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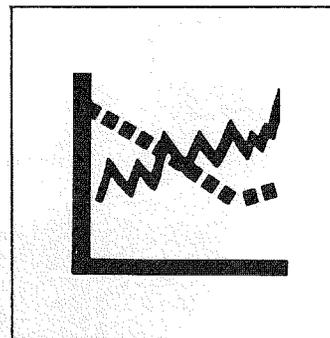
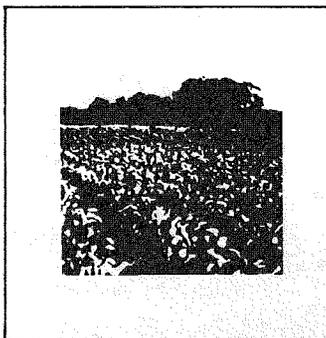
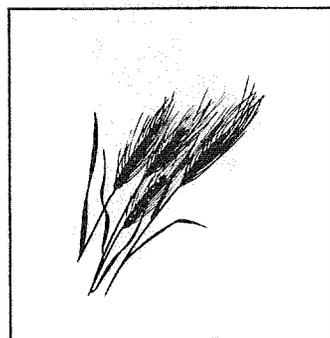
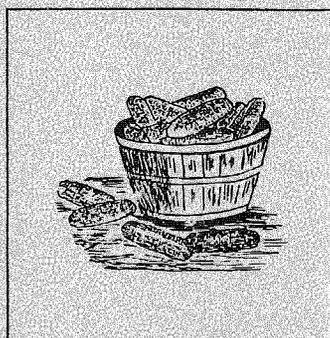
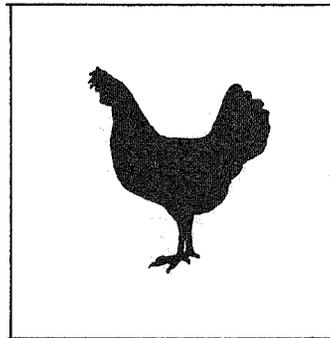
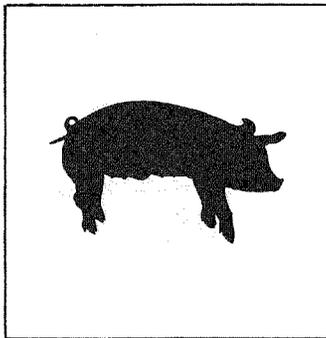
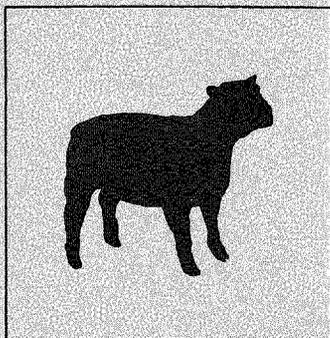
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# 1978

## AGRICULTURAL OUTLOOK



DEPARTMENT OF AGRICULTURAL AND APPLIED ECONOMICS  
**AGRICULTURAL EXTENSION SERVICE**  
**UNIVERSITY OF MINNESOTA**

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AGRICULTURAL OUTLOOK 1977-78

by  
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## FARM INCOME AND POLICY

The bountiful harvest of 1977 is the good news for many Minnesota farmers. However, this same bountiful harvest throughout the world brought with it the bad news of sharply lower prices.

The two good worldwide crop years of 1976 and 1977 have lessened fears of world food shortages but have brought back large carryover grain stocks and depressed U. S. farm prices and income. These developing conditions resulted in renewed interest in farm policy and the 1977 farm bill. This article will, therefore, review the new farm bill as well as the current farm income situation and outlook.

### FARM INCOME OUTLOOK

#### Supply

Record, or near record, world supplies of wheat, feedgrains, sugar and rice are expected this year. Supplies of soybeans, cotton and coffee are still relatively small but are significantly larger than last year's low levels. Dairy products, pork and poultry supplies are also expanding worldwide.

#### Demand

On the demand side, national demand for farm products will expand but export demand may slacken in the 1977-78 marketing year. U. S. consumer buying power will be 7 to 9 percent higher, but two-thirds of that increase will be inflation. And the fear of further inflation may dampen enthusiasm for increased food purchases. Foreign demand will slacken because of the larger world crop. Bushel export levels may hold, but the dollar value of those exports will drop below the \$23 billion level of 1976-77 because of lower prices. This could cause our agricultural net trade balance to drop below the \$10 billion estimated for the current year.

#### Farm Income - U. S.

Gross returns from crops will probably decline significantly for all U. S. farmers. Increased livestock returns will partially offset this. Farm costs, except fertilizer and pesticide, will be up again. Therefore, net U. S. farm income is expected to drop below the estimated 19.5 billion for 1976-77 despite increased government payments. This compares to USDA recently revised total net income estimates of \$20.0 in 1976, \$24.3 in 1975 and \$26.1 in 1974.

### Farm Income - Minnesota

Minnesota farm income, however, will improve in 1977-78 over 1976-77 because of the substantial increase in crop production over last year's drought reduced level. The record large Minnesota crop now being harvested is almost in the "miracle" category in light of the extremely low subsoil moisture levels of last fall. Unusually early spring rains plus very timely summer rains, combined with good planting and growing conditions, culminated in a total harvest that is expected to be fully one-fourth greater than the previous 1972 record and 50 percent larger than the 1976 crop. Only Illinois and Iowa have larger total crops than Minnesota this year.

The Minnesota crop value will, therefore, be greater than last year despite the sharp drop in crop prices. Thus, the net income of most farmers in last year's drought areas will be improved while those who were blessed with good crop yields in both years will experience a reduction in crop income in the coming marketing year because of the lower crop prices.

Net returns to dairy and beef producers should improve in the year ahead despite some higher costs because of higher milk and beef prices. Sheep and poultry producers can also look for higher net returns to those enterprises.

Net returns to hog producers will drop only slightly in the coming 12 months. Returns to the hog enterprise will (actually) increase at the expense of lower returns to the crop enterprises on hog farms. Market hog prices may average \$1.50 lower, giving a lower total return per bushel of corn fed on corn-hog farms than during the past year.

### THE 1977 FARM BILL

On August 5, 1977, the House-Senate Conference Committee agreed upon a farm bill which will likely be enacted into law when Congress reconvenes after Labor Day.

Any interpretation of the bill at this point must be regarded as tentative and unofficial. There is a possibility that changes might be made in the bill and also implementation of the act, when it is passed, must be based upon official interpretation of its provisions. Recognizing this limitation, some of the highlights of the bill follow:

#### 1977 Loan And Target Prices

The bill raises the previously announced loan level on 1977 crop corn from \$1.75 per bushel to \$2 per bushel. The loan on wheat remains as previously announced at \$2.25 per bushel.

The target price for 1977 crop corn is raised to \$2 from the announced level of \$1.70. Since the corn loan and target prices are both set at \$2, there will be no target payments for corn even if the average price for corn for the first 5 months of the marketing year should fall below the target price.

For 1977 crop wheat, the bill raises the target price to \$2.90 per bushel compared to the announced level of \$2.47. Target payments for wheat, up to 65 cents per bushel, might be made on 1977 crop wheat if the market price for the first 5 months of the marketing year averages out below the loan level of \$2.25 per bushel. If, for example, the market price averaged \$2.50, target payments would be 40 cents per bushel.

The other dimension to target payments is the number of bushels on which payment is made. It appears that the new law will be a significant improvement over the 1973 law in this matter. Rather than the old allotments based upon historical plantings, some of which dated back to the 1940's, the new bill will provide for payments based upon acreage planted for harvest for the current year. This change will permit the program to reflect changes in cropping patterns that have occurred and remove the inequities that could develop under the old system.

#### 1978 Loan And Target Price

The minimum loan level for the 1978 crop corn will remain at \$2, however, the target price will be raised to \$2.10. The minimum loan level for 1978 crop wheat will be raised to \$2.35 per bushel and the target price to either \$3 or \$3.05 depending upon the size of the crop. A harvest of over 1.8 million bushels would call for the \$3 target price.

The bill provides for adjusting target prices to reflect increases in production costs. Loan levels may also be adjusted either up or down within certain limits whenever certain specified conditions exist.

#### Set-Aside

There is little doubt that a set-aside program will be put into effect for the 1978 crop. The bill extends the authority of the Secretary of Agriculture for 4 years to provide such a program. He may require, as a condition of eligibility for loans and target payments, that plantings be reduced by a specified percentage from the previous or current year plantings. Cooperators would be eligible for target payments on 100 percent of their actual plantings.

Details of a set-aside program are still to be developed. But some observers feel that without direct acreage diversion or set-aside payments, such as were provided for under earlier legislation, crop reduction programs under this legislation are not likely to attract many cooperators.

### Disaster Payments

The bill provides for disaster payments for "low yield" and "prevent planting" as did the 1973 law.

Wheat and feedgrain producers whose yield for 1977, 1978 and 1979 crops fall below 60 percent of normal yield on planted acres will receive 50 percent of the target price for the shortfall below 60 percent. Producers who are prevented from planting will receive one-third of the target price on 75 percent of their normal yield. If a set-aside is in effect, producers must meet the set-aside requirements to be eligible for assistance.

### Extended Loan Program (Farmer-Held Reserve)

The bill authorizes the Secretary of Agriculture to offer a loan program of 3 to 5 years duration to feed and wheat producers as a means of creating a farmer-held reserve. The size of the farmer-held wheat reserve may be from 300 to 700 million bushels but no amount is specified for feedgrain. As an incentive for producer participation, the Secretary is authorized to pay annual storage costs and waive or adjust interest rates. Grain might come out of the reserve as market prices reached certain levels. At 140 percent of the loan level the Secretary may discontinue the storage payments and charge interest on the loan. At 175 percent of the loan level the Secretary may call the loan. Whenever the farmer-held reserve program is in effect, the resale price of CCC owned grain would be set at 150 percent of the loan. Otherwise the resale price would be 115 percent of the loan.

### Other Provisions

Other provisions of the bill deal with a wide range of matters. Some of these are payment limitations, sugar programs, PL480, food stamps, research and extension, grain inspection, and storage facility loans to farmers.

## FEEDGRAINS

**AT A GLANCE:** Feedgrain supply for 1977-78 is projected to be about 6 percent above 1976-77, but use will likely increase to somewhat less than the increased supply. Early season prices will be influenced largely by the government loan program. Expanded livestock feeding and a substantial amount of feedgrain going into storage are expected to generate later seasonal price strength. The November-July Minneapolis corn price is expected to average around \$2 per bushel, or 35 to 40 cents per bushel below last year.

### Factors To Watch

1. The government feedgrain program may be the best pricing alternative early in the season and will influence the aggregate amount of corn available for market later, so know the details of the program.
2. Livestock feeding may be a good market alternative for people with facilities. Cash grain farmers need to be aware of livestock and poultry industry economics as a signal regarding amount of feedgrains being utilized.
3. Foreign crop and market developments could begin to influence U.S. feedgrain prices by early spring 1978 as southern hemisphere crops are harvested and weather begins to influence spring-planted grains.
4. The weather will continue to influence both production and markets. Despite the good 1977 moisture for Minnesota, weather problems could substantially bolster grain prices next year.

### CORN

#### 1976-77 Review

Price developments during the year were disappointing to many corn growers. Price rose from harvest into the early part of 1977, but slowly dropped from March through mid-summer and plunged in late summer. For the 1976-77 marketing year, it appears that the corn price will average 37 cents per bushel under 1975-76, and 75 cents below 1974-75 (see table 1).

Although carryin stocks were low, the market had a record supply of 6,616 million bushels due to the large 1976 crop (see table 2). The major problem in the corn market was utilization.

Corn exports held up quite well throughout the year at about 1,650 million bushels, down only slightly from 1975-76. Livestock feeding has been accounting for about 70 percent of corn use. According to USDA estimates, corn feeding declined slightly again. This decline occurred despite an increase in estimated livestock numbers. This means a reduction in feeding rates despite the high soybean meal price relative to corn. Wheat feeding was up slightly and substituted for some feedgrain. With release of the USDA April grain stocks reports, this decline in feeding became apparent. By summer, the apparent decline in use led the grain market to anticipate carryover stocks building to the 900 million bushel level. Facing this kind of a carryover, depressed prices in other grains and a likely 6 billion bushel 1977 crop, the corn market fell through summer.

#### 1977-78 Supply Prospects

At 900 million bushels, carryin stocks will be the highest since those on hand at the end of the 1971 marketing year. The USDA August 1 production forecast was 6,092 million bushels, down sharply from the July 1 forecast. Corn acreage for grain in 1977 is estimated at 69.8 million, down 1.3 million from last year. Yield is forecast at 87.3, about the same as in 1976. Total feedgrain production is estimated to be about the same as in 1976. The August 1 forecast plus carryover is slightly under 7 billion bushels, a record large supply.

#### 1977-78 Demand Prospects

Demand prospects for corn are closely geared to economic developments in the livestock and poultry industry. U.S. livestock and poultry feeding is expected to account for about two-thirds of total corn utilization in 1977-78 (see table 2). Two factors are involved in projecting corn feeding: (1) livestock and poultry numbers and (2) feeding rates per animal unit (see table 3).

Livestock and poultry industry analysts are projecting a moderate increase in total numbers. For October 1977-September 1978, placements of cattle into feedlots may be up almost 5 percent; hog numbers may be up almost 6 percent; and poultry numbers may be up about 4 percent. Hogs, poultry and cattle on feed account for three-fourths of corn fed. Dairy and other cattle numbers will trend downward. In total, the number of grain consuming animal units is expected to be up about 3 percent in 1977-78 (see table 3).

Rate of feeding should be up from the unusually low rate in 1976-77. In the early 1970's feeding was running above 50 bushels per animal unit. In 1974-75, with the very high corn price, feeding fell to the 45 bushel level. With more placements of calves into feedlots and sharply lower corn prices, the feeding rate should increase toward 50 bushels.

With the moderate feeding rate increase and livestock number increase, corn feeding is likely to increase by 200 million bushels. This would mean 3,750 million bushels of corn fed. If feeding rates increase to the level of the early 1970's, corn feeding could increase to 4,000 million bushels.

Food and industrial uses of corn have trended upward. The corn processing industry has expanded production in corn sugars, alcohol and corn meals. Combined with seed for the 1978 crop, use should total about 530 million bushels in 1977-78.

Corn exports are expected to be down by about 200 million bushels for 1976-77. At a forecast of 1,450 million bushels, they would still be two and a half times the average amount of the late 1960's. Grain crop prospects in most of the world are generally good, but world feedgrain production is expected by USDA to be slightly lower than the very large 1976-77 feedgrain crop. World total feedgrain imports are expected to be down about 8 percent because of the good crop in Western Europe. Japan is the only principal country expected to show growth in feedgrain imports. If southern hemisphere crops are not good, we could see higher U.S. feedgrain exports next spring. World feedgrain stocks are estimated to be 12 to 13 percent of consumption by mid-1978. In mid-1976 stocks were 7.5 percent of consumption; in mid-1970 stocks were 14 percent of consumption; so it appears that world feedgrain stocks accumulation will not be extremely large.

Although total corn use is likely to be quite high and approximately equal to the 1975-76 level, carryover stocks are likely to increase again. At the projected use level, carryover stocks may increase to one and one-fourth billion bushels by September, 1978. Even if feeding or exports exceed projections, we do not foresee stocks below present levels.

### 1977-78 Price Prospects

With the sharp decline in corn prices through summer of 1977 and the prospects of carryover increasing by the end of the marketing year, it is difficult to be optimistic about the likelihood of prices returning to their 1974-76 levels. Historical supply, utilization and price relationships indicate the November-July Minneapolis corn price should average \$2 to \$2.25 per bushel. But the present depressed state of the market appears lower than that.

A large harvest in Minnesota will keep downward pressure on prices through fall--especially in areas short of storage space. It is likely that a substantial amount of corn will go under government loan at harvest, thus, putting support under the low end of the market. Corn prices are then likely to rise later in the marketing year, as it becomes necessary to bid corn out of loan positions in order to supply market needs. During 1952-72, when there frequently was much corn under government loan, seasonal price rises averaged about 15 percent. If the national average loan rate is raised to \$2 from its existing \$1.75, local county loan rates would generally be in the \$1.85 to \$1.90 range. Minneapolis corn prices may rise to the \$2.25 area by early summer 1978 to attract

corn into the market. Hence, a \$2.10 to \$2.20 November-July Minneapolis price average is feasible. This price translates into different local prices, depending on distance from the terminal market area and local elevator margins. It implies a season average farm price in the \$1.90 per bushel area. Reduced 1978 acreage and/or 1978 crop production problems in the U.S. or elsewhere in the world could cause more substantial price strength by next summer.

### Pricing Management

1. Season average price forecasts have in the past served as useful points of perspective for watching market developments. When market prices are above season average, it is time to think about selling.
2. Plan a marketing strategy early in the year. For most cash corn growers this year, it may involve storing corn at harvest under government loan. But, develop a marketing strategy based on knowledge of pricing alternatives, price movements and your storage costs (see table 4).
3. Carefully manage your drying and storage operations. Over-drying consumes excess fuel and results in costly shrink loss. Spoilage in the bin is costly and may force sales when you would not otherwise want to sell.

### OATS

Based on attractive oat prices early last spring, many farmers increased oats acreage this year. Production in 1977 is up 35 percent from 1976. Although carryin stocks are down, total supply is up 20 percent. Use will be up also, but not as much as supply, and carryover stocks will increase (see table 3).

Oats prices are generally geared to the overall feedgrain market. In Minnesota, country oats prices per bushel have averaged 53 percent of the corn price during the past 10 years. This average applied to our corn price projection implies a season average oats price of less than \$1 per bushel. In years of relatively high oats supply, price has averaged 46 percent of corn. In years of relatively tight oats supply, price has averaged 62 percent of corn. We expect the 1977-78 oats price to average 85 cents to 95 cents per bushel in most of the oat-growing area of Minnesota.

BARLEY

Barley production is also up in 1977. Planted acreage increased by 12 percent but yield is down about 5 percent. Because of the high barley use in 1976-77, barley stocks are down slightly from a year ago. But with the higher production, total 1977-78 supply is up by 5 percent (see table 3).

Feed use accounts for just over half of domestic barley use--and food, industrial and seed uses account for just under half. Exports account for 10 to 15 percent of use.

For 1977-78, feed use will be up about 8 percent to 180 million bushels. Food, industry and seed use will increase about 4 percent. Exports are expected to drop 40 percent from the relatively high level of 1976-77. Total use will then drop to 384 million bushels. This will leave carryout stocks at 159 million bushels, up 25 percent from last year.

Barley prices are basically feedgrain market value, plus a differential to fulfill malting industry requirements. In the past 10 years, the average country price of barley in Minnesota has been 90 percent of the corn price. For 1977-78, this implies \$1.65 per bushel season average in the barley growing areas of the state.

Table 1. Monthly Average Minneapolis Corn Price

<u>Month</u>	<u>Marketing Year</u>					
	<u>1971-72</u>	<u>1972-73</u>	<u>1973-74</u>	<u>1974-75</u>	<u>1975-76</u>	<u>1976-77</u>
October	1.07	1.24	2.28	3.63	2.73	2.49
November	1.06	1.23	2.34	3.46	2.54	2.30
December	1.15	1.39	2.47	3.35	2.50	2.41
January	1.13	1.42	2.68	3.08	2.51	2.47
February	1.13	1.28	2.92	2.88	2.56	2.47
March	1.15	1.37	2.82	2.79	2.61	2.45
April	1.19	1.46	2.60	2.86	2.59	2.44
May	1.21	1.77	2.55	2.81	2.76	2.35
June	1.18	2.16	2.77	2.83	2.85	2.22
July	1.21	2.25	3.19	2.87	2.88	1.98
August	1.20	2.61	3.40	3.15	2.77	1.75
September	1.26	2.29	3.43	2.94	2.71	--
Year Average	1.16	1.71	2.79	3.05	2.67	2.30

Table 2. Corn Supply And Use By Marketing Year

	Average 1966-71	Average 1971-75	1975-76	1976-77	Projected 1977-78
----- million bushels -----					
Beginning Stocks	1,014	746	359	398	901
Production	4,339	5,381	5,797	6,216	6,092
Imports	<u>1</u>	<u>1</u>	<u>2</u>	<u>2</u>	<u>1</u>
Total Supply	5,355	6,129	6,158	6,616	6,994
Feed	3,462	3,919	3,558	3,550	3,750
Food, Ind., Seed	398	429	491	515	530
Exports	<u>579</u>	<u>1,112</u>	<u>1,711</u>	<u>1,650</u>	<u>1,450</u>
Total Use	4,422	5,460	5,760	5,715	5,730
Ending Stocks	933	669	398	901	1,264

Table 3. Supply And Use Of Oats, Barley And All Feedgrains By Marketing Year

	Oats		Barley		All Feedgrains*	
	1976-77	Projected 1977-78	1976-77	Projected 1977-78	1976-77	Projected 1977-78
----- million bushels -----					-- million tons --	
Beginning Stocks	208	168	129	127	19.1	33.6
Production	562	758	377	406	212.4	212.7
Imports	<u>1</u>	<u>   </u>	<u>11</u>	<u>10</u>	<u>.3</u>	<u>.3</u>
Total Supply	771	926	517	543	231.8	246.6
Feed	504	540	167	180	123.3	130.5
Food, Ind., Seed	89	90	157	164	19.8	20.4
Exports	<u>10</u>	<u>10</u>	<u>66</u>	<u>40</u>	<u>55.1</u>	<u>48.0</u>
Total Use	603	640	390	384	198.2	198.9
Ending Stocks	168	286	127	159	33.6	47.7

\* Includes corn, oats, barley and grain sorghum.

Table 4. Grain Consuming Animal Units (GCAU) And Feedgrains Fed

<u>Year</u>	<u>GCAU</u> (mil. units)	<u>Feedgrains Fed</u> (mil. tons)	<u>Fed/GCAU</u> (tons)	<u>Corn Fed</u> (mil. bu.)	<u>Corn Fed/GCAU</u> (bushels)
1972-73	79.4	156.4	1.97	4,310	54.3
1973-74	78.4	153.3	1.96	4,183	53.4
1974-75	69.8	115.6	1.66	3,191	45.7
1975-76	73.3	127.6	1.74	3,558	48.5
1976-77	75.7	125.3	1.66	3,550	46.9
1977-78*	78.2	130.5	1.67	3,750	48.0

\* Projected

Table 5. Cumulative Variable Costs Of Storing Corn - 1977

\$/BU	PLACE OF STORAGE	MONTHS IN STORAGE									
		1	2	3	4	5	6	7	8	9	10
		-----CENTS PER BUSHEL-----									
1.50	FARM	2.8	4.1	5.4	6.7	8.0	9.3	10.6	11.9	13.3	14.6
	ELEVATOR	3.1	6.3	9.4	12.6	15.7	18.9	22.1	25.2	28.4	31.6
1.75	*FARM	2.8	3.9	4.9	6.0	7.0	8.1	9.2	10.3	11.4	12.4
1.75	FARM	3.2	4.7	6.2	7.8	9.3	10.8	12.4	13.9	15.5	17.1
	ELEVATOR	3.3	6.6	10.0	13.3	16.7	20.0	23.4	26.8	30.2	33.6
2.00	*FARM	3.2	4.4	5.6	6.8	8.1	9.3	10.5	11.7	13.0	14.2
2.00	FARM	3.7	5.4	7.1	8.9	10.6	12.4	14.1	15.9	17.7	19.5
	ELEVATOR	3.5	7.0	10.5	14.1	17.6	21.2	24.7	28.3	31.9	35.5
2.25	FARM	4.2	6.1	8.0	10.0	11.9	13.9	15.9	17.9	19.9	22.0
	ELEVATOR	3.7	7.4	11.1	14.8	18.6	22.3	26.1	29.9	33.7	37.5

ASSUMPTIONS

9.0 INTEREST RATE

FARM LOSS AND DAMAGE OF 1.0 PCT.

PLUS .10 PERCENT/MONTH

ELEVATOR CHARGE 2.0 CENTS/MONTH

\* ASSUMES STORED UNDER GOVERNMENT LOAN WITH INTEREST AT 6 PCT.

This is the implied price rise necessary to break even after having put the crop in storage.

## SOYBEANS

AT A GLANCE: Soybean prices during the past year were very volatile as the market priced a relatively tight supply. For 1977-78, supply appears to be quite large due to greater acreage and a higher yield. The October-June average Minneapolis soybean price is expected to be \$5.50 to \$6. We expect this to be associated with 20 to 22 cents per pound soybean oil and \$140 to \$150 per ton soybean meal.

### Factors To Watch

1. The final size of the 1977 soybean crop will have a major impact on price because of low carryover stocks.
2. Half the crop is usually exported, so watch the weekly rate of exports and export commitments as an indicator of foreign demand.
3. Domestic livestock consumption of meal can be gauged by watching livestock feeding programs.
4. The strength of soybean oil and meal markets relative to soybeans is reflected in the crushing margin. You should watch this margin regularly.

### 1976-77 Review

Minnesota soybean prices were pushing \$7 per bushel in the early part of harvest, 1976. As harvest progressed prices dropped sharply, but moved up again into winter. By early spring there was talk of \$12 per bushel soybeans, and by late April Minneapolis cash soybeans were over \$10 per bushel. By early June prices were falling as rapidly as they had risen in late March. For the entire marketing year, Minneapolis cash soybeans averaged \$7.33 per bushel, which is \$2.13 per bushel above the 1975-76 season (see table 1).

Through the first several months of the marketing year, the market was pricing a very short soybean supply. The 1976 crop was 17 percent below 1975. Although carryin stocks were quite large, total supply was down 200 million bushels (see table 2). Market price moved up as domestic crushers and exporters bid for the short supplies. By early summer several things occurred to take steam from the market. Brazil soybeans began moving into export. The investigations into trading activities on the Chicago Board of Trade made speculators nervous. The greatly expanded 1977 U.S. soybean acreage became known with greater certainty.

Regardless of the price fluctuations, use of soybeans continued heavy relative to the available supply. It is now estimated that carryover stocks from 1976-77 will be down to 75 million bushels. This is only a couple weeks' supply at annual average rate of use.

### 1977-78 Supply Prospects

With an extremely low carryover, the new crop prospects become very critical for the market. The August 1 USDA crop report forecast a record 1,602 million bushel 1977 crop (see table 2). In response to the increasingly favorable soybean/corn price ratio at planting time, farmers planted 17 to 18 percent more acres. USDA forecasts a yield increase of 2 bushels per acre over last year. Crop size estimates could change significantly before harvest is completed, but the oncoming crop appears quite large compared to 1976, and slightly above 1975.

The total supply is forecast to be between 1,600 and 1,700 million bushels, 11 percent greater than the 1976-77 supply, but less than the 1975-76 supply.

### 1977-78 Demand Prospects

In recent years about half of U.S. soybeans have been exported, and half used domestically. That balance will likely prevail for 1977-78.

The domestic crush is expected to increase to about 840 million bushels. This would be about 70 percent of the estimated industry crushing capacity, and somewhat less than the 1975-76 crush. Livestock and poultry feeding will probably consume 3 to 5 percent more soybean meal this year. Livestock feeding demand is likely to increase through the year. Demand for meal may be stronger by spring and early summer of 1978. Although other countries are expanding protein meal crops, export demand for meal should grow. With continued world increases in livestock and poultry feeding, and the abundant feedgrain supply, a soybean meal price of \$140 to \$150 per ton (mill basis) looks realistic.

Soybean oil demand is also expected to increase. Demand for vegetable oils grows at a slightly faster rate than world population each year. But, U.S. soybean oil has competition in world markets. Brazil's soybean oil exports increase each year. Animal fats, olive oil, coconut oil, peanut oil, palm oil and sunflower oil also compete with soybean oil. Malaysian palm oil production is up about 16 percent from 1976, and palm oil stocks are also up. A projected price for soybean oil of about 20 cents per pound appears likely. This would be slightly below last year's average oil price (see table 3).

Exports of soybeans will also be up in 1977-78. They are projected to be up about 7 percent. This would mean an export of 610 million bushels for the marketing year. There is some trade-off between soybean and oil and meal exports. U.S. processors would prefer to crush soybeans and sell oil and meal abroad. Some importers would prefer to buy soybeans and crush them in their country. If demand remains strong and supplies of other soybeans, oils and protein meals do not increase greatly, there could be an increase in both the soybean and product exports.

### 1977-78 Price Prospects

Our forecasts point to an October-June Minneapolis soybean price average in the \$5.50 to \$6.25 range. This implies a soybean oil price of 20 to 22 cents per pound for a \$2.20 to \$2.40 per bushel value (see table 4). It implies a soybean meal price of \$140 to \$150 per ton for a \$3.35 to \$3.60 per bushel value. Crushing margins are likely to average in the 15 to 20 cents per bushel range.

It now appears that the likely seasonal price pattern will be lower prices at harvest, followed by strength through winter and into spring. We think a substantial amount of new crop soybeans were contracted for harvest in spring, 1977. Substantial amounts of corn and wheat going into storage at harvest will compete for storage space. The amount of seasonal price strength will also depend on domestic meal consumption by livestock and export competition from southern hemisphere crops next spring. Anticipated seasonal price strength should be compared with storage costs (see table 4).

### Marketing Management

Selling soybeans was a hectic undertaking again in 1976-77. Many people who speculated for the market peak still have old crop soybeans in storage. People who sold all their soybeans at harvest were disappointed by the high price of April. People who did some price averaging through the season probably feel best of all about the market. Our season average price forecasts are meant to be used as a marketing tool. When market prices are above these levels, think about selling. When market prices are below these levels, think about holding. It is best to plan a marketing strategy in advance in order to fit selling decisions to cash flow requirements. Calculate storage costs and compare those with your projected seasonal price expectations. Watch the market with respect to those factors that can influence the demand for soybeans. The greater the demand, the greater the price required to bid against other uses and out of storage. Also, watch the availability of substitutable products such as other oils and other kinds of protein meal.

Table 1. Monthly Average Minneapolis Soybean Price\*

Month	Marketing Year				
	1972-73	1973-74	1974-75	1975-76	1976-77
----- dollars per bushel -----					
September	3.32	8.20	7.55	5.53	6.57
October	3.21	5.82	8.34	5.06	6.19
November	3.46	5.46	7.47	4.75	6.52
December	3.91	5.80	7.25	4.51	6.76
January	4.26	5.92	6.30	4.49	6.95
February	5.54	6.06	5.68	4.58	7.19
March	6.07	5.96	5.52	4.58	8.28
April	6.25	5.43	5.77	4.64	9.65
May	8.76	5.39	5.20	5.15	9.41
June	10.10	5.38	5.10	6.15	8.19
July	6.37	6.88	5.51	6.55	6.34
August	8.87	7.63	5.93	6.30	5.90
Marketing Year Average	5.84	5.99	6.30	5.20	7.33

\* Most Minnesota country prices are 20 to 25 cents per bushel under Minneapolis.

Table 2. Soybeans: Supply And Utilization By Marketing Year\*

	Average					Projected
	1965-69	1973-74	1974-75	1975-76	1976-77	1977-78
----- million bushels -----						
Beginning Stocks	130	60	171	185	245	75
Production	998	1,547	1,215	1,546	1,265	1,602
Total Supply	1,128	1,607	1,386	1,731	1,510	1,677
Crushing	603	821	701	865	800	840
Exports	300	539	421	555	570	610
Seed, Feed, etc.	55	76	79	66	65	82
Total Use	958	1,436	1,201	1,487	1,435	1,532
Ending Stocks	170	171	185	245	75	145

\* Soybean marketing year - September 1 to August 30.

Table 3. Soybean Prices Compared With Market Value Of Oil And Meal\*

	<u>8/15/74</u>	<u>8/12/76</u>	<u>8/18/77</u>	<u>Projected 1977-78</u>
Soybean oil price/lb	44.65¢	20.50¢	20.70¢	20-22¢
Oil yield/bu.	11.01 lbs.	11.23 lbs.	11.26 lbs.	11 lbs.
Oil value/bu.	\$4.92	\$2.30	\$2.33	\$2.20-2.42
Soybean meal price/ton	\$147.00	\$170.00	\$133.00	\$140-150
Meal yield/bu.	48.06 lbs.	48.49 lbs.	47.80	48 lbs.
Meal value/bu.	\$3.53	\$4.12	\$3.18	\$3.36-3.60
Value of oil and meal/bu.	\$8.45	\$6.42	\$5.51	\$5.56-6.02
Crushing margin/bu.	.79¢	.24¢	.12¢	.16¢
Soybean price/bu.	\$7.66	\$6.18	\$5.39	\$5.40-5.86

\* Decatur spot price series

Table 4. Cumulative Variable Costs Of Storing Soybeans - 1977\*

Dollar /bu.	Place of Storage	Months in Storage									
		1	2	3	4	5	6	7	8	9	10
----- cents per bushel -----											
4.50	Farm	8.1	11.7	15.4	19.1	22.8	26.5	30.2	34.0	37.8	41.7
	Elevator	5.4	10.8	16.2	21.7	27.1	32.6	38.2	43.7	49.3	54.9
5.00	Farm	9.0	13.0	17.1	21.2	25.3	29.4	33.6	37.8	42.0	46.3
	Elevator	5.8	11.5	17.3	23.2	29.0	34.9	40.8	46.8	52.8	58.8
5.50	Farm	9.9	14.3	18.8	23.3	27.8	32.4	37.0	41.6	46.2	50.9
	Elevator	6.1	12.3	18.5	24.7	30.9	37.2	43.5	49.9	56.3	62.7
6.00	Farm	10.8	15.6	20.5	25.4	30.3	35.3	40.3	45.4	50.4	55.5
	Elevator	6.5	13.0	19.6	26.2	32.8	39.5	46.2	53.0	59.7	66.5

\* This table is based on an interest charge of 9 percent on money invested in stored grain, on an elevator storage charge of 2 cents per bushel per month, and on a loss and damage rate in farm storage of 1 percent, plus .05 percent per month. With good farm storage management this loss rate will be less. This is the implied price rise necessary to break even after having put the crop in storage.

# WHEAT

**AT A GLANCE:** Wheat prices in the 1977-78 marketing year will average lower than in 1976-77. Although the 1977 crop is below 1976, carryin stocks are much higher. Government loan and target prices will dominate farm income from wheat. Market prices are expected to average about 20 percent below 1976-77, at about the \$2.60 level, Minneapolis.

## Factors To Watch

1. The pace of wheat exports, as reflected in weekly shipments and commitments.
2. Weather developments in southern hemisphere countries through winter which might affect their harvest by spring.
3. The ratio of wheat to feedgrain prices as an indicator of wheat feeding.

## Review Of 1976-77

The 1976-77 wheat marketing year was a bitter disappointment to many wheat growers. Market price for the year averaged 94 cents per bushel below the 1975-76 price (see table 1). What happened?

Production gains in 1976 outpaced demand growth. Exports fell and carryover stocks increased (see table 2). The 1976 United States wheat crop was 2,147 million bushels--45 percent above the 1970-72 crop average. Carryin stocks, while not enormous, had increased by 230 million bushels from 1975. Total supply was up about 10 percent. But, this increase in United States wheat supply was not the only development affecting price. Declining exports also meant trouble for the market.

During the past few years, exports have been substantially over 1,000 million bushels and have accounted for over 60 percent of total use. In 1976-77 exports fell to 950 million bushels. Domestic wheat use did not increase significantly and carryover stocks increased to 1,109 million bushels. As U.S. grain traders and foreign buyers watched the declining exports and increasing carryover stock prospects, they grew progressively less enthusiastic in their price bids.

Not only did the U.S. have a good 1976 wheat crop, but so did other wheat growing nations. The estimated world wheat crop increased 64 million metric tons from 1975-76 to 1976-77 (see table 4). The 1976-77 wheat crop was up in almost all parts of the world--including importing and exporting nations. Hence, world wheat exports fell from 73 to 65 million metric tons. Other wheat exporting countries were very aggressively pushing wheat sales and cutting sales prices. Canada, Australia and Argentina actually increased their exports; while U.S. wheat exports dropped by about 20 percent. As a result, the share of world wheat stocks carried in the U.S. has increased from 13 percent in 1974 to 30 percent in 1977.

### 1977-78 Supply Prospects

For 1977-78, the U.S. wheat market has a supply of 3,152 million bushels. This is 12 percent above last year and a record supply.

This supply is made up of an estimated 1,109 million bushels carryover and the current USDA crop estimate of 2,041 million bushels.

Production of Hard Red Spring (HRS) wheat is estimated at 411 million bushels--about the same as the 1976 crop--but carryover stocks at 242 million bushels are double year earlier stocks (see table 3). Durum production and supply are down.

### 1977-78 Demand Prospects

Total wheat utilization in 1977-78 is expected to be in the 1,750 to 2,000 million bushel range. This would likely leave stocks at the end of the year somewhat higher than at the beginning of the year.

Domestic food use of wheat has accounted for about 30 percent of the market in recent years. It has been trending upward and will likely do so through 1977-78. Total food use is expected to total almost 560 million bushels.

A relatively higher proportion of HRS wheat generally goes for domestic use. In years of lower crop quality in other wheat classes, more HRS is used for blending purposes. This year the quality of the crop is said to be quite good, so food use of HRS could be down. Since the overall wheat protein level also appears relatively high, wheat protein premiums may not be as great as in recent years.

Wheat feeding is expected to increase, but there are differences of opinion regarding the amount. Early in the marketing year wheat prices were low relative to feedgrains. Since then, feedgrain prices have dropped. Since the statistical category for feeding also includes other factors, feeding data are not precise. We expect feeding for the year to be up, but below the 1970-72 average.

Wheat exports are expected to increase slightly. In mid-August the world wheat crop was estimated by USDA at 398 million metric tons. This would be 4 percent below 1976-77, but 14 percent above 1975-76. Stocks at the end of the year are likely to be about the same as the beginning of the year, but stocks of all grains would still be at a lower ratio to consumption than in the late 1960's. World wheat exports are projected to increase about 9 percent from 1976-77, and to be at about the 1975-76 level. China, Western Europe, North Africa and the Middle East are expected to take more wheat imports. The USSR and Eastern Europe are expected to take less. Australia, the USSR and other smaller countries will have larger exports.

Among the major wheat producing countries of the world, compared to last year, crops in Australia, most of Western Europe and the USSR are larger--while crops in Canada, Argentina, India and some of Eastern Europe are smaller.

All in all, the USDA expects 1977-78 U.S. wheat exports to total between 900 and 1,100 million bushels. The mid-point of this range is 5 percent above 1976-77.

If wheat exports are at the top end of the anticipated range, and if all other use projections are realized, the ending stocks could be kept at the 1,200 million bushel level. Most observers expect stocks to be above this level by the end of the marketing year. This would be by far the largest carryover stocks of the decade, and would be about twice the 1966-70 average.

#### 1977-78 Price Prospects

In the face of the anticipated large amount of stocks still on hand at the end of the marketing year, it is very difficult to find a basis for price optimism. The season average price will likely be substantially under 1976-77. We expect the Minneapolis market price to average in the \$2.50 to \$2.75 range for the marketing year. But, given the extreme importance of world crop and economic developments on our wheat market, and given the many unpredictable forces affecting these world conditions, any wheat price forecast is a very tentative projection.

A substantial amount of the carryover stocks and new crop wheat are in farmers' hands. About 40 percent of the carryover stocks were in farm storage. The volume of wheat under government loan amounted to 37 percent of the carryover stocks. Volume of government loan activity since the beginning of the new crop year has been running very high. Since much of the crop will be under government loan, and be held very tightly by farmers, we would expect price to rise enough above loan to draw out the market requirements. With the large quantity of stocks available, we are not likely to see a sharp price rise. Hence, we expect to see prices rising moderately from late fall through winter. The likelihood of a government program to reduce acres in 1978 may keep the 1978 crop from being an additional price depressant factor, but any substantial price strength will most likely need to come from developments affecting export potential.

Pricing Management

1. For most wheat growers the best alternative may be to put the crop in storage under government loan. Present prices offer little incentive to put the crop on the market.
2. Carefully monitor wheat in farm bins. If neglected grain goes out of condition, it may force a sale not otherwise desired.
3. Know your pricing alternatives in cash, contracts and futures markets. There may be opportunity to price wheat favorably to take out of storage at a later date.
4. Know your storage costs (and the details of the government program if under loan) and the quality of wheat you have in storage.
5. Plan a marketing strategy to help you balance your price risk and help trigger sales decisions if prices rise.

Table 1. Monthly Average Minneapolis Wheat Price\*

<u>Month</u>	<u>Marketing Year</u>				
	<u>1972-73</u>	<u>1973-74</u>	<u>1974-75</u>	<u>1975-76</u>	<u>1976-77</u>
	----- dollars per bushel -----				
June	\$1.56	\$2.71	\$4.70	\$3.96	\$4.19
July	1.63	3.04	5.04	4.24	4.04
August	1.79	4.47	4.82	4.58	3.51
September	2.00	4.76	4.85	4.59	3.25
October	2.10	4.40	5.46	4.46	3.09
November	2.16	4.47	5.54	4.07	2.98
December	2.41	4.99	5.18	3.90	2.95
January	2.42	5.52	4.53	3.98	3.01
February	2.26	5.81	4.26	4.24	3.04
March	2.32	5.25	4.18	4.13	2.99
April	2.37	4.29	4.19	3.94	2.91
May	2.52	4.06	4.34	3.92	2.76
Market Year Avg.	2.13	4.48	4.76	4.17	3.23

\* Monthly average price quotation for No. 1 Dark Northern Spring Wheat, 13 percent protein.

Table 2. Supply And Utilization Of All Wheat By Marketing Year\*

	Average <u>1966-70</u>	Average <u>1970-72</u>	Average <u>1973-76</u>	<u>1976-77</u>	Projected <u>1977-78</u>
----- million bushels -----					
Beginning Stocks	640	903	457	664	1,109
Production	1,433	1,485	1,879	2,147	2,041
Imports	<u>1</u>	<u>1</u>	<u>3</u>	<u>3</u>	<u>2</u>
Total Supply	2,074	2,389	2,339	2,814	3,152
Food Use	516	521	537	553	560
Seed	66	63	91	88	85
Feed	134	228	96	114	207
Exports	<u>679</u>	<u>675</u>	<u>1,136</u>	<u>950</u>	<u>1,000</u>
Total Use	1,395	1,487	1,859	1,705	1,852
Ending Stocks	679	902	480	1,109	1,300

\* Marketing Year: June 1 to May 31; except for 1966-70 (July 1 to June 30).

Table 3. Hard Spring And Durum Wheat Supply And Utilization By Marketing Year

	<u>Hard Spring</u>		<u>Durum</u>	
	<u>1976-77</u>	Projected <u>1977-78</u>	<u>1976-77</u>	Projected <u>1977-78</u>
----- million bushels -----				
Beginning Stocks	113	242	53	86
Production	410	411	135	83
Imports	<u>1</u>	<u>1</u>	<u>2</u>	<u>1</u>
Total Supply	524	654	190	170
Domestic Use	158	160	63	47
Exports	<u>124</u>	<u>130</u>	<u>41</u>	<u>40</u>
Total Use	282	290	104	87
Ending Stocks	242	364	86	83

Table 4. World Wheat Supply And Utilization\*

	<u>Stocks</u>	<u>Production</u>	<u>Exports</u>		<u>Consumption</u>
			<u>Total</u>	<u>U.S.</u>	
	----- million metric tons -----				
1968-69	88	329	50	15	305
1969-70	112	310	55	17	327
1970-71	95	316	53	20	339
1971-72	72	348	56	17	341
1972-73	79	343	71	31	361
1973-74	61	372	73	33	364
1974-75	69	356	68	28	363
1975-76	63	349	73	32	349
1976-77	63	413	65	26	375
1977-78	100	398	71	27	397
1978-79	100				

\* USDA Estimates

Table 5. Cumulative Variable Costs Of Storing Wheat - 1977

	PLACE OF STORAGE	MONTHS IN STORAGE									
		1	2	3	4	5	6	7	8	9	10
\$/BU		-----CENTS PER BUSHEL-----									
1.75	FARM	2.3	3.7	5.1	6.5	8.0	9.4	10.9	12.4	13.8	15.3
	ELEVATOR	3.3	6.6	10.0	13.3	16.7	20.0	23.4	26.8	30.2	33.6
2.00	FARM	2.6	4.2	5.8	7.5	9.1	10.8	12.4	14.1	15.8	17.5
	ELEVATOR	3.5	7.0	10.5	14.1	17.6	21.2	24.7	28.3	31.9	35.5
2.25	*FARM	2.4	3.6	4.9	6.1	7.4	8.6	9.9	11.2	12.5	13.8
2.25	FARM	2.9	4.7	6.6	8.4	10.3	12.1	14.0	15.9	17.8	19.7
	ELEVATOR	3.7	7.4	11.1	14.8	18.6	22.3	26.1	29.9	33.7	37.5
2.50	FARM	3.3	5.3	7.3	9.3	11.4	13.5	15.5	17.6	19.8	21.9
	ELEVATOR	3.9	7.8	11.7	15.6	19.5	23.5	27.4	31.4	35.4	39.4

ASSUMPTIONS

9.0 INTEREST RATE

FARM LOSS AND DAMAGE OF .5 PCT.

PLUS .05 PERCENT/MONTH

ELEVATOR CHARGE 2.0 CENTS/MONTH

\* ASSUMES STORED UNDER GOVERNMENT LOAN WITH INTEREST AT 6 PCT.

This is the implied price rise necessary to break even after having put the crop in storage.

## BEEF

**AT A GLANCE:** Cattle feeders continued to lose money on almost all cattle sold in 1977, leaving only 8 months of positive returns out of the past 44 months. Cow-calf operations are losing money for the fourth straight year. Cow-calf operations in Minnesota will probably fail to cover all feed and cash costs again in the coming year unless low value feeds are used in the ration. Cattle feeding prospects also continue to look bleak for the next 6 to 9 months. However, cattlemen faced with the possibility of selling their corn (or getting a government loan) for a net of about \$1.65 per bushel after paying drying costs should be able to market their corn at a considerably higher net price through a calf feeding program.

As beef supplies decline and beef prices increase during the next 2 years, returns will be increasing to the cow enterprise. However, the cattle feeding enterprise may not get completely out of the red because the tendency will be to bid all of the fat cattle price increase into feeder prices.

### Factors To Watch--Supply And Demand

Changes in supply are influenced by (1) numbers of cattle in the country, (2) numbers placed on feed, (3) average market weights of cattle, (4) current stage of the cattle cycle, (5) cow slaughter and imports and (6) weather and feed supplies and prices.

Changes in the demand for beef are influenced by changes in (1) disposable income of consumers, (2) supplies and prices of competing meats, (3) the U.S. population and the number of new families started and (4) consumer attitude toward beef.

Other factors affecting farm prices are (1) changes in marketing margins and (2) changes in by-product values.

Following is an evaluation of how these factors influenced beef prices during the past year (prior to mid-August, 1977) and expectations as to their influence in the coming year.

### Review Of Past Year

Cattle prices have been below industry expectations in 1977 because of (1) an unexplained drop in consumer demand for beef, (2) a drop in retail beef promotion coupled with high retail margins and (3) larger than expected supplies due to continued large cow slaughter coupled with expanded fed cattle marketings.

The soft consumer demand for fed beef evidenced in 1977 is probably a combination of many factors including (1) continued high inflation rates for most non-food items, (2) continued high unemployment rates and the relatively poorer income gains for below average income workers, (3) an apparent drop in beef advertising and promotion and (4) changing consumer attitudes toward choice beef cuts.

If retail beef promotion did decline significantly last winter, this might be partially explained by (1) the industry expectation of impending lower beef supplies and (2) the fact that there are several pending producer court suits against retailers--a circumstance not conducive to encouraging retailers to promote beef products.

Beef production in the first quarter of 1977 was 2.5 percent below year earlier levels and in the second quarter it was about equal to the year earlier level. Despite this reduction in total beef supplies, the weak demand and high marketing margins coupled with a 2 to 3 percent increase in fed cattle marketings held choice steer prices below year earlier levels for most of the first half of 1977.

Third quarter fed cattle marketings are running slightly above both second quarter and year earlier levels and choice steer prices are holding at about \$40 per cwt. This is almost \$3 above year earlier levels (see table 1).

#### Outlook For Late 1977

Monthly fed cattle marketings during the rest of the year will run slightly below recent levels. But cow slaughter will increase seasonally. Beef imports will also be up since Australia and New Zealand are both behind schedule in their export quotas to the U. S. Consequently, total beef supplies during the fourth quarter of 1977 will probably remain at about 31 pounds of carcass beef per person (23 pounds retail weight), where it has been for the past 4 quarters. This suggests that beef prices will average near current levels for the last 4 months of 1977. Summer placements suggest a pattern of fall marketings that would result in some price decline into October and then for gradually increasing prices in November and December.

Feeder cattle prices will likely strengthen from expected September-October lows after the full impact of the huge corn crop hits--with its low harvest time prices. Choice steer calves will be bid into the high \$40's and, perhaps, even up to \$50 by the end of the year. Yearlings will sell for \$4 to \$5 less in contrast to the \$2 difference that existed last fall and the \$2 premium paid for yearlings in the fall of 1975. This changing price differential is due primarily to the decrease in feed prices and the impact this has on lowering feedlot costs. With costs of feedlot gains lower than choice steer prices, relatively higher prices can be paid for lighter animals that can put on more weight in the feedlot.

## Outlook For 1978

The USDA mid-year cattle inventory estimate was 2 percent below the year earlier estimate. This decline was less than expected, in part because a larger proportion of the calf crop was born before July 1.

Beef cow numbers were down 4 percent. Heifers held for beef cow herd replacements were down 10 percent. Dairy cow numbers were down 1 percent while heifers held for milk cow replacements were up 2 percent.

The most disappointing and hard to understand number was that of steers 500 pounds and over. This was reported to be the same as a year ago--despite last year's estimated large drop in calf crop, the high calf slaughter of last year and the high steer slaughter of this year. Although some of this apparent discrepancy can be explained by differential rates of gain between years, it appears to us that last year's calf crop was bigger than estimated and/or current yearling numbers are overestimated.

If the July 1 estimate is accepted, we must expect that steer and heifer slaughter during the first half of 1978 could be about equal to the level of January-June, 1977. And, with significantly lower grain prices, a higher proportion of these slaughter cattle will come from feedlots. Nonfed steer and heifer slaughter could drop sharply if placements remain very high in early 1978. Beef cow slaughter will be lower, but both pork and broiler supplies will be higher than in 1976. So the "impending beef shortage" people have been talking about the past 2 years appears to be delayed again. Therefore, the major portion of any price increase relative to first half 1976 must come on the demand side. And, after witnessing the sluggish demand of the past year, we see no good reason for planning on a reversal of this factor in the next 12 months. If increased per capita incomes result in only a minor shift in demand, choice steer prices would be only marginally improved over 1976 levels. This would put Omaha choice steers at \$38 to \$40 in the first quarter and \$40 to \$42 in the second quarter. However, since the pattern could be different this year, we suggest using a \$40 planning price for all of the first 6 months of 1978.

Using this \$40 sales price on fall purchased yearlings gives us a budget projection in which sales income will about equal feed and cash costs if choice yearlings are bought in the \$43 to \$45 range and corn is priced at \$1.50 to \$1.60. (See yearling budget. Note that if the futures price--currently \$37 to \$38 for April and June--is used as an outlook price, budgeted returns to labor and facilities would be negative.)

Beef supplies should drop during the last half of 1978 relative to both early 1978 and late 1977. Again, however, the drop will come in nonfed beef rather than in fed beef. We expect fed cattle marketings to be maintained above 1977 levels despite the 1.3 million drop in the calf crop because of the current greater interest in placing calves on feed. With the expected 10 percent increase in pork supplies offsetting the demand increase generated from a probable 10 percent decrease in cow slaughter, the only source of stronger demand for choice beef must again come from higher consumer incomes and inflation. If this has the historical impact, the 7 to 9 percent increase in average earnings--although mostly inflation--should push choice beef prices up by \$2 to \$3 over last half 1977 levels. However, if demand remains unresponsive to income increases as it did in 1977, fed cattle prices could be at current levels a year from now.

Assuming a 5 percent increase in demand due to income changes and a 10 percent drop in cow slaughter, we are suggesting a \$42 planning price for choice cattle sold next fall. Using this along with corn at \$1.65 (the alternative use value of the corn if dried and put under the government loan program) suggests that reasonable returns might be expected from choice steer calves purchased for less than \$50 per cwt. (see calf feeding budget).

Current low feed prices are giving a lift to feeder prices and subsequent returns to cow herds. Choice steer calves sold in the \$45 to \$50 range this fall will, however, still not cover 1977 feed and directly related cash costs for most Minnesota cow herds. The outlook for 1978 is somewhat improved because of (1) the higher fed cattle prices expected, (2) the lower calf crop expected in 1978 and (3) if grain prices remain relatively low. Even if corn prices improve by 25 cents or so next fall--a real possibility given low rainfall in the cornbelt in 1978--feeder prices could still be several dollars higher than this fall. Our cow-calf budget with \$52 steer calves shows a return about sufficient to cover feed and cash costs. Although still poor, these are better prospects than faced in the last 4 years.

The record of past cattle cycles suggests that after 3 or 4 "disastrous" years, another 3 to 4 years of "poor" returns to the cow herd can be expected. Finally, 2 or 3 "good" years can be expected before the next "bust" in the mid-80's that comes as a result of overexpansion during the "good" years.

#### Management Implications

After the large losses of the past 4 years, the beef industry is still looking at a poor return year for 1977-78. Realistic discussions with creditors should precede any additional investments in the beef enterprise. Special attention might be afforded the following decisions.

Expanding the beef herd: Unless low cost forage is in plentiful supply, our beef cow budgets suggest that there is still no need to get anxious about expanding the cow herd in the year ahead. Rather, if expansion fits the farm, additional heifer calves might be kept each fall. Prospects for keeping them in the herd can be evaluated the following summer.

Pricing home grown feeds: Use as feed prices the best expected net at the farm when figuring costs of keeping cattle. We backed off from the \$2 national corn support as follows: County support rate was assumed to be 10 cents less (check your local rate), drying costs were assumed to be 20 cents on a dry corn basis, delivery costs were assumed to be 5 cents. Thus, a price of \$1.65 was used in the calf feeding programs. A lower price, \$1.55, was used in the yearling budget to reflect the fact that full-priced corn with less storage costs is used in shorter feeding programs.

When to buy feeder cattle: Feeder price movements this fall will be influenced by fat cattle prices, grain prices and feeder cattle movements. The normal seasonal low is in December for both calves and yearlings. If fat cattle prices taper off into October and then strengthen, we expect the low in feeder prices to appear earlier than usual this year on both classes of feeders.

What to buy: Our research shows that those who buy top priced choice cattle usually do not fare as well as those buying lower priced feeders. At this writing, calves appear to be better buys than yearlings. Heifer calves have been "best buys" the past few years but may not be this fall if choice steer prices are increasing during the third quarter of 1978. Use your cost structures and your outlook prices to compare different buys with budgets similar to the attached.

When to sell feeders: Fall calf prices may become quite attractive. But, if excess forage is available for wintering, or wintering and pasturing, construct some budgets to help reach your "sell or hold" decision this fall. We expect winter feeder prices to be over October prices. But, remember that heavier feeders will get discounted because of the relatively low feedlot costs this winter. Thus, the \$46 - \$44 "hold-sell" prices used in the attached "winter calves 77-78" budget actually incorporate a \$2 general feeder price increase. If no price increase is expected, the \$13 budgeted return would disappear at \$42 for short yearlings sold in northern Minnesota (see the section of the budget entitled "returns per head for labor and facilities with different prices").

Table 1. Choice Steer Prices Per 100 Pounds, Omaha\*

Month	1971	1972	1973	1974	1975	1976	1977
Jan.	\$29.10	\$35.63	\$40.65	\$47.14	\$36.34	\$41.18	\$38.38
Feb.	32.18	36.32	43.54	46.38	34.74	38.80	37.98
March	31.89	35.17	45.65	42.85	36.08	36.14	37.28
April	32.41	34.52	45.03	41.53	42.80	43.12	40.08
May	32.86	35.70	45.74	40.52	49.48	40.62	41.98
June	32.35	37.91	46.76	37.98	51.82	40.52	40.24
July	32.44	38.38	47.66	43.72	50.21	37.92	40.94
Aug.	33.10	35.70	52.94	46.62	46.80	37.02	39.93**
Sept.	32.58	34.69	45.12	41.38	48.91	36.97	
Oct.	32.22	34.92	41.92	39.64	47.90	37.88	
Nov.	33.30	33.59	40.14	37.72	45.23	39.15	
Dec.	34.28	36.85	39.36	37.20	45.01	39.96	
Average	\$32.39	\$35.78	\$44.54	\$41.89	\$44.61	\$39.11	\$39.57***

\* 900 to 1,100 pounds.

\*\* For week ending August 13.

\*\*\* Average of first 8 months.

Table 2. Feeder Cattle Price Per 100 Pounds, Kansas City

Month	Choice Feeder Steer (600 - 700#)				Choice Feeder Calves (400 - 500#)			
	1974	1975	1976	1977	1974	1975	1976	1977
Jan.	\$50.58	\$26.45	\$37.46	\$36.49	\$54.66	\$25.55	\$37.47	\$37.99
Feb.	47.95	26.96	40.42	37.86	54.45	26.29	41.40	41.69
March	44.81	28.75	39.69	38.95	54.02	29.14	44.01	44.36
April	44.15	31.69	44.62	41.69	50.30	31.45	47.01	45.72
May	40.14	35.50	44.21	41.72	45.48	34.66	47.58	45.20
June	35.10	36.81	42.83	39.90	39.96	35.82	44.81	42.46
July	36.72	34.70	39.18	40.64	37.72	32.58	40.64	43.14
Aug.	36.70	34.34	38.94	41.58*	36.84	31.70	41.13	44.70*
Sept.	30.49	37.59	36.18		32.40	35.15	38.18	
Oct.	30.94	38.09	36.72		30.47	36.04	39.81	
Nov.	28.71	38.26	36.26		27.31	36.26	38.46	
Dec.	28.27	37.83	36.23		26.54	35.94	38.22	
Average	\$37.88	\$33.91	\$39.40	\$39.85**	\$40.84	\$32.55	\$41.56	\$43.16**

\* For week ending August 13.

\*\* Average of first 8 months.

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08-24-77 NORTHERN MINNESOTA

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BEEF COW-CALF BUDGET AND RETURN TABLES

	HERD	PER COW
HERD SIZE AND PERFORMANCE:		
NUMBER OF COWS IN HERD.....	100	
NUMBER OF REPLACEMENT HEIFERS.....	14	
PERCENT CALF CROP .....	85	
PERCENT COWS CULLED ANNUALLY .....	13	
PERCENT DEATH LOSS .....	.80	

VALUE PRODUCED:		
43 STEER CALVES 445 LBS #A \$52.00 .....	9834.50	
29 HEIFER CALVES 422 LBS #A \$44.20 .....	5362.75	
13 CULL COWS 1000 LBS #A \$28.00 .....	3640.00	
TOTAL SALES .....	18837.25	188.37

FEED REQUIREMENTS(HERD) AND COSTS:		
HAY 289.0 TONS #A \$40.00 .....	11560.00	115.60
PASTURE 550.0 COW MO.#A \$ 4.00 .....	2200.00	22.00
CORN 250.0 BU. #A \$ 1.80 .....	450.00	4.50
MINERAL 50.0 CWT #A \$ 7.00 .....	350.00	3.50
TOTAL FEED COST .....	14560.00	145.60

OPERATING COSTS:		
INTEREST ON ANIMAL DEBT(8.0#B) .....	2400.00	24.00
HIRED LABOR .....	100.00	1.00
BREEDING COSTS .....	400.00	4.00
SELLING COST .....	551.00	5.51
OTHER OPERATING COSTS .....	950.00	9.50
TOTAL OPERATING COSTS .....	4401.00	44.01

TOTAL FEED AND OPERATING COSTS ..... 18961.00 189.61

BUDGETED RETURN TO LAB,FACILITY,EQUITY IN COWS -123.75 -1.24

RETURN TO HERD FOR LABOR, FACILITIES, AND COW EQUITY CAPITAL

STEER PRICE	PER CENT CALF CROP				95
	75	80	85	90	
42.00	-4684	-3865	-3045	-2226	-1406
47.00	-3424	-2504	-1584	-664	255
52.00	-2164	-1143	-123	897	1918
57.00	-904	216	1338	2459	3580
62.00	355	1577	2799	4021	5242

RETURN TO HERD FOR LABOR, FACILITIES, AND COW CAPITAL

WEANING WEIGHT	PER CENT CALF CROP				95
	75	80	85	90	
405	-3342	-2415	-1489	-562	364
425	-2753	-1779	-806	167	1141
445	-2164	-1143	-123	897	1918
465	-1575	-507	559	1627	2695
485	-986	128	1242	2357	3472

BUDGET FOR STEER CALF

	HEAD	CWT GAIN
PERFORMANCE:		
PURCHASE WEIGHT, LBS .....	425.	
SELLING WEIGHT, LBS .....	650.	
TOTAL GAIN, LBS .....	225.	
AVERAGE DAILY GAIN, LBS .....	1.25	
DAYS ON FEED .....	180.	

VALUE PRODUCED:		
SALE VALUE AT \$ 44.00 /CWT.....	\$ 286.00	
PURCHASE COST AT \$ 46.00 /CWT .....	195.50	
GROSS MARGIN .....	90.50	\$ 40.22

FEED REQUIREMENTS AND COSTS:		
CORN 4.00 BU AT \$ 1.75 .....	7.00	3.11
HAY 1.15 TON AT \$ 45.00 .....	51.75	23.00
TOTAL FEED COST .....	58.75	26.11

OPERATING COSTS:		
INTEREST ON ANIMALS ( 8.5 PERCENT) ..	8.19	3.64
DEATH LOSS ( 1.0 PERCENT) .....	2.04	.91
SELLING AND BUYING COSTS .....	3.00	1.33
OTHER OPERATING COSTS .....	5.08	2.22
TOTAL OPERATING COSTS .....	18.23	8.10

TOTAL FEED @ OPERATING COSTS ..... 76.98 34.21

BUDGETED RETURN TO LABOR @ FACILITIES..\$ 13.52 6.01

RETURN PER HEAD FOR LABOR @ FACILITIES WITH DIFFERENT PRICES

SELLING PRICE/CWT	WHEN PURCHASE COST PER CWT IS:				
	42.00	44.00	46.00	48.00	50.00
40.00	5.41	-3.54	-12.48	-21.43	-30.37
42.00	18.41	9.46	.52	-8.43	-17.37
44.00	31.41	22.46	13.52	4.57	-4.37
46.00	44.41	35.46	26.52	17.57	8.63
48.00	57.41	48.46	39.52	30.57	21.63

BREAK EVEN SELLING PRICES THAT WILL COVER FEED, OPERATING, AND \$15.00 RETURN FOR LABOR AND FACILITIES.

PURCHASE PRICE/CWT	WHEN CORN PRICE PER BU IS:				
	1.40	1.57	1.75	1.92	2.10
42.00	41.26	41.37	41.48	41.58	41.69
44.00	42.64	42.74	42.85	42.96	43.07
46.00	44.01	44.12	44.23	44.34	44.44
48.00	45.39	45.50	45.60	45.71	45.82
50.00	46.76	46.87	46.98	47.09	47.20

NOTE: TO COVER ONLY FEED AND OPERATING COSTS SUBTRACT \$ 2.31

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BUDGET FOR STEER YEARLING  
USING A HIGH SILAGE RATION # 4

	HEAD	CWT GAIN
<b>PERFORMANCE:</b>		
PURCHASE WEIGHT, LBS .....	650.	
SELLING WEIGHT, LBS .....	1150.	
TOTAL GAIN, LBS .....	500.	
AVERAGE DAILY GAIN, LBS .....	2.20	
DAYS ON FEED .....	227.	
<b>VALUE PRODUCED:</b>		
SALE VALUE AT \$ 40.00 /CWT.....	\$ 460.00	
PURCHASE COST AT \$ 44.00 /CWT .....	286.00	
GROSS MARGIN .....	174.00	\$ 34.80
<b>FEED REQUIREMENTS AND COSTS:</b>		
CORN 40.00 BU AT \$ 1.55 .....	62.00	12.40
SILAGE 3.30 TON AT \$ 12.00 .....	39.60	7.92
HAY .30 TON AT \$ 50.00 .....	15.00	3.00
PROTSUP 2.30 CWT AT \$ 8.00 .....	18.40	3.68
MINERAL .33 CWT AT \$ 7.00 .....	2.31	.46
TOTAL FEED COST .....	137.31	27.46
<b>OPERATING COSTS:</b>		
INTEREST ON ANIMALS ( 8.5 PERCENT) ..	15.14	3.03
DEATH LOSS ( .7 PERCENT) .....	2.14	.43
SELLING AND BUYING COSTS .....	10.00	2.00
OTHER OPERATING COSTS .....	8.00	1.60
TOTAL OPERATING COSTS .....	35.27	7.05
TOTAL FEED @ OPERATING COSTS .....	172.58	34.52
BUDGETED RETURN TO LABOR @ FACILITIES..\$	1.42	.28

RETURN PER HEAD FOR LABOR @ FACILITIES WITH DIFFERENT PRICES

SELLING PRICE/CWT	WHEN PURCHASE COST PER CWT IS:				
	40.00	42.00	44.00	46.00	48.00
36.00	-17.02	-30.80	-44.58	-58.37	-72.15
38.00	5.98	-7.80	-21.58	-35.37	-49.15
40.00	28.98	15.20	1.42	-12.37	-26.15
42.00	51.98	38.20	24.42	10.63	-3.15
44.00	74.98	61.20	47.42	33.63	19.85

BREAK EVEN SELLING PRICES THAT WILL COVER FEED, OPERATING, AND \$15.00 RETURN FOR LABOR AND FACILITIES.

PURCHASE PRICE/CWT	WHEN CORN PRICE PER BU IS:				
	1.24	1.39	1.55	1.70	1.86
40.00	37.16	37.97	38.78	39.60	40.41
42.00	38.36	39.17	39.98	40.79	41.61
44.00	39.56	40.37	41.18	41.99	42.80
46.00	40.76	41.57	42.38	43.19	44.00
48.00	41.95	42.77	43.58	44.39	45.20

NOTE: TO COVER ONLY FEED AND OPERATING COSTS SUBTRACT \$ 1.30

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CATTLE FEEDING BUDGET  
RESULTS FOR: GOOD-CH CALVES 77-78  
08-23-77 SOUTHERN MINNESOTA

BUDGET FOR STEER CALF  
USING A HIGH SILAGE RATION # 2

	HEAD	CWT GAIN
<b>PERFORMANCE:</b>		
PURCHASE WEIGHT, LBS .....	430.	
SELLING WEIGHT, LBS .....	1080.	
TOTAL GAIN, LBS .....	650.	
AVERAGE DAILY GAIN, LBS .....	1.90	
DAYS ON FEED .....	342.	
<b>VALUE PRODUCED:</b>		
SALE VALUE AT \$ 42.00 /CWT.....	\$ 453.60	
PURCHASE COST AT \$ 48.00 /CWT .....	206.40	
GROSS MARGIN .....	247.20	\$ 38.03
<b>FEED REQUIREMENTS AND COSTS:</b>		
CORN 40.00 BU AT \$ 1.65 .....	66.00	10.15
SILAGE 4.00 TON AT \$ 12.00 .....	48.00	7.38
HAY .40 TON AT \$ 50.00 .....	20.00	3.08
PROTSUP 3.30 CWT AT \$ 8.00 .....	26.40	4.06
MINERAL .45 CWT AT \$ 7.00 .....	3.15	.48
TOTAL FEED COST .....	163.55	25.16
<b>OPERATING COSTS:</b>		
INTEREST ON ANIMALS ( 8.5 PERCENT) ..	16.44	2.53
DEATH LOSS ( 1.8 PERCENT) .....	4.07	.63
SELLING AND BUYING COSTS .....	9.00	1.38
OTHER OPERATING COSTS .....	12.00	1.85
TOTAL OPERATING COSTS .....	41.51	6.39
TOTAL FEED @ OPERATING COSTS .....	205.06	31.55
BUDGETED RETURN TO LABOR @ FACILITIES..\$	42.14	6.48

RETURN PER HEAD FOR LABOR @ FACILITIES WITH DIFFERENT PRICES

SELLING PRICE/CWT	WHEN PURCHASE COST PER CWT IS:				
	44.00	46.00	48.00	50.00	52.00
38.00	17.85	8.39	-1.06	-10.51	-19.96
40.00	39.45	29.99	20.54	11.09	1.64
42.00	61.05	51.59	42.14	32.69	23.24
44.00	82.65	73.19	63.74	54.29	44.84
46.00	104.25	94.79	85.34	75.89	66.44

BREAK EVEN SELLING PRICES THAT WILL COVER FEED, OPERATING, AND \$25.00 RETURN FOR LABOR AND FACILITIES.

PURCHASE PRICE/CWT	WHEN CORN PRICE PER BU IS:				
	1.32	1.48	1.65	1.81	1.98
44.00	36.74	37.70	38.66	39.63	40.59
46.00	37.61	38.57	39.54	40.50	41.46
48.00	38.49	39.45	40.41	41.38	42.34
50.00	39.36	40.33	41.29	42.25	43.21
52.00	40.24	41.20	42.16	43.13	44.09

NOTE: TO COVER ONLY FEED AND OPERATING COSTS SUBTRACT \$ 2.31

# HOGS

AT A GLANCE: Indicators point to a slight decrease in hog marketings this fall compared to a year earlier followed by increases throughout 1978. Demand for pork, however, should be stronger in the face of higher incomes and lower supplies of beef. Hog prices will decline to levels in the high \$30's per cwt. by mid-fourth quarter 1977. Prices can be expected to range in the mid to high \$30's per cwt. through much of the first half of 1978 before dropping to the low \$30's by late 1978. With production costs expected to be lower in 1978 than in 1977, hog producers will continue to show profits through most of 1978.

## Factors To Consider

A large number of factors interact to influence hog prices. Those which are considered throughout this analysis are listed below.

Table 1. Model Of Factors Affecting Hog Price And The Relationship Of Each On Hog Prices

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<u>Factor</u>	<u>Percent Change In Hog Price For Each 1 Percent Increase In Factor</u>
Disposable Income	+0.4
Population	+1.0
Beef Supplies	-0.3
Poultry Supplies	-0.2
Pork Supplies	-2.3

---

The impact of the demand and supply factors differ greatly. For example a 1 percent change in poultry supplies can be expected to change hog prices by only two-tenths of a percent. However, a change in pork supplies of 1 percent will impact on pork prices by 2.3 percent. Therefore, it is most important in an outlook analysis to get a good line on expected hog supply changes.

### Review Of Recent Past

Commercial hog slaughter in first half 1977 continued to show the increase which began to develop in mid-1976. Following increases of 17 and 27 percent, respectively, in pork production in the last 2 quarters of 1976 over year earlier levels, pork production in the first half of 1977 was 14 percent higher than a year earlier. All of this increase in slaughter resulted from expanded 1976 farrowings, reflecting hog producers' positive response to good hog profits in 1975 and 1976.

Demand for pork during the first half of 1977 appears to have been quite strong due to increased incomes, higher population, some reduction in total beef supplies and some renewed interest on the part of consumers for pork. As a result, barrow and gilt prices in the first 2 quarters of 1977 rebounded well from the low fourth quarter 1976 level but remained well below year earlier levels as a result of the larger hog supplies. Barrow and gilt prices on 7 major markets averaged \$39.10 per cwt. in the first quarter 1977 and \$40.87 in the second quarter. The third quarter average will likely be around \$43 per cwt. (see table 2).

U.S. sow farrowings during the December 1976 - February 1977 quarter were reported to have been 12 percent greater than in the previous year. March-May farrowings were estimated to be down 1 percent. When added together, sow farrowings for the entire spring period, December-May, were up 5 percent. A decrease in pigs saved per litter resulted in only a 2 percent increase in total pigs born last winter and spring; thus, a continuation of expansion in the hog cycle which began in 1976.

Total profits in the complete hog enterprise have continued to be positive through much of 1977, but down significantly from the very strong profit picture of early 1976.

### Market Prospects--Fall 1977

Pork production for the fourth quarter of 1977 will be heavily influenced by farrowings in the March-May quarter, 1977. The number was down by 1 percent from a year earlier. Pigs from these farrowings showed up in June 1 inventories as pigs under 60 pounds. This weight group was also down 1 percent from a year earlier. Slaughter weights have been running about the same as a year ago and are expected to continue at about current levels. Fewer sows and gilts will be marketed this fall compared with a year ago due to expected expansion in sows farrowing next spring. On balance, then, although fourth quarter slaughter will be seasonally up some 13 percent from third quarter, it will run 1 to 3 percent under a year ago.

Demand for pork is expected to be up by about 3 percent from fourth quarter 1976 due mainly to increased incomes and population. Since 2 percent less pork is expected, prices will have to rise over 1976 to ration the shorter supply. Using the relationships noted in table 1, prices should rise about 12 percent over the \$34.14 average for fourth quarter 1976, due to normal supply and demand factors. If marketing margins are reduced from last year's high levels as expected, further price strength could develop. We expect the price to range from \$39 to \$41 per cwt. during this fall quarter considering all factors.

Average production costs for a complete hog enterprise over the spring and summer months of 1977 would require a breakeven level on hogs marketed in the fourth quarter of 1977 of about \$34 to \$35 per cwt. This means that the predicted price level for fourth quarter 1977 will be sufficient to cover all hog production costs, including a good return to labor and investment.

With this projection, per capita consumption of pork will be approximately 61 pounds in 1977, compared with only 58 pounds in 1976 and 55 pounds in 1975. We expect per capita consumption of pork to climb to 65 pounds per person in 1978.

#### Market Prospects For First Half 1978

Hog marketing for the first half of 1978 will come largely from the June-November 1977 pig crop. Hog producers in the U.S., as reported in the June 1 Hogs and Pigs Report, planned to increase farrowings over the entire June-November period by 5 percent from last half 1976. Quarterly estimates for a 14-state sample indicated a 5 percent increase in June-August farrowings and a 4 percent increase in September-November. Since economic conditions in the hog industry did not change materially over the summer months of 1977, we think that these estimates will be close to the actual farrowing level give or take 1 percent.

If farrowings develop according to intentions, hog slaughter during the first half of 1978 would be about 4 to 6 percent above levels in first half 1977, with the most marked increase toward the end of second quarter.

Part of this increase in supplies will likely be absorbed in the market by increased demand for pork. As was the case in fourth quarter 1977, expanded income and population should increase demand for pork by about 5 percent over year earlier levels. However, increased poultry and fed beef supplies could offset about 2 percent of that increase. On net, this means that about 2 percent of the expected increase in hog supply will be felt in the hog market as a depressant on hog prices. Using a 2.3 percent price flexibility factor for each 1 percent change in net supplies, we can expect prices to decline by about 5 percent (2 percent x 2.3) as a result of pork supplies being expected to increase more than demand. Applying this decrease to quarterly prices of last year, we would predict a \$36 to \$38 per cwt. hog price level in first quarter 1978 and a \$37 to \$39 per cwt. level in second quarter 1978.

Profit prospects for first half 1978 depend largely on both hog price levels and feed price levels as well as hog prices. Current expectations call for a corn price at the farm level of about \$1.60 to \$1.80 during the feeding period for hogs marketed in first half of 1978. Protein costs are also expected to be somewhat lower than a year ago. Thus, feed costs will be sharply below last year.

With feed costs expected to be down enough in first half 1978 to more than offset the drop in hog prices, profit prospects look better than the breakeven levels of the first half 1977 for both feeder pig production and complete hog enterprises.

The hog budgets in tables 3, 4 and 5 give estimated costs and returns for complete hog, feeder pig finishing and feeder pig production enterprises. These can be compared with predicted prices for purposes of estimated profit prospects.

### Prospects For Last Half 1978

Market and price conditions over the second half of 1978 will depend to a great degree on what happens to farrowing during the winter quarter (December-February) and spring quarter (March-May) of 1978. Most of the indications point to continued expansion in output for both quarters. Some of the factors considered in this prediction were:

1. Hog prices high enough during the breeding season for the winter quarter farrowings to cover costs of production and return a moderate profit.
2. Sizeable corn crop and low corn prices during the fall breeding season for the spring 1978 farrowing season.
3. Hog prices high enough in fourth quarter 1977 compared with production costs to return a profit.

We think winter quarter farrowings, which will finally result in 1978 summer marketings, will increase in a range of from 6 to 9 percent compared with year earlier levels. It seems likely that the spring pig crop could be even greater than this, depending on how low corn prices go this fall relative to hog prices. For purposes of making some price projections, we will assume that farrowings in the spring quarter will increase by 10 to 12 percent over year earlier levels.

Given this much expansion, it is quite likely that hog prices could move down from the high \$30's per cwt. in the summer of 1978 to low \$30's level by fourth quarter. This would put the hog enterprise at a sub-profitable level and, therefore, set the stage for another cut-back in numbers in 1979.

Table 2. Quarterly Commercial Hog Marketings And Prices

<u>Year</u>	<u>Quarter</u>	<u>Number Marketed</u> million head	<u>Slaughter Hogs</u> <u>Seven Markets</u>	<u>Feeder Pigs</u> <u>Northern Minn.</u> <u>40 Pounds</u>
			Average Price per cwt.	Average Price per head
1975	1	18.8	\$39.35	\$29.60
	2	17.8	46.11	38.11
	3	15.3	58.83	43.07
	4	16.8	52.20	45.45
1976	1	17.4	48.00	45.04
	2	16.8	49.19	43.52
	3	17.9	43.88	28.34
	4	21.5	34.14	20.80
1977	1	19.7	39.10	30.31
	2	18.6	40.87	36.68
	3	18.0*	43-45*	36-38*
	4	21.1*	39-41*	33-35*
1978	1	20.5-21.1*	36-38*	31-34*
	2	19.7-20.1*	37-39*	30-32*
	3	19.2-19.8*	35-37*	27-30*
	4	22.0-22.5*	30-33*	26-28*

\* Estimate

Table 3. Feeder Pig Production - Estimated Costs And Returns

	<u>Sow - 2 Litters</u>	<u>Per Feeder Pig</u>	<u>My Figures</u>
<u>Value Produced</u>			
15.5 Pigs @ \$32/head . . . . .	\$496.00	\$32.00	
.5 Sow - 450# @ \$29/cwt. . . . .	65.25	4.21	
Total . . . . .	<u>\$561.25</u>	<u>\$36.21</u>	
<u>Feed Requirements and Costs</u>			
Corn @ \$1.65/bu. . . . . 60 bu.	\$ 99.00	3.9 bu. \$ 6.39	
Supplement @ \$10.00/cwt. . . . 800 lbs.	80.00	52 lbs. 5.20	
Total Feed . . . . .	<u>\$179.00</u>	<u>\$11.59</u>	
<u>Operating Costs</u>			
Veterinary and medicine . . . . .	\$ 12.87	\$ .83	
Electricity and fuel . . . . .	10.08	.65	
Hauling and marketing . . . . .	23.25	1.50	
Grind and mix . . . . .	6.66	.43	
Breeding . . . . .	8.06	.52	
Interest on livestock . . . . .	14.00	.90	
Equipment repair . . . . .	4.65	.30	
Miscellaneous expenses . . . . .	5.00	.32	
Total Operating . . . . .	<u>\$ 84.57</u>	<u>5.45</u>	
Total Feed and Operating . . . . .	\$263.57	\$17.04	
Return for Labor and Facilities . . .	\$297.68	\$19.17	

Table 4. Complete Hog Program - Estimated Costs And Returns

	<u>Sow - 2 Litters</u>	<u>Per Cwt. Produced</u>	<u>My Figures</u>
<u>Value Produced</u>			
14 Pigs - 230# @ \$36/cwt. . . . .	\$1,159.20		
1 Sow - 400# @ \$29/cwt. . . . .	116.00		
Total (3,620 lbs.) . . . . .	<u>\$1,275.20</u>	\$35.23	
<u>Feed Requirements and Costs</u>			
Corn @ \$1.65/bu. . . . . 230 bu.	\$ 379.50	356 lbs. \$10.49	
Supplement @ \$9.00/cwt. . . . 2,400 lbs.	216.00	66 lbs. 5.94	
Total Feed . . . . .	<u>\$ 595.50</u>	<u>\$16.43</u>	
<u>Operating Costs</u>			
Veterinary and medicine . . . . .	\$ 20.00	\$ .55	
Electricity and fuel . . . . .	13.06	.36	
Hauling and marketing . . . . .	47.06	1.30	
Grind and mix . . . . .	24.45	.68	
Breeding . . . . .	8.06	.22	
Interest on livestock . . . . .	26.00	.72	
Equipment repair . . . . .	14.00	.39	
Miscellaneous expenses . . . . .	8.00	.22	
Total Operating . . . . .	<u>\$ 160.63</u>	<u>\$ 4.44</u>	
Total Feed and Operating . . . . .	\$ 756.13	\$20.87	
Return for Labor and Facilities . . .	\$ 519.07	\$14.36	

Table 5.

COMPUTER DECISION AIDS  
 EXTENSION FARM MANAGEMENT  
 AGRI. EXTENSION SERVICE  
 UNIVERSITY OF MINNESOTA

AGRICULTURAL ECONOMICS PROGRAM:  
 FEEDER PIG BUDGET  
 RESULTS FOR: HOG FEEDER  
 08-25-77 SOUTHERN, MN.

	HEAD	CWT GAIN
PERFORMANCE:		
WEIGHT SOLD .....( 1-14-78).....	230.	
WEIGHT PURCHASED ( 9-15-77).....	40.	
DAYS ON FEED .....	121.	
AVERAGE DAILY GAIN, LBS .....	1.57	
POUNDS FEED PER POUND OF GAIN ..	3.92	
VALUE PRODUCED:		
SALE VALUE AT \$ 36.00 /CWT .....	\$ 82.80	
PURCHASE COST AT \$ 36.00 /HEAD .	36.00	
DEATH LOSS ( 3.0#B) .....	1.11	.59
VALUE PRODUCED .....	45.69	24.05
FEED REQUIREMENTS/HEAD AND COSTS:		
CORN 11.01 BU AT \$ 1.65 ..	18.17	9.56
PROSUP40#B 1.30 CWT AT \$ 9.00 ..	11.66	6.14
(MIN,VIT,ANTIB INCL IN PROT SUP)		
TOTAL FEED COST .....	29.83	15.70
OPERATING COSTS:		
INTEREST ON ANIMALS ( 8.5#B) ....	1.05	.55
SELLING AND BUYING COSTS .....	3.00	1.58
OTHER OPERATING COSTS .....	4.00	2.11
TOTAL OPERATING COSTS .....	8.05	4.23
TOTAL FEED @ OPERATING COSTS	37.88	19.93
RETURN FOR LABOR @ FACILITIES	7.81	4.11

RETURN PER HEAD FOR LABOR @ FACILITIES WITH DIFFERENT PRICES

SELLING PRICE/CWT	WHEN PURCHASE COST PER HEAD IS:				
	32.00	34.00	36.00	38.00	40.00
30.00	-1.75	-3.87	-5.99	-8.11	-10.23
32.00	2.85	.73	-1.39	-3.51	-5.63
34.00	7.45	5.33	3.21	1.09	-1.03
36.00	12.05	9.93	7.81	5.69	3.57
38.00	16.65	14.53	12.41	10.29	8.17
40.00	21.25	19.13	17.01	14.89	12.77
42.00	25.85	23.73	21.61	19.49	17.37

BREAK EVEN SELLING PRICES THAT WILL COVER FEED, OPERATING AND \$ 5.00 PER HEAD FOR LABOR AND FACILITIES.

PURCHASE PRICE/HEAD	WHEN CORN PRICE PER BU IS:				
	1.35	1.50	1.65	1.80	1.95
30.00	30.58	31.29	32.01	32.73	33.45
32.00	31.50	32.22	32.93	33.65	34.37
34.00	32.42	33.14	33.86	34.57	35.29
36.00	33.34	34.06	34.78	35.50	36.21
38.00	34.26	34.98	35.70	36.42	37.14
40.00	35.19	35.90	36.62	37.34	38.06
42.00	36.11	36.83	37.54	38.26	38.98

## DAIRY

AT A GLANCE: Sharp increases in production throughout 1976 caused manufacturing milk prices to drop to support levels with ensuing government purchases by year's end. More modest increases in production have occurred in 1977. Increased production together with sluggish demand has triggered large government purchases. Milk prices are now somewhat below the support level. Milk supplies are expected to increase at a slower pace in 1978. If demand recovers, government purchases will be held to near this year's relatively high levels. Milk prices in 1978 should hover near the support level and average slightly above 1977.

### Review And Prospects For The Rest Of 1977

1976 milk production totaled 120.4 billion pounds, up 4 percent from 1975 (see table 1). This was the highest annual production since 1965 and the largest year-to-year gain since 1953. A large (5 percent) increase in production per cow more than offset relatively small declines (less than 1 percent) in milk cow numbers. Even though beginning stocks were low and commercial disappearance was up substantially from 1975, the sharp increases in production out-stripped demand and caused milk prices to fall from August highs to support levels by year's end (table 2). As a result, government stocks began to build.

Milk production through the first half of 1977 has increased at about a 2 to 2.5 percent rate. The 3 percent increase in June represented the largest June output since 1966 and the 21<sup>st</sup> straight month of increases from a year earlier. Farm milk prices should move close to the \$9 support level as supplies subside seasonally and, thus, average above 1976 levels (table 2). Feed prices are expected to be considerably lower. Thus, high levels of concentrate feeding are expected to bring about increases in production per cow. Declines in cow numbers are likely to remain small as higher milk prices, lower feed prices, and larger replacement numbers off-set the effects of somewhat higher cull cow prices and improved off-farm employment opportunities. Thus, total production for the year is expected to be up about 2 percent (see table 1). With the season's average price about equal to last year, gross income from dairy should be up slightly in 1977.

In the face of these larger supplies, commercial dairy sales during the first half of the year have been down about 3 percent from 1976. Butter sales have been down about 15 percent while cheese sales have been sluggish in the face of competition from red meats. Fluid sales were off slightly. Total commercial usage probably will return to year-earlier levels during the second half of the year, with total annual use down about 1 percent (table 1).

Thus, large beginning stocks, continued production increases and a weakened demand picture have caused a sharp increase in government purchases (table 1). Government purchases during the first half of the year totaled 4.7 billion pounds milk equivalent, the largest for the same period since 1971. Most of these removals were in the form of butter (180 million pounds), though the 103 million pounds of cheese purchased was the most since 1962. Net removals of non-fat dry milk were up substantially but still only one-half the level of 1975. Given the expected milk supply/use picture, government removals will likely continue large until fall, with the 1977 total running around 7 billion pounds milk equivalent. It is estimated that these purchases cost the government about \$10 per cwt. of purchased milk equivalent, thus the current budgetary concern with dairy support programs.

### Prospects For 1978 And Beyond

In a nutshell, the happenings of the past 12 months--continued increases in supply, sluggish demand and higher support prices--have set the tone for the next couple of years at least. Production will likely continue to outstrip demand, forcing substantial government purchases. As a result, milk prices will likely continue to hover near support levels.

With expected favorable milk/feed price relationships, milk production is expected to be up at least 1 percent (table 1). Commercial use may recover to 1976 levels. If things work out this well, government removals will only go up slightly. However, if production should go up more sharply or disappearance lag, then government removals could approach the peak levels of 1953 and 1962 when removals were at the 10 billion pound level.

In any case the dairy industry is once again faced with a surplus problem. It's no comfort to dairymen to realize that world dairy markets are also glutted with no improvement in sight. Milk prices will likely average somewhat higher for 1978 as markets adjust to the new support level. With slightly higher production, gross incomes will be up slightly.

### Price Support Developments

On April 1, 1977, the price support level for manufacturing milk of national average test was raised to \$9 per cwt. This was about 83 percent of parity at the time. For milk of 3.5 percent test, the price equivalent would be about \$8.79.

Many dairymen have raised questions about the operation of the price support program since the price received for their milk has been below the support level. The price support goal of \$8.79 for milk of 3.5 percent test is a market average so the price received by individual dairymen would be expected to deviate some from the average price. Even so, the Minnesota-Wisconsin price has been consistently below the price support goal since April. Sluggish wholesale cheese prices have generally been cited

as the reason for failure of the Minnesota-Wisconsin price to move up rapidly to the support goal. Gradual improvement has been made, however, as the government has attempted to make more cheese eligible for price support purchase as block, barrel and process cheese. This improvement should continue in the next few months.

The Food and Agriculture Act of 1977, presently before Congress, calls for a minimum support level of 80 percent of parity until March 31, 1979. Then the minimum will revert to the present 75 percent of parity. In addition, supports will be required to be adjusted semi-annually, except quarterly adjustments will be authorized when production costs increase sharply. By October, 1977, it is expected that the present level of supports of \$9 will calculate out at about 80 percent of parity because of increases in the price of inputs.

### Management Implications

With abundant milk supplies and little chance of much price improvement, dairymen must pay close attention to the amount produced and the cost of producing it. Since feed is the major cost in dairying and one that influences output directly, careful attention to the feeding program is in order. Also, with marked changes in the prices of feeds, attention should be paid to finding the least cost ration.

Focusing on the longer-term picture for dairying, we see little chance of the price of milk increasing compared to the price of inputs in the next 5 years. Thus, any plans to expand operations should be budgeted out carefully. Getting better before you get bigger is sage advice under current conditions.

Table 1. U.S. Milk Supply And Disappearance, 1976, With Projections For 1977 & 1978 <sup>1/</sup>

	<u>1976</u> <sup>2/</sup>	<u>1977</u> <sup>3/</sup>	<u>1978</u> <sup>3/</sup>
	----- billion pounds -----		
Production	120.4	123.0	124.5
Less farm use	3.1	3.0	2.9
Marketings	117.3	120.0	121.6
Beginning commercial stocks	3.7	5.3	5.0
Imports	<u>1.9</u>	<u>1.9</u>	<u>1.9</u>
Total "supply"	122.9	127.2	128.5
Ending commercial stocks	5.3	5.0	5.0
Net government removals	1.2	7.2	7.5
Commercial disappearance	<u>116.4</u>	<u>115.0</u>	<u>116.0</u>
Total "disappearance"	122.9	127.2	128.5

<sup>1/</sup> Milk equivalent, fat solids basis.

<sup>2/</sup> Dairy Situation, July 1977.

<sup>3/</sup> Estimated by authors.

Table 2. Minnesota-Wisconsin Manufacturing Milk Price, 1975 To Date

<u>Month</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
January	\$6.80	\$8.90	\$8.19
February	6.85	8.25	8.16
March	6.86	8.60	8.31
April	6.94	8.44	8.60
May	7.02	8.30	8.62
June	7.11	8.32	8.60
July	7.35	8.71	8.65
August	7.70	8.99	
September	8.27	8.46	
October	8.60	8.26	
November	8.84	8.26	
December	<u>9.08</u>	<u>8.25</u>	
Season Average	7.62	8.48	

## SHEEP AND LAMBS

**AT A GLANCE:** Slaughter lamb prices are expected to remain at late summer levels over the remaining months of 1977 due to a slight decline in seasonal slaughter and some increase in demand. Feeder lambs will continue to sell at prices close to slaughter lambs. Fed lamb prices during the first half of 1978 should remain in the low \$50's per cwt. range.

### Native Ewe Flock

The number of sheep and lambs on U. S. farms and ranches on January 1, 1977 totaled 12.7 million head, down almost 0.6 million head from year earlier levels. This decline reflected the trend which has persisted since 1960 plus the drought conditions which hit the sheep areas of the country in 1976. According to the estimates shown in table 1, the number of sheep in inventory will probably be about the same at the end of 1977. Some people believe that this is the first evidence of a reversal of the long-term trend. It is too early to tell yet but the favorable returns experienced in the sheep industry in recent years should begin to make sheep somewhat more attractive than they have been. Therefore, some leveling off of sheep numbers might be expected in the future.

Table 1. U. S. Sheep And Lamb Balance Sheet (Million Head)

<u>Item</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
<u>January 1 Number</u>			
Stock Sheep . . . . .	12.4	11.4	11.0
On Feed . . . . .	2.1	1.9	1.7
Total . . . . .	14.5	13.3	12.7
Lamb Crop . . . . .	9.8	8.9	8.5
Net Imports . . . . .	-0.3	-0.3	-0.3
Total Supply . . . . .	24.0	21.9	20.9
Slaughter . . . . .	8.1	6.9	6.6
Other Disappearance . . . . .	2.6	2.3	2.2
Total Disappearance . . . . .	10.7	9.2	8.8
<u>December 31 Number</u> . . . . .	13.3	12.7	12.0

The 1977 U. S. lamb crop was estimated at 8.5 million head. This was down 4 percent from year earlier levels.

Commercial sheep and lamb slaughter over the first 6 months of 1977 totaled 3.2 million head, 2 percent fewer than were slaughtered through mid-1976. Slaughter through July and early August was down about 9 percent. Sheep and lamb slaughter over the third and fourth quarters of 1977 will be down by at least 5 percent from year earlier levels. Part of this decrease, however, will be offset by higher slaughter weights as lamb feeders respond to lower grain prices. Therefore, total lamb meat production this fall should hold near fall levels to slightly above.

Fed lamb prices again this year showed a sharp seasonal increase from January through the peak in May, when they peaked at near \$60 per cwt. Fed lamb prices then fell by over \$10 per cwt. from May to the current level in the low \$50's per cwt. This drop reflected a normal seasonal downturn in lamb prices along with weakness in beef prices.

Fed lamb prices should remain at about current levels through the fourth quarter of 1977, putting them in the low \$50 per cwt. range, basis South St. Paul.

Wool prices have continued to be strong in the face of reduced world supplies and increased demand. Wool prices are expected to range some above year earlier levels through much of the 1977-78 marketing year.

Profits to native ewe flocks should be as good in 1978 as a year earlier due to expected continued strong fed lamb prices and lower production costs. For the average herd flock owner, the breakeven level on a 105 pound lamb would be around \$44 per cwt.

Table 2. Average Costs Per Ewe

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<u>Feed Costs*</u>	<u>Per Ewe</u>
Protein and Minerals	\$ 1.85
Corn	10.54
Hay	30.00
Pasture	<u>5.00</u>
Total Feed	\$47.39
Labor and Facilities	8.00
Other Costs	<u>7.00</u>
Total Costs	\$62.39**

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\* Prices used are: corn \$1.70 per bushel; hay \$50 per ton; protein \$8 per cwt.

\*\* Assuming a 20 percent replacement rate, 1.4 lambs sold per ewe, and a \$1.50 credit for 20 percent ewe sales, this would mean a breakeven of \$44 per cwt. per 105 pound lamb sold.

Lamb Feeding

Lamb feeding returns in the 1976-77 feeding year were again very good due in large part to the sharp upturn in prices over the winter marketing period.

Feeder lamb supplies for the 1977-78 feeding year will be about the same as a year ago, despite the drop in 1977 lamb crop, since not as many lambs will go directly to slaughter. Demand for this lamb supply will be stronger than a year ago due largely to the strong profits of a year ago and a large expected feedgrain supply.

Feeder lamb prices are expected to strengthen over the fall months and average in the low \$50's per cwt., basis So. St. Paul. This will put them \$3 to \$5 per cwt. above levels of a year earlier.

Fed lamb prices should continue to be strong in first half 1978. A normal seasonal upturn in price should be expected into the winter and spring months of 1978, but perhaps not as high as was the case for the last 2 years. Fed lamb prices will likely range in the low \$50 per cwt. level through much of this period.

Table 3. Typical Feedlot Costs Per Feeder Lamb, 75 Pounds In - 110 Pounds Out, And Breakeven Prices

<u>Feedlot Costs</u>	
Feed Costs	\$ 9.00
Building Equipment	.50
Labor and Management	1.25
Other Costs	<u>3.25</u>
Total Costs	\$14.00

Breakeven Lamb Feeding Prices At Various Laid-In Prices

<u>Laid-In 75 Pound Feeder At Price Per Cwt.</u>	<u>Net Sale Shrunk Weight Of 105 Pounds Price Needed To Cover All Costs</u>
\$44	\$44.80 per cwt.
46	46.25
48	47.60
50	49.00
52	50.50
54	52.00

Lamb feeders could cover all estimated costs at fed lamb prices of about \$50 per cwt. if feeder lambs can be purchased below \$50 per cwt. this fall, and if feedlot costs are as estimated in table 3.

## POULTRY

**AT A GLANCE:** With strength in consumer income and a slightly lower supply of red meats, poultry product demand is strong. Poultry feed prices in late 1977 and 1978 will be below those of 1976 and early 1977. Prices will be above break-even levels for both eggs and turkeys for the next 12 months. The increased profit potentials will trigger larger flock placements and will result in increased marketings by late 1978.

Egg prices are predicted to rise from 65 to 68 cents by year end. After Easter 1978, seasonal decline will cut prices to the mid-50's, New York cartoned basis. Seasonal recovery to 59 cents should occur in late summer 1978.

Turkey prices should be 4 to 6 cents above year ago levels, around 53 cents per pound for hens in New York. If stocks build as expected by year end, prices will drop below 50 cents for the first half of 1978.

### EGGS

**Factors To Watch:** Watch flock molting data for increases. Also watch chick hatch as the margin over feed cost increases. As both increase, production will follow and price will decline. Frozen egg stocks were up 2 percent over a year ago in June.

**1976-77 In Review:** Flock size for 1977 is in line with 1976, well below 1973-75. The rate of lay continues slightly above a year ago. Culling rates are above last year. Profit margins are improved compared to last year and as recently as 3 months ago.

**Price Outlook:** Prices are expected to follow a seasonal pattern similar to a year ago for the next 12 months, except they will be some 7 to 8 cents lower until year end, 5 to 6 cents under until the second quarter when the difference should narrow until mid-summer (see "At A Glance").

**Management Implications:** There is little economic reason to tie up funds by forward contracting feed right now. If delivery can be taken (storage available), harvest time purchase should be considered. Price rises beyond harvest should approximate storage cost. A "sharp pencil" and some figuring is needed before any decisions to expand. The 2 year price and production cycle is still there, though its effects will be tempered by the feed and red meat situation.

## TURKEYS

Factors To Watch: More favorable feeding margins will likely trigger increased production. Watch for increased chick hatch, anything in excess of a 2 percent increase over year earlier levels in storage stocks January 1, 1978, will definitely decrease prices.

1976-77 In Review: Turkey production was typically not profitable in 1976 and until recently in 1977. Feed was too high relative to turkey prices; this held production down.

Price Outlook: With limited production and strong demand, prices should rise slightly (53 cents for hens in New York) to year end. But increased profits will encourage increased production and prices in the high 40's may return early next year. Prices in late 1978 will be greatly influenced by how much expansion in production occurs.

Management Implications: As in egg production, feed costs will not likely increase for a while (see "Eggs" above). It is a time to watch turkey stock reports, slaughter and chick hatchings. Cyclical adjustments continue as the norm for the industry.

Forward pricing of product and feed should be considered regularly. A manager needs to know and control his cost structure carefully to make forward pricing decisions profitably.

Note: The Poultry and Egg Situation, an ERS-USDA quarterly release (March, June, September and December) provides the poultryman with a substantial source of data. It will provide most of what you need to be your own outlook analyst. A request to join the mailing list may be sent to ERS-USDA, Washington, D.C. 20250. Content includes stock reports, trend data and economic analysis.

## AGRICULTURAL STATISTICS

The Crop Reporting Board of the Statistical Reporting Service (SRS) issues periodic reports of crop and livestock production and related topics. Reports and dates of release are listed in the table below. For detailed contents of each report, write for "Crop Reporting Board Reports, 1977-78 Issuance Dates and Contents", available free. Order from SRS.

Reports are released from Washington, D. C. , on the dates shown. Local segments of most reports are also issued on the same day at SRS field offices.

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U. S. Department of Agriculture  
Washington, D. C. 20250

### IMPORTANT USDA REPORTS AVAILABILITY

<u>Title</u>	<u>1977</u>	<u>1978</u>
Crop Reports	Sept. 12, Oct. 12 Nov. 10	Monthly
Grain Stocks	Oct. 25	Quarterly
Cattle On Feed	Sept. 13. , Oct. 19, Nov. 14, Dec. 13	Monthly
Hogs And Pigs	Sept. 21 & Dec. 22	Quarterly
Cattle Inventory	--	Feb. & July
Sheep And Lambs On Feed	Nov. 15	Jan. , March, Nov.
Eggs, Chickens And Turkeys	Sept. 19, Oct. 20, Nov. 18, Dec. 20	Monthly
Milk Production	Sept. 13, Oct. 13, Nov. 11, Dec. 12	Monthly
Agricultural Prices	Sept. 30, Oct. 31, Nov. 30, Dec. 30	Monthly