527	2,435,807	666,431	221,577	3,323,815	
Corn Belt.....	3,649	11,098,126	8,249,003	1,575,368	20,922,497	
North Dakota.....	193	224,307	122,685	69,594	416,586	
South Dakota.....	257	415,992	426,316	144,298	986,606	
Nebraska.....	538	1,693,204	1,322,042	423,581	3,438,827	
Kansas.....	606	1,933,892	1,888,972	344,090	4,166,954	
Northern Plains.....	1,594	4,267,395	3,760,015	981,563	9,008,973	
Virginia.....	228	808,756	222,969	129,081	1,160,806	
West Virginia.....	63	22,929	54,105	26,855	103,889	
North Carolina.....	398	2,503,781	478,153	199,413	3,181,347	
Kentucky.....	226	439,064	323,752	140,145	902,961	
Tennessee.....	194	1,855,205	446,203	170,362	2,471,770	
Appalachian.....	1,109	5,629,735	1,525,182	665,856	7,820,773	
South Carolina.....	130	360,051	134,006	77,437	571,494	
Georgia.....	298	3,327,642	450,472	109,778	3,887,892	
Florida.....	123	1,028,802	228,537	162,451	1,419,790	
Alabama.....	198	2,140,055	515,427	76,725	2,732,207	
Southeast.....	749	6,856,550	1,328,442	426,391	8,611,383	
Mississippi.....	177	1,336,415	929,424	197,361	2,463,200	
Arkansas.....	130	2,965,848	225,891	40,945	3,232,684	
Louisiana.....	88	649,433	84,465	13,484	747,382	
Delta States.....	395	4,951,696	1,239,780	251,790	6,443,266	
Oklahoma.....	223	1,063,531	505,673	84,235	1,653,439	
Texas.....	706	5,667,621	2,751,369	326,900	8,745,890	
Southern Plains.....	929	6,731,152	3,257,042	411,135	10,399,329	
Montana.....	88	274,145	149,213	26,903	450,261	
Idaho.....	136	539,228	300,603	112,719	952,550	
Wyoming.....	26	27,835	89,608	13,820	131,263	
Colorado.....	141	1,286,504	972,375	95,734	2,354,613	
New Mexico.....	50	633,284	113,265	37,537	754,086	
Arizona.....	36	885,098	349,762	3,653	1,238,513	
Utah.....	67	314,070	61,230	50,385	425,685	
Nevada.....	10	108,740	12,000	831	121,571	
Mountain.....	554	4,038,904	2,048,056	341,582	6,428,542	
Washington.....	82	782,401	78,094	51,155	911,650	
Oregon.....	84	581,117	76,016	16,908	674,041	
California.....	190	4,959,565	1,153,755	328,603	6,441,923	
Pacific.....	356	6,323,083	1,307,865	396,666	8,027,614	
47 States.....	12,069	60,289,203	28,263,399	7,196,655	96,449,257	

1/ Data apply only to establishments reporting on this question. 2/ Unspecified feed includes production from mills producing less than 1,000 tons and that from all mills 1,000 tons and over that did not identify their production as primary or secondary. 3/ State data omitted to avoid disclosure of individual establishment data.

TABLE 3.—NUMBER AND PRODUCTION OF FEED MANUFACTURING ESTABLISHMENTS PRODUCING 1,000 TONS OR MORE OF FORMULA FEED, BY FORM OF OWNERSHIP, REGION, AND STATE, 1969

REGION AND STATE	ESTABLISHMENTS REPORTING	FORM OF OWNERSHIP					TOTAL REPORTED
		CORPORATION	PARTNERSHIP	SINGLE OWNER	FARMER COOPERATIVE	OTHER	
	NUMBER	TONS					
MAINE-----	13	413,677	2,000		86,991		502,668
NEW HAMPSHIRE--	6	110,222			54,940		165,162
VERMONT-----	11	559,336			234,564		793,900
MASSACHUSETTS--	13	98,479		2,209	129,386		230,074
RHODE ISLAND & CONNECTICUT----	5	44,599			212,665		257,264
NEW YORK-----	240	1,271,050	81,759	131,665	1,291,791	3,888	2,730,153
NEW JERSEY-----	23	48,884		13,061	310,107		372,052
PENNSYLVANIA----	260	1,395,582	176,454	291,302	503,225	3,260	2,369,823
DELAWARE-----	19	656,184	3,500	4,000	26,102		689,786
MARYLAND-----	58	829,356	38,030	244,851	181,212		1,293,449
NORTHEAST-----	648	5,377,369	301,743	647,088	3,030,983	7,148	9,406,331
MICHIGAN-----	188	667,010	60,697	105,143	364,027		1,196,877
WISCONSIN-----	446	1,348,604	106,835	733,729	1,839,933		4,029,101
MINNESOTA-----	354	1,539,038	193,144	271,718	1,080,709	32,100	3,116,709
LAKE STATES-----	988	3,554,652	360,676	1,110,590	3,284,669	32,100	8,342,687
OHIO-----	413	1,309,723	128,024	334,178	1,249,447		3,021,412
INDIANA-----	420	1,818,230	239,692	664,678	774,656	1,400	3,498,456
ILLINOIS-----	419	2,773,035	205,115	413,213	531,488	1,600	3,874,451
IOWA-----	639	3,422,008	279,129	541,237	1,749,084		5,991,456
MISSOURI-----	261	1,468,184	89,723	283,719	1,136,304	4,200	2,982,130
CORN BELT-----	2,152	10,741,180	941,683	2,236,825	5,641,019	7,200	19,367,907
NORTH DAKOTA----	68	131,029	3,300	49,776	94,989	61,188	340,292
SOUTH DAKOTA----	127	450,124	55,910	138,015	255,522	2,233	899,804
NEBRASKA-----	299	2,132,398	128,939	316,496	629,810		3,207,643
KANSAS-----	357	2,579,706	233,663	240,765	828,319	1,100	3,923,553
NORTHERN PLAINS	851	5,293,257	421,812	783,052	1,808,660	64,521	8,371,282
VIRGINIA-----	105	762,514	18,968	35,980	272,801	1,550	1,091,813
WEST VIRGINIA---	18	41,203	16,300	18,760	7,729		83,992
NORTH CAROLINA--	209	2,365,083	157,105	156,634	381,358	6,398	3,066,608
KENTUCKY-----	119	504,774	47,489	200,707	73,557		841,527
TENNESSEE-----	101	1,611,450	357,109	75,245	272,976		2,316,780
APPALACHIAN----	552	5,290,024	596,971	485,326	1,008,451	7,948	7,388,720
SOUTH CAROLINA--	56	352,571	47,386	28,345	26,619		456,941
GEORGIA-----	164	2,925,907	96,958	198,055	553,453	11,200	3,787,573
FLORIDA-----	86	1,088,415	25,435	42,924	185,025		1,382,299
ALABAMA-----	100	1,578,916	53,963	243,467	253,986		2,130,332
SOUTHEAST-----	406	5,946,309	225,742	592,811	1,019,083	11,200	7,755,145
MISSISSIPPI----	94	1,678,863	155,701	211,838	371,389		2,417,791
ARKANSAS-----	85	2,869,535	51,105	82,915	190,240		3,202,835
LOUISIANA-----	42	543,547	4,000	41,260	92,114	5,777	686,698
DELTA STATES---	221	5,091,945	210,806	336,013	662,783	5,777	6,307,324
OKLAHOMA-----	128	1,134,995	55,430	157,532	209,728		1,557,685
TEXAS-----	386	6,618,490	524,308	676,408	390,261	32,273	8,241,740
SOUTHERN PLAINS	514	7,753,485	579,738	833,940	599,989	32,273	9,799,425
MONTANA-----	54	315,017	4,450	42,220	43,465	11,906	417,068
IDAHO-----	78	566,122	43,725	148,225	68,677		826,749
WYOMING-----	15	35,140	74,100	9,000	4,676		122,916
COLORADO-----	86	1,791,024	251,497	101,442	134,574	3,177	2,281,714
NEW MEXICO-----	39	585,093	52,200	91,447	10,909		739,649
ARIZONA-----	28	1,059,137	170,223				1,229,360
UTAH-----	39	173,880	19,800	47,870	149,255		340,805
NEVADA-----	7	60,131	22,000	5,000			87,131
MOUNTAIN-----	346	4,585,544	637,995	445,214	411,556	15,083	6,095,392
WASHINGTON----	49	455,077	35,718	33,430	358,092		882,317
OREGON-----	47	224,906	29,607	30,755	262,865		548,133
CALIFORNIA-----	159	4,027,632	968,431	328,285	594,189		5,918,537
PACIFIC-----	255	4,707,615	1,033,756	392,470	1,215,146		7,348,987
48 STATES-----	6,933	58,341,380	5,310,922	7,863,329	18,682,319	183,250	90,181,200

1/ DATA APPLY ONLY TO ESTABLISHMENTS REPORTING ON THIS QUESTION.
2/ STATE DATA OMITTED TO AVOID DISCLOSURE OF INDIVIDUAL ESTABLISHMENT DATA.

Table 4.--Number of feed manufacturing establishments producing 1,000 tons or more of formula feed and their production, by size and region, 1969 1/

Region	Establishment size by production in tons						Total reported
	1,000-9,999	10,000-24,999	25,000-49,999	50,000-99,999	100,000 and over		
	Number						
Northeast	500	88	35	28	18	669	
Lake States	837	143	24	19	10	1,033	
Corn Belt	1,845	269	67	42	24	2,247	
Northern Plains	706	112	48	21	9	896	
Appalachian	451	51	21	26	20	569	
Southeast	276	72	32	27	18	425	
Delta States	135	25	24	27	15	226	
Southern Plains	366	81	50	29	23	549	
Mountain	237	81	30	21	10	379	
Pacific	110	63	50	36	15	274	
48 States	5,463	985	381	276	162	7,267	
	Tons						
Northeast	1,932,850	1,244,177	1,217,991	2,052,967	3,159,758	9,587,743	
Lake States	3,168,490	1,954,643	803,681	1,249,604	1,507,014	8,683,432	
Corn Belt	6,849,286	3,742,769	2,315,945	2,928,292	4,330,910	20,167,202	
Northern Plains	2,457,571	1,648,333	1,692,120	1,449,538	1,409,353	8,656,915	
Appalachian	1,425,589	783,350	755,051	1,785,644	2,817,303	7,546,937	
Southeast	938,164	1,136,268	1,169,159	1,859,469	3,343,182	8,446,242	
Delta States	496,538	376,475	860,768	1,969,142	2,661,905	6,364,828	
Southern Plains	1,319,790	1,534,863	1,742,555	2,080,292	3,726,036	10,203,536	
Mountain	994,806	1,221,787	1,015,998	1,319,014	1,786,401	6,338,006	
Pacific	537,730	1,021,653	1,698,332	2,557,675	2,174,191	7,989,581	
48 States	20,120,814	14,464,318	13,251,600	19,251,637	26,896,053	93,984,422	

1/ Data apply only to establishments reporting on this question.

Table 5.--Production of bagged formula feed by establishments producing 1,000 tons or more, by size and region, 1969 1/

Region	Establishments reporting	Establishment size by production in tons						Total reported
		1,000-9,999	10,000-24,999	25,000-49,999	50,000-99,999	100,000 and over		
	Number	Tons						
Northeast	459	518,099	223,490	261,055	315,094	758,208	2,075,946	
Lake States	760	1,047,635	606,924	246,157	346,526	783,232	3,030,474	
Corn Belt	1,542	1,495,789	915,880	916,626	1,334,224	1,973,199	6,635,718	
Northern Plains	409	236,359	296,120	356,328	235,428	441,654	1,565,889	
Appalachian	397	581,661	198,419	205,545	268,885	631,310	1,885,820	
Southeast	253	313,434	242,869	199,055	122,168	440,538	1,318,064	
Delta States	129	159,759	43,944	245,465	134,421	252,135	835,724	
Southern Plains	322	339,447	292,579	430,999	272,231	763,754	2,099,010	
Mountain	176	188,796	216,928	108,124	47,056	86,152	647,056	
Pacific	150	124,524	146,447	94,908	165,260	165,943	697,082	
48 States	4,597	5,005,503	3,183,600	3,064,262	3,241,293	6,296,125	20,790,783	
Establishments reporting	---	3,476	643	233	142	103	4,597	

1/ Data apply only to establishments reporting on this question.

Table 6.--Production of formula feed by establishments producing 1,000 tons or more that reported feed manufacture as the primary gross income source, by size and region, 1969 1/

Region	Establishments reporting	Establishment size by production in tons						Total reported
		1,000-9,999	10,000-24,999	25,000-49,999	50,000-99,999	100,000 and over		
	Number	Tons						
Northeast-----	354	942,394	870,273	1,046,832	1,793,558	2,886,080	7,539,137	
Lake States-----	242	705,591	662,232	310,321	815,354	489,953	2,983,451	
Corn Belt-----	580	1,580,233	1,656,736	1,706,036	2,058,187	2,645,721	9,646,913	
Northern Plains-----	198	507,924	670,064	747,897	586,974	660,027	3,172,886	
Appalachian-----	242	583,827	440,066	596,085	1,501,869	1,917,950	5,039,797	
Southeast-----	220	459,836	719,967	809,902	1,371,200	2,682,712	6,043,617	
Delta States-----	119	218,200	209,998	645,912	1,211,183	1,353,463	3,638,756	
Southern Plains-----	234	527,325	754,870	1,054,785	839,183	1,692,765	4,868,928	
Mountain-----	135	382,733	608,404	392,802	455,750	243,556	2,083,245	
Pacific-----	166	305,542	676,214	1,057,997	1,709,686	1,730,891	5,480,330	
48 States-----	2,490	6,213,605	7,268,824	8,368,569	12,342,944	16,303,118	50,497,060	
Establishments reporting---	---	1,503	476	238	177	96	2,490	

1/ Data apply only to establishments reporting on this question.

Table 7.--Production of formula feed by establishments producing 1,000 tons or more that reported feed manufacture as one of the 3 largest income sources, by size and region, 1969 1/

Region	Establishments reporting	Establishment size by production in tons					Total reported
		1,000-9,999	10,000-24,999	25,000-49,999	50,000-99,999	100,000 and over	
		Tons					
		Number					
Northeast-----	488	1,364,391	1,076,520	1,129,367	1,793,558	3,139,758	8,503,594
Lake States-----	559	1,750,833	1,147,092	503,821	890,454	489,953	4,782,153
Corn Belt-----	1,052	3,075,260	2,335,103	1,907,877	2,504,653	3,516,206	13,339,099
Northern Plains-----	413	1,169,797	952,738	1,144,213	796,974	1,133,753	5,197,475
Appalachian-----	354	858,007	585,479	735,051	1,501,869	2,322,808	6,003,214
Southeast-----	294	647,541	825,193	1,008,721	1,424,502	3,099,782	7,005,739
Delta States-----	168	361,322	251,198	762,368	1,823,486	1,745,173	4,943,547
Southern Plains-----	357	823,601	955,535	1,179,485	1,453,205	2,848,481	7,260,307
Mountain-----	208	572,450	763,661	645,507	810,557	699,516	3,491,691
Pacific-----	207	420,806	803,044	1,365,455	1,875,970	1,730,891	6,196,166
48 States-----	4,100	11,044,008	9,695,563	10,381,865	14,875,228	20,726,321	66,722,985
Establishments reporting--		2,821	648	296	213	122	4,100

1/ Data apply only to establishments reporting on this question.

Table 8.--Production of primary formula feeds by establishments producing 1,000 tons or more, by size and region, 1969 ^{1/}

Region	Establishment size by production in tons						Total reported
	1,000-9,999	10,000-24,999	25,000-49,999	50,000-99,999	100,000 and over		
	-----Number-----						
Northeast-----	296	73	29	26	18	442	
Lake States-----	393	81	14	13	4	505	
Corn Belt-----	650	132	53	35	20	890	
Northern Plains--	264	65	31	11	7	378	
Appalachian-----	177	25	17	25	18	262	
Southeast-----	131	57	27	24	17	256	
Delta States-----	81	19	17	26	13	156	
Southern Plains--	192	59	37	21	17	326	
Mountain-----	130	55	22	14	7	228	
Pacific-----	82	57	38	29	12	218	
48 States-----	2,396	623	285	224	133	3,661	
	-----Tons-----						
Northeast-----	967,918	910,479	1,023,795	1,880,133	3,139,758	7,922,083	
Lake States-----	911,042	762,879	400,476	605,679	491,153	3,171,229	
Corn Belt-----	1,818,560	1,565,440	1,772,186	2,232,945	3,708,995	11,098,126	
Northern Plains--	768,438	846,485	973,764	824,554	854,154	4,267,395	
Appalachian-----	483,533	329,350	567,372	1,707,177	2,542,303	5,629,735	
Southeast-----	411,148	863,415	959,270	1,614,869	3,007,848	6,856,550	
Delta States-----	272,831	275,122	591,264	1,892,964	1,919,515	4,951,696	
Southern Plains--	608,127	926,624	1,251,901	1,458,560	2,485,940	6,731,152	
Mountain-----	519,020	809,610	711,896	877,327	1,121,051	4,038,904	
Pacific-----	386,073	877,455	1,298,034	2,030,630	1,730,891	6,323,083	
48 States-----	7,146,690	8,166,859	9,549,958	15,124,838	21,001,608	60,989,953	

^{1/} Data apply only to establishments reporting to this question.

Table 9.--Production of primary formula feeds, by type and kind of feed, establishments producing 1,000 tons or more, 1969 ^{1/}

Type of feed	Complete feed		Supplement		Premix		Total reported	
	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent
Starter and grower, layer-breeder.....	9,839,714	17.0	1,056,036	1.8	76,039	.1	10,971,789	18.9
Broiler.....	9,801,897	16.9	178,951	.3	42,826	.1	10,023,674	17.3
Turkey.....	2,130,208	3.7	222,086	.4	12,192	--	2,364,486	4.1
Dairy.....	9,236,662	16.0	1,299,003	2.3	65,336	.1	10,601,001	18.4
Beef and sheep.....	10,087,345	17.4	2,620,063	4.5	118,776	.2	12,826,184	22.1
Hog.....	4,617,964	8.0	3,392,595	5.9	149,858	.3	8,160,417	14.2
All other.....	2,594,724	4.5	249,754	.4	82,857	.1	2,927,335	5.0
Total reported.....	48,308,514	83.5	9,018,488	15.6	547,884	.9	57,874,886	100.0

^{1/} Data apply only to establishments reporting on this question.

TABLE 10.—PRIMARY FEED PRODUCTION BY ESTABLISHMENTS PRODUCING 1,000 TONS OR MORE OF FORMULA FEED, BY FORM OF OWNERSHIP, REGION, AND STATE, 1969 1/

REGION AND STATE	ESTABLISHMENTS REPORTING	FORM OF OWNERSHIP					TOTAL REPORTED
		CORPORATION	PARTNERSHIP	SINGLE OWNER	FARMER COOPERATIVE	OTHER	
	NUMBER	TONS					
MAINE-----	12	398,677	2,000		86,991		487,668
NEW HAMPSHIRE---	6	110,222			54,940		165,162
VERMONT-----	11	558,336			234,564		792,900
MASSACHUSETTS---	9	65,348		2,209	129,386		196,943
RHODE ISLAND-2/							
CONNECTICUT----	5	44,599			217,665		257,264
NEW YORK-----	163	1,003,900	63,334	40,491	1,141,413		2,249,138
NEW JERSEY-----	17	37,659		6,545	308,359		352,563
PENNSYLVANIA---	164	1,152,290	94,182	100,794	342,862		1,710,128
DELAWARE-----	13	643,209	3,500	4,000	22,002		672,711
MARYLAND-----	32	659,206	36,410	218,996	90,362		1,004,974
NORTHEAST-----	432	4,673,466	199,426	373,035	2,643,544		7,889,451
MICHIGAN-----	71	272,214	9,777	14,915	59,507		356,413
WISCONSIN-----	236	745,348	13,362	150,934	285,291		1,194,935
MINNESOTA-----	178	939,131	66,354	52,358	457,740		1,515,583
LAKE STATES-----	485	1,956,693	89,493	218,207	802,538		3,066,931
OHIO-----	127	640,324	38,584	53,376	483,751		1,216,035
INDIANA-----	155	898,559	76,033	44,790	140,980	50	1,162,412
ILLINOIS-----	131	2,017,061	35,570	97,685	249,466	1,600	2,401,382
IOWA-----	324	2,572,570	128,026	81,002	825,623		3,607,221
MISSOURI-----	120	1,182,428	23,414	78,513	1,004,314	800	2,289,469
CORN BELT-----	857	7,310,942	301,627	357,366	2,704,134	2,450	10,676,519
NORTH DAKOTA----	27	66,697	900	19,543	63,259	61,188	211,607
SOUTH DAKOTA----	46	263,966	3,250	29,636	113,667	1,538	412,057
NEBRASKA-----	114	1,405,954	31,140	42,778	172,709		1,652,581
KANSAS-----	178	1,302,453	68,919	59,695	417,902	1,100	1,850,069
NORTHERN PLAINS:	365	3,039,070	104,209	151,672	767,537	63,826	4,126,314
VIRGINIA-----	48	656,330	4,850	4,080	142,496		807,756
WEST VIRGINIA---	6	6,917	15,000	1,012			22,929
NORTH CAROLINA--	105	2,046,445	27,972	17,534	354,527	6,398	2,442,916
KENTUCKY-----	41	333,882	5,800	75,184	12,898		427,764
TENNESSEE-----	53	1,520,766	36,047	27,510	263,742		1,848,065
APPALACHIAN----	253	4,604,380	89,669	125,320	773,663	6,398	5,599,430
SOUTH CAROLINA--	24	208,435	32,806	12,890	21,969		276,100
GEORGIA-----	98	2,531,752	71,228	137,221	553,453		3,293,654
FLORIDA-----	60	793,127	13,734	66,019	148,922		1,023,802
ALABAMA-----	61	1,342,151	25,415	198,586	225,240		1,791,392
SOUTHEAST-----	243	4,875,465	143,183	416,716	949,584		6,384,948
MISSISSIPPI----	58	772,087	77,054	147,767	339,507		1,336,415
ARKANSAS-----	63	2,663,109	46,960	54,895	199,280		2,964,244
LOUISIANA-----	33	480,161	2,500	30,291	85,714	5,777	604,433
DELTA STATES---	154	3,915,357	126,514	232,943	624,501	5,777	4,905,092
OKLAHOMA-----	65	825,546	12,380	57,505	142,707		1,038,138
TEXAS-----	242	4,353,048	349,804	360,239	370,904	31,125	5,465,120
SOUTHERN PLAINS:	307	5,178,594	362,184	417,744	513,611	31,125	6,503,258
MONTANA-----	36	221,290		15,200	27,605		264,095
IDAHO-----	49	398,816	20,000	41,240	47,154		507,210
WYOMING-----	6	24,635	1,200	2,000			27,835
COLORADO-----	42	964,223	209,652	8,680	98,124		1,280,679
NEW MEXICO-----	28	526,873	52,200	9,000	4,220		592,293
ARIZONA-----	22	709,375	170,223				879,598
UTAH-----	23	142,355	9,000	15,050	133,495		299,900
NEVADA-----	5	51,131	22,000	2,000			75,131
MOUNTAIN-----	211	3,038,698	484,275	93,170	310,598		3,926,741
WASHINGTON-----	42	395,932	28,933	29,680	319,856		774,401
OREGON-----	38	186,031	29,607	29,515	226,964		472,117
CALIFORNIA-----	124	3,188,356	644,763	174,374	560,189		4,567,682
PACIFIC-----	204	3,770,319	703,303	233,549	1,107,009		5,814,200
47 STATES-----	3,511	42,362,964	2,603,883	2,619,742	11,196,719	109,576	58,892,884

1/ DATA APPLY ONLY TO ESTABLISHMENTS REPORTING ON THIS QUESTION. 2/ STATE DATA OMITTED TO AVOID DISCLOSURE OF INDIVIDUAL ESTABLISHMENT DATA.

Table 11.--Estimated milling capacity of establishments producing 1,000 tons or more of formula feed, by size and region, 1969 1/

Region	Establishment size by production in tons						Total reported
	1,000-9,999	10,000-24,999	25,000-49,999	50,000-99,999	100,000 and over		
	-----Number-----						
Northeast.....	454	80	34	27	16	611	
Lake States.....	735	129	15	11	3	893	
Corn Belt.....	1,631	243	58	34	19	1,985	
Northern Plains.....	606	101	38	16	7	768	
Appalachian.....	389	43	17	23	16	488	
Southeast.....	258	65	29	25	14	391	
Delta States.....	121	23	22	23	12	201	
Southern Plains.....	328	80	42	25	19	494	
Mountain.....	209	70	27	19	9	334	
Pacific.....	100	53	45	32	13	243	
48 States.....	4,831	887	327	255	128	6,408	
	-----Tons-----						
Northeast.....	37,628,496	1,516,320	1,342,080	1,545,120	2,329,920	44,361,936	
Lake States.....	6,813,312	2,796,048	466,800	675,600	432,000	11,183,760	
Corn Belt.....	17,397,216	4,672,176	2,401,680	2,035,920	2,553,936	29,060,928	
Northern Plains.....	6,179,952	2,548,272	1,950,240	1,196,400	1,000,800	12,875,664	
Appalachian.....	3,267,360	877,968	694,704	1,309,680	2,022,000	8,171,712	
Southeast.....	2,411,856	1,704,096	1,292,256	1,260,960	1,693,920	8,363,088	
Delta States.....	1,368,720	501,696	841,440	1,497,600	1,017,360	5,226,816	
Southern Plains.....	3,538,368	1,964,256	1,805,760	1,550,688	2,253,120	11,112,192	
Mountain.....	2,061,840	1,358,304	1,232,496	988,520	1,491,552	7,132,512	
Pacific.....	1,005,024	1,190,736	1,739,280	2,662,800	1,339,200	7,937,040	
48 States.....	81,672,144	19,129,872	13,766,736	14,723,088	16,133,808	145,425,648	

1/ Estimates based on full capacity output for 48 weeks of 40 hours each. Data apply only to establishments reporting on this question.

TABLE 12.—ESTIMATED MILLING CAPACITY ^{1/} OF ESTABLISHMENTS PRODUCING 1,000 TONS OR MORE OF FORMULA FEED, BY FORM OF OWNERSHIP, REGION, AND STATE, 1969 ^{2/}

REGION AND STATE	ESTABLISHMENTS REPORTING	FORM OF OWNERSHIP					TOTAL REPORTED
		CORPORATION	PARTNERSHIP	SINGLE OWNER	FARMER COOPERATIVE	OTHER	
	NUMBER	TONS					
MAINE-----	13	413,760	7,400		103,680		519,840
NEW HAMPSHIRE--	6	127,680			24,000		151,680
VERMONT-----	9	540,240			132,000		672,240
MASSACHUSETTS--	10	102,240		2,160	110,400		214,800
RHODE ISLAND ^{3/}							
CONNECTICUT----	5	58,080			148,000		226,080
NEW YORK-----	217	1,426,752	122,160	176,400	1,216,320		2,941,632
NEW JERSEY-----	21	74,640		26,064	291,120		391,824
PENNSYLVANIA----	240	1,420,800	260,400	34,522,608	634,512	3,840	36,002,160
DELAWARE-----	18	977,280	17,000	6,000	64,800		1,065,080
MARYLAND-----	56	782,640	79,680	123,840	174,480		1,160,640
NORTHEAST-----	595	5,924,112	476,640	34,917,072	2,919,312	3,840	44,240,976
MICHIGAN-----	157	838,416	134,640	210,144	382,320		1,565,520
WISCONSIN-----	395	2,371,040	129,360	949,696	1,865,376		5,255,472
MINNESOTA-----	307	2,146,944	269,656	347,280	1,279,272		4,042,752
LAKE STATES----	859	5,306,400	532,656	1,497,120	3,527,568		10,863,744
OHIO-----	359	1,991,056	210,720	404,404	1,977,648		4,683,828
INDIANA-----	376	2,514,672	371,280	739,680	1,042,320	6,000	4,673,952
ILLINOIS-----	370	3,537,600	444,032	706,176	764,000	7,680	5,555,568
INDIA-----	576	4,296,304	520,128	1,065,072	3,343,280		9,224,784
MISSOURI-----	227	1,878,480	159,120	450,288	1,117,200	5,760	3,610,544
CORN BELT-----	1,908	14,198,112	1,709,280	3,545,712	8,256,528	19,440	27,729,072
NORTH DAKOTA---	54	176,160	15,600	66,720	149,956	65,280	473,616
SOUTH DAKOTA---	108	539,760	56,640	220,608	628,320	1,920	1,447,248
NEBRASKA-----	255	3,204,720	253,680	1,119,072	750,000		5,327,472
KANSAS-----	316	3,053,568	360,000	448,960	1,374,672	2,160	5,259,360
NORTHERN PLAINS:	733	6,974,208	685,920	1,875,360	2,902,944	69,360	12,507,696
VIRGINIA-----	88	797,904	41,088	57,056	352,800	3,600	1,247,448
WEST VIRGINIA---	14	68,640	19,200	24,864	24,480		137,184
NORTH CAROLINA--	189	2,411,904	133,440	308,496	348,768	14,400	2,217,008
KENTUCKY-----	100	656,400	102,096	365,904	111,800		1,243,200
TENNESSEE-----	87	1,494,720	210,000	114,232	311,280		2,135,232
APPALACHIAN----	478	5,429,568	505,824	965,552	1,156,128	14,000	7,995,072
SOUTH CAROLINA--	51	436,320	62,880	68,400	33,600		601,200
GEORGIA-----	156	2,760,528	138,576	349,824	388,800	12,000	3,649,728
FLORIDA-----	79	1,255,488	33,600	17,672	250,040		1,645,440
ALABAMA-----	91	1,661,040	101,520	280,900	159,640		2,202,000
SOUTHEAST-----	377	6,113,376	336,576	805,296	831,120	12,000	8,092,368
MISSISSIPPI----	75	1,138,320	161,184	349,092	305,952		2,084,448
ARKANSAS-----	85	1,958,208	92,160	142,080	150,000		2,342,448
LOUISIANA-----	38	536,640	3,840	105,360	124,800	9,600	780,240
DELTA STATES---	198	3,633,168	257,184	636,432	670,752	9,600	5,207,136
OKLAHOMA-----	118	1,155,888	94,080	345,200	429,840		2,065,008
TEXAS-----	345	6,375,936	757,200	934,368	447,600	34,560	9,549,664
SOUTHERN PLAINS:	463	7,531,824	851,280	1,319,568	877,440	34,560	10,614,672
MONTANA-----	47	384,912	4,320	80,448	57,120	12,000	538,800
IDAHO-----	10	866,064	51,600	116,080	103,440		1,157,184
WYOMING-----	73	61,440	17,760	15,072	9,600		103,872
COLORADO-----	73	1,699,488	208,368	99,120	115,200	26,880	2,149,056
NEW MEXICO-----	32	829,584	96,000	129,120	30,720		1,085,424
ARIZONA-----	28	972,912	137,280				1,110,192
UTAH-----	35	248,160	27,840	82,664	138,000		496,664
NEVADA-----	7	113,280	25,920	24,960			164,160
MOUNTAIN-----	305	5,175,840	569,088	567,264	454,080	38,880	6,805,152
WASHINGTON----	42	373,920	58,080	64,000	294,288		792,288
OREGON-----	38	243,600	19,200	97,920	177,120		537,840
CALIFORNIA-----	144	3,760,176	844,320	388,416	650,880		5,643,792
PACIFIC-----	224	4,377,696	921,600	552,336	1,122,288		6,973,920
47 STATES-----	6,140	64,664,304	6,846,048	46,601,712	22,718,064	205,680	141,035,808

^{1/} ESTIMATES BASED ON FULL-CAPACITY OUTPUT FOR 48 WEEKS OF 40 HOURS EACH. ^{2/} DATA APPLY ONLY TO ESTABLISHMENTS REPORTING ON THIS QUESTION. ^{3/} STATE DATA OMITTED TO AVOID DISCLOSURE OF INDIVIDUAL ESTABLISHMENT DATA.

TABLE 13.—PRODUCTION AND METHODS OF DISPOSITION OF FORMULA FEED MANUFACTURED BY ESTABLISHMENTS PRODUCING 1,000 TONS OR MORE, BY REGION AND STATE, 1969 ^{1/}

REGION AND STATE	METHOD OF DISTRIBUTING FEED						TOTAL REPORTED
	WHOLE SALE	RETAIL	FEEDING OWN ANIMALS	CUSTOM FEEDING	CUSTOM GRINDING AND MIXING		
TONS							
MAINE-----	3,800	173,458	319,410	5,500	500	502,668	
NEW HAMPSHIRE--	64,804	87,896		4,830	7,632	165,162	
VERMONT-----	389,845	394,295			10,760	794,900	
MASSACHUSETTS--	61,522	146,523	19,655	1,624	4,250	233,574	
RHODE ISLAND 2/							
CONNECTICUT----	68,600	182,914	4,000	1,750		257,264	
NEW YORK-----	1,210,619	869,128	46,970	89,480	490,340	2,706,537	
NEW JERSEY-----	147,732	167,301	3,052	2,905	41,062	367,052	
PENNSYLVANIA----	846,046	535,003	189,640	107,112	781,342	2,459,143	
DELAWARE-----	158,283	11,040	502,763	1,500	17,200	690,786	
MARYLAND-----	136,023	86,341	782,502	12,800	206,233	1,223,899	
NORTHEAST-----	3,087,274	2,653,899	1,867,992	227,501	1,559,319	9,395,985	
MICHIGAN-----	159,407	170,499	91,076	107,537	724,773	1,253,292	
WISCONSIN-----	508,632	316,259	134,611	215,468	2,901,498	4,076,468	
MINNESOTA-----	833,497	337,698	228,766	129,763	1,705,261	3,234,985	
LAKE STATES-----	1,501,536	824,456	454,453	452,768	5,331,532	8,564,745	
OHIO-----	688,924	310,644	149,591	121,158	1,717,355	3,007,672	
INDIANA-----	532,296	534,005	261,757	255,698	1,912,639	3,496,395	
ILLINOIS-----	1,333,091	1,151,366	165,381	72,257	1,386,754	4,108,847	
IOWA-----	2,089,687	1,298,183	167,387	348,919	2,255,618	6,159,794	
MISSOURI-----	1,602,156	587,777	230,321	81,629	655,205	3,157,098	
CORN BELT-----	6,246,154	3,881,973	994,437	879,661	7,927,571	19,929,796	
NORTH DAKOTA----	128,702	49,709	15,200	14,512	155,609	363,732	
SOUTH DAKOTA----	215,843	138,053	31,026	81,562	454,455	920,939	
NEBRASKA-----	944,563	648,389	624,898	315,081	691,984	3,224,915	
KANSAS-----	586,817	476,470	807,979	1,393,687	744,191	4,009,144	
NORTHERN PLAINS:	1,875,925	1,312,621	1,479,103	1,804,842	2,046,239	8,518,730	
VIRGINIA-----	209,428	343,699	202,201	123,075	205,770	1,084,173	
WEST VIRGINIA--	5,147	13,451	26,726	15,200	22,360	82,884	
NORTH CAROLINA--	816,473	327,214	1,362,958	196,371	350,759	3,053,775	
KENTUCKY-----	339,178	86,700	37,601	17,068	366,185	846,732	
TENNESSEE-----	1,021,572	386,247	609,651	20,840	369,760	2,408,070	
APPALACHIAN----	2,391,798	1,157,311	2,239,137	372,554	1,314,834	7,475,634	
SOUTH CAROLINA--	78,319	187,947	161,441	12,185	62,370	502,262	
GEORGIA-----	1,029,869	609,977	1,981,324	68,479	116,065	3,805,714	
FLORIDA-----	288,799	478,358	468,717	43,252	26,853	1,305,979	
ALABAMA-----	661,765	234,280	1,242,603	270,431	266,778	2,675,857	
SOUTHEAST-----	2,058,752	1,510,562	3,854,085	394,347	472,066	8,289,812	
MISSISSIPPI----	502,064	92,297	1,023,395	590,624	211,405	2,419,785	
ARKANSAS-----	421,009	365,150	2,258,218	107,440	61,322	3,213,139	
LOUISIANA-----	396,053	95,757	208,208	6,187	27,693	733,898	
DELTA STATES----	1,319,126	553,204	3,489,821	704,251	300,420	6,366,822	
OKLAHOMA-----	599,271	289,465	203,505	312,848	186,989	1,592,078	
TEXAS-----	1,517,040	1,596,870	1,966,675	2,972,180	462,763	8,515,528	
SOUTHERN PLAINS:	2,116,311	1,886,335	2,170,180	3,285,028	649,752	10,107,606	
MONTANA-----	70,132	123,559	55,432	102,059	64,676	415,858	
IDAHO-----	49,081	178,418	461,470	99,304	112,734	901,007	
WYOMING-----	823	13,545	17,450	71,248	16,377	119,443	
COLORADO-----	192,716	362,871	948,695	518,095	289,052	2,311,429	
NEW MEXICO-----	40,126	165,836	334,376	170,476	19,985	730,799	
ARIZONA-----	114,173	155,164	173,185	775,586	16,752	1,234,860	
UTAH-----	121,316	160,263	58,248	28,283	35,465	403,575	
NEVADA-----	3,182	14,449	48,500	50,318	4,291	120,740	
MOUNTAIN-----	591,549	1,174,105	2,097,356	1,815,369	559,332	6,237,711	
WASHINGTON----	268,819	442,247	111,909	36,619	39,923	899,517	
OREGON-----	99,631	333,418	84,811	37,687	101,586	657,133	
CALIFORNIA-----	822,670	2,824,403	1,326,044	1,209,743	128,605	6,311,465	
PACIFIC-----	1,191,120	3,600,068	1,522,764	1,284,049	270,114	7,868,115	
47 STATES-----	22,379,545	18,554,534	20,169,328	11,220,370	20,431,179	92,754,956	

^{1/} DATA APPLY ONLY TO ESTABLISHMENTS REPORTING ON THIS QUESTION. ^{2/} STATE DATA OMITTED TO AVOID DISCLOSURE OF INDIVIDUAL ESTABLISHMENT DATA.

TABLE 14.—PRODUCTION AND METHOD OF DISPOSITION OF FORMULA FEED MANUFACTURED BY ESTABLISHMENTS PRODUCING 1,000 TONS OR MORE THAT USED ONLY ONE METHOD OF FEED DISPOSITION, BY REGION AND STATE, 1969 ^{1/}

REGION AND STATE	ESTABLISHMENTS REPORTING	METHOD OF DISTRIBUTING FFFD					TOTAL REPORTED
		WHOLESALE	RETAIL	FEEDING ON ANIMALS	CUSTOM FFFDING	CUSTOM GRINDING AND MIXING	
	NUMBER	TONS					
MAINE-----	7		125,878		145,000		270,878
NEW HAMPSHIRE--	3	54,940	15,600				70,540
VERMONT-----	4	86,564	41,700				128,264
MASSACHUSETTS--	6	42,581	54,207	4,200			100,988
RHODE ISLAND ^{2/}							
CONNECTICUT----	3	68,000	164,186				232,186
NEW YORK-----	99	802,973	349,783	46,000	12,200	173,198	1,384,154
NEW JERSEY-----	9	142,282	98,207	1,616		3,148	245,253
PENNSYLVANIA---	67	247,941	31,478	36,260	9,300	170,811	495,790
DELAWARE-----	12	88,505		263,409		13,100	365,014
MARYLAND-----	26	62,396	2,500	668,691		51,454	785,041
NORTHEAST-----	236	1,594,182	883,489	1,165,176	21,500	411,711	4,076,058
MICHIGAN-----	55	54,329	8,530	17,483	48,000	154,601	282,943
WISCONSIN-----	135	190,460	52,275	2,010	43,280	674,770	962,795
MINNESOTA-----	147	346,493	124,178	130,973	3,000	423,111	1,027,755
LAKE STATES----	337	591,282	184,983	150,466	94,280	1,252,482	2,273,493
OHIO-----	205	458,499	70,428	11,168	9,670	775,147	1,324,912
INDIANA-----	160	429,934	99,170	19,971	32,986	674,887	1,256,948
ILLINOIS-----	224	840,139	242,011	93,627	8,200	773,879	1,957,856
IOWA-----	323	1,371,032	656,448	91,984	129,888	1,116,189	3,365,541
MISSOURI-----	104	1,002,570	86,222	36,765	31,057	365,872	1,522,486
CORN BELT-----	1,016	4,102,174	1,154,279	253,515	211,801	3,705,974	9,427,743
NORTH DAKOTA---	35			6,200		87,447	93,647
SOUTH DAKOTA---	80	1,500	39,586	15,798		269,263	326,147
NEBRASKA-----	160	786,063	159,548	424,137	92,099	364,145	1,825,992
KANSAS-----	142	270,656	120,785	638,686	910,264	211,986	2,152,377
NORTHERN PLAINS:	417	1,058,219	319,919	1,084,821	1,002,363	932,841	4,398,163
VIRGINIA-----	36	145,189	143,428	14,700	4,200	48,484	356,001
WEST VIRGINIA--	6			6,848	15,000	6,400	28,248
NORTH CAROLINA--	60	308,332	6,916	573,785	99,200	64,119	1,002,352
KENTUCKY-----	51	4,000	4,000	17,996		156,611	182,607
TENNESSEE-----	34	622,309	3,500	363,172		46,350	1,035,331
APPALACHIAN----	187	1,079,830	157,844	926,501	118,400	321,964	2,604,539
SOUTH CAROLINA--	16	7,322	7,464	66,800		15,742	97,328
GEOORGIA-----	66	628,254	122,276	835,825	29,500	37,836	1,653,691
FLORIDA-----	47	122,572	208,417	323,547		1,500	656,036
ALABAMA-----	36	373,955	32,448	408,627	57,200	4,400	876,630
SOUTHEAST-----	165	1,132,103	370,605	1,634,799	86,700	59,478	3,283,685
MISSISSIPPI----	40	284,543	20,718	820,296		13,670	1,139,227
ARKANSAS-----	40	107,086	109,643	910,192	1,500	23,160	1,151,581
LOUISIANA-----	18	295,569	37,400	177,778		7,000	517,747
DELTA STATES---	98	687,198	167,761	1,908,266	1,500	43,830	2,808,555
OKLAHOMA-----	53	244,948	42,036	164,838	124,150	62,169	638,141
TEXAS-----	148	283,786	220,877	1,057,488	1,847,250	187,792	3,597,193
SOUTHERN PLAINS:	201	528,734	262,913	1,227,326	1,971,400	249,961	4,235,334
MONTANA-----	20	3,350	1,500	38,932	24,250	15,418	83,450
IDAHO-----	39	3,571	20,626	429,769	63,350	22,189	539,505
WYOMING-----	5			14,000		8,400	22,400
COLORADO-----	44	45,506	59,157	631,929	454,977	64,512	1,256,081
NEW MEXICO-----	17	3,000	13,840	254,573	51,750		323,163
ARIZONA-----	13	10,320	46,000	17,723	506,276		580,319
UTAH-----	12	16,400	14,120	29,178	1,560	3,800	65,058
NEVADA-----	2				2,000	3,000	5,000
MOUNTAIN-----	152	82,147	155,243	1,416,104	1,104,163	117,319	2,874,976
WASHINGTON-----	12	150,873	44,000	42,117	13,000	2,750	252,740
OREGON-----	11		94,278	38,193	7,300	3,280	143,051
CALIFORNIA-----	79	495,708	1,252,368	655,003	566,146	85,700	3,054,925
PACIFIC-----	102	646,581	1,390,646	735,313	586,446	91,730	3,450,716
47 STATES-----	2,911	11,502,450	5,047,682	10,497,287	5,198,553	7,187,290	39,433,262

^{1/} DATA APPLY ONLY TO ESTABLISHMENTS REPORTING ON THIS QUESTION. ^{2/} STATE DATA OMITTED TO AVOID DISCLOSURE OF INDIVIDUAL ESTABLISHMENT DATA.

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