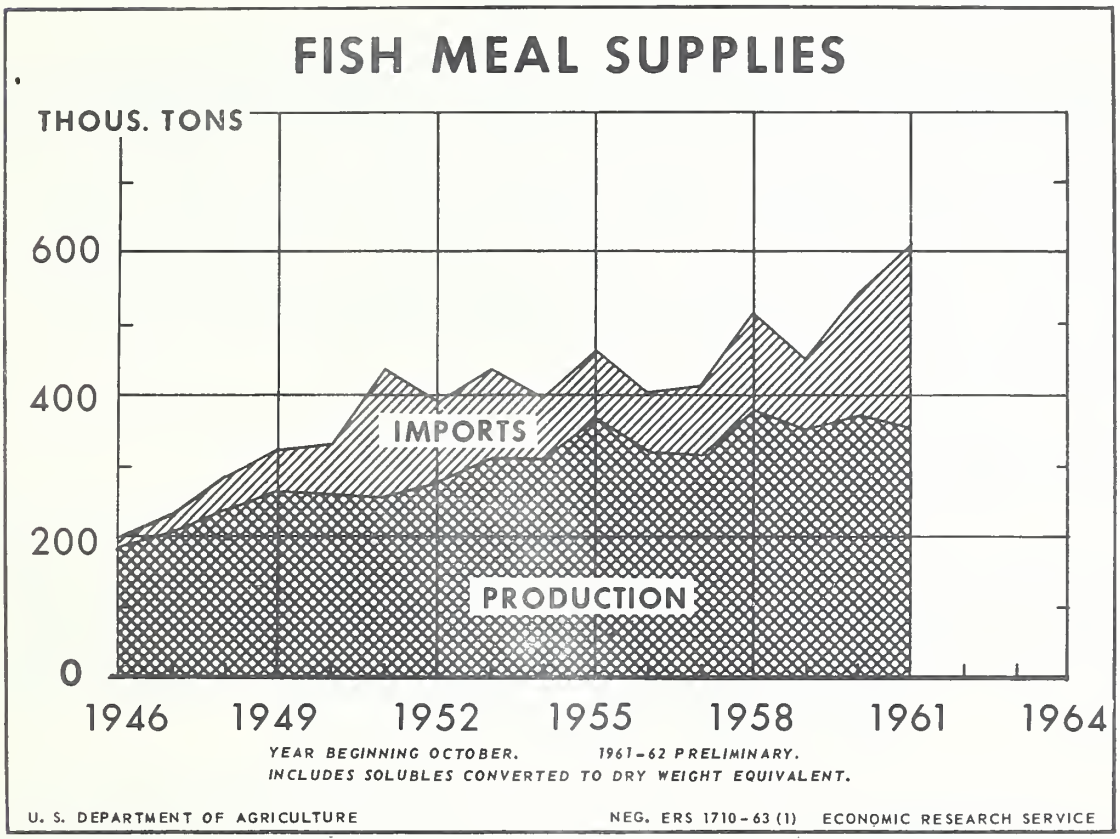
FISH MEAL SUPPLY AND PRICE TRENDS



Fish meal supplies have trended upward since the end of World War II. In the 1961-62 feeding year, supplies reached a record high of 615,000 tons, over 3 times the level in 1946-47 and about 50 percent more than 5 years ago. During 1946-55, annual production of fish meal increased from nearly 200,000 tons to around 350,000. Output has remained at about that level in the past 7 years.

Imports of fish meal in recent years have accounted for most of the annual increase in supplies. In 1961-62, a new record quantity of nearly 260,000 tons was imported. This was 42 percent of the total supply compared with only 20 percent 5 years ago. About 80 percent of this total came from Peru.

Reprinted from the Feed Situation, FdS-197, February 1963, by the Economic and Statistical Analysis Division, Economic Research Service.

FISH MEAL SUPPLY AND PRICE TRENDS

by
Jack S. Ross*

Domestic demand for fish meal has expanded rapidly in recent years. In the 1961-62 feeding year, the total tonnage fed reached a record high of 615,000 tons, 50 percent more than 5 years ago. Even at this level, fish meal makes up only about 1.5 percent of the total tonnage of commercially prepared livestock and poultry feeds and about 4 percent of total high-protein feeds. However, its importance as an ingredient of poultry and hog rations is much greater than indicated by its relatively small volume. Fish meal is a primary source of certain amino acids (mainly lysine and methionine) and B-complex vitamins. These are not found in sufficient quantities in feed grains and many of the other byproducts.

Trends in Supply Since the 1930's

The supply of fish meal is composed of domestic production and imports. Because quantities of stocks held by processors are not available, the amount of fish meal disappearance in a selected period of time cannot be accurately determined. Stocks of fish meal on hand at the beginning of the fishing season are considered to be relatively stable, and the quantity utilized probably does not differ greatly from the total of domestic production and imports.

Supplies of fish meal in the late 1930's averaged 243,000 tons annually but declined to an average of a little over 200,000 tons during World War II (table 28). Following World War II, supplies increased sharply to over 400,000 tons in the early 1950's. Further expansion during the 1950's brought the total to over 500,000 tons by 1958-59.

During the late 1930's and throughout the 1940's there was no definite trend in domestic production of fish meal with total output ranging from about 175,000 to 250,000 tons. However, since 1952-53 U. S. production of fish meal has generally trended upward, exceeding 350,000 tons each year since 1958-59.

Imports of fish meal during the late 1930's averaged around 50,000 tons annually, declining to less than 10,000 tons per year during World War II. In 1947-50, average annual imports regained the prewar level of 50,000 tons. In 1951-52, imports of fish meal increased sharply to 180,000 tons, then dropped sharply and remained well below this record level throughout the 1950's. Since 1959-60, imports have more than doubled, reaching a new record high of nearly 260,000 tons in 1961-62.

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*Agricultural Economist, Economic and Statistical Analysis Division, Economic Research Service, USDA.

Seasonality in Fish Meal Supply

Like most products of agricultural or marine origin, production of fish meal has a pronounced seasonal pattern. Catches of fish for processing are heaviest during the summer and early fall when weather and the biological aspects of fishing are favorable.

Combining domestic production and imports, supplies of fish meal are seasonally large during June, July and August. The low seasonal level occurs during January, February and March.

Seasonal variation in fish meal consumption during the year probably is somewhat less than the variation in production and imports shown in the chart below. Processors and buyers of fish meal probably accumulate stocks during the peak production months. This would insure adequate reserves throughout the period of low production and reduce considerably the seasonal variation in disappearance. The less pronounced seasonal price swing, relative to the rather sharp seasonal production and import curves, lends support to this conclusion.

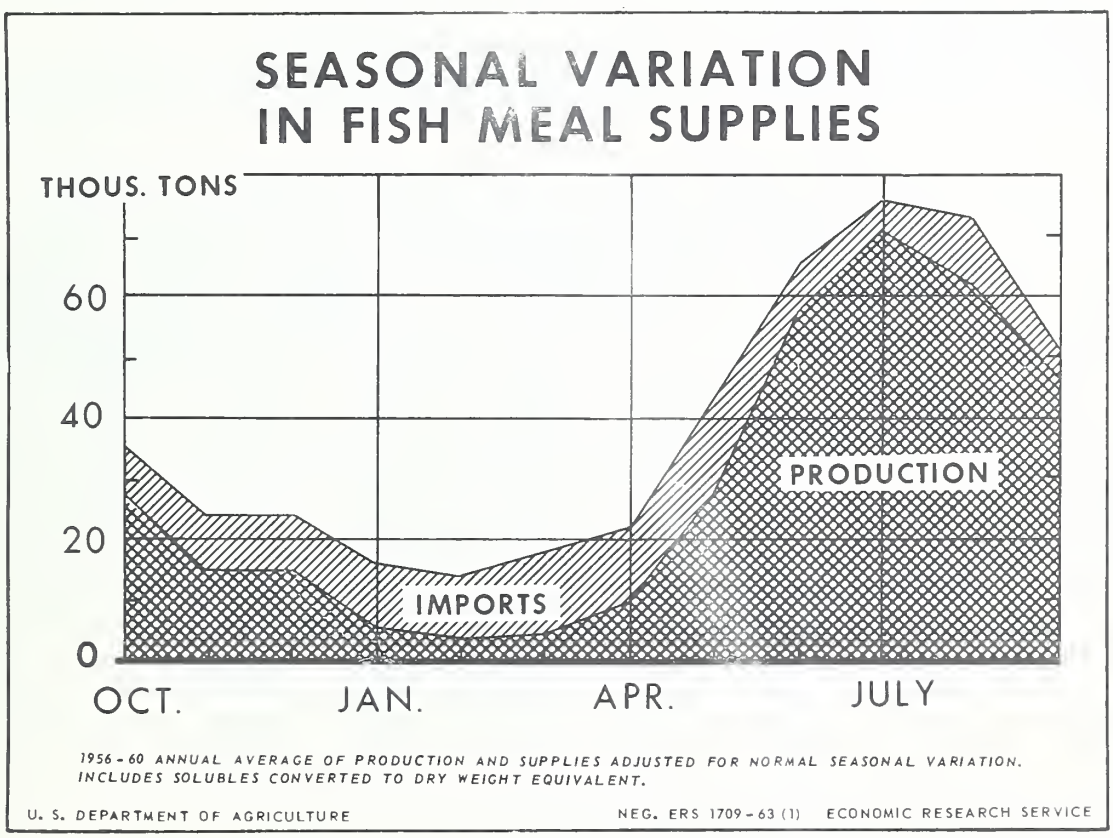


Table 20.- Fish meal: Production, imports and supplies, by coastal areas, United States, average 1957-61, annual 1956-62 1/

Coastal area	Average 1957-61	1956	1957	1958	1959	1960	1961	1962 2/
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons
Atlantic								
Production	209.0	235.5	225.0	192.9	237.8	186.3	203.0	198
Imports 3/	26.0	33.5	21.0	16.3	36.8	19.7	36.3	52
Total supply	235.0	269.0	246.0	209.2	274.6	206.0	239.3	250
Gulf								
Production	83.4	67.6	45.1	56.4	96.3	100.8	118.4	136
Imports	45.3	16.7	31.4	43.2	49.3	31.7	70.7	85
Total supply	128.7	84.3	76.5	99.6	145.6	132.5	189.1	221
Pacific								
Production	54.0	56.7	53.5	63.9	55.1	52.1	45.5	37
Imports	55.0	38.6	33.5	40.9	44.6	58.1	97.7	105
Total supply	109.0	95.3	87.0	104.8	99.7	110.2	143.2	142
Total U. S.								
Production	346.4	359.8	323.6	313.2	389.2	339.2	366.9	371
Imports	126.2	88.8	85.9	100.4	130.7	109.5	204.7	242
Supply	472.6	448.6	409.5	413.6	519.9	448.7	571.6	613

1/ Calendar years. Includes solubles converted to dry weight equivalent.
2/ Preliminary, partly estimated.
3/ Includes quantities unloaded at ports located on or near the Great Lakes.

Production data from Fish and Wildlife Service, Department of Interior; Imports from the Bureau of Census.

Table 21.- Fish meal supplies: Indexes of monthly seasonal variation, average 1956-60 monthly adjustments with 1961 and 1962 comparisons 1/

Year beginning October	Indexes of seasonal variation 2/		Seasonal adjusted average 1956-60 3/		Production and supply by months 4/			
					1961-62		1962-63	
	Production	Supply	Production	Supply	Production	Supply	Production	Supply
	Percent	Percent	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons
October	96	93	27.8	36.0	20.5	29.9	44.1	57.0
November	52	62	15.1	24.0	12.7	39.7	13.1	23.5
December	53	62	15.4	24.0	15.3	38.7	3.2	22.4
January	20	42	5.8	16.3	4.6	30.1		
February	13	37	3.8	14.3	3.9	23.2		
March	15	46	4.3	17.8	4.5	23.1		
April	34	57	9.9	22.1	10.9	37.5		
May	95	113	27.6	43.7	52.7	77.9		
June	201	170	58.3	65.8	73.0	92.9		
July	245	197	71.0	76.3	67.0	89.7		
August	214	188	62.0	72.8	50.2	78.1		
September	162	133	47.0	51.5	40.6	54.3		
Total	1,200	1,200	348.0	464.6	355.9	615.1	---	---
Average	100	100	29.0	38.7	29.7	51.3		

1/ Includes solubles converted to dry weight equivalent.
2/ Computed on basis of monthly production and supply (production plus imports) data for calendar years 1950-61.
3/ Computed by multiplying the monthly seasonal indexes by the average monthly production and supply during 5 years 1956-60.
4/ Preliminary.

Fish meal production reaches its highest seasonal level in July. When adjusted to reflect normal seasonal variation, the 1956-60 average production rose to 71,000 tons in July, then declined to less than 6,000 tons in January, February and March (table 21). While the seasonal variation in imports is much less regular than for production, there appears to be a tendency for imports to be slightly higher during late winter and early spring than during other periods of the year. The wide seasonal swing in fish meal supplies is caused by the marked seasonal variation in production. The seasonal swing is reduced a little by imports which tend to flatten the seasonal pattern for total supplies. In 1961-62, the seasonal variation in production of fish meal did not differ greatly from the normal seasonal variation. But the much larger volume of imports in 1961-62 than the 1950-61 average resulted in less than the usual seasonal swing in total supplies.

Supplies of Fish Meal in Coastal Areas

Although most of the fish meal supplies originate on the Atlantic Coast, supplies from that area in proportion to the U. S. total have declined in recent years. In 1962 (calendar year), the Atlantic coast provided about 40 percent of the total U. S. supply compared with the 1957-61 average of about 50 percent (table 20).

As a result of both increased domestic production and imports, Gulf coast supplies have trended sharply upward since 1956. In 1962, Gulf coast supplies reached a record level of about 220,000 tons, nearly 70 percent above the 1957-61 average.

Supplies on the Pacific coast have generally trended upward since 1957. Pacific coast supplies in 1962 totaled about 142,000 tons, 33,000 more than the 1957-61 average.

Production of Fish Meal by Areas

Since 1956, production of fish meal generally has trended upward on the Gulf coast, while production on the Atlantic coast has shown no definite trend. Production of meal on the Gulf coast in 1962 reached a record high of 136,000 tons, up 18,000 from 1961 and 53,000 tons more than the 1957-61 average. Production of meal on the Pacific coast has declined since 1958. In 1962, the Pacific coast production of meal was about 37,000 tons compared with 45,500 in 1961 and the 1957-61 average of 54,000 tons. Fish meal production on the Atlantic coast declined about 17 percent from 1956 to 1960-62, while production for the U. S. was increasing. Production in the area averaged 67 perc nt of the total U. S. annual output during 1952-57 but declined to an average of 55 percent in the last 3 years.

Table 22.- Fish meal: Production by kinds and areas, 1952-62 1/

Coastal area and kind	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962 2/
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons
Atlantic and Gulf coasts											
Menhaden	144.0	174.8	183.1	190.6	210.6	172.4	158.1	223.9	218.4	247.6	244
Groundfish	18.5	16.4	7.2	6.1	4.7	6.8	---	---	---	---	---
Maine herring	6.7	3.0	4.5	3.2	3.5	5.1	3.4	3.5	2.9	---	---
Blue crab	9.6	8.4	10.1	8.1	9.5	8.9	8.5	9.2	8.5	10.5	10
Other	7.8	4.1	14.1	15.7	22.4	26.4	28.0	27.2	18.1	19.1	29
Total	186.6	206.7	219.1	223.7	250.7	219.6	198.0	263.8	247.9	277.2	283
Pacific Coast											
Tuna and mackeral	22.0	20.0	21.5	23.4	26.3	25.7	25.3	25.4	26.3	21.2	21
Alaska herring	3.1	2.2	2.4	4.5	7.8	7.9	6.9	8.4	6.2	5.3	---
Sardine (pilchard)	.4	.1	6.5	7.0	2.8	1.5	10.8	2.9	3.3	2.5	1
Other	9.3	9.8	7.5	5.7	7.8	8.6	7.2	6.0	6.0	5.0	5
Total	34.8	32.1	37.9	40.6	44.7	43.1	50.2	42.7	41.8	34.0	27
Total United States	221.4	238.8	256.9	264.3	295.4	262.5	248.2	306.5	289.7	311.2	310

1/ Calendar years. Includes fish scrap, but excludes solubles.
2/ Preliminary.

Compiled from reports of the Fish and Wildlife Service, Department of Interior

Table 23.- Fish meal: Production from menhaden fish, by coastal areas, 1952-62 1/

Area	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962 2/
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons
North Atlantic 3/	51.9	92.9	88.7	85.2	100.4	86.1	54.1	69.2	83.9	86.3	81
South Atlantic 4/	44.8	38.9	53.4	56.0	53.4	49.7	58.4	77.3	48.2	56.7	55
Gulf 5/	47.3	43.0	41.0	49.4	56.8	36.6	45.6	77.4	86.3	104.6	108
Total	144.0	174.8	183.1	190.6	210.6	172.4	158.1	223.9	218.4	247.6	244

1/ Calendar years. Includes fish scrap, but excludes solubles.
2/ Preliminary.
3/ Includes States, Massachusetts, Rhode Island, New York, New Jersey, Delaware, Maryland and Maine.
4/ Includes States, Virginia, North Carolina and the East Coast of Florida.
5/ Includes States, Mississippi, Louisiana, Texas and the West Coast of Florida.

Compiled from reports of the Fish and Wildlife Service, Department of Interior.

Fish Meal Production from Common Species

Menhaden, which provide about 65-80 percent of the total U. S. production of fish meal, are found exclusively along the Atlantic and Gulf coasts. During 1952-58, Menhaden fish meal processed in plants along the Atlantic coast made up about three-fourths of the total output on the Atlantic and Gulf coasts (table 22). However, because of the increased production of fish meal on the Gulf coast, the quantity of meal processed from Menhaden caught off the Atlantic coast during the last few years has declined to about 60 percent of the total from both coasts. Other sources of meal from the Atlantic and Gulf coasts include small quantities derived from crab, Maine herring, shrimp, and miscellaneous fish species.

Common species of fish (including fish trimmings) processed into meal on the Pacific coast are tuna, mackerel, Alaska herring, and sardines. Meal from tuna and mackerel usually average about 60 percent of the total production on the Pacific coast.

Imports of Fish Meal by Coastal Areas

In recent years, the Atlantic coast has produced more fish meal than the Gulf and Pacific coasts combined, and its imports have been substantially less than in those areas. During 1956-62 (calendar years), total annual imports into the Atlantic coast ports tended to be higher in those years of higher production (table 20). Atlantic coast imports of fish meal during 1957-61 averaged about 11 percent of the total supply for the area and 21 percent of total U. S. imports.

Baltimore and New York are the major ports of entry for fish meal on the Atlantic coast. In 1962, Baltimore and New York ports together handled approximately 13,000 tons, down 2,000 from 1961 but about double the 1957-61 average. During 1956-59, the Georgia Customs District (port of Savannah) reported no imports. But in 1960, the District reported 150 tons and in 1961 a little more than 6,000 tons. Georgia imported 15,700 tons of meal in the first 9 months of 1962.

Since 1956, imports of fish meal have increased on the Gulf coast. Imports in 1962 were about 85,000 tons compared with a little over 70,000 in 1961. During 1957-61, an average of 35 percent of total Gulf coast supplies were imported.

In 1962, the port of Galveston handled about 45,000 tons of meal, 5,000 more than in 1961 and nearly 20,000 more than the 1957-61 average. About 98 percent of all fish meal and solubles imported into the Gulf coast area during 1957-61 were unloaded at the ports of Galveston (56 percent), Mobile (24 percent) and New Orleans (18 percent).

Table 24.- Fish meal: Imports into the United States by countries of origin 1954-62 1/

Country	1954	1955	1956	1957	1958	1959	1960	1961	1962 2/
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons
Peru	13.4	7.2	6.8	15.3	30.0	38.6	49.8	135.9	175
Canada	40.4	40.9	56.8	44.0	28.5	39.5	31.0	38.6	40
Republic of South Africa	3.9	3.4	3.5	4.0	7.4	9.8	6.3	13.3	12
Chile	---	3.9	1.3	4.0	6.7	4.7	17.7	11.7	10
Angola	19.2	10.2	4.6	9.2	17.3	18.6	.5	1.5	---
Norway	27.1	14.1	11.3	3.7	1.2	1.2	---	---	---
Other	15.8	10.5	4.5	5.7	9.3	18.3	4.2	3.7	5
Total	119.8	90.2	88.8	85.9	100.4	130.7	109.5	204.7	242

1/ Calendar years. Includes solubles converted to dry weight equivalent.
2/ Preliminary. Distribution by countries partly estimated.

Compiled from data of the Bureau of Census.

Table 25.- Fish meal: Imports by major ports of entry, United States, average 1957-61, annual 1956-62 1/

Ports of entry	Average 1957-61	1956	1957	1958	1959	1960	1961	1962 2/
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons
Galveston	25.5	10.2	18.4	22.6	21.5	24.5	40.3	45
San Francisco	23.1	7.2	6.7	17.5	15.2	30.0	46.0	55
Seattle	24.3	28.8	25.8	17.0	26.4	21.0	31.4	25
Mobile	10.9	4.9	8.0	9.9	10.5	.7	25.7	30
New Orleans	8.2	1.6	5.0	10.7	16.5	5.3	3.4	5
Los Angeles	5.4	.5	.3	2.3	1.6	6.0	17.1	25
Baltimore	4.7	2.5	.9	1.1	12.8	.2	8.7	7
New York	3.3	1.5	1.0	1.2	2.2	4.2	7.8	6
Other	20.8	31.6	19.8	18.1	24.0	17.6	24.3	44
Total	126.2	88.8	85.9	100.4	130.7	109.5	204.7	242

1/ Calendar years. Includes solubles converted to dry weight equivalent.
2/ Preliminary. Distribution by ports partly estimated.

Compiled from data of the Bureau of Census.

In recent years, a larger proportion of the Pacific coast supply has been imported than on either the Atlantic or Gulf coasts. Since 1960, Pacific coast imports have exceeded production. In 1962, imports of meal and solubles accounted for about three-fourths of the total supply of 142,000 tons compared with about one-half of the 1957-61 average.

About 96 percent of all fish meal and solubles imported into the Pacific coast area during 1957-61 were unloaded at the ports of Seattle (44 percent), San Francisco (42 percent), and Los Angeles (10 percent). A substantial proportion of meal shipped into the Washington Customs District (Seattle) was imported from Vancouver Island, Canada. During 1957-61, San Francisco and Seattle imports averaged about 23,500 tons (table 25). In 1962, the port of San Francisco handled about 55,000 tons of fish meal, more than any other U. S. port and nearly 10,000 tons more than in 1961.

Countries Exporting Fish Meal to the United States

U. S. imports of fish meal from northern Europe have declined in recent years, while imports from Peru and Chile have increased. In the mid-1950's, Angola, Norway, and Canada provided most of the meal and solubles imported (table 24). During this same period, however, imports from Angola and Norway declined, while imports from Canada showed no consistent trend. During 1954-61, imports from Canada ranged from a low of 28,500 tons in 1958 to a high of 56,800 in 1956. Imports of fish meal from Peru have increased sharply since 1955. Imports from Peru in 1962 (calendar year) totaled about 175,000 tons compared with 136,000 in 1961 and only about 7,000 annually in 1955 and 1956. In 1962, Peru provided about 70 percent of our total imports and unloaded meal at more U. S. ports than any other country. Other sources of fish meal in 1962 were Canada, Republic of South Africa, and Chile.

In the early 1950's, Angola and Norway supplied a moderate proportion of U. S. fish meal, but most of their shipments now go to nearby European countries. Denmark, which furnished most of the fish solubles imported by the United States during 1950-55, has been replaced by Iceland.

Price Trends Since the Late 1930's

During 1934-45, average prices of fish meal at Buffalo (f.o.b. seaboard, bagged), trended upward from about $43.00 per ton in 1934 to nearly $85.00 in 1945. With the removal of price ceilings at the close of World War II, fish meal prices at Buffalo (bulk) advanced sharply to $121.60 per ton in 1946-47. The record high was reached in 1948-49, when the price averaged $166.80 per ton. Fish meal prices declined rather sharply from this high level in 1949-50 and 1950-51, but during the past 10 years, there has been no definite trend in prices. Influenced by increased domestic production and imports in 1960-61, fish meal prices at Buffalo declined to $101.00 per ton, the lowest since World War II. Demand was strong in 1961-62, despite continued large supplies, and prices rose to near the 1956-60 average of $123.00 per ton.

Price Comparisons of Fish Meal Soybean Meal, and Meat Meal

Fish meal commands a substantial price premium over other high-protein feeds. This is due largely to fish meal's overall feeding value, which is enhanced by its high content of protein (60 to more than 70 percent), essential amino acids, vitamins, trace elements, and other unidentified growth factors.

Since the end of World War II, fish meal prices at Buffalo have averaged about twice those of soybean meal at Decatur and about 40 percent above meat meal prices at Chicago. Fish meal prices have varied considerably during the past 10 years in relation to those of soybean meal and meat meal (table 26). During 1951-55, fish meal prices averaged 194 percent of soybean meal prices, then rose to an average of 226 percent in 1956-60. In 1959-60 and 1960-61, fish meal prices dropped to 191 and 167 percent, respectively, of soybean meal prices. Prices of fish meal advanced to 194 percent of soybean meal prices in 1961-62. In the first 4 months of 1962-63, fish meal prices averaged 176 percent of soybean meal prices, well below the 1956-60 average of 226 percent for that period.

During 1956-60, prices of fish meal declined generally, in relation to those of meat meal prices. This mainly resulted from the occurrence of lower fish meal prices during that period. Fish meal prices dropped from 156 percent of meat meal prices in 1958-59 to less than 120 percent during 1959-60 and 1960-61. In 1961-62, fish meal prices advanced to 143 percent of meal meal prices, the same as the 1956-60 average. During the first 4 months of 1962-63, fish meal prices averaged 129 percent of meat meal compared with an average of 149 percent a year earlier.

Seasonal Variation in Prices of Fish Meal and Soybean Meal

Seasonal changes in supply and demand during the year result in seasonal variation in prices of fish meal and soybean meal. The seasonal variation in fish meal prices apparently is due largely to the marked variation in production. Seasonal price variations were computed from wholesale prices (bulk) for 60-percent protein fish meal at Buffalo (f.o.b. seaboard) and for 44-percent protein soybean meal at Decatur during 1950-61 (table 27).

Prices of fish meal are at a seasonal high level of 103 percent of the annual average during December-March, when production is at the lowest level. Low prices of fish meal occur during the high production months of July and August.

In 1961-62, fish meal prices rose a little more than the seasonal normal, advancing from $119.00 per ton in the fall to $134.00 in the following spring. The seasonal peak occurred during May, about 3 months later than the normal seasonal high, which usually is reached in January-March. They declined more than seasonally to $119.00 in June, July, August, and September 1962. During the first 4 months of 1962-63, fish meal prices increased seasonally, reaching $126.60 per ton in January, an increase of 6 percent since the seasonal low last summer, or slightly more than the normal seasonal rise.

Table 26.- Prices of fish meal compared with prices of soybean meal and meat meal, 1946-62 1/

Year beginning October	Fishmeal, 60 percent, Buffalo 2/	Soybean meal, 44 percent, solvent, Decatur	Meat meal, 50 percent, Chicago	Fish meal as a percentage of:	
				Soybean meal	Meat meal
	Dol. per ton	Dol. per ton	Dol. per ton	Pct.	Pct.
Average 1946-50	138.90	69.60	107.80	200	129
Average 1951-55	132.75	68.60	87.60	194	152
Average 1956-60	123.30	54.60	86.00	226	143
1956-57	129.75	47.45	69.10	273	188
1957-58	133.75	53.40	91.75	250	146
1958-59	145.60	55.80	93.35	261	156
1959-60	106.35	55.55	91.80	191	116
1960-61	100.95	60.60	84.20	167	120
1961-62	123.20	63.60	86.30	194	143
1962-63					
October	122.20	69.00	97.80	177	125
November	124.00	70.60	96.40	176	129
December	124.00	70.50	91.90	176	135
January	126.60	71.90	100.10	176	126

1/ Wholesale, bulk. 2/ F.o.b. seaboard.

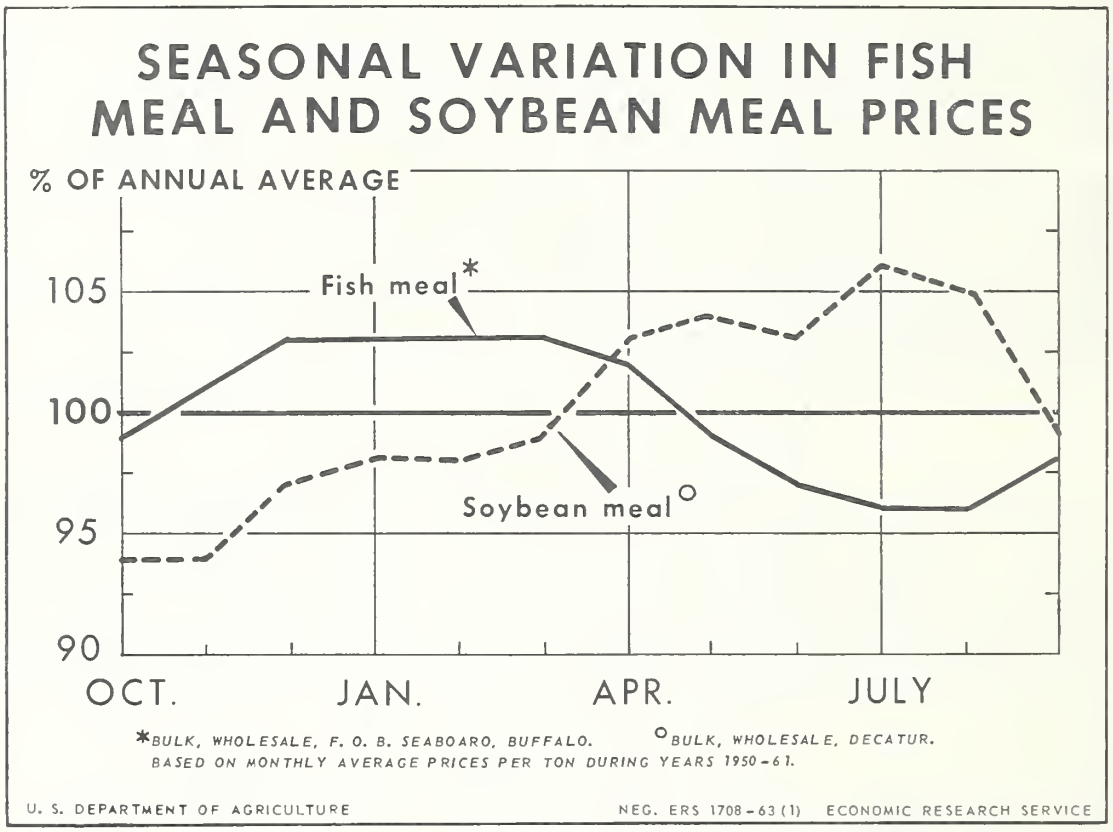
Table 27.--Fish meal: Seasonal variation in prices and monthly prices, 1961-62 and 1962-63

Year beginning October	Fish meal 1/				Soybean meal 2/			
	Index of seasonal variation 3/	Seasonal adjusted average 1950-61 4/	Average monthly price 5/		Index of seasonal variation 3/	Seasonal adjusted average 1950-61 4/	Average monthly price 5/	
			1961-62	1962-63			1961-62	1962-63
	Percent	Dol. per ton	Dol. per ton	Dol. per ton	Percent	Dol. per ton	Dol. per ton	Dol. per ton
October	99	126.10	119.00	122.20	94	58.30	55.80	69.00
November	101	128.70	119.00	124.00	94	58.30	59.30	70.60
December	103	131.20	121.20	124.00	97	60.10	6/60.20	70.50
January	103	131.20	124.40	126.60	98	60.75	59.90	71.90
February	103	131.20	126.00		98	60.75	57.60	
March	103	131.20	126.70		99	61.40	60.60	
April	102	129.90	131.50		103	63.90	62.50	
May	99	126.10	134.00		104	64.50	64.10	
June	97	123.60	119.00		103	63.90	66.70	
July	96	122.30	119.00		106	65.70	68.50	
August	96	122.30	119.00		105	65.10	71.10	
September	98	124.90	119.00		99	61.40	76.70	
Average	100	127.40	123.20		100	62.00	63.60	

1/ Buffalo, f.o.b. seaboard, 60 percent protein. 2/ Decatur, 44 percent protein, solvent. 3/ Based on monthly average prices during calendar years 1950-61. 4/ Average prices during 1950-61 adjusted by monthly indexes of seasonal variation. 5/ Simple average based on Tuesday quotations of each week. 6/ Correction of the price published in the Feed Situation, Nov. 1962, p. 28.

The seasonal pattern in soybean meal prices is nearly opposite to that of fish meal. Soybean meal prices generally swing upward seasonally from November until the peak is reached in July. During August and September, prices decline seasonally before leveling off in October and November. Seasonal variation in both production and demand appear to be important in influencing prices of soybean meal.

During October-July 1961-62, soybean meal prices rose about $13.00 per ton or 10 percent more than the usual seasonal increase for that period. They continued to rise during August and September, although they normally decline during those months. After declining 10 percent from September to October, soybean meal prices made about their usual seasonal rise from October to January this year.



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