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1977 agricultural outlook

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AGRICULTURAL OUTLOOK 1976-77

by

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FARM INCOME — BUSINESS MANAGEMENT

Recently revised USDA farm income estimates show U. S. farmers' realized net income for 1973, 1974 and 1975 for the U. S. at 29.9, 27.8 and 22.7 billion dollars respectively. Adding in inventory changes yielded total net incomes of 33.3, 26.5 and 25.6 billion dollars. The USDA now expects total U. S. 1976 farm income to be slightly higher than in 1975.

Minnesota farmers will not fare as well because of the drought. Cash receipts of 1.5 billion in the first 5 months of 1976 were up 13 percent over early 1975, slightly under the national 14.7 percent increase. Minnesota crop receipts will drop below 1975 levels and year-end feed inventories will be sharply reduced on southwestern and central Minnesota farms. Net farm incomes will be lower in Minnesota, South Dakota, and Wisconsin for 1976 in contrast to increases in most other states.

Farm Income by Type of Farm

Farm earnings will vary greatly among farm types as well as among areas in Minnesota. Farm incomes will be sharply lower in drought stricken counties of southwestern and central Minnesota.

Farmers specializing in feeder calf production will have low, possibly negative, farm earnings for the third straight year. Specialized cattle feeding farmers will also show severely depressed earnings in 1976. The feedlot enterprise has been in the red for 28 of the last 36 months. Cattle feeders in the important cattle feeding area of southwestern Minnesota who have also been hit by drought 2 or 3 times in the past 3 years have suffered the heaviest financial setbacks.

The hog enterprise will show excellent returns again in 1976. This, in addition to the record high returns of 1975, will keep the incomes of specialized hog farms among the highest of all Minnesota farm types this year.

Dairy producers will show wide variations in earnings depending on their feed production. Those who were forced to buy large supplies of feed because of the drought will show significant income drops. Those in southeastern Minnesota should show some improvement in farm earnings because of the higher milk prices in 1976.

Specialized crop producers will prosper or suffer according to how well they were blessed with rain. Many in southeastern, south central and the northwest corner of the state will show earnings similar to 1975. An individual crop farmer's earnings could be well above or below last year depending upon when he chose to sell the bulk of his crops in each year.

Farm Business Management Implications

Greater variations in commodity prices, crop losses from the drought, wider swings in farm income and the continued rise in land prices all increase the importance of careful planning in many areas of the farm business. These include:

Timing of purchases and sales: Plan to spread commodity sales over several different marketing periods. Sell some grains whenever prices move above expected average market year levels. Buy inputs when prices move temporarily below year average expectations. (see management sections of inputs and commodity articles)

Composition of livestock rations: Last year's ration probably is not best for next year. Corn silage will be the cheapest energy source on most farms in the year ahead. Hay feeding should be cut back to more nearly match the one-third reduction in the state's hay supply. Protein feeding can be cut back when the price of protein is high relative to other feeds, with the aid of nutrient tests of homegrown feeds. (see the forage article in this report for comparative feed buys and the management sections of the dairy and beef articles for a more detailed discussion of feed pricing and least cost ration estimation)

Livestock production and price cycles: Hog cycles generally last 3.5 to 4.0 years--18 to 24 months with low numbers and high prices and then 18 to 24 months with high numbers and low prices. The high price period is just coming to a close so it is a poor time to expand or to start in the hog business. The cattle cycle runs 10 to 12 years. This complete cycle usually has 3 to 4 years of high production and low prices, followed by 3 to 4 years of more stable production and average prices, and then 3 to 4 years of relatively low beef sales with high prices as beef herds are being built up again. The high production-low return period has 1 more year to go. Those interested in starting a beef cow herd can get started with relatively low priced heifer calves during the next year or two--but "high" feeder prices are probably still 4 to 5 years away.

Buying or selling farm land: Land prices in Minnesota moved up another 20-25 percent between March 1975 and March 1976. They probably will move up faster than the general inflation rate during the next 2 years. Annual earnings from land probably will not be enough to cover cash flow debt retirement needs. Careful cash flow planning is necessary when buying land.

Estate planning: Estate planning becomes increasingly important to avoid excess death taxes as well as dealing with the legal and personal problems as land values continue to escalate. Some relief in the form of a new national estate tax law is in sight. Estate disposition plans may need to be reviewed after this is passed.

Income tax management: If you are hit by drought try to avoid an income tax "operating loss" this year, if possible. This "tax sheltered" income is lost forever when income drops below the level of your annual exemptions and deductions. If you expect to pay taxes again next year, try to shift some of next year's income to 1976. However, if a loss is expected again next year, it might be better to increase losses even more this

year so that a greater amount of the taxes paid in the past 3 years can be recovered in early 1977 through an operating loss carryback.

Farmers in drought disaster-designated counties can adjust income by how they handle forced sales of breeding stock. If they need the income in 1976 to help take advantage of their exemptions and deductions, they can take it. If they don't need it, they can elect to report the income as involuntary sales due to the drought. Two years are allowed in which to buy back the breeding stock without having to pay taxes on the income from the excess sales.

Ask your tax advisor to check your returns to see if you might be eligible for an "earned income credit" if a loss must be taken in 1976. Low earning operators can actually get a tax refund through this recently enacted tax change.

AGRICULTURAL TRADE

AT A GLANCE: A good agricultural export year seems to be ahead. The USDA estimate is a total of $22 billion. On a tonnage basis, exports of feedgrains, wheat, soybeans and soybean meal are expected to be below the past year, but still above the 1974-1975 level.

Review of 1975-1976

U. S. agricultural exports totaled a record $22. 15 billion for the year ending June 30, 1976. This was 3 percent over the 21. 6 billion level of a year earlier. This marked the third year that agricultural exports have exceeded $21 billion. The high level of agricultural exports helped generate a $4 billion U. S. net trade balance by offsetting $10. 1 billion of agricultural imports and an $8 billion trade deficit in nonagricultural products.

The volume of export shipments of major bulk commodities totaled about 103 million metric tons, an increase of over 20 percent over the previous year. This more than offsets a decline of about 11 percent in the per-unit value of export commodities. Our biggest customer again was Japan with over $3 billion of U. S. farm products in calendar 1975. Next in importance was the Netherlands, an important transhipment port. West Germany, Canada, the USSR, South Korea, Italy, Spain, India and the United Kingdom round out the list of our ten largest customers last year. The USSR and India replaced Mexico and Taiwan which were on the list.

Our wheat and wheat product exports were valued at $4. 9 billion for the 1975-1976 period. This was about the same as a year earlier, despite an increase in tonnage of about 12 percent.

Feedgrain exports valued at $5. 6 billion were up from about $4. 8 billion the year before. The volume of feedgrains shipped increased by a third, totaling 46. 4 million tons. Corn accounted for $4. 8 billion and 39. 7 million tons of this total. Corn tonnage increased 39 percent.

Exports of soybeans and products declined 3 percent to $4 billion. The volume of soybeans exported increased by 40 percent. The increase was more than offset by declines in prices and in the volume of oil shipped.

Export Prospects for 1975-1976

World agricultural production is expected to increase in the 1976-1977 growing season despite poor growing conditions in Western Europe due to drought. The Soviet wheat

harvest was forecasted as of July to be one-fifth greater than last year. Both Canada and Argentina expect greater wheat production this year. The 1976-1977 world wheat crop is forecast by the USDA to exceed the 1975-1976 crop of 350 million metric tons by up to 40 million tons. This should ease somewhat the tight world food supply situation. This estimate is highly tentative. Australia and Argentina, both important wheat producing countries, are located in the southern hemisphere where the growing season is not far along.

Greater world wheat production would allow recovery in levels of consumption and stocks, but might mean a reduction in the amount of wheat traded. The USDA has forecast that U. S. wheat exports in 1976-1977 might be as high as 1,150 million bushels. This would be 25 million bushels short of the 1,175 million bushels exported in 1975-1976. Argentina and Canada are expected to be aggressive export competitors in wheat.

World production of coarse grain for 1976-1977 was forecast at the end of July at a record level. This was nearly 8 percent above the July 1975 forecast. Weather will have an important impact on the final outcome. Much of the anticipated increase is due to a good recovery in the USSR and increased U. S. production. Greater grain production will result in heavier feeding in most major consuming countries. Feeding should recover from past depressed levels particularly in the U. S. and USSR.

The upper range of the USDA forecast of feedgrains and corn exports is equal to last year's export level. The expectation is that feedgrains and corn exports will decrease by about 8 percent from 1975-1976 exports of 49.6 million metric tons for feedgrain and 1,700 million bushels for corn.

World oilmeal production in 1976-1977 is expected to be about 2 million tons below 1975-1976, due primarily to smaller soybean acreage in the U.S. Brazilian soybean production is expected to continue to expand. The USDA estimates that Brazil's 1977 harvest could reach a record 13 million tons. Peruvian fishmeal output is expected to increase. World production of vegetable oils and fats is expected to continue to expand in 1977.

U. S. exports of soybeans and meal recovered sharply in 1975-1976. According to preliminary USDA estimates, tons of soybeans exported in 1975-1976 increased 34 percent from 1974-1975. Soybean meal exports increased 18 percent. Soybean oil exports decreased 12 percent.

The USDA export forecast for 1976-1977 shows oil exports recovering. Soybeans and soybean meal exports are expected to be somewhat lower than 1975-1976, but still higher than in 1974-1975. The USSR is expected to purchase about 2 million tons of 1976-1977 soybeans from us.

Public Law 480 Highlights

Public Law 480, the "Food For Peace" law is the program under which the U. S. extends food aid to developing nations. Title I of the law is the concessional sales program. In calendar 1975 Title I sales totaled $924 million, nearly double the sales of 1974. Over half of these exports are wheat and went mainly (28 percent) to Bangladesh. India, Pakistan, the Republic of Korea, Chile and Egypt also received shipments.

Public Law 480 Title II is the law under which donations are made. Principal Title II commodities in 1975 were nonfat dry milk, bulgur wheat, blended food products and wheat flour.

It should be noted that our food aid shipments in dollar terms increased between 1970 and 1975. However, the volume of grain shipped declined significantly as grain prices rose.

AGRICULTURAL INPUTS

AT A GLANCE: Available supplies of most major farm inputs have increased compared to this time last year. Fertilizer inventories are higher and production capacity also has increased. Prices for fertilizer will be somewhat lower in the year ahead. Fuel supplies are also up, but prices will likely be 1 to 2 cents higher than current levels. Pesticide and herbicide supplies are adequate and prices should be reasonably stable. Farm machinery inventories are up. Price increases on most machinery items will be less than last year.

Fertilizer Outlook

Nitrogen and phosphate inventories were considerably higher at the beginning of 1976 than in January 1975. Farmers responded to high price levels by holding back on fertilizer purchases through January and February causing inventories to reach even higher levels. Price reductions were necessary to sell accumulated inventories resulting in significantly lower fertilizer prices for the remainder of 1976.

January 1977 fertilizer inventories are expected to be at higher levels than the first of 1976 due to the industry's continued production expansion. This should prevent any price increases in the year ahead even though increased fertilizer use is expected.

The price of nitrogen fertilizers should be steady to lower due to increased U. S. and Canadian production capacity in 1976 and scheduled further increases in 1977. The only sour note in the nitrogen picture appears to be the availability and price of natural gas required to produce anhydrous ammonia. Approved rate hikes will become effective when current natural gas contracts expire. Most manufacturers are on long-term natural gas contracts so that it is not exactly clear just when the higher gas rates will cause higher production costs for nitrogen. Canadian nitrogen production should not be affected.

Rock phosphate inventories in July 1976 were 54 percent higher than a year ago due to increased output and a slowdown in both domestic and export market sales. Phosphate fertilizer prices should continue well below 1975 levels and a little below 1976 levels through the 1977 planting season. With large inventories and weaker prices, phosphate production should decrease in 1977.

Potash supplies are expected to be sufficient through 1977. Prices should be somewhat lower than 1976. Imports from Saskatchewan supply much of the U. S. farmer's need for potash. The provincial government is assuming control of about one-half of the potash production capacity. Effects of this change are unknown at this time. The situation renewed U. S. interest in finding new domestic and foreign sources for potash. Potash

supplies for farmers will remain sufficient if Canadian output and price levels remain reasonably stable.

Fuel Outlook

Gasoline and diesel fuel appear to be in plentiful supply for 1977 farming operations. Gas prices are currently 1 to 2 cents higher than in the first half of the year. Prices should increase another 1 to 2 cents per gallon if price and allocation regulations are removed this fall. These regulations were removed from heating oil and diesel fuel on June 30, 1976. The FEA administration has indicated restrictive action will be taken if prices rise more than 2 cents per gallon.

LP gas supplies are greater now than a year ago. Price and allocation regulations are still in effect. Prices should remain about the same unless supplies are unusually reduced by early severe weather.

Pesticide Outlook

Production of herbicides and insecticides in 1976 increased by 15 percent over 1975. Fungicide production remained about equal to 1975 levels. Overall pesticide production capacity expanded by 20 percent during 1976. Herbicide capacity is expected to expand another 20 percent in 1977, while insecticide capacity should expand 5 percent. These supplies should hold prices stable unless either pesticide use greatly expands in 1977 or new regulations further restrict uses.

Farm Machinery Outlook

Most farm machinery sales in 1976 exceeded manufacturers' initial expectations. In spite of this, inventories of most types of machinery have been built up to pre-1974 levels. With inventories finally catching up, the high rates of price increases of the last 2 years should slow down in 1977. This does not mean machinery will be cheaper in 1977. Price increases will more nearly approximate the current inflation rate. Recent steel price increases and the possibility of higher wage rates will affect final machinery price increases.

Management Implications

Minnesota farmers will face many difficult farm and financial management decisions in 1977, particularly in view of the widespread drought in 1976. Carefully thought-out profitable long-range plans should not be abandoned, but some modifications in plans may be necessary to insure continuation of the business.

Although fertilizers are projected to cost less per unit in 1977, the farmer should soil test and give consideration to possible levels of carryover of fertilizer applied last year, especially in dry areas. Where crop yields were very low, no phosphate or potash and very little nitrogen may be needed for 1977 if recommended amounts were used in 1976.

The same advice applies to pesticide use in that carryover problems may well exist and will influence crop selection and levels of pesticide to use on specific fields.

With projected higher fuel prices and the current dry conditions, tillage practices and farm machinery selection may well need to be rethought in terms of applying moisture-conserving minimum-tillage field operations.

Careful cash flow planning for 1977 that demonstrates to your creditor that adjustments in management practice and machinery purchases due to current dry and financial conditions have been considered in the plan will be necessary to obtain necessary operating funds for farm input purchases.

FEEDGRAINS

AT A GLANCE: Feedgrain use expanded by 17.5 percent in 1975-76 with larger available supplies and lower prices. There is only a small increase in carryover stocks. All utilization categories increased--exports up the most. The No. 2 yellow corn price in Minneapolis averaged $2.67 per bushel in 1975-76, down from $3.05 the preceding year. Supplies will be up in 1976-77. Feeding is expected to increase. Exports may be lower. The November-July Minneapolis corn price is projected to average about $2.55 per bushel.

Factors to Watch

1. volume of feeding in the livestock industry as shown by placements of cattle on feed, hog farrowings and poultry hatch; as well as slaughter weights of livestock.

2. exports, as reflected in weekly export shipments and reported export commitments.

3. until harvest--continued development of 1976 crop prospects, because of the very low carryover stocks from 1975.

Feedgrain supplies during 1975-76 were relatively short. Production in 1975 was well above the very short 1974 crop, but carryin stocks were low. Feedgrain use increased 17.5 percent from the low 1974-75 level. Exports increased more than domestic feed uses. Crop prospects for 1976-77 indicate higher production than in 1975. Carryover stocks will be quite low. Available 1976-77 supply will be about 5 percent above last year. This should allow increased domestic livestock feeding and moderate increases in carryover stocks and exports.

Corn is the dominant feedgrain produced in Minnesota. It is the major U.S. feedgrain. It dominates market developments for oats, feed barley and grain sorghum. In 1976 it will comprise over 80 percent of total feedgrain production. This article emphasizes corn.

CORN

1975-76 Review

The marketing year began with the largest corn crop ever; but carryin stocks were at an extremely low level (table 1). Supply was up from 1974-75, but it remained lower than in

each of the three years preceding 1974-75. Prices stayed quite strong at the beginning of harvest. A good crop and good harvest weather resulted in large supplies reaching the market in a short period of time. The Minneapolis corn price dropped from $2.90 per bushel in early October to $2.40 per bushel by early January.

These lower prices stimulated both domestic use and export sales. Concern about condition of the winter wheat crop also generated higher grain prices. Prospects of very large 1976 corn acreage dampened prices in late March and early April. But unfavorable weather, including May freezes and extreme drought in the central and western corn belt, renewed market nervousness about a short crop following low carryover. Farmers tended to be reluctant sellers of all grains. This contributed to relatively strong local and national cash markets and kept hedging pressures from lowering futures prices.

Corn use in 1975-76 increased substantially to utilize a supply increase of almost 20 percent. Livestock feeders anticipated better returns. Feeding increased by 15 percent to almost 3,700 million bushels (table 3). Both livestock numbers and feeding rates were up. Other domestic use of corn increased moderately.

Exports show the sharpest increase of all the use categories by increasing almost 50 percent over 1974-75 to an estimated 1,700 million bushels. Much of the increase is due to heavy grain purchases by the USSR. Total grain imports by the USSR in 1975-76 are estimated to be almost 26 million tons compared with about 5 million in 1974-75. Corn exports to Western Europe are about the same as 1974-75. Imports by Japan and Eastern Europe are above 1974-75 imports.

There appeared to be a possible slight increase in corn stocks going in to 1976-77 early in the year. However, it now appears that stocks will be even lower than the minimal supply on hand October 1, 1975. It is presently estimated that stocks on hand October 1, 1976 will be about 313 million bushels. This is less than a two-week supply at the 1975-76 average use rate.

1976-77 Prospects

A. Supply:

The August 1976 USDA corn production estimate is 6,187 million bushels. Farmers planted 84.1 million acres of corn, 8 percent more than 1974-75. In August, grain harvest acreage is also estimated up 8 percent. Yield is always uncertain until the crop is safely stored. Yield estimates were revised downward between July and August due to extreme drought in the western corn belt. The August USDA estimate is 85.7 bushels per acre, or .5 bushels per acre below last year and 5 bushels per acre below the good 1973 crop yield.

The final crop could be about 6,120 million bushels. Adding 313 million bushels carryin from 1974-75 and 2 million in imports indicates a 1976-77 supply of 6,435 million bushels. This is about 6 percent above last year. Good weather through harvest could push supply above 6,500 million bushels. Continued drought or an early frost could reduce supply nearer to 6,000 million bushels.

B. Utilization:

The major issue facing the corn market with a significant supply increase is utilization to provide price strength.

Livestock feeding in the U.S. accounts for about two-thirds of total corn use and is projected to increase in 1976-77. Total grain-consuming animal units (GCAU) are projected to increase about 5 percent. This includes a 15 percent increase in hogs, 6 percent increase in cattle on feed, a slight decline in dairy and other cattle, a 5 percent increase in poultry and no change in total other livestock. Rate of corn feeding per animal unit will also likely hold in 1976-77. Oat and barley supplies will be tighter than last year. Roughage supplies are down, and soybean meal prices will average higher relative to corn than they did through most of last year. Wheat feeding may be up significantly. Corn consumption per GCAU in 1975-76 was about 9 percent below 1972-73 and 1973-74. If corn consumption rates returned to those levels, feeding would approach 4,250 million bushels. A more conservative projection of 50 bushels per GCAU generates a total corn feeding projection of 3,900 million bushels. The extent of increased livestock feeding will depend chiefly on the cattle/corn price relationship in the early part of the 1976-77 marketing year. Feeding will be higher if fed cattle prices approach $45 per cwt. or if corn prices drop sharply at harvest.

Exports are becoming an increasingly significant part of the corn market. They accounted for about 10 percent of total use in 1970, 20 percent in 1972 and 1973, 24 percent in 1974 and 30 percent in 1975-76. In 1976-77 corn exports are projected to be down slightly from 1975-76, due to increased feedgrain production elsewhere in the world. Non-U.S. world feedgrain production is expected to be up 7 to 8 percent. Some increases are expected among both importing and exporting countries. Expected larger production in Canada, Argentina and the USSR is particularly significant. The U.S. exported about 475 million bushels to the USSR in 1975-76. By mid-August, the USSR had "booked" 104 million bushels of 1976 corn.

Western and Eastern Europe feedgrain crops are particularly hard hit by a well-publicized drought. Australia is reported dry. Some countries in southeastern Asia are also having weather problems. Economic recovery in both developed and developing countries will likely increase demand for feedgrains. Western European countries have been buying 500 to 600 million bushels of U.S. corn annually since 1972. Their purchases may be higher in 1976-77. Eastern European countries are expected to substantially increase their purchases of U.S. feedgrain this year. By mid-August they had booked almost 100 million bushels of 1976 corn. A large reduction in 1976-77 corn exports below the 1975-76 level is not expected. A conservative projection for 1976-77 corn exports is now at the 1,500 to 1,600 million bushels level.

The domestic "food, industrial and seed" category includes other uses of corn. Food and industrial use has been trending upward. It appears to be relatively independent of supply and price. Corn use for sweeteners increased in response to high sugar prices. Corn seed use increased in response to high corn prices. A trend-line projection in this category is about 485 million bushels.

The foregoing projections of supply and use would leave a carryover at the end of the 1976-77 marketing year at the 500 million bushel level. Although this would be greater than carryin stocks, the increase is not such as to result in a burdensome stock level.

Pricing the 1976 Crop

Corn prices are projected to average lower in 1976-77 than in 1975-76. The November-June 1975-76 Minneapolis average was $2.67 per bushel. Based on the foregoing supply and use estimates, season average corn price is expected to be about 15 cents below 1975-76. November-June 1976-77 Minneapolis No. 2 yellow corn price is projected to average $2.50 to $2.55 per bushel. Price is expected to average $2.55 to $2.70 if the 1976 corn crop drops to 6,000 bushels. Country price runs 20 to 25 cents under the Minneapolis price in most of Minnesota's corn-growing areas. Corn prices in corn deficit areas, including the drought areas of western and southwestern Minnesota, have to be high enough to bid supply into the area for livestock feeding. The corn price can run at or above the Minneapolis price in these areas.

Season-average price forecasts furnish a base for making pricing decisions. Prices fluctuate up and down around the season average throughout the year. Temporary market factors at any given time push price sharply in one direction or the other. When market prices are above the season average, farmers should watch for selling opportunities. This includes pricing for future delivery as well as spot sales. When market prices are below season averages, it is good management to avoid selling.

Pricing decisions on the 1976 corn crop will be an important aspect of successful crop management. Farmers who have developed a balanced marketing strategy during the past few volatile years should find it easier to deal with the 1976-77 markets.

Making good pricing decisions requires effort and analysis. The following guidelines may help in making pricing decisions in 1976-77:

1. Plan a marketing strategy early in the year. This should include knowledge of pricing alternatives in the cash, contract and futures market. Price, grades and discounts differ between cash buyers. Forward contracting and futures trading occasionally can be advantageous.

2. Calculate storage costs, including losses and interest on stored grain. Compare these projected costs with expected seasonal price rises. The data in tables 4 and 5 should be helpful.

3. Determine how much of a grain market speculator you want to be, and can afford to be. This will depend on your financial condition, cash flow needs and your inclination to be a speculator. Then decide how much corn you want to price at any one time. In volatile markets some method of price averaging is usually most satisfactory.

4. Carefully manage storage and drying operations. Over-drying results in costly shrink loss. Spoilage in the bin is expensive and can force early delivery.

5. Watch market developments closely. If corn is in storage, try to make a sell or hold decision every market day.

OATS

1975-76 Review

Total oats supply for 1975-76 was 882 million bushels, 4 percent below the 1974-75 supply. Carryin stocks were down, even though the 1975 crop was up from 1974. Approximately 85 percent of oats supplies were used for domestic livestock feeding. Food, industry and seed use held at about 85 million bushels. Exports, at 14 million bushels, were 25 percent under 1974-75. Carryover stocks of oats on June 1, 1976 were estimated at 207 million bushels. Oats prices through the season tended to be slightly lower than last year, trading in the $1.50 to $1.75 (Minneapolis) range for much of the season.

1976-77 Prospects

Carryin stocks for the 1976-77 marketing year, at 207 million bushels, were down 8 percent from June 1, 1975. USDA estimated the oats crop at 549 million bushels on August 1. This is 16 percent below last year, and the smallest crop in 40 years. Yield was reduced sharply by very dry weather in Minnesota, the Dakotas and western Iowa (where half the oats crop is grown). Total oats supply for 1976-77, at 756 million bushels, is 14 percent below last year.

Use must be cut back in 1976-77 due to lower supply. Feed use is projected to drop to 540 million bushels. Food, industrial and seed use is projected to hold at about 85 million bushels. Exports are expected to drop to 10 million bushels. This would be only 16 percent of the high level of exports back in 1973-74. Carryover stocks will be cut nearly in half even with these projected use reductions, and are expected to be down to about 120 million bushels by June 1, 1977.

Oats prices are expected to average higher relative to corn than during 1975-76. Because of the higher total feedgrain supply, central market oats prices will be a little below 1975-76 when Minneapolis No. 2 white oats averaged $1.69 per bushel. The price is projected to average close to $1.65 per bushel for 1976-77. Local demand for oats in drought areas will keep these local prices high relative to central markets.

BARLEY

1975-76 Review

Barley supply for the 1975-76 marketing year was 4 percent above the previous year. Carryin stocks were very low, but the 1975 crop was up from 1974. As a result, supplies were more plentiful. Domestic barley use increased even though exports were down. Feed use was up about 2 percent and nonfeed use held unchanged. Feed barley prices were 10 percent above corn on a pound-for-pound basis throughout much of the summer. Barley is normally priced at 90 to 95 percent of corn price. Malting barley price premiums were sharply lower than in 1974-75. Malting barley in Minneapolis was priced at about 60 cents per bushel over feed barley by spring of 1976. In 1975 the premium was about $2.00 per bushel.

1976-77 Prospects

Carryover stocks on June 1, 1976 were about 127 million bushels, up 38 percent from 1975. But 1976 production is down. It is estimated at 341 million bushels, 11 percent below the 1975 crop. Yield is down 7 percent. Estimated harvest acreage is down 4 percent. Total barley supply for 1976-77 is an estimated 478 million bushels. This is down 3 percent from 1975-76.

Barley use in 1976-77 will be cut back. Feed use should show the biggest reduction, about 6 percent, totaling 180 million bushels in the marketing year. This would be about half the total barley utilization. The "food, industrial and seed" use category has been trending upward. The malting industry accounts for the bulk of this use. It is projected up about 3 percent, to 154 million bushels. Barley exports should be unchanged in the coming year. They are projected to be approximately 25 million bushels. Total barley use will drop to just under 360 million bushels according to these estimates. That level of use will leave a carryover of 115 to 120 million bushels at the end of the marketing year next June 1.

Feed barley prices are expected to run at least at 1975's level relative to corn on a pound-per-pound basis. The 1976-77 price average would be $2.30 to $2.40 for Minneapolis No. 3 or better feed barley. Malting barley prices are very difficult to forecast. The market is quite thin in numbers of buyers, each of whom has an inelastic demand. Consequently, small reductions in the supply of high quality malting barley cause sharp price rises and efforts to increase the use of lower quality barley in malting. Rather small increases in the supply of high quality malting barley cause sharp drops in the malting barley premium and enables the buyers to be more discriminating in quality.

Table 1. Feedgrains: Supplies, Distribution and Prices.

Marketing Year 1/	Carryin	Supply: Production	Supply: Imports 2/	Supply: Total	Distribution: Domestic Use: Feed	Distribution: Domestic Use: Food Industry and Seed	Distribution: Domestic Use: Total Domestic	Distribution: Exports 2/	Distribution: Total Use	U.S. Farm Price
	Million Bushels									$/bu.
					CORN					
1973	709	5,647	1	6,357	4,193	438	4,631	1,243	5,874	2.55
1974	483	4,664	2	5,149	3,187	454	3,641	1,149	4,790	3.03
1975	359	5,767	2	6,128	3,650	465	4,115	1,700	5,815	2.50
1976*	313	6,120	2	6,435	3,900	485	4,385	1,550	5,935	
1977*	500									
					GRAIN SORGHUM					
1973	73	930		1,003	702	6	708	234	942	2.14
1974	61	629	-	690	437	6	443	212	655	2.78
1975	35	758	-	793	500	6	506	225	731	2.31
1976*	62	789		851	550	6	556	200	756	
1977*	95									
					OATS					
1973	461	667	-	1,128	675	88	763	57	820	1.18
1974	308	614	-	922	595	84	679	19	698	1.53
1975	224	657	-	882	576	85	661	14	675	1.44
1976*	207	549	-	756	540	85	625	10	635	
1977*	121									
					BARLEY					
1973	192	422	9	623	239	145	384	93	477	2.13
1974	146	304	20	470	187	149	336	42	378	2.80
1975	92	383	16	491	191	149	340	24	364	2.43
1976*	127	341	10	478	180	154	334	25	359	
1977*	119									
					TOTAL FEEDGRAINS					
	Million Tons									
1973	33.9	205.0	.2	239.1	153.3	17.6	170.9	44.5	215.4	
1974	23.7	165.3	.5	189.5	115.6	17.7	133.3	39.4	172.7	
1975	16.8	202.4	.5	219.7	130.1	18.1	148.2	54.7	202.9	
1976*	16.8	212.3	.3	229.4	137.5	18.8	156.3	49.8	206.1	
1977*	23.3									

1/ Beginning October 1 for corn and sorghum: June 1 for oats and barley
2/ Includes product equivalents
* 1975 preliminary: 1976 based on August Crop Report and prospective demand

Table 2. Monthly Average Minneapolis Corn Price*

Month	Marketing Year 1971/72	1972/73	1973/74	1974/75	1975/76
	dollars per bushel				
October	1.07	1.24	2.28	3.63	2.73
November	1.06	1.23	2.34	3.46	2.54
December	1.15	1.39	2.47	3.35	2.50
January	1.13	1.42	2.68	3.08	2.51
February	1.13	1.28	2.92	2.88	2.56
March	1.15	1.37	2.82	2.79	2.61
April	1.19	1.46	2.60	2.86	2.59
May	1.21	1.77	2.55	2.81	2.76
June	1.18	2.16	2.77	2.83	2.85
July	1.21	2.25	3.19	2.87	2.88
August	1.20	2.61	3.40	3.15	2.80
September	1.26	2.29	3.43	2.94	--
Marketing Year Avg.	1.16	1.71	2.79	3.05	2.67

* Average of daily closing quotations, no. 2 yellow corn, Minneapolis

Table 3. Grain Consuming Animal Units (GCAU) and Feedgrains Fed

Year	GCAU (mil. units)	Feedgrains Fed (mil. tons)	Fed/GCAU tons	Corn Fed (mil. bu.)	Corn Fed/GCAU (bu.)
			history		
1971-72	80.1	149.0	1.86	3,978	49.7
1972-73	79.2	156.2	1.97	4,310	54.4
1973-74	78.3	153.5	1.96	4,193	53.6
1974-75	70.0	117.5	1.68	3,250	46.4
1975-76	74.0	130.1	1.76	3,650	49.3
			projection		
1976-77	78.0	137.5	1.76	3,900	50.0

Table 4. Approximate Corn Storage Costs, November to July at $2.50/bu. Corn Price

Item	Amount	
	on farm	in elevator
	cents per bushel	
Cumulative costs (from table 5)	19.9	31.4
Drying from 15 1/2% to 13% moisture for extended storage: [1]		
shrink	7.5	[2]
fuel and power	1.0	
Extra handling	0[3]	
Insurance	0[3]	
Bin cost	5.9[4]	
Total cost [= market price rise necessary to break even on storage]	34.3[5]	31.4[5]

1/ With good storage management it is not necessary to dry down to 13 percent moisture, yet it is a common practice.

2/ Many country elevators will figure a pencil shrink and drying charge on corn going in to storage.

3/ Use your own estimate for your situation.

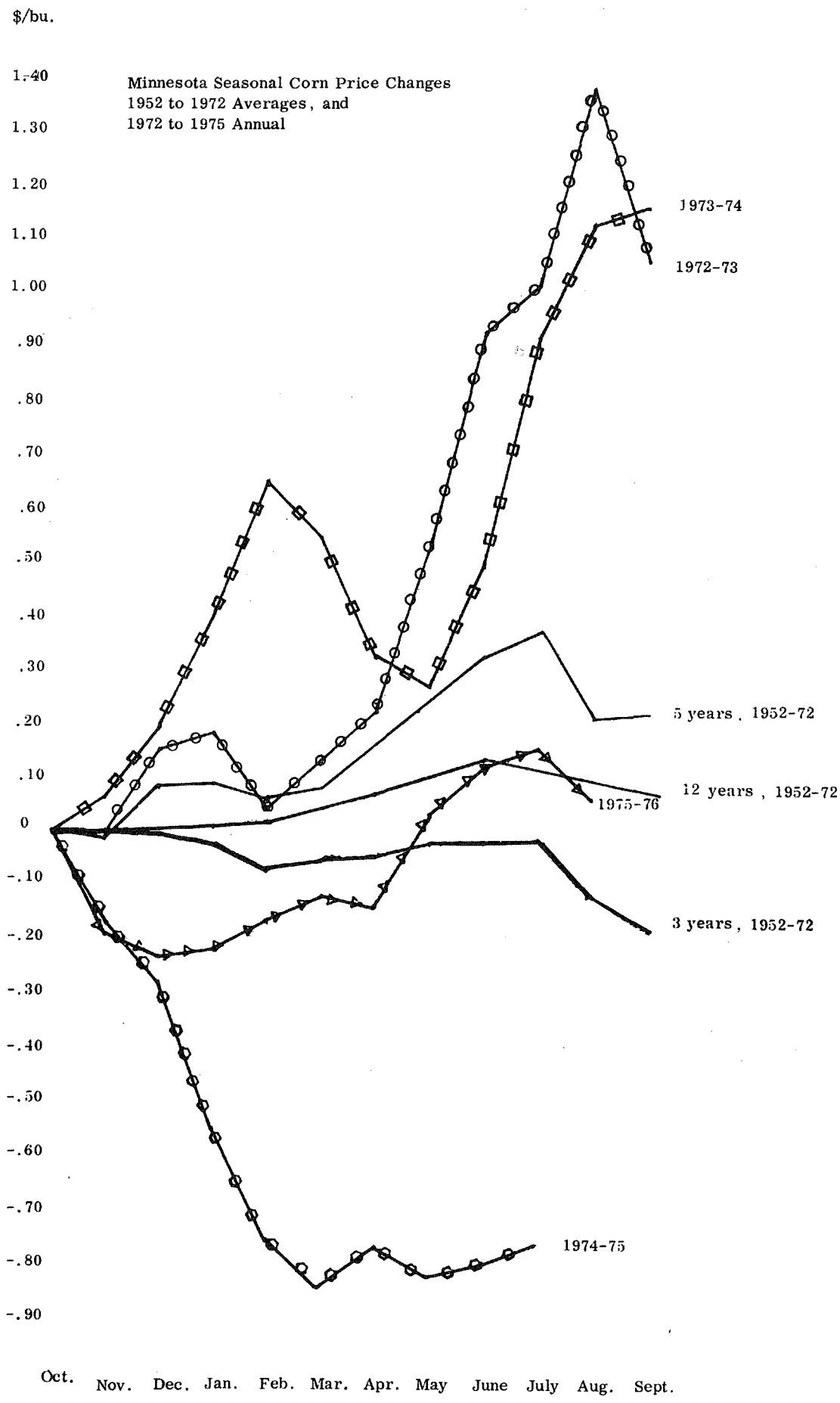
4/ Based on bin ownership cost of $ .057/yr., plus $ .002/yr. maintenance and repair. If you already own storage, you have this cost whether or not you store the corn; then it should not be considered a variable cost.

5/ Cost of drying to 15 1/2 percent, or the elevator moisture discount, is fixed regardless of whether you store the corn or sell at harvest.

Table 5. 1976 Cumulative Costs of Storing Corn

Dollar /bu.	Place of Storage	Months in Storage 1	2	3	4	5	6	7	8	9	10
		cents per bushel									
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
2.50	Farm	4.6	6.8	8.9	11.1	13.3	15.5	17.7	19.9	22.1	24.4
	Elevator	3.9	7.8	11.7	15.6	19.5	23.5	27.4	31.4	35.4	39.4
3.00	Farm	5.6	8.1	10.7	13.3	15.9	18.6	21.2	23.9	26.6	29.3
	Elevator	4.3	8.5	12.8	17.1	21.4	25.8	30.1	34.5	38.9	43.3
3.50	Farm	6.5	9.5	12.5	15.5	18.6	21.6	24.7	27.9	31.0	34.2
	Elevator	4.6	9.3	13.9	18.6	23.3	28.0	32.8	37.6	42.3	47.2

Based on: A 9 percent interest rate on money invested in stored grain, an elevator storage charge of 2¢/bushel/month, a farm loss and damage rate of 1 percent plus .1 percent/month. With good storage management the loss rate will be less. With poor management it will be more.


$/bu.
1.40
1.30
1.20
1.10
1.00
.90
.80
.70
.60
.50
.40
.30
.20
.10
0
-.10
-.20
-.30
-.40
-.50
-.60
-.70
-.80
-.90
Minnesota Seasonal Corn Price Changes
1952 to 1972 Averages, and
1972 to 1975 Annual
1973-74
1972-73
5 years, 1952-72
12 years, 1952-72
1975-76
3 years, 1952-72
1974-75
Oct.
Nov.
Dec.
Jan.
Feb.
Mar.
Apr.
May
June
July
Aug.
Sept.

SOYBEANS

AT A GLANCE: Soybean supplies were at a record level in 1975-76, but price dropped early in the season and use was strongly stimulated. Supply for 1976-77 will be down appreciably from 1975-76 due to low 1976 acreage and yield. Both domestic use and exports will be reduced. Soybean meal and soybean prices are expected to average above 1975-76. Soybean prices during October-June 1976-77 are projected to average about $5.60 per bushel for Minneapolis No. 1 yellow soybeans.

Factors to Watch

1. The size of the 1976 crop is still uncertain, so a crop significantly below 1,344 million bushels would be associated with a higher soybean price.

2. Exports, as reflected in weekly export shipments and export commitments data.

3. The strength of U.S. soybean oil and meal markets relative to soybeans, as reflected in weekly crushing margin reports.

1975-76 Review

Soybean growers saw another year of wide price movement in the market in 1975-76. Minneapolis No. 1 yellow soybeans averaged $5.19 per bushel. The price pushed down toward $4 per bushel in late December and was up over $7 per bushel in mid-July.

There was a record supply of soybeans in 1975-76. Carryin stocks were above a year earlier and the 1975 U.S. soybean crop, at 1,521 million bushels, was the second largest ever. Soybean prices were descending through harvest last fall and dropped sharply until the year's end. Both oil and meal prices were also declining. The soybean oil price then dropped to encourage oil use. The soybean meal price dropped to the point where both feeding and exports began to pick up sharply. Prices stabilized and grew moderately stronger through winter and early spring. Then came reports of much lower 1976 soybean acreage. New reports of export sales also hit the market. Facing the prospect of a 1976 crop lower than current use rates, prices moved "limit up" on the Chicago Board of Trade for several days. A short-term sell-off hit the market in mid-July. This extended into early August, when prices again strengthened.

Domestic soybean crush in 1975-76 is up by nearly 25 percent. The meal/corn price ratio was at a record low during much of the year. Record livestock and poultry consumption of soybean meal resulted. Domestic use of soybean meal has been averaging 1.3 million

tons per month, up 28 percent from 1975. This use rate resulted in the steep rise in soybean meal price in early summer.

Soybean oil use is up from 1974-75, but not as much as supply, so oil stocks are up slightly at year's end. Soybean oil use increased despite the increase in palm oil imports. This is due to the drop in soybean oil prices and lower supplies of cottonseed oil, lard and butter.

Industry crushing margins appear to be running slightly ahead of last year. Spot margins averaged about 15 cents per bushel through summer compared with 11 cents per bushel in 1974-75. They averaged 78 cents per bushel in 1973-74. Low soybean oil prices have been putting pressure on the margins. Soybean oil has accounted for about 39 percent, and meal 61 percent, of the product value of a bushel of soybeans in 1975-76. Meal accounted for two-thirds of product value in mid-August (table 3). Soybean oil accounted for 53 percent of the product value in 1974-75.

Soybean and soybean product exports for 1975-76 total about 565 million bushels, up 35 percent from 1974-75. The previous record was 539 million bushels in 1973-74. Most of the export increase has been to Western Europe for livestock feeding. The USSR has also imported 12 million bushels of U. S. soybeans because of a poor 1975 sunflower seed crop. The higher world imports of soybeans and soybean products reflect the economic recovery of the major soybean importing nations, particularly Western Europe and Japan. Livestock and poultry feeding have been increasing. Lower soybean prices have also contributed substantially to the quickened export pace.

Carryover at the end of the 1975-76 marketing year is up moderately from the beginning despite the high rate of soybean use. Although it is the third consecutive year of increasing carryover, the buildup is very moderate in view of the growing market size. The carryover is only about half of what some analysts had anticipated early in the marketing year.

Palm Oil Imports

Recent large U. S. imports of palm oil have created concern in the soybean industry. Palm oil imports have increased sevenfold since 1970. Domestic fats and oils production was dow in 1971 and 1972, up in 1973 and down again in 1974. Coupled with strong world demand relative to supply, soybean oil prices rose from an average of 11.3 cents per pound in 1971-72 to 43.3 cents per pound in August 1974. This helped stimulate a rapid rise in palm planta tion acreage. Malaysian acreage alone jumped from under 600,000 in 1968 to over 1,200,00 in 1975. Relatively high soybean oil prices were a boon to palm oil exporters. U.S. import of palm oil were about 1.5 percent of our fats and oils production in 1970-71 and about 7.5 percent of our fats and oils production in 1975-76. Palm oil had a significant price advantage over soybean oil during October-December of 1975. Imports were exceeding 100 million pounds per month. As soybean oil dropped under 20 cents per pound, it became favorably priced relative to palm oil and palm oil imports declined. There has been pressure to obtain government action to eliminate or reduce palm oil imports. This would tend to strengthen soybean oil prices in the short run. But the greater concern perhaps should be the relative position of the oils in the world market.

1976-77 Prospects

Supply of soybeans on hand at the beginning of the new marketing year totals about 200 million bushels. USDA's August crop estimate projected a 1976 soybean crop of 1,344 million bushels. Both acreage and yield appear to be down from 1975. Soybean acreage is down 8 percent from last year. Estimated yield on August 1 was down 4 percent to 27.2 bushels per acre. Continued drought and stress conditions through August may cause a further yield reduction. Superb harvest conditions could result in a higher yield than the August estimate. Total soybean supply for 1976-77 appears to be approximately 1,500 million bushels at this writing. This is 12 percent less than 1975-76 use of soybeans.

There must be a reduction in 1976-77 use since supply for the new marketing year is less than 1975-76 use. Domestic soybean crush is expected to drop to 800 million bushels. Exports are projected to drop to 540 million bushels. Carryover is expected to drop to just over 100 million bushels.

There has been an annual increase trend in U.S. edible fats and oils consumption for many years. Soybean oil consumption is expected to continue to trend upward in 1976-77. Nevertheless, oil stocks are now large and may accumulate more by the end of 1976-77 as soybean oil exports decline. Soybean oil prices are said to be shaped laregly by world supply and use patterns. There will likely continue to be downward pressure on soybean oil prices in the face of rapidly increasing world edible oil supplies. Soybean oil price is expected to average less than 20 cents per pound. Consequently, the reduced soybean supply is not likely to command higher prices through the edible oil market.

Domestic soybean meal disappearance set a record in 1975-76. Use should be cut back significantly as livestock feeders face higher 1976-77 meal prices. Some analysts expect a 10 percent cutback in meal use despite the higher livestock and poultry numbers due to the expected higher meal/corn price ratio. A $150 per ton soybean meal price is expected to be high enough to reduce consumption. The lower domestic soybean crush will be accompanied by accumulating soybean oil stocks at low prices and by meal prices higher than in 1975-76 (although not as high as recent quotations).

Soybean and soybean product exports generally account for about half the crop. They are projected to be down about 4 percent in 1976-77. It may take a relatively higher price to discourage exports. Lower feedgrain crops in Western and Eastern Europe could be expected to stimulate soybean and meal imports. Japan's growing economy could be expected to do the same. Although the Brazilian crop continues to grow, it would not be expected to put pressure on price in the face of the reduced U.S. soybean supply. Other available edible oils will keep pressure on the soybean oil product price. Competing protein meals do not appear so abundant, however. The USSR is reported to have purchased 50 million bushels of 1976 soybeans. It appears, therefore, that if there is to be a sharp soybean price thrust from the demand side of the market, it would be through intense export demand.

Pricing the 1976 Crop

Soybean prices are expected to average higher in 1976-77 than in 1975-76. Minneapolis No. 1 yellow soybeans averaged $4.94 per bushel in October-June 1975-76. The price is expected to average about 75 cents per bushel above that price in 1976-77, approaching a $5.70 per bushel average in October-June. Country prices in most of Minnesota's soybean production area run 20 to 25 cents per bushel under the Minneapolis price.

Soybean meal price appears likely to average $150 to $160 per ton. That is above the 1975-76 price level but lower than present price. This appears high enough to reduce domestic soybean meal use to match the supply reduction. Soybean oil prices should hold under 20 cents per pound. The per bushel soybean product value is $5.50 to $5.75 at these product prices. Soybeans would be expected to average $5.40 to $5.60 per bushel if crushing margins run at the same level as 1975-76. This is below present new-crop prices, but above the 1975-76 price. The market appears to be following a typical short-crop pattern of high early-season prices which restrict use and allow price to float downward later in the season. Higher than expected export demand, or prospects of a short 1977 crop, would alter this type of a price pattern.

Markets have moved widely in response to temporary factors in the past few years. A season-average price forecast is valuable because selling should be considered when market price is above that level, and avoided when price is below that level.

Good soybean pricing decisions in 1976-77 will require effort and analysis. The following guidelines may help.

1. Plan a marketing strategy early in the year. This should include knowledge of pricing alternatives in the cash, contract and futures markets. Prices, grades and discounts differ between cash buyers. Forward contracts and futures market trading occasionally can be advantageous.

2. Calculate storage costs, including losses and interest on stored grain. Compare those projected costs with expected seasonal price rises. The data in tables 4 and 5 should be helpful. There may be opportunities to forward price for later delivery and assure a storage return.

3. Determine how much of a grain market speculator you want to be and can afford to be. This will depend on your financial condition, cash flow needs and your inclination to be a speculator. Then decide how much of your soybean crop you want to price at any one time. Some method of price averaging through the season is usually the best strategy.

4. Carefully manage storage. Spoilage in the bin is not only expensive, but it can force selling at an otherwise undesirable time.

5. Closely watch market developments. If soybeans are in storage, try to make a sell or hold decision every market day.

Table 1. Soybeans: Supply and Utilization by Marketing Year*

	Average 1965-69	1973-74	1974-75	1975-76	Projected 1976-77
	million bushels				
Beginning stocks	130	60	171	185	200
Production	998	1,547	1,215	1,521	1,344
Total supply	1,128	1,607	1,386	1,706	1,544
Crushing	603	821	701	865	800
Exports	300	539	421	565	540
Seed, feed, etc.	55	76	79	76	84
Total use	958	1,436	1,201	1,506	1,424
Ending stocks	170	171	185	200	120

* Soybean marketing year: September 1 to August 30

Table 2. Monthly Average Minneapolis Soybean Price*

Month	Marketing Year 1972-73	1973-74	1974-75	1975-76
	dollars per bushel			
September	3.32	8.20	7.55	5.53
October	3.21	5.82	8.34	5.06
November	3.46	5.46	7.47	4.75
December	3.91	5.80	7.25	4.51
January	4.26	5.92	6.30	4.49
February	5.54	6.06	5.68	4.58
March	6.07	5.96	5.52	4.58
April	6.25	5.43	5.77	4.64
May	8.76	5.39	5.20	5.15
June	10.10	5.38	5.10	6.15
July	6.37	6.88	5.51	6.55
August	8.87	7.63	5.93	6.12
Marketing Year Avg.	5.84	5.99	6.30	5.18

* Most Minnesota country prices are 20-25 cents per bushel under Minneapolis

Table 3. Soybean Prices Compared With Market Value of Oil and Meal*

	Aug. 15, 1974	Aug. 14, 1975	Aug. 12, 1976	1976-77 Projected Average
Soybean oil price/lb.	44.65¢	29.15¢	20.50¢	20.00¢
Oil yield/bu.	11.01 lbs.	10.50 lbs.	11.01 lbs.	11 lbs.
Oil value/bu.	$4.92	$3.06	$2.26	$2.20
Soybean meal price/ton	$147.00	$131.00	$170.00	$150.00
Meal yield/bu.	48.06 lbs.	47.31 lbs.	47.50 lbs.	47.50 lbs.
Meal value/bu.	$3.53	$3.10	$4.04	$3.56
Value of oil and meal/bu.	$8.45	$6.16	$6.30	$5.76
Crushing margin	79¢	8¢	12¢	15¢

* Decatur spot price series

Table 4. Approximate Soybean Storage Cost, October to June, at $5.50/bu.

Item	Amount	
	on farm	in elevator
	------- cents per bushel -------	
Cumulative costs (from table 5)	46.2	56.3
Extra handling	*	--
Insurance	*	--
Bin cost	5.9**	--
Total Cost [= market price rise necessary to break even on storage]	52.1	56.3

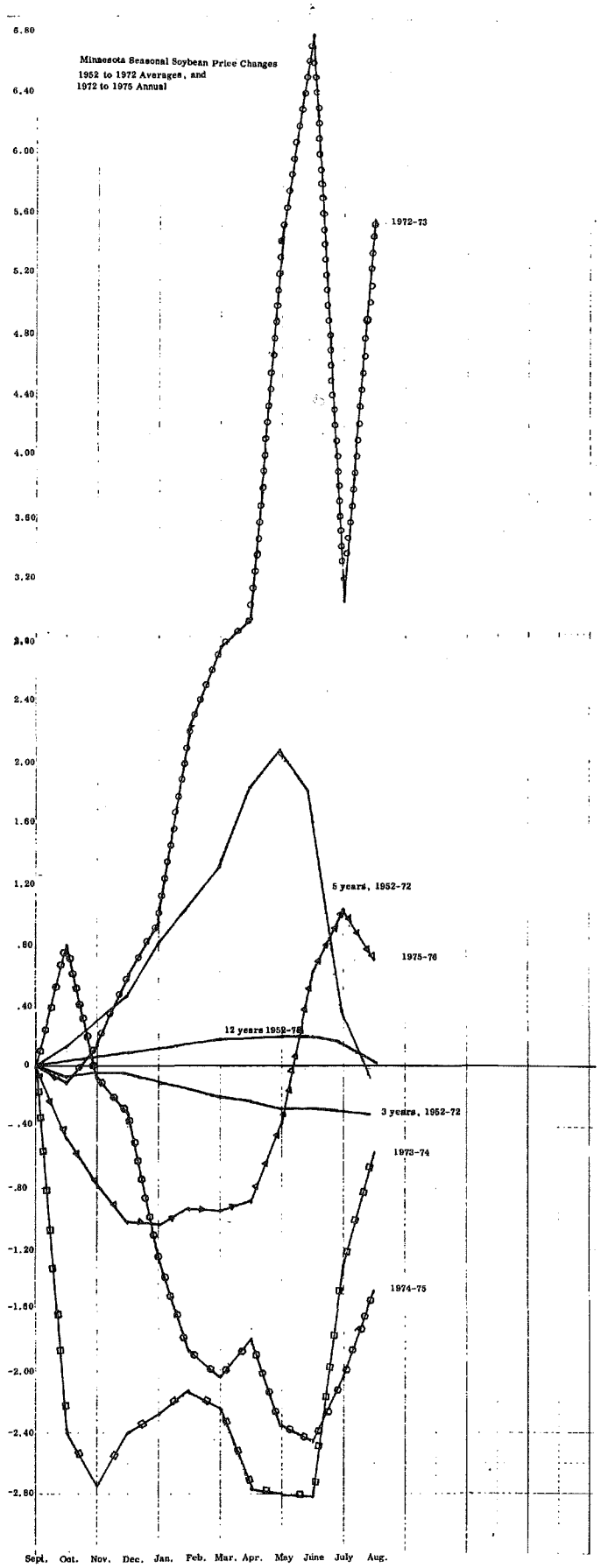
* Use your own estimate for your situation.

** Based on bin ownership cost of 5.7 cents/bu./yr., plus .2 cents/bu./yr. maintenance and repair. If you already own storage, you have this cost whether or not you store the soybeans; then it should not be considered a variable cost.

Table 5. Cumulative Variable Costs of Storing Soybeans - 1976*

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.


Minnesota Seasonal Soybean Price Changes
1952 to 1972 Averages, and
1972 to 1975 Annual
6.80
6.40
6.00
5.60
5.20
4.80
4.40
4.00
3.60
3.20
2.80
2.40
2.00
1.60
1.20
.80
.40
0
-.40
-.80
-1.20
-1.60
-2.00
-2.40
-2.80
1972-73
5 years, 1952-72
1975-76
12 years 1952-72
3 years, 1952-72
1973-74
1974-75
Sept.
Oct.
Nov.
Dec.
Jan.
Feb.
Mar.
Apr.
May
June
July
Aug.

WHEAT

AT A GLANCE: Wheat prices in the 1976-77 marketing year will likely average lower than in 1975-76. Although the 1976 crop is below 1975, carryin stocks are up so total supply is up. Wheat use will continue high, but exports are expected to be down 10 percent. Minneapolis Spring Wheat (13 percent protein) price is projected to average about $3.70 per bushel from harvest to spring 1977.

Factors to Watch

1. The wheat export rate, as reflected in weekly export data and export commitments.

2. Weather developments through winter in southern countries, including Asia, affecting their foodgrain and feedgrain production.

3. The wheat/corn price ratio, indicating the incentive for wheat feeding in the U.S.

Recent Wheat Prices

Wheat prices during the marketing year ending June 1 continued their familiarly erratic path. Minneapolis No. 1 Dark Northern Spring 13 percent protein (DNS) wheat price started the year at $4 per bushel and ended at $4.10 per bushel. That is hardly a dramatic change, but the price trip from June to June had enough suspense and excitement to satisfy most speculators.

Sharp price rises early in the season were related to deteriorating crop conditions in the USSR and Europe, and hot, dry weather in U.S. wheat growing areas. The USSR bought grain in July, touching off new speculation. The government suspended sales to the USSR in August. Sales to Poland were "voluntarily postponed" in September. Reported export commitments were rising during this period. Minneapolis DNS price peaked at about $4.80 per bushel in late August. Prices then trended sharply downward through December. Grain traders talked of reductions in export sales. Production of other world foodgrains, particularly Asian rice, ran quite high. U.S. farmers rapidly harvested a record corn crop in excellent weather. This also put pressure on cash grain markets.

Wheat prices began rising in early 1976. There was extreme drought and wind damage in the southern Great Plains. Export movement picked up. Farmers continued to hold their grain supplies in storage. Rains came on the Great Plains, along with expectations of very large 1976 U.S. corn acreage. Wheat prices generally declined from March to early May.

Prices again strengthened as the new crop harvest approached. Freeze damage in the central U. S. in early May triggered some price strength. Rains delayed early harvest progress. Drought in Western Europe was a prominent news item in the market. USSR crop prospects were deemed below earlier expectations. The very strong rise in soybean prices carried into the wheat and other grain markets. But wheat prices began collapsing in early July.

Storage Returns

Presumably wheat now in storage is being held with some expectation of a price rise sufficient to give positive returns to storage. At $3.50 per bushel, variable costs for farm bin storage until May 1977 (9 months) would be expected to be 27 cents per bushel (table 4). Wheat stored in a commercial elevator for a similar period would cost 42 cents per bushel.

Recovering these costs would be an unlikely prospect (figure 1) in the long-term history of the wheat market. In the 20 years preceding the 1972 marketing year, price peaks averaged about 20 cents per bushel in the eight "high price rise" years. In the other 12 years, average price rises were about 8 cents in three upswing markets, and declines averaged 10 cents in nine down markets.

However, the last four marketing years have been different. Returns could have exceeded $1 per bushel in 1972-73. Returns could have been almost $2.80 per bushel in 1973-74. The gain was a more modest 50 cents per bushel in 1974-75. The gain could have been about 35 cents per bushel in 1975-76. Wheat producers are thinking about these recent years.

The memory of very high price swings (generally unpredictable) furnishes incentive to keep wheat locked in the bin. Maybe this will be another year to "hit the jackpot". But the timing of sales had to be fortuitous for storage returns to look as good as the chart shows by hindsight even in the two very high price rise years. Wheat pricing had to be done in the fall to gain any appreciable storage returns in the last two years.

Supply Prospects for 1976-77

The August USDA crop report estimated the total 1976 wheat crop at 2,096 million bushels (table 2). This was derived from an indicated yield of 29.8 bushels on an estimated 70.4 million harvested acres. Yield appeared to be down 3 percent from 1975. Harvested acreage was up 10 percent. Winter Wheat yield was off 2 percent. Spring Wheat yield was off 6 percent. Total 1976 wheat crop will be down 2 percent from last year. Hence, it breaks the precedent of a record U. S. wheat crop in each of the last four crop years.

Carryover stocks going into the current marketing year are up over 50 percent above 1975, representing about a four-month supply at an average rate of disappearance. However, they are still below the average beginning stocks in 1970-72. Total 1976-77 supply is estimated to be up 8 percent. Hard Spring supply is up 17 percent. Durum supply is up 26 percent (table 4). The 1976-77 supply of wheat appears abundant.

Demand Prospects for 1976-77

A. Domestic Use

Domestic use of wheat has comprised about 40 percent of total disappearance in the past few years. Domestic food use has been running about half the quantity of exports. The domestic food use category is projected to be down slightly for 1976-77, due to what are believed to be price-related inventory adjustments in the milling industry which have distorted year-to-year food use figures. It is generally believed that U. S. wheat product consumption is increasing and will continue to increase in the current year. An estimate of 540 million bushels domestic food use is on the trend line of the past few years. This appears to be at the low end of a likely range for 1976-77 U. S. food use.

Seed use should remain about the same as last year, 95 million bushels, because 1977 wheat acreage is not likely to be significantly different from 1976.

Feed use of wheat has fluctuated greatly in the last few years. Part of this may be statistical in that feed use is calculated as a residual. But there undoubtedly have been wheat feeding adjustments in response to price. Precise year-to-year wheat feeding changes are difficult to explain (figure 2). Feed use was tending toward a 250 million bushel annual figure in years prior to 1972. Wheat prices rose relative to feed grain, and wheat feeding undoubtedly dropped off sharply with the demand pull of exports. As the wheat/corn price ratio has dropped, wheat feeding does not appear to have picked up. The price ratio is now back at the early 1970's level. Country wheat prices are said to be under feedgrain in some parts of the U. S. (East Coast, Plains, Colorado and the Northwest). Wheat feeding may pick up in 1976-77. But as long as farmers are expecting relatively high-priced wheat, they are not likely to feed it to livestock on their own farms. As long as they are reluctant sellers, not much is likely to find its way to feedlots through commercial channels. A projected 175 million bushels of wheat fed is a likely estimate. It appears low, based strictly on current cash price relationships.

Strong domestic demand for wheat in 1976-77 is not likely to be the key to higher wheat prices looking at all three domestic use categories.

B. Exports

Exports are not only the most important wheat demand factor; they are also the most difficult to project. They often have been significantly off target since 1972. U. S. government food aid policy no longer marks export direction since commercial sales have dominated exports. Export projections must be highly tentative because supply and use data are state secrets or of little value in many of our major wheat markets. Furthermore, some import decisions may be based on policy decisions not directly related to supply and use balances in a given year. Such decisions are unpredictable.

USDA projects wheat exports to be off about 10 percent in 1976-77 (table 2). There appears to be good reason for projecting some (but not too much) decline.

There are several factors weighing on the minus side of the export balance. World wheat production is estimated to be up in the current year (figure 3). The August USDA estimate of 13.8 billion bushels is 8 percent above the estimate for last year. Much of this increase is in developing countries and other importing nations. Total non-U.S. world crop is projected up 10 percent. USSR wheat production is estimated up by 20 percent. India and other countries in southeast Asia had good weather and crops last year. Production could exceed consumption for the first time in several years. Total world wheat stocks are likely to increase moderately at the end of the current marketing year, perhaps to 3 billion bushels. An additional negative factor is the rising value of the U.S. dollar compared to other currencies. The cost of U.S. wheat imports is rising in terms of importers' currencies. The dollar was off 10 percent in mid-1973 in 1971 terms, relative to currencies of 67 trading partners. By last spring it had risen above the 1971 level.

Export prospects are not totally bleak. Economic recovery in many countries should foster increased trade. Real growth in world economies is projected to be at the 4 percent rate. Some importing economies will grow at a faster rate. Japan's growth is projected at 6 percent, implying a growth in food demand of about 3 percent. As a whole, developing countries will experience a 3 to 4 percent increase in per capita purchasing power. Their income elasticity of demand for food is high, and foodgrains are an important food. World wheat consumption increased an average of 414 million bushels per year during the 1966-67 to 1973-74 marketing years. Since then, consumption growth has been limited by production, but has matched or exceeded production in the last four years.

Although the U.S. is not the dominant world wheat producer, it has been supplying about half the world wheat exports (figure 4). Export competitors are expected to have a less than 1 percent crop increase in 1976-77. Argentina had a good 1975 wheat crop but is plagued with drought in 1976. Australia had a good 1975 crop, but it is estimated to be down in 1976 due to drought. Canada has good 1976 crop prospects. Western Europe has had a widely publicized drought, with total grain production now estimated to be about 5 percent below average. This could mean some increase in U.S. exports, but more significantly, it signals reduced export availability of European grain. Eastern Europe wheat import requirements are expected to be up from last year. At present prices, some countries could be interested in U.S. wheat for feedgrain purposes.

In summary, U.S. wheat exports are projected to be down slightly from last year, at 1,000 to 1,100 million bushels. However, this projection appears to be on the low side of a likely range. This will be particularly true if wheat prices continue to move downward in the near term. Lower prices could stimulate additional export movement.

Export sales booked as of August 1 were 271.6 million bushels. This was about the same as August 1, 1975. Shipments are running below last year. But comparison of such data needs careful interpretation in view of two significant points. Traditional U.S. wheat customers, as well as the USSR, are now assured of access to U.S. wheat. This would be expected to lessen buyers' interest in early booking. Wheat prices have been on a sharp decline during the past few weeks. Foreign buyers would be expected to act as normal merchants, under such circumstances, and delay purchases until prices gets lower.

Wheat Market Balance for 1976-77

U. S. wheat carryover would increase to about 900 million bushels by the end of the current marketing year under the foregoing assumptions and projections (table 2). This is a big increase. The number may be a bit on the high side. But these supply and use estimates do not imply a particularly strong wheat price situation.

Some classes of wheat may be in relatively more price trouble than others. Ending stocks of Hard Spring Wheat and Durum are projected to be up 60 percent (table 3).

Pricing the 1976 Crop

Most observers expect wheat prices to average lower in 1976-77 than last year. Minneapolis No. 1 DNS (13 percent) wheat averaged $4.17. The 1976-77 average is expected to be in the $3.50 to $3.90 range. Price movement during 1976-77 will depend, among other things, on: the size of and harvest condition for the feedgrain crop, world food and feedgrain crops during 1976-77, the pattern of foreign purchases, pricing practices of wheat growers and development of the 1977 Winter Wheat crop.

Reports thus far indicate a good quality, high protein wheat crop. This implies a reduction in protein premiums from last year's levels. The data showing a relatively higher Spring Wheat and Durum carryover imply a reduction in price premiums for those classes, relative to other wheat classes.

Wheat market history gives little clue as to how the seasonal price pattern may take shape around the season average price projection (figure 1). There must be some returns to storage over time or wheat will not be stored. In the past few years there have been sharp price rises following harvest, with price dropping off rapidly in early winter as the market apparently "overpriced" wheat. Wheat prices this year are expected to show a typical grain market pattern following a big crop. Low prices following harvest will encourage purchases which will pull prices above the season average by next spring. Farmers' reluctance to sell wheat at lower-than-expected prices will encourage this price pattern. Wheat pricing is encouraged at any significant run-up in the market. For example, if an early season bull move in the grain markets is generated by soybeans, it may be a good time to price some wheat for current or future delivery. Good wheat pricing decisions in 1976-77 will require effort and analysis.

The following guidelines may help in making pricing decisions on the 1976 wheat crop:

1. Plan a marketing strategy early in the year. This planning should include knowledge of pricing alternatives in the cash, contract and futures markets. Price, grades and discounts differ between cash buyers; contract terms differ; and futures market contracts sometimes can be advantageous.

Table 2. Supply and Utilization of All Wheat by Marketing Year

	Average 1970-72	1973-74	1974-75	1975-76	Projected 1976-77
	million bushels				
Beginning Stocks	903	599	339	430	665
Production	1,485	1,705	1,796	2,134	2,096
Imports	1	3	3	2	2
Total Supply	2,389	2,307	2,138	2,566	2,763
Food Use	521	530	521	559	540
Seed	63	84	93	95	95
Feed	228	137	76	74	175
Exports	675	1,217	1,018	1,173	1,050
Total Use	1,487	1,968	1,708	1,901	1,860
Ending Stocks	902	339	430	665	903

Table 3. Hard Spring and Durum Wheat Supply and Utilization

	Durum		Hard Spring	
	1975-76	1976-77*	1975-76	1976-77*
	million bushels			
Beginning Stocks	26	54	100	115
Production	123	134	328	385
Imports	1	1	1	1
Total Supply	150	189	429	501
Domestic Use	44	48	154	162
Exports	52	55	160	155
Total Use	96	103	314	317
Ending Stocks	54	86	115	184

* Projected

Table 4. 1976 Cumulative Costs of Storing Wheat*

Dollar /bu.	Place of Storage	Months in Storage 1	2	3	4	5	6	7	8	9	10
		cents per bushel									
3.00	Farm	3.9	6.3	8.8	11.2	13.7	16.2	18.7	21.2	23.7	26.3
	Elevator	4.3	8.5	12.8	17.1	21.4	25.8	30.1	34.5	38.9	43.3
3.50	Farm	4.6	7.4	10.2	13.1	15.9	18.8	21.8	24.7	27.7	30.7
	Elevator	4.6	9.3	13.9	18.6	23.3	28.0	32.8	37.6	42.3	47.2
4.00	Farm	5.2	8.4	11.7	14.9	18.2	21.5	24.9	28.2	31.6	35.0
	Elevator	5.0	10.0	15.1	20.1	25.2	30.3	35.5	40.6	45.8	51.0
4.50	Farm	5.9	9.5	13.1	16.8	20.5	24.2	28.0	31.8	35.6	39.4
	Elevator	5.4	10.8	16.2	21.7	27.1	32.6	38.2	43.7	49.3	54.9

* Based on: 9 percent interest rate, farm loss and damage of .5 percent plus .05 percent per month, elevator charge 2 cents per month.

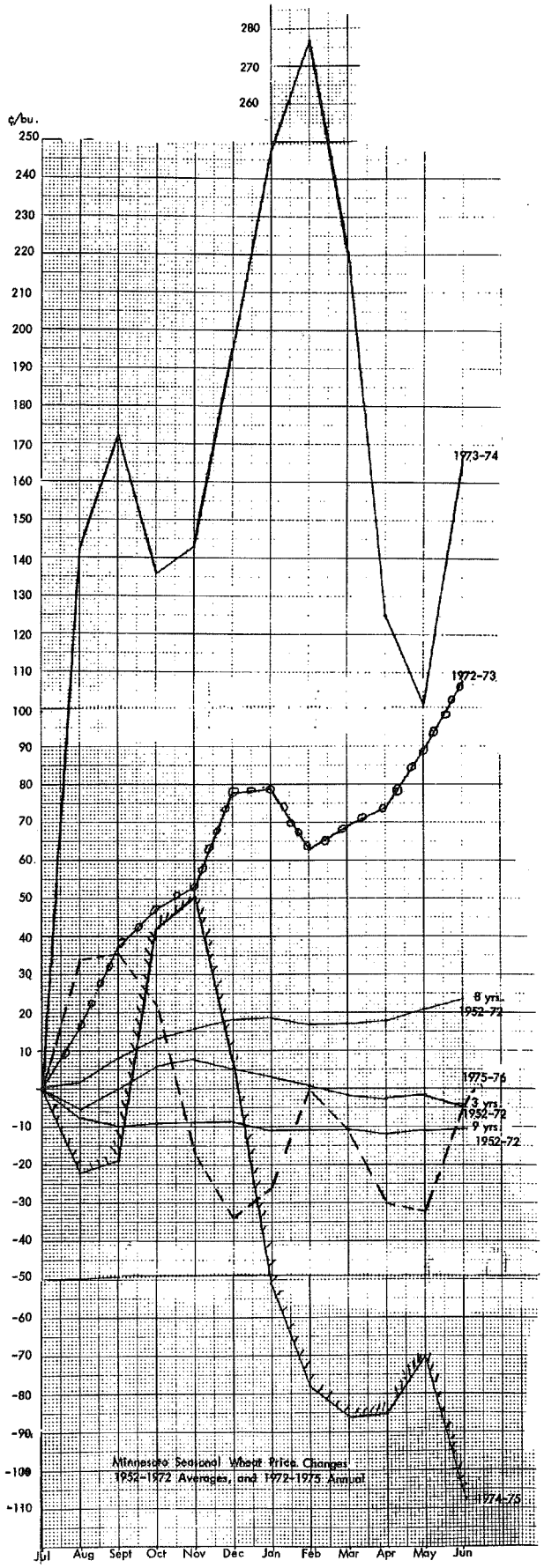
Table 5. Approximate Wheat Storage Cost, September to June, at $3.50/bu. Wheat

Item	Amount on farm	Amount in elevator
	cents per bushel	
Cumulative costs (from table 4)	27.7	42.3
Extra handling	1/	-
Insurance	1/	-
Bin cost	5.9 2/	-
Total cost [= market price rise necessary to break even on storage]	33.6	42.3

1/ Use your own estimate for your situation

2/ Based on bin ownership cost of $ .057/bu./yr., plus $ .002/yr. maintenance and repair. If you already own storage, you have this cost whether or not you store the wheat; then it should not be considered a variable cost.

Figure 1.


¢/bu.
280
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250
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-30
-40
-50
-60
-70
-80
-90
-100
-110
1973-74
1972-73
8 yrs. 1952-72
1975-76
3 yrs. 1952-72
9 yrs. 1952-72
1974-75
Minnesota Seasonal Wheat Price Changes
1952-1972 Averages, and 1972-1975 Annual
Jul
Aug
Sept
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun

Figure 2. Wheat Fed and Wheat/Corn Price Ratio

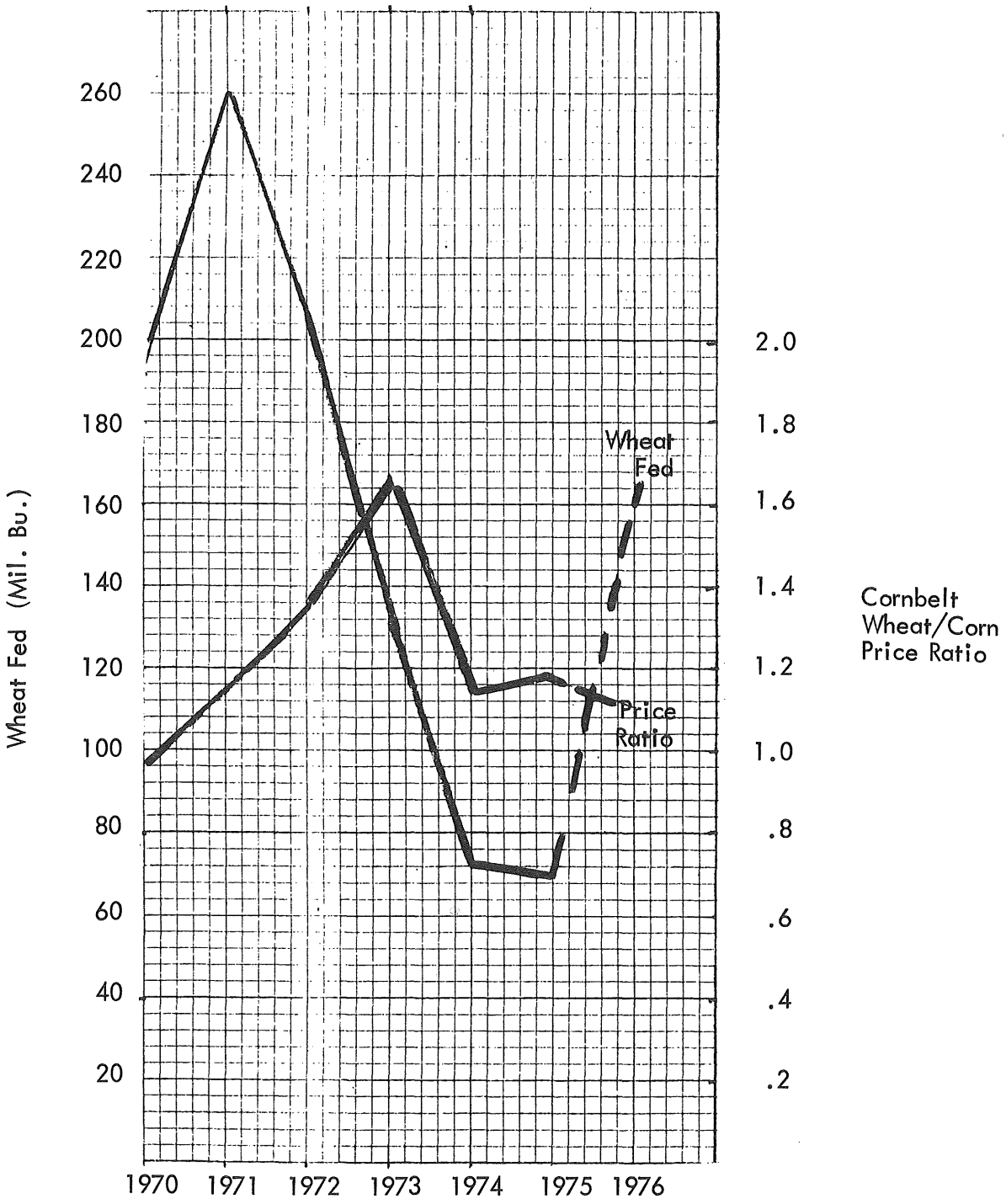


Figure 3. World Wheat Production, Consumption, Stocks and Imports

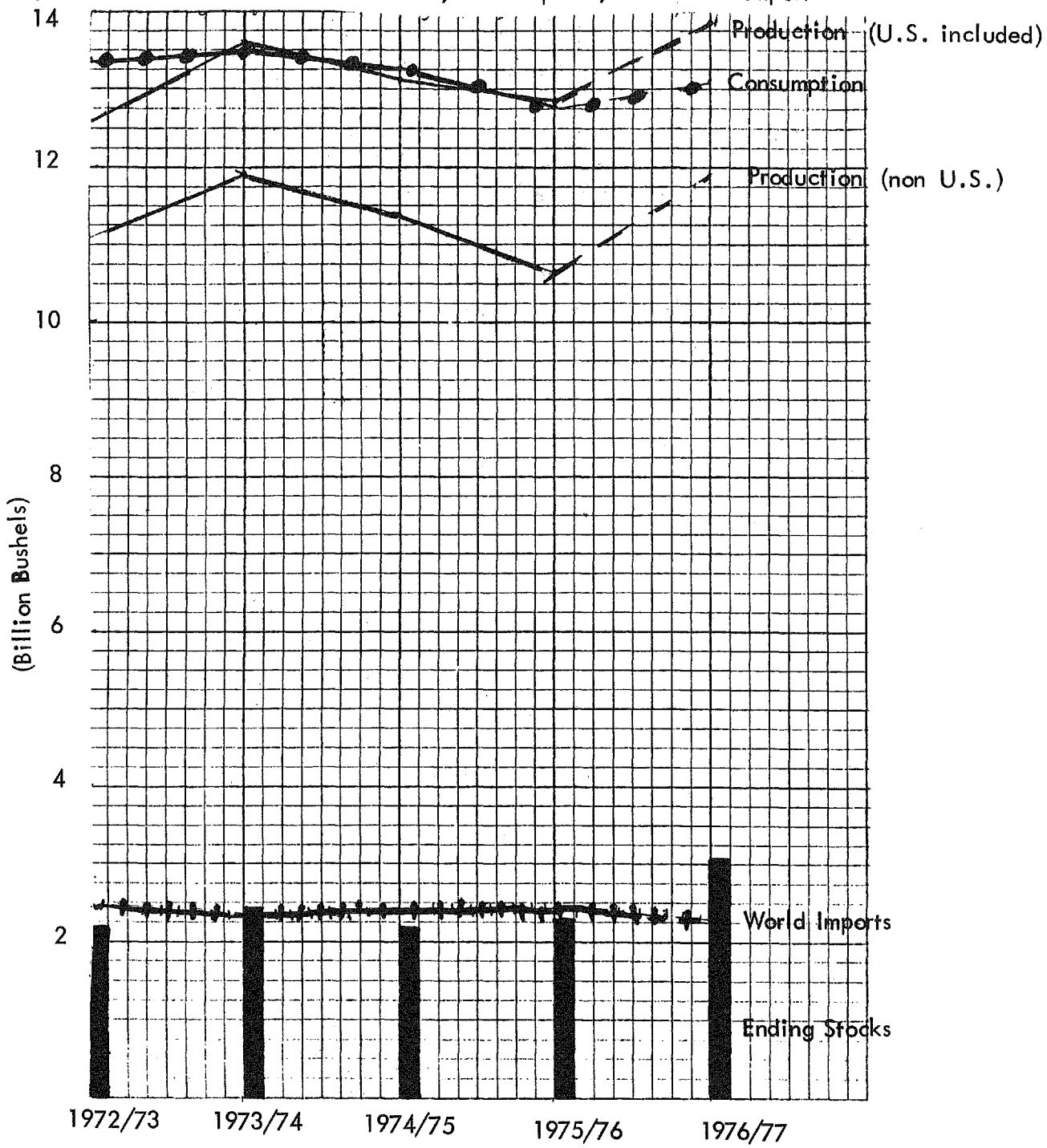
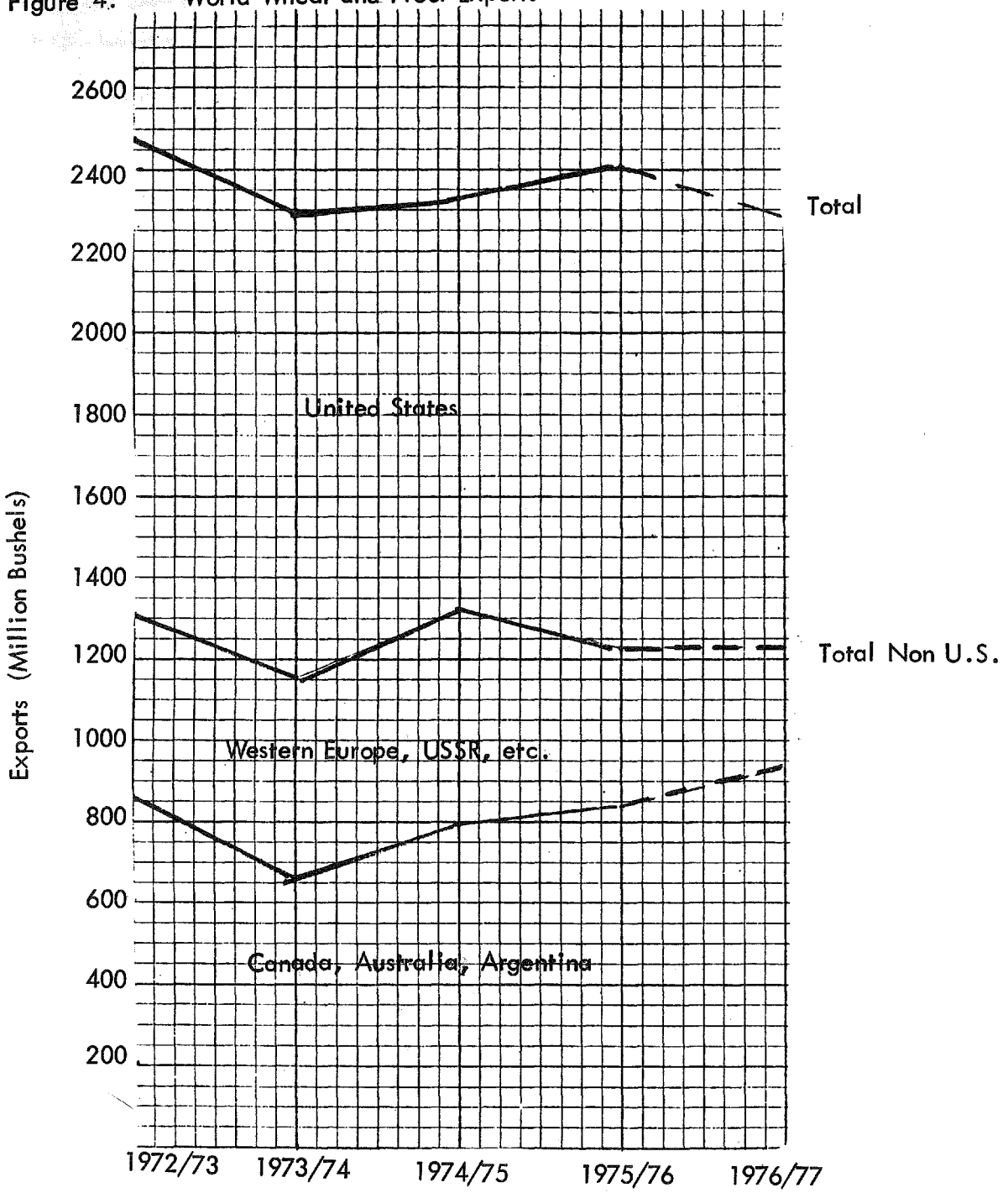


Figure 4. World Wheat and Flour Exports



FORAGES

AT A GLANCE: The drought has cut Minnesota's hay crop by one-third from 1975. Corn silage production could be greater than 1975 because many acres planted for corn grain failed to make grain. Livestock operators are encouraged to put up all that is available. Drought damaged corn silage has little alternative use value so it will be the cheapest feed source in the coming year. Producers can pay $10 to $12 per ton in the field for 30 percent dry matter material, harvest it for $5 per ton and it will still be cheaper than hay at $60 per ton or corn grain at $2.50 per bushel.

Factors Affecting Forage Prices

Factors affecting the supply of forages are acres and yields of (1) tame hay, (2) wild hay and (3) corn silage in Minnesota and, to a limited extent, in nearby states.

Factors affecting the demand for hay are: (1) the number of livestock on farms, (2) the price of feedgrain and (3) the price of protein supplements. Transportation costs are another important factor in forage prices.

Review of 1975-76

Hay production in Minnesota during 1975 was 8 million tons, 80 percent of which was alfalfa or alfalfa mix. Corn silage production was almost 10 million tons. Both hay and corn silage supplies were above 1974 levels (table 1). Forage supplies became scarce in central and western Minnesota when the spring drought delayed 1976 pasture growth. Average alfalfa hay prices in Minnesota jumped from $46 per ton in May to $73 in mid-June. In contrast, U.S. prices declined from $70 to $64 per ton (table 2).

Mid-August farm prices for alfalfa hay in Minnesota were reported as $64 by the Minnesota Crop and Livestock Reporting Service. Hay prices vary greatly within the state because of large variations in area hay supplies and because of the high hay transportation cost. Prices for mixed hay in August varied from $40 to $45 in northern Minnesota, to $50 to $60 in southeastern Minnesota, to $80 and above in the heart of the drought-stricken area in southwestern Minnesota.

Hay transportation charges have ranged between $1 to $1.25 per loaded mile for trucks hauling 12 to 15 tons of hay. A 200 to 300 mile haul adds $20 to $35 per ton to the price of hay. The current government subsidy administered through the ASCS offices pays two-thirds of the transportation cost up to $27 per ton. Therefore, hay has been moving into southwestern Minnesota for a net cost of $50 to $75 per ton. Some of this reportedly has been of poor quality, so farmers are cautioned to check quality before buying.

1976-77 Prospects

The USDA August 1 estimate of Minnesota hay production for 1976 was 5.3 million tons compared with 8 million tons in 1975. Low August rainfall may cut this estimate even further. There is no USDA estimate of corn silage production. Total production could equal or surpass 10 million tons because of the increased acreage of drought-damaged corn that has little alternative use. The southwest district increased the acreage of corn harvested as corn silage by 28 percent in 1975 because of dry weather. Total production increased in that district in 1975 despite lower yields (8.6 tons vs. 8.9 tons) (table 1). A further increase in harvested corn silage acreage is expected in most districts this year.

Many acres of lowland hay, roadside ditches and other waste acreages are being harvested this year. The amount and value of this lower quality material will be difficult to estimate, but it will help to over-winter more cattle than could otherwise be kept on Minnesota farms.

Aspen bark waste material is available from several different Minnesota plants. This can be purchased by farmers and ensiled as winter feed for beef cows. It is recommended that this material be finely ground and that the moisture content be increased to 45 to 50 percent for best storage. Add 100 gallons of water per ton of material put in the silo to increase 30 percent moisture material to 50 percent. Thirty percent moisture coarsely ground material can be purchased at $6 per loaded ton from the Little Falls plant. A second grinding, which is needed, can be done at the plant for an additional $5 per ton.

Waste forest products have an even more limited market area than dry hay because of the higher transportation costs per unit of dry matter. A semi-truck charging $1 to $1.25 per loaded mile might haul 20 to 25 tons per load. If hauling, processing and storage costs do not push total "as fed" costs over $19 per ton of 30 percent dry matter material, this product will still be competitive with $2.50 corn or $50 timothy hay in a beef cow ration (table 3). When this material is used in a beef ration it requires more supplementary ingredients than good quality hay because it has no digestible protein and very few minerals. Recent research at Grand Rapids, Minnesota, suggests that properly supplemented poplar bark silage priced at $15 per ton (30 percent dry matter basis) could be competitive with good quality hay at $37 per ton if the cows are fed 10 pounds of hay per day. But, if the level of hay feeding is cut back to 5 pounds per day, hay would have to be priced over $49 before the bark silage becomes competitive.

The principle to follow when evaluating low quality feeds such as aspen bark, slough grass or cattails, is that they can be quite valuable when used to substitute for energy in up to 50 to 60 percent of a beef cow's ration. However, once higher priced protein must be purchased to replace that lost in the good hay, the value of these feeds declines. This can be seen by comparing the values in the last two columns of table 3 with the center two columns.

The demand for purchased forages has been at its seasonal low as farmers have been busy harvesting their own crops. September hay prices should be similar to August prices. Increased demand should push hay prices to their seasonal highs as the winter

progresses, especially when livestock producers in the drought areas realize that pastures probably will be late and sparse again in early 1977 because of low soil moisture reserves.

Harvest and Transportation Costs

It costs more to harvest an acre of corn silage than an acre of corn grain. Harvest costs per ton are relatively higher when low-yielding crops are harvested. Transportation costs on bulky forages also are high per unit of feed value. The following cost estimates have been developed to help livestock producers estimate the value of hay stumpage or of standing corn.

	Normal Yield	Low Yield	Normal Yield	Low Yield
Harvesting Costs	- - - - total cost per ton - - - -		- - - cash cost per ton* - - -	
Corn silage	$2.00 - $3.00	$4.00 - $6.00	$ .75 - $1.25	$1.50 - $2.00
Hay				
conventional bales	10.00 - 12.00	12.00 - 15.00	6.00 - 7.20	7.20 - 9.00
large round bales	9.00 - 11.00	11.00 - 14.00	4.50 - 5.50	5.50 - 7.00
3-ton stacks	8.00 - 11.00	11.00 - 14.00	3.60 - 5.00	5.00 - 6.30

	Total Cost Per Mile	Cash Cost Per Mile*
Transportation Costs		
Light truck (hauls 6-8 tons)	$ .32 - $ .48	$ .12 - $ .18
Heavy truck (hauls 10-12 tons)	.50 - .75	.20 - .30

* Cash costs exclude labor and equipment depreciation

Management Implications

Calculate winter forage needs and compare with supplies. If supplies are short, try to fill requirements early. This can have a two-fold advantage. First, prices are expected to rise. Second, additional drought-damaged corn can be purchased from neighbors out of their fields. Excess corn silage should be purchased for the 1977-78 feeding year if available at $10 per ton or less.

Livestock farmers in areas with low soil moisture reserves should plan on additional tonnages to carry their stock longer into the spring. This is recommended to compensate for the expected lateness of spring pastures and to allow overgrazed pastures longer than normal to recover.

Special attention should be given to ration content with respect to protein and TDN when using low quality feeds and/or forage intake is being limited. The added cost of proper

ration supplementation will be less expensive than low milk production, a poor calf crop or possible sickness or death of animals. Feeds must be tested before proper supplementation is possible. The county agent or vo-ag teacher has information on feed testing.

Corn silage will be the cheapest source of forage in the drought-stricken area of Minnesota. Farmers with livestock can pay $10 to $12 per ton of 30 percent dry matter material in the field. The "as fed" cost of the silage would be $18 to $20 per ton after harvest and storage costs. This is competitive with $65 per ton average quality alfalfa hay and $2.50 a bushel corn.

Table 3 shows the feeding value of many common feeds when compared with number 2 dry corn at $2.50 and $3 a bushel. Refer to the first two columns of equivalent values if additional protein is needed in the ration. For example, a dairyman who needs to buy supplemental protein as well as more forages can pay up to $70 per ton for alfalfa, full bloom hay if corn grain is available at $2.75 per bushel and soybean meal at $10 per hundredweight. ($70 is halfway between the values of $66.08 and $74.12 shown under $2.50 and $3 corn for this type of hay.)

The last two columns should be used to estimate the feeding value of alternative feeds if no added protein is needed in the ration. For example, if enough legume hay is already available in a beef cow ration to provide adequate protein, the added energy provided by the same full bloom alfalfa hay is worth only $56 when corn can be bought for $2.75 per bushel.

Note that the beef cow man can justify a higher price for low quality feeds when they are substituted for only part of the ration and the protein content is not important (see last two columns of table 3). Thus, economics suggest that beef cow men might sell some of their top quality legume hay to dairymen and buy back, at lower prices, some low quality feeds.

Table 1. Acreage and Production of Hay and Corn Silage in Minnesota by Regions for 1974 and 1975

Crop Reporting District	Hay Production (All)				Corn Silage Production			
	Acres (1000)		Production (1000 tons)		Acres (1000)		Production (1000 tons)	
	1974	1975	1974	1975	1974	1975	1974	1975
NW (1)	531.6	500.2	1085.3	939.8	47.9	57.5	411.9	408.3
NC (2)	239.7	235.1	373.1	342.1	9.2	10.5	84.4	66.2
NE (3)	57.4	53.1	78.3	71.0	0.2	0.2	1.9	1.6
WC (4)	401.0	412.6	924.4	1014.4	153.2	193.9	1317.5	1609.4
Cent (5)	633.1	685.7	1687.9	1951.8	261.8	309.6	2356.2	2538.7
EC (6)	392.9	453.5	753.1	845.6	91.0	67.4	855.4	599.9
SW (7)	213.7	220.8	619.9	603.3	163.4	208.1	1454.3	1789.7
SC (8)	176.2	193.8	641.1	669.9	81.7	94.9	980.4	1157.8
SE (9)	414.4	455.2	1332.9	1567.1	135.6	127.9	1695.0	1779.4
State Total	3060.0	3210.0	7496.0	8005.0	944.0	1070.0	9157.0	9951.0

Table 2. Average Prices Received by Farmers by Months in Minnesota and the United States for Alfalfa and Other Hay - 1975 and 1976.

Month	Alfalfa Hay				Other Hay			
	Minnesota		United States		Minnesota		United States	
	1975	1976	1975	1976	1975	1976	1975	1976
January	51.50	53.50	53.00	56.20	40.50	39.00	44.70	46.40
February	54.00	55.00	52.50	58.60	41.50	41.00	44.20	46.70
March	56.00	51.50	52.40	58.20	43.00	38.00	44.20	46.10
April	67.50	46.00	54.90	56.90	55.00	31.50	46.10	44.90
May	75.00	46.00	59.10	70.20	65.00	31.50	46.80	48.00
June	56.00	73.00	56.70	64.00	48.00	52.00	45.30	47.70
July	50.50	66.00	54.40	63.50	38.00	48.00	43.50	47.70
August	55.00	64.00	54.10		40.50	49.00	44.10	
September	52.50		54.10		37.10		43.80	
October	54.50		53.60		37.50		43.30	
November	53.50		53.00		38.50		44.20	
December	54.50		54.80		38.00		45.20	

Table 3. Estimated Feed Values of Various Feeds, Based on Their Energy and Digestible Protein Contributions When No. 2 Corn can be Purchased for $2.50 or $3 per Bushel and Soybean Meal for $10 per Cwt.

FEED		PCT D.M.	PCT TDN	PCT DIG PROT	SBOM AT $10.00/CWT FEED VALUE RELATIVE TO CORN PRICE: $ 2.50	SBOM AT $10.00/CWT FEED VALUE RELATIVE TO CORN PRICE: $ 3.00	PROT NOT VALUED* CORN PRICE: $ 2.50	PROT NOT VALUED* CORN PRICE: $ 3.00
EAR CORN	TON	88.5	75.9	6.0	82.39	99.49	84.08	100.90
CORN COBS	TON	90.4	46.2	.4	40.89	52.87	51.18	61.41
OATS	BU.	91.1	71.5	9.4	1.41	1.64	1.27	1.52
CORN SILAGE AVE	TON	35.0	20.6	1.5	22.00	26.70	22.82	27.38
CORN SIL. DROUGHT	TON	30.0	16.8	1.4	18.50	22.24	18.61	22.33
ALFALFA 1/10 BLOOM	TON	90.6	55.0	13.0	84.36	92.57	60.93	73.11
ALFALFA FULL BLOOM	TON	90.4	47.0	9.0	66.08	74.12	52.06	62.48
ALFALFA PAST BLOOM	TON	90.4	44.9	8.6	63.13	70.81	49.74	59.69
TIMOTHY FULL BLOOM	TON	88.7	48.0	3.2	50.41	61.51	53.17	63.81
QUACK GR. IMMATURE	TON	90.0	53.0	10.2	74.66	83.70	58.71	70.45
QUACK GR. MATURE	TON	92.0	51.0	3.9	54.99	66.54	56.50	67.80
REED CANARY MATURE	TON	91.0	42.0	5.0	50.38	59.03	46.53	55.83
SLOUGH GR. MATURE	TON	90.0	40.8	3.0	43.65	52.95	45.20	54.24
SORG. SUDAN, EARLY	TON	88.0	48.0	7.7	63.23	72.16	53.17	63.81
SORGHUM SUDAN, AVE	TON	89.0	54.0	4.5	59.28	71.33	59.82	71.78
SOYBEAN HAY, EARLY	TON	88.0	48.0	7.7	63.23	72.16	53.17	63.81
SOYBEAN HAY, AVE.	TON	89.0	54.0	4.5	59.28	71.33	59.82	71.78
CORN STOVER	TON	81.0	46.2	2.1	45.73	56.89	51.18	61.41
SWEET CORN RESIDUE	TON	35.0	19.6	2.0	22.56	26.76	21.71	26.05
SORGHUM SILAGE	TON	35.0	18.0	.7	17.48	21.88	19.94	23.93
OAT STRAW	TON	89.6	44.1	.9	40.50	51.69	48.85	58.62
WHEAT STRAW	TON	90.0	40.0	.4	35.69	46.02	44.31	53.17
SUNFLOWER, EARLY	TON	22.0	11.0	.8	11.74	14.25	12.19	14.62
CATTAILS	TON	90.8	41.0	2.6	42.68	52.23	45.42	54.50
ASPEN BARK	TON	70.0	23.0	0	19.79	25.85	25.48	30.57

* The last two columns are to be used only when the feed can be substituted into a ration which has excess protein. This may be the case for up to one-half of a beef cow's ration.

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Table 1. Choice Steer Prices per 100 Pounds, Omaha*

Month	1971	1972	1973	1974	1975	1976
January	$29.10	$35.63	$40.65	$47.14	$36.34	$41.18
February	32.18	36.32	43.54	46.38	34.74	38.80
March	31.89	35.17	45.65	42.85	36.08	36.14
April	32.41	34.52	45.03	41.53	42.80	43.12
May	32.86	35.70	45.74	40.52	49.48	40.62
June	32.35	37.91	46.76	37.98	51.82	40.52
July	32.44	38.38	47.66	43.72	50.21	37.92
August	33.10	35.70	52.94	46.62	46.80	37.08**
September	32.58	34.69	45.12	41.38	48.91	
October	32.22	34.92	41.92	39.64	47.90	
November	33.30	33.59	40.14	37.72	45.23	
December	34.28	36.85	39.36	37.20	45.01	
Average	32.39	35.78	44.54	41.89	44.61	

* 900 - 1,100 pounds
** For week ending August 14

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

	Choice Feeder Steer (600 - 700#)			Choice Feeder Calves (400 - 500#)		
Month	1974	1975	1976	1974	1975	1976
January	$50.58	$26.45	$37.46	$54.66	$25.55	$37.47
February	47.95	26.96	40.42	54.45	26.29	41.40
March	44.81	28.75	39.69	54.02	29.14	44.01
April	44.15	31.69	44.62	50.30	31.45	47.01
May	40.14	35.50	44.21	45.48	34.66	47.58
June	35.10	36.81	42.83	39.96	35.82	44.81
July	36.72	34.70	39.18	37.72	32.58	40.64
August	36.70	34.34	38.55*	36.84	31.70	41.00*
September	30.49	37.59		32.40	35.15	
October	30.94	38.09		30.47	36.04	
November	28.71	38.26		27.31	36.26	
December	28.27	37.83		26.54	35.94	
Average	37.88	33.91	41.20**	40.84	32.55	43.27**

* For week ending August 14
** Average of first seven months

First, beef production has been higher than expected. Feedlot placements picked up more rapidly than expected when grain prices dropped last fall. Therefore, fed cattle marketings continue to run 15-20 percent over 1975 levels. Also, feedlot cattle have been held to heavier than desirable weights as feedlot operators waited for better prices.

Cow slaughter continued at somewhat higher rates than anticipated this spring and summer. Over 5 million cows went to slaughter during the first half of 1976 compared with 4.6 million in 1975.

Marketing margins, costs charged by retailers and processors, have increased significantly to 65 cents per pound of beef compared to 55 cents in August 1975. This difference reduces pay price to farmers about $4 per cwt. on a live animal basis.

Consumers apparently became accustomed to buying larger quantities of hamburger during 1975. They have been somewhat reluctant to move back to the higher priced beef cuts which are available in larger amounts this year.

Outlook For Late 1976

Fed cattle marketings during the last half of 1976 will be very close to the second quarter levels at 6.1 to 6.2 million head per quarter. The slaughter of non-fed steers and heifers will be between 1.5 and 1.7 million head per quarter. Cow slaughter is expected to approach 6 million head during the last half of this year because of the current liquidating mood of cow herd owners. Total beef supplies for the last half of 1976 will be slightly higher than during the first half of the year. Per capita consumption for the year will reach 127 to 128 pounds, carcass basis, if these high slaughter rates materialize. This compares to 120 pounds per person in 1975. The price pressure observed in the beef markets in recent months can be expected to be maintained through 1976.

Higher incomes in 1976 are holding up the demand for beef. Higher levels of pork and poultry supplies this fall will offer more competition, however. Increases in total meat supplies are expected for the next several months. There is little opportunity for increased beef prices unless marketing margins can be narrowed. If this occurs, it probably will not be over 5 cents per pound at retail, which is about 2 cents a pound live if all of it is passed back to the producer.

Cow prices will probably decline further as cow marketings pick up during the fourth quarter. Choice beef prices will probably stay near September levels.

Feeder prices in August dropped to near January levels (table 2). Any change in feeder cattle prices will depend as much on changes in feed prices as on changes in fed cattle prices. Feeder prices will be higher in December than in early September if grain prices move down significantly during harvest. Feeder prices will move down as grain prices move up if the national corn crop continues to deteriorate and foreign demand strengthens. August - September feeder prices should be the low for the fall period.

Outlook For 1977

The USDA mid-year cattle inventory estimate contained good news for cow-calf operators. The July 1 beef cow herd was estimated to be 7 percent below that of July 1, 1975. The number of calves on hand was estimated to be 8 percent below that of July 1, 1975. Beef heifers held for replacement were down by 12 percent, indicating that beef cow herds would be reduced even further in the year ahead. Therefore, feeder cattle prices will be higher in late 1977 than currently.

There was bad news for cattle feeders and cow yearling operators, however. The number of yearlings both in and outside of feedlots appeared to be about 9 percent greater than July 1, 1975. Steer and heifer slaughter through the first half of 1977 should remain significantly above the 1976 slaughter level prohibiting much improvement in fed cattle prices before mid-1977. The lower than expected calf crop estimate indicates that improved prices can be expected for fed cattle as well as for feeder animals by mid-1977.

The cost of keeping a cow in the year ahead will require feeder calf prices of at least 50 cents per pound in most hay feeding operations in order to cover just feed and cash costs (see the beef cow budget). Cow-calf operations using large supplies of forages which have good alternative market values will probably fail to cover costs again in 1977. Those with ample supplies of lower valued forages, such as corn refuse or drought-stricken corn silage, should more than cover their production costs.

Cattle feeders will have to buy carefully and do an excellent job of controlling costs to realize profits during the next 6 months if yearling supplies are as large as estimated. Fed cattle prices should gradually improve through much of 1977. There could be a relatively short supply of fed beef in the third quarter of 1977 with subsequently strong prices if there is a delay in the placement of calves on feed this fall and if many are held over by cow-calf men for sale later in 1977. Therefore, a $45 market is used in the budget for calves in contrast to a $43 market for yearlings next spring. Whether or not such selling prices permit any returns over feed and cash costs will depend on feed prices and feed efficiency for individual operations. Therefore, each individual should plug in his own corn price and feed efficiency level into the cattle feeding budgets shown at the end of this article. The 10 percent changes in corn prices shown in the last sensitivity table can also be interpreted as 8 percent changes in feed efficiency levels from those assumed in the initial budget.

Given the expectation of higher feeder cattle prices next year, the cow-calf operator as well as the feeder in the drought area of western Minnesota should consider growing calves. Corn that failed to pollinate and make corn grain this year will be an excellent feed for growing out calves. Its feeding value on an equal dry matter basis should be within 10 percent of regular corn silage. This feed has little alternative use value so it probably should not be priced at more than $15 per ton. Fed through feeders, corn silage should return at least $25-$30 per ton (see budget on growing calves with drought damaged corn).

Beef Imports

A brief section on beef imports is included to help the reader to place this issue in proper perspective.

Total beef imports by the end of 1976 are expected to be slightly higher than in 1975 when measured both in absolute pounds and as a percentage of U. S. beef production. Table 3 shows the level of beef imports and exports on a carcass weight basis as well as the relationship of net imports to total U. S. beef production.

The current USDA estimate of beef imports subject to the Meat Import Law is for an increase of 1 percent over 1975. This level would be only 10 million pounds under the level at which the quota mechanism would be triggered into effect under the Meat Import Law.

The Meat Import Law, passed in 1964, has provided a framework to limit meat trade to the U. S. The law covers animal imports of fresh, chilled or frozen beef and mutton. An adjusted base quantity is calculated. If it is exceeded by more than 10 percent, further exports to the U. S. are not permitted. The trigger point is derived from average yearly imports during 1959-1963, adjusted by the percent change from the previous three years in domestic beef production. This allows imports to increase each year at about the same rate of change as U. S. beef production.

Frozen, fresh or chilled beef subject to the Import Law makes up roughly 90-93 percent of the beef imported into the U. S. Processed beef makes up the remainder of the total beef imports shown in column 1 of table 1. Processed beef is not subject to the Import Law. The amount of processed beef shipped into the U. S. has been declining over the past 3 years. In 1973, 201 million pounds (carcass weight) was shipped in, 188 million pounds in 1974 and only 139 million pounds in 1975.

Imports of processed beef not subject to the Import Law could increase some in 1976, largely as a result of new processing capacity in the Foreign Trade Zone of Puerto Rico and the relaxation of beef trade restrictions with Canada. Some frozen beef from other countries is processed in Puerto Rico prior to shipment into the U. S. It does not come under the Meat Import Law in the processed form. The capacity of the plant in Puerto Rico appears to allow a maximum of 70 million pounds in 1976. This would increase total imported beef (that subject to the law plus that which is not) by an additional 70 to 90 million pounds in 1976 over 1975. If Canadian imports also expand slightly, total beef imports could be up by 80 to 100 million pounds.

How much of a difference would this amount of change in imports have on live cattle prices? The following estimates were made based on results of a study done by Professor Houck of the University of Minnesota:

Effect of a year to year increase in beef imports of 100 million pounds:

Choice Steer Price	-$ .40 per cwt.
Cull Cows	-$1.00 per cwt.

Another study done recently by researchers at the University of Iowa State showed a somewhat smaller impact. Both studies showed that the impact of changes in beef imports is much greater on cull cows than on fed beef because imported beef tends to substitute better for cow beef than for fed beef.

Table 3. U.S. Beef Trade Situation*

Period	Imports	Exports	Net Imports as a Percent of U.S. Production
	- - - - million pounds - - - -		
1973	2,022.0	90.9	8.9
1974	1,646.0	63.2	6.7
1975	1,781.0	53.4	6.9
1976			
1st qtr.	492.0	42.0	6.6
2nd qtr.	559.0	45.0	8.1

* Carcass weight basis

Management Implications

Many Minnesota beef producers will have negative returns from their cropping programs as well as their livestock programs in 1976 because of the severe drought in much of southwestern and central Minnesota. Consequently, additional time must be spent on cost-cutting and income-increasing mangement and marketing decisions such as the following.

Pricing corn silage: Corn fields hit hard by drought will have little corn grain except in the low spots. An "alternative use" value must be placed on it if pricing it into your own cattle or selling it to a neighbor instead of plowing it down. The value as a plow-down would be less than $5 per ton of 30 percent dry matter material as it stands in the field. This includes $3 worth of fertility nutrients and $1 to cover its value as a snow catch and the loss in organic matter if it is harvested for silage. Harvesting the crop will cost $4 to $6 per ton. Additional storage losses may be incurred if this is excess silage stacked in an outside temporary stack. Total alternative use cost of silage material with little grain in it will be between $10 and $15 per ton fed. This will be the cheapest source of energy feed available to many Minnesota farmers in the coming year because the feeding value of this material on a dry matter basis is almost equivalent to that of regular corn silage. Excess corn silage at an in-the-field price of $10 to $12 per ton will provide a relatively cheap feed compared with hay at over $60 a ton and corn grain at over $2.50 a bushel (see table in forage article).

Pricing other home grown feeds: Prices on grains and hay will probably fluctuate widely in the coming year. A feed price that reflects the best expected net at the farm should be used when figuring costs of keeping cattle. This is especially true for harvesting and storing wet shelled corn because once this product has been put in the silo it must be used as livestock feed.

What ration mix to use: Drought stressed corn will be the cheapest feed through much of the cattle feeding area of Minnesota. All livestock farms should have additional stacks of extra corn silage this year. The level of corn silage should be increased in all rations, replacing both hay and shelled corn. This is an excellent product for growing out calves. Perhaps more animals can be fed, but fewer fed all the way to slaughter weights.

Protein buying decisions: Protein will be expensive relative to corn in the year ahead. Several strategies to consider for minimizing protein costs are: (1) test feeds for protein content and then limit supplemental feeding to the amount necessary to balance the ration (drought stressed corn has more protein per unit of dry matter than regular corn silage); (2) utilize more urea in protein supplementation; (3) consider buying some protein needs ahead when there are temporary dips in the soybean meal market and (4) check closely the protein requirements on heavier feeder animals. Recent research results suggest somewhat less protein may be needed in the later phases of a finishing program.

When to buy feeder cattle: Farmers with large quantities of drought stressed corn silage this year may want to buy feeders as early as possible. August-September feeder prices will probably be the lowest of the year unless grain prices move up rather than down after harvest begins.

When to sell calves: The cow-calf feeders should again consider alternatives other than selling this fall. (1) Carry calves through the year and sell next fall as yearlings. (2) Carry them only through the winter and sell them next spring as short yearlings. (3) Contract with a friend or relative who has excess drought-damaged corn silage to grow out the calves for him. Yearlings will be worth more per pound next year than calves are early this fall with the expected 7 percent drop in this year's calf crop.

What to buy: Light feeders or thin yearlings from the drought area of the Dakotas should prove excellent buys for farmers with large supplies of drought-damaged corn silage. Some of the lower quality feeders, such as holsteins, may be relatively low risk ways of marketing excess corn silage. Calves are apt to be marketed higher in 1977 than yearlings. However, their higher purchase price per hundredweight will necessitate careful examination of individual budgets as feeder prices vary in the coming weeks.

AGRI. EXTENSION SERVICE
UNIVERSITY OF MINNESOTA

RESULTS FOR: NORTHE. . MINN.
08-31-76 UGL FARMS

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 444 LBS @ $50.00	9435.00	
29 HEIFER CALVES 421 LBS @ $45.00	5447.55	
13 CULL COWS 1000 LBS @ $27.00	3510.00	
TOTAL SALES	18392.55	183.93
FEED REQUIREMENTS(HERD) AND COSTS:		
HAY 286.0 TONS @ $40.00	11440.00	114.40
PASTURE 550.0 COW MO.@ $ 3.00	1650.00	16.50
CORN 400.0 BU. @ $ 2.80	1120.00	11.20
MINERAL 44.0 CWT @ $ 6.00	264.00	2.64
TOTAL FEED COST	14474.00	144.74
OPERATING COSTS:		
INTEREST ON ANIMAL DEBT(7.0%)	2016.00	20.16
HIRED LABOR	100.00	1.00
BREEDING COSTS	360.00	3.60
SELLING COST	489.40	4.89
OTHER OPERATING COSTS	940.00	9.40
TOTAL OPERATING COSTS	3905.40	39.05
TOTAL FEED AND OPERATING COSTS	18379.40	183.79
BUDGETED RETURN TO LAB,FACILITY,EQUITY IN COWS	13.15	.13

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

STEER PRICE	PER CENT CALF CROP 75	80	85	90	95
40.00	-4565	-3763	-2962	-2161	-1360
45.00	-3282	-2378	-1474	-570	333
50.00	-2000	-993	13	1020	2027
55.00	-718	391	1501	2611	3721
60.00	564	1777	2990	4203	5416

RETURN TO HERD FOR LABOR, FACILITIES, AND COW CAPITAL

WEANING WEIGHT	PER CENT CALF CROP 75	80	85	90	95
404	-3155	-2241	-1327	-412	501
424	-2578	-1617	-656	303	1264
444	-2000	-993	13	1020	2027
464	-1422	-369	684	1737	2790
484	-845	254	1354	2454	3553

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RESULTS FOR: GROWING CALVES
08-31-76 DROUGHTY C. SILAGE

BUDGET FOR STEER CALF

	HEAD	CWT GAIN
PERFORMANCE:		
PURCHASE WEIGHT, LBS	430.	
SELLING WEIGHT, LBS	730.	
TOTAL GAIN, LBS	300.	
AVERAGE DAILY GAIN, LBS	1.67	
DAYS ON FEED	180.	
VALUE PRODUCED:		
SALE VALUE AT $ 44.00 /CWT.....	$ 321.20	
PURCHASE COST AT $ 42.00 /CWT	180.60	
GROSS MARGIN	140.60	$ 46.87
FEED REQUIREMENTS AND COSTS:		
SILAGE 3.50 TON AT $ 18.00	63.00	21.00
PROTSUP 1.80 CWT AT $ 8.00	14.40	4.80
MINERAL .25 CWT AT $ 6.00	1.50	.50
TOTAL FEED COST	78.90	26.30
OPERATING COSTS:		
INTEREST ON ANIMALS (8.5 PERCENT)..	7.57	2.52
DEATH LOSS (1.5 PERCENT)	2.85	.95
SELLING AND BUYING COSTS	10.00	3.33
OTHER OPERATING COSTS	6.00	2.00
TOTAL OPERATING COSTS	26.42	8.81
TOTAL FEED & OPERATING COSTS	105.32	35.11
BUDGETED RETURN TO LABOR & FACILITIES..$	35.28	11.76

RETURN PER HEAD FOR LABOR & FACILITIES WITH DIFFERENT PRICES

SELLING PRICE/CWT	WHEN PURCHASE COST PER CWT IS: 38.00	40.00	42.00	44.00	46.00
40.00	24.27	15.17	6.08	-3.02	-12.11
42.00	38.87	29.77	20.68	11.58	2.49
44.00	53.47	44.37	35.28	26.18	17.09
46.00	68.07	58.97	49.88	40.78	31.69
48.00	82.67	73.57	64.48	55.38	46.29

BREAK EVEN SELLING PRICES THAT WILL COVER FEED, OPERATING, AND $18.00 RETURN FOR LABOR AND FACILITIES.

PURCHASE PRICE/CWT	WHEN CORN SILAGE PER TON IS: 14.40	16.20	18.00	19.80	21.60
38.00	37.42	38.28	39.14	40.00	40.87
40.00	38.66	39.52	40.39	41.25	42.11
42.00	39.91	40.77	41.63	42.50	43.36
44.00	41.15	42.02	42.88	43.74	44.61
46.00	42.40	43.26	44.13	44.99	45.85

NOTE: TO COVER ONLY FEED AND OPERATING COSTS SUBTRACT $ 2.47

AGRI. EXTENSION SERVICE
UNIVERSITY OF MINNESOTA

RESULTS FOR: CATTLE FEEDER
08-31-76 SO. MINN.

BUDGET FOR STEER CALF

	HEAD	CWT GAIN
PERFORMANCE:		
PURCHASE WEIGHT, LBS	430.	
SELLING WEIGHT, LBS	1080.	
TOTAL GAIN, LBS	650.	
AVERAGE DAILY GAIN, LBS	1.91	
DAYS ON FEED	340.	
VALUE PRODUCED:		
SALE VALUE AT $ 45.00 /CWT.....	$ 486.00	
PURCHASE COST AT $ 42.00 /CWT	180.60	
GROSS MARGIN	305.40	$ 46.98
FEED REQUIREMENTS AND COSTS:		
CORN 40.00 BU AT $ 2.50	100.00	15.38
SILAGE 5.00 TON AT $ 18.00	90.00	13.85
HAY .30 TON AT $ 70.00	21.00	3.23
PROTSUP 3.40 CWT AT $ 8.00	27.20	4.18
MINERAL .45 CWT AT $ 5.00	2.25	.35
TOTAL FEED COST	240.45	36.99
OPERATING COSTS:		
INTEREST ON ANIMALS (8.5 PERCENT)..	14.30	2.20
DEAH LOSS (1.8 PERCENT)	3.59	.55
SELLING AND BUYING COSTS	11.80	1.82
OTHER OPERATING COSTS	10.00	1.54
TOTAL OPERATING COSTS	39.69	6.11
TOTAL FEED & OPERATING COSTS	280.14	43.10
BUDGETED RETURN TO LABOR & FACILITIES..$	25.26	3.89

RETURN PER HEAD FOR LABOR & FACILITIES WITH DIFFERENT PRICES

SELLING PRICE/CWT	WHEN PURCHASE COST PER CWT IS: 38.00	40.00	42.00	44.00	46.00
41.00	.96	-8.49	-17.94	-27.38	-36.83
43.00	22.56	13.11	3.66	-5.78	-15.23
45.00	44.16	34.71	25.26	15.82	6.37
47.00	65.76	56.31	46.86	37.42	27.97
49.00	87.36	77.91	68.46	59.02	49.57

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: 2.00	2.25	2.50	2.75	3.00
38.00	39.94	41.58	43.23	44.87	46.51
40.00	40.81	42.46	44.10	45.74	47.39
42.00	41.69	43.33	44.98	46.62	48.26
44.00	42.56	44.21	45.85	47.49	49.14
46.00	43.44	45.08	46.73	48.37	50.01

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

AGRI. EXTENSION SERVICE
UNIVERSITY OF MINNESOTA

RESULTS FOR: YEARLING FEEDER
08-31-76 SO. MINN.

BUDGET FOR STEER YEARLING

	HEAD	CWT GAIN
PERFORMANCE:		
PURCHASE WEIGHT, LBS	650.	
SELLING WEIGHT, LBS	1150.	
TOTAL GAIN, LBS	500.	
AVERAGE DAILY GAIN, LBS	2.17	
DAYS ON FEED	230.	
VALUE PRODUCED:		
SALE VALUE AT $ 43.00 /CWT.....	$ 494.50	
PURCHASE COST AT $ 38.00 /CWT	247.00	
GROSS MARGIN	247.50	$ 49.50
FEED REQUIREMENTS AND COSTS:		
CORN 40.00 BU AT $ 2.50	100.00	20.00
SILAGE 4.00 TON AT $ 18.00	72.00	14.40
HAY .25 TON AT $ 70.00	17.50	3.50
PROTSUP 2.30 CWT AT $ 8.00	18.40	3.68
MINERAL .33 CWT AT $ 5.00	1.65	.33
TOTAL FEED COST	209.55	41.91
OPERATING COSTS:		
INTEREST ON ANIMALS (8.5 PERCENT)..	13.23	2.65
DEATH LOSS (.7 PERCENT)	1.85	.37
SELLING AND BUYING COSTS	12.00	2.40
OTHER OPERATING COSTS	10.00	2.00
TOTAL OPERATING COSTS	37.08	7.42
TOTAL FEED & OPERATING COSTS	246.63	49.33
BUDGETED RETURN TO LABOR & FACILITIES..$	.87	.17

RETURN PER HEAD FOR LABOR & FACILITIES WITH DIFFERENT PRICES

SELLING PRICE/CWT	WHEN PURCHASE COST PER CWT IS: 34.00	36.00	38.00	40.00	42.00
39.00	-17.54	-31.34	-45.13	-58.92	-72.71
41.00	5.46	-8.34	-22.13	-35.92	-49.71
43.00	28.46	14.66	.87	-12.92	-26.71
45.00	51.46	37.66	23.87	10.08	-3.71
07.00	74.46	60.66	46.87	33.08	19.29

BREAK EVEN SELLING PRICES THAT WILL COVER FEED, OPERATING, AND $20.00 RETURN FOR LABOR AND FACILITIES.

PURCHASE PRICE/CWT	WHEN CORN PRICE PER BU IS: 2.00	2.25	2.50	2.75	3.00
34.00	39.45	40.86	42.26	43.67	45.08
36.00	40.65	42.06	43.46	44.87	46.28
38.00	41.85	43.25	44.66	46.07	47.48
40.00	43.05	44.45	45.86	47.27	48.68
42.00	44.24	45.65	47.06	48.47	49.88

NOTE: TO COVER ONLY FEED AND OPERATING COSTS SUBTRACT $ 1.74

HOGS

AT A GLANCE: Pig crop and hog inventory estimates project into increasing hog supplies for the remainder of 1976 and into 1977. Hog prices can be expected to decline to the $40 per cwt. area by late fall and range from the high $30's to low $30's per cwt. through 1977. Profits will be lower than in 1976 but still positive until late 1977.

Review of Recent Past

The increasing phase of the hog cycle began in 1976, first with increased farrowings, and later with increased slaughter.

Farrowings in the spring of 1976 increased 14 percent over 1975 following four years of reduced U.S. sow farrowings. This increase, coupled with a slight increase in pigs born per litter, pushed the 1976 spring pig crop to an estimated level of 41.4 million head, an increase of 16 percent over 1975 levels. Percentage increases in farrowings were approximately equal in both the early quarter (December-February) and the late quarter (March-May). The 1976 spring pig crop was 8 percent less than the spring crop of 1974 despite this sharp increase.

The sharp rebound in U.S. hog production this spring was in response to very favorable hog production profits during the 1976 spring pig crop breeding season and the planning period 3 to 6 months earlier.

Barrow and gilt prices in the first two quarters of 1976 remained stable--averaging $48 per cwt. in the first quarter and $49.19 in the second (table 1, page 62). This followed a sharp seasonal downward adjustment of $6.50 per cwt. resulting from increased slaughter from third quarter 1975 to fourth quarter 1975. Barrow and gilt prices over the entire first half of 1976 averaged about $6 per cwt., or 14 percent higher than 1975. Table 2 (page 62) gives important factors to consider for explanation or prediction of hog prices.

Reduction in hog supplies contributed the most to the improved first half 1976 price situation. Supply change is usually the most important price change factor since prices normally change 2 to 2.5 percent for each 1 percent change in supplies. The positive contribution of increased income, inflation and population on hog prices was largely offset by the negative impact of increased beef and poultry supplies.

Total profits in the complete hog enterprise have been excellent since second quarter 1975 through third quarter 1976. Receipts have remained at least $10 per cwt. higher than all costs thus far in 1976.

Market Prospects, Fall 1976

The estimated pork production in fourth quarter of 1976 is expected to be 19.2 million head. This is an increase of 12 percent from third quarter 1976 and 14 percent up from 1975 (table 1). This assumes that the June 1 estimates, as reported in the USDA Hog Report, are accurate and can be expected to project in a normal pattern into slaughter.

Demand for pork is expected to be up by about 3 percent over fourth quarter 1975 because of higher incomes and reduction in beef production. This would mean that 11 percent of the expected 14 percent increase in pork production will impact on hog prices at the rate of -2.3 price flexibility per 1 percent supply change.

Slaughter hog prices already have come under pressure at seven markets after reaching a seasonal price peak of near $51 per cwt. in late June. Since then, barrow and gilt prices gradually have moved downward to the current mid-August level in the mid-$40 per cwt. level. Feeder pig prices have dropped about $15 per head, reflecting the decline in slaughter hog prices, the sharp increase in feeder pig marketings and higher summer feed prices.

A 25 percent (11 percent x -2.3) drop in barrow and gilt prices from fourth quarter 1975 is expected, based on analysis of expected supply and demand and using the model shown in table 2. Fourth quarter barrow and gilt prices should range from $39 to $41 per cwt. Feeder pig prices can be expected to range between $25 to $27 per head, already showing the influence of increased last half 1976 farrowings.

Hog profits for complete hog operations should remain above the "breakeven" level in a range which will encourage further expansion in breeding plans for farrowings in first half 1977, assuming that hog price predictions hold and country corn prices remain in the $2.50 to $2.70 per bushel range for the remaining months of 1976. Feeder pig production enterprises may show reduced profits. Feeder pig feeding will fluctuate in response to changing feeder, fed hog and corn prices.

Per capita consumption of pork will be approximately 57 pounds in 1976, assuming that estimates of production are accurate. This is compared with almost 55 pounds in 1975 and 67 pounds in 1974. Per capita consumption could rise to about 65 pounds in 1977, based on the following analysis.

Market Prospects for First Half 1977

Hog marketings in the first half of 1977 will come largely from the June-November 1976 pig crop. There is no reported estimate of what that crop will be, unlike the previous time periods. However, a look at hog producers' intentions, along with an analysis of returns to hog producers during the planning and breeding season for the fall, gives a clue of the possible direction and magnitude of farrowing changes for this period.

U.S. hog producers, as reported in the June 1 Hogs and Pigs Report, planned an estimated 17 percent increase in farrowings in the fall of 1976 compared to 1975 levels. Quarterly estimates for a 14-stage sample indicate a 16 percent increase for June-August farrowings, and a 19 percent increase in September-November.

These farrowing figures are only estimates of intentions. However, if analyzed with other data, they appear realistic. Evidence supporting these intention estimates includes: (1) excellent hog profits during the spring of 1976 when plans were being made for the 1976 fall pig crop, (2) sizable increase in the spring pig crop and (3) high enough hog profits during the first quarter (June-August) to preclude any sell-off of breeding stock.

The farrowing intention estimates for fall 1976 are believed to be within 2 percent of the actual figures. This means that hog slaughter during the first half of 1977 could be up by at least 15 percent over 1976 levels, and perhaps higher (table 1).

How much of this predicted increase can be absorbed by increased demand for pork? There are many uncertainties here. In general, however, some improvement in demand seems likely with expected reductions in both beef and poultry supplies. Total disposable incomes are expected to increase by 6 to 8 percent. An estimated net increase of 5 percent in demand for pork is predicted for the first half 1977 over first half 1976 (table 2).

An 11 percent increase in supply will clear the market only at lower prices, given the estimated 15 to 17 percent increase in supplies and a predicted 5 percent increase in demand. This price drop projects out to a 25 percent drop from first half 1976 levels, using a -2.3 price flexibility coefficient. Therefore, an average price for the entire first half 1977 is predicted in the mid-$30 per cwt., averaging in the high-$30 per cwt. in the first quarter, and in the mid-$30 per cwt. in the second quarter. Profit projections for first half 1977 depend on both hog price predictions and feed price expectations. It now appears that a 6 billion bushel corn crop is expected, so sufficient supplies of corn will be available. This will put corn prices only slightly below 1976 levels. Protein prices will be higher. Thus, total feed costs will be the same to higher.

With other costs up slightly, it appears that hog prices should remain near or above breakeven levels during much of first half 1977 with possible dips below showing up in the second quarter.

The hog budgets on pages 63 and 64 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 estimating profit prospects.

Prospects for Last Half 1977

The dominant question surrounding market conditions for late 1977 is what will be the size of the 1977 spring pig crop. The expansion in farrowings experienced in the spring and fall of 1976 is expected to continue at least through the spring of 1977 since profits are expected to remain good through the breeding season for the 1977 spring pig crop. Quite likely the expected percentage increase will be somewhat less, but anything less than a 10 percent increase seems unrealistic.

Farrowings in the December-February quarter should be up by 12 to 14 percent and the late March to May farrowings should increase from 9 to 12 percent over 1976. This would push marketings during the fourth quarter 1977 to levels which could force prices to sub-profitable levels into the low-$30 per cwt. area.

The summer quarter 1977 pig crop could go either way. The expansion could be in the 5 to 8 percent increase range for this quarter if the cycle runs true to form. Farrowings in the late fall quarter of 1977 could be down slightly. This means that hog producers might have to wait for profits until mid-1978, following a period of less than breakeven levels in late 1977 and early 1978.

Table 1. Quarterly Commercial Hog Marketings and Prices

Year	Quarter	Number Marketed	Slaughter Hogs Seven Markets Average Price	Feeder Pigs Northern Minn. 40 Pounds Average Price
		million head	per cwt.	per head
1974	1	20.1	$38.40	$30.23
	2	21.0	28.00	20.95
	3	19.7	36.59	15.93
	4	20.9	39.06	19.51
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	~~17.1*~~ 17.9	~~43-46*~~ 43.88	~~29.00*~~ 28.31
	4	~~19.2*~~ 21.5	~~39-41*~~ 34.14	~~25-27*~~ 20.90
1977	1	~~20.0*~~ 19.7	~~37-39*~~ 39.10	~~22-24*~~ 30.31
	2	~~19.5*~~ 18.6	~~34-36*~~ 40.87	~~21-24*~~ 36.62
	3	~~19.1*~~ 18.0	~~35-37*~~ 41-43*	~~23-25*~~ 29-31
	4	~~21.1*~~ 21.1	~~31-32*~~ 38-40*	~~26-29*~~ 30-32
1978	1	20.5-21.6	35-37	25-28
	2	19.7-20.1	34-36	26-28
	3	19.2-19.8	35-37	27-30
	4	22.0-22.5	30-33	26-28

Table 2. Analysis of First Half 1976 Slaughter Hog Price Percentage Change from First Half 1975

Model Factors	Factor Coefficients	Percent Change 1975 to 1976	Expected Effect On Prices
Disposable Income	+.4	+10.0%	+4.0%
Population	+1.0	+1.0	+1.0
Beef Supplies	-.3	+8.0	-2.4
Poultry Supplies	-.2	+10.0	-2.0
Pork Supplies	-2.3	-5.5	+12.5
Net "expected" change in price			+13.3
Actual change in price			+14.0
Difference from model			+.9

Table 3.

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

AGRICULTURAL ECONOMICS PROGRAM:
FEEDER PIG BUDGET
RESULTS FOR: HOG FEEDER
08-31-76 SO. MINN.

	HEAD	CWT GAIN
PERFORMANCE:		
WEIGHT SOLD .....(1-12-77).....	230.	
WEIGHT PURCHASED (9-15-76).....	40.	
DAYS ON FEED	119.	
AVERAGE DAILY GAIN, LBS	1.59	
POUNDS FEED PER POUND OF GAIN ..	3.83	
VALUE PRODUCED:		
SALE VALUE AT $ 38.00 /CWT ..... $	87.40	
PURCHASE COST AT $ 30.00 /HEAD .	30.00	
DEATH LOSS (3.0%)	.93	.49
VALUE PRODUCED	56.47	29.72
FEED REQUIREMENTS/HEAD AND COSTS:		
CORN 10.77 BU AT $ 2.60 ..	28.00	14.74
PROSUP40% 1.27 CWT AT $ 11.00 ..	13.94	7.33
(MIN,VIT,ANTIB INCL IN PROT SUP)		
TOTAL FEED COST	41.94	22.07
OPERATING COSTS:		
INTEREST ON ANIMALS (8.5%)	.86	.45
SELLING AND BUYING COSTS	3.00	1.58
OTHER OPERATING COSTS	4.00	2.11
TOTAL OPERATING COSTS	7.86	4.14
TOTAL FEED & OPERATING COSTS	49.80	26.21
RETURN FOR LABOR & FACILITIES	6.68	3.51

RETURN PER HEAD FOR LABOR & FACILITIES WITH DIFFERENT PRICES

SLLING PRICE/CWT	WHEN PURCHASE COST PERHEAD IS: 26.00	28.00	30.00	32.00	34.00
32.00	-2.89	-5.00	-7.12	-9.24	-11.36
34.00	1.71	-.40	-2.52	-4.64	-6.76
36.00	6.31	4.20	2.08	-.04	-2.16
38.00	10.91	8.80	6.68	4.56	2.44
40.00	15.51	13.40	11.28	9.16	7.04
42.00	20.11	18.00	15.88	13.76	11.64
44.00	24.71	22.60	20.48	18.36	16.24

BREAK EVEN SELLING PRICES THAT WILL COVER FEED, OPERATING AND $ 8.00 PER HEAD FOR LABOR AND FACILITIES.

PRCHASE PRICE/HEAD	WHEN CORN PRICE PER BU IS: 2.30	2.45	2.60	2.75	2.90
24.00	34.41	35.11	35.81	36.51	37.22
26.00	35.33	36.03	36.73	37.44	38.14
28.00	36.25	36.95	37.65	38.36	39.06
30.00	37.17	37.87	38.58	39.28	39.98
32.00	38.09	38.79	39.50	40.20	40.90
34.00	39.01	39.72	40.42	41.12	41.82
36.00	39.93	40.64	41.34	42.04	42.74

Table 4. Feeder Pig Production - Estimated Costs and Returns

		Sow - 2 Litters		Per Feeder Pig	My Figures
Value Produced					
15.5 Pigs @ $31/head		$480.50		$ 31.00	
.5 Sow - 450# @ $30/cwt.		67.50		4.35	
Total		548.00		35.35	
Feed Requirements and Costs					
Corn @ $2.60/bu.	60 bu.	156.00	3.9 bu.	10.14	
Supplement @ $11.00/cwt	800 lbs.	88.00	52 lbs.	5.68	
Total Feed		244.00		15.82	
Operating Costs					
Interest		14.00		.90	
Marketing		18.00		1.16	
Breeding		8.00		.52	
Health		13.00		.83	
Electricity and fuel		9.00		.58	
Grind and mix		8.00		.52	
Equipment repair		4.00		.26	
Miscellaneous supplies		5.00		.32	
Total Operating		79.00		5.09	
Total Feed and Operating		323.00		20.91	
Return for Labor and Facilities		225.00		14.44	

Table 5. Complete Hog Program - Estimated Costs and Returns

		Sow - 2 Litters	Per Cwt. Produced		My Figures
Value Produced					
14 Pigs - 230# @ $37/cwt.		$1,191.40			
1 Sow - 400# @ $30/cwt.		120.00			
Total (3,620 lbs.)		1,311.40		$36.22	
Feed Requirements and Costs					
Corn @ $2.60/bu.	230 bu.	598.00	356 lbs.	16.53	
Supplement @ $10.00/cwt.	2,400 lbs.	240.00	66 lbs.	6.62	
Total Feed		838.00	422 lbs.	23.15	
Operating Costs					
Interest		26.00		.72	
Marketing		43.00		1.20	
Breeding		8.00		.22	
Health		20.00		.56	
Electricity and fuel		12.00		.33	
Grind and mix		23.00		.64	
Equipment repair		12.00		.33	
Miscellaneous supplies		8.00		.22	
Total Operating		152.00		4.22	
Total Feed and Operating		990.00		27.37	
Return for Labor & Facilities		321.40		8.85	

DAIRY

AT A GLANCE: The dairy outlook is clouded by uncertainties surrounding future milk output and consumer demand. Prices are expected to rise seasonally for the remainder of 1976, and should reach the 1975 level by Januar. As production increases seasonally in 1977, prices will tend toward the support level.

The Minnesota manufacturing grade price was $8.76 per pound of milk of 3.5 percent butterfat test in July 1976. This was up from the June level of $8.41 and a reversal in the nearly continuous decline from the record high of $9.13 in January 1976. The decline in the first six months of 1976 was just the reverse of the 1975 pattern. Milk prices rose each month early in 1975, even in the face of seasonal increases in milk production.

Various market factors affected the two different patterns.

Milk Production and Fluid Use

Milk production during the first 6 months of 1976 rose 3.3 percent above 1975. A 0.9 percent decline in cow numbers was more than offset by a 4.4 percent increase in production per cow. Production per cow in 1975 was unchanged from 1974. Cow numbers were down, so 1975 milk production was lagging somewhat behind the 1974 level.

Even with retail prices up about 6 percent, monthly fluid milk sales in major urban markets have been slightly above 1975 sales. The 1975 retail prices averaged about the same as 1974 prices. Fluid sales rebounded strongly from the depressed levels of early 1974.

Production and Sales of Manufactured Products

More milk has been available for manufactured products even in the face of slightly higher fluid sales because of greater milk production this year. But butter production has been below the 1975 level. January-May butter production was down over 8 percent. The level of butter output in May 1976, normally the seasonal peak, was below January for the first time on record.

Butter sales were comparable to the levels of 1970-74 this spring, but somewhat below 1975. Retail butter prices during March-May 1976 were 20 to 25 cents per pound higher than in 1975. Margarine prices were lower. Nonfat dried milk sales were well above 1975 sales this spring, but weak compared with earlier years. Nonfat sales apparently are suffering from a price disadvantage compared to substitute products.

Cheese and other manufactured dairy products have had a higher claim on the available milk supply than butter and nonfat dry milk. Strong wholesale cheese prices have enabled cheese producers to bid strongly for available milk supplies. Cheese production has been hitting record highs. Total monthly cheese production has been running 13 to 16 percent above 1975. American-type cheese has been running 20 to 22 percent higher. Other manufactured products also have shown increases.

Retail cheese prices were considerably above 1975 this spring, but increasing demand has supported increased consumption. Commercial disappearance of American types of cheese was up 11 percent from last year, the highest on record. Sales of some other varieties of cheese were even stronger.

Government Purchases and Product Stocks

Government purchases and product stock levels are affected by differences in the manufacturing rate and product use rate. CCC removals of dairy products during the January-June 1976 period were the lowest in 25 years, equivalent to about 0.1 billion pounds of milk. CCC removals were equivalent to 2.3 billion pounds of milk during the same period in 1975. The above comparison of market factors points out similarities and differences between the first 6 months of 1976 and the same period in 1975. Of primary importance was the increased milk production in 1976 compared to 1975. Increased milk production resulted in greater production of manufactured products, particularly cheese, but sales have been brisk. Stocks of manufactured dairy products have been rebuilt during the first half of 1976. They do not appear excessive when compared to sales. They may prove to be quite tight, similar to 1975.

Stocks of butter, cheese and nonfat dry milk are shown in table 2. Commercial stocks of butter were 76.3 million pounds as of July 1, 1976, considerably above the 36.4 million pounds of 1975. However, last year's commercial stocks were supplemented by the sale of 21 million pounds of butter from CCC. This year's butter stocks may be considered no more than adequate at best, in view of the expected low level of monthly butter production.

Commercial stocks of American cheese are up slightly from 1975. Stocks of other cheeses are about the same. Both are below the 1974 level. If cheese sales continue at the present rate, the present level of stocks might prove to be somewhat tight. The pressure on stocks would be reduced if cheese sales should slow somewhat.

Commercial stocks of nonfat dry milk seem to be adequate in view of the large amount held by CCC.

1976-77 Prospects

Dairy price prospects for the period ahead will depend primarily on milk production and cheese sales. Other factors, such as fluid milk sales, will be important, of course, but these two seem to hold the key. A significant change in either of these factors could change the pattern of price expectations.

Total milk production in 1976 is expected to increase about 2 percent over 1975 and total about 117.7 billion pounds (see table 3). Looking to 1977, a comparatively favorable milk-feed price relationship should continue to encourage fairly heavy concentrate feeding. On the other hand, the severe drought situation in Minnesota and Wisconsin could cut into production.

Therefore, we expect milk production to increase about 1 percent in 1977 to a total of 118.8 billion pounds. With 1976 production increasing faster than commercial disappearance, a rebuilding of commercial stock at the beginning of 1977 to about the level that existed at the beginning of 1975 is expected. With beginning stocks rebuilt and modest increases in milk output, commercial disappearance in 1977 would have to increase and/or government purchases increase.

These forecasts suggest that the M-W milk prices for the remainder of 1976 might be expected to move up to the $9 plus level. However, as milk production increases seasonally in the first half of 1977, milk prices are expected to settle around support levels. At this writing the support price is $8.13 per hundred for milk of national average butterfat test. By April 1977, this likely will be higher as the index of prices paid reflects higher input prices.

Management Considerations

A. Dairymen Located in Drought Affected Areas:

"Income" from the crop sector of your business has probably already been reduced sharply. Don't compound your cash flow problem by feeding your cows poorly. Don't let production per cow drop because you have to buy feed. Milk prices will be high enough in the year ahead so that most dairymen will more than cover feed and other cash costs and get $3 per hour for labor at current or even higher feed prices (table 4).

Make an early estimate of the quantity and quality of your forage supply so that proper adjustments can be made in your feeding program. You can add to this supply by cutting more corn for silage. This is the cheapest available feed. Put up enough corn silage to insure an adequate forage supply if possible. Make extra piles if necessary.

Reduce the pressure on your limited feed supply by:

- Reducing the number of young stock raised. (You may save as much as a ton of feed per cow by raising only the replacements needed vs. raising everything.)
- Culling dry cows that will not calve for quite awhile or poor producers that are not covering feed and cash costs.
- Feeding residue feeds such as stover, straw, etc. to dry cows and heifers, but supplement carefully.

If you are still going to be short of forages, and if they are more expensive than grains, you can reduce the forage intake to 1 to 1.5 pounds of dry matter per 100 pounds of body

weight. To do this you must feed more grain: 1 pound of grain will replace about 2 pounds of forage at most production levels. Make sure the ration is properly adjusted so that you have an adequate, economical ration.

B. Dairymen Located in Areas Where Feed Supply is Adequate and Not Affected by Drought:

Crop production is a major source of income under today's dairy farm conditions, so harvest, store and feed it properly. Emphasize a good cropping program for next year.

Milk prices will be high enough so that most cows in the herd will more than cover feed and cash costs. Feed grain according to production. Balance rations properly and consider urea as an alternative source of protein.

Dairymen in both areas should compare costs of different feeds and rations because of high and variable feed prices. Least-cost rations can be approximated by the following steps:

- Determine the animal's needs for maintenance and production.
- Calculate the nutrients supplied by the fixed part of the ration (fixed by supply available or feeding program).
- Determine the least-cost source of the most limiting nutrient (protein or energy) needed to balance the ration. Use tables in the "Forage" section to find the cheapest source of that nutrient.

Table 1. Minnesota-Wisconsin Manufacturing Milk Price, 1974 to Date

Month	1974	1975	1976
January	$8.10	$6.80	$9.13
February	8.14	6.85	8.42
March	8.15	6.86	8.76
April	7.73	6.94	8.59
May	6.93	7.02	8.43
June	6.31	7.11	8.41
July	6.29	7.35	8.76
August	6.39	7.70	
September	6.69	8.27	
October	6.82	8.60	
November	6.76	8.84	
December	6.41	9.08	

Table 2. Dairy Product Stocks

Item	July 1, 1974	July 1, 1975	July 1, 1976
	million pounds		
Butter			
Commercial	99.4	36.9	76.3
Total	117.5	99.6	80.9
American cheese			
Commercial	486.1	402.7	412.7
Total	486.5	408.9	417.3
Other cheese			
Commercial	84.2	64.8	63.3
Nonfat dry milk			
Manufacturers	192.2	111.6	120.0
Total	671.3	551.3	512.8

Table 3. U.S. Milk Supply and Disappearance, 1975, With Projections for 1976 & 1977 1/

	1975 2/	1976 3/	1977 3/
	billion pounds		
Production	115.5	117.7	118.8
Less farm use	3.2	3.2	3.1
Marketings	112.2	114.5	115.7
Beginning commercial stocks	5.6	3.7	5.7
Imports	1.7	1.7	1.7
Total "supply"	119.5	119.9	123.1
Ending commercial stocks	3.7	5.7	5.7
Net government removals	2.0	0.1	2.0
Commercial disappearance	113.7	114.1	115.4
Total "disappearance"	119.4	119.9	123.1

1/ Milk equivalent, fat solids basis.

2/ Dairy Situation, July 1976.

3/ Estimated by authors.

Table 4. Maximum Prices that Could be Paid for Hay Equivalent and Grain Ration after Paying Cash Costs, plus $3 per Hour for Labor, and Receiving $9 for Milk *

	Production Level		
	10,000	12,000	14,000
	price that could be paid for hay (ton)		
With grain @ $6.50/cwt. **	$57.00	$73.00	$90.00
Effect of change			
$1/cwt. milk	$14.00	$16.00	$19.00
$1/cwt. grain	5.00	6.00	8.00
$1/hour labor	9.00	9.00	9.00
	price that could be paid for 14% dairy ration (cwt)		
With hay equiv. @ $50/ton **	$ 7.90	$10.10	$11.65
Effect of change			
$1/cwt. milk	$ 2.60	$ 2.55	$ 2.50
$10/ton hay	1.90	1.55	1.30
$1/hour labor	1.70	1.40	1.15

* Other cash costs amount to $190/cow; 65 hours of labor were charged to the dairy enterprise. Cull sales and manure credit of $150 per cow were included in income. Does not cover overhead costs such as interest, insurance and depreciation.

** Assumed feeding rates for cow and normal replacement were as follows: 3,810 pounds, 4,720 pounds and 5,630 pounds of 14 percent ration, respectively, and 7.28 tons of hay equivalent at all production levels.

SHEEP AND LAMBS

AT A GLANCE: Slaughter lamb prices are expected to strengthen some over the remaining months of 1976. Feeder lamb prices could be slightly lower than 1975 prices. Fed lamb prices during the first half of 1977 should remain in the mid-$40 per cwt. range.

Native Ewe Flock

The number of sheep and lambs on U.S. farms and ranches on January 1, 1976, totaled 13.3 million head, down almost 1 million head from 1975. This represents a continuation of the downward trend which began in 1960. If this trend continues at the same rate, there will be about 1 million head less on January 1 of 1977.

Table 1. Sheep and Lamb Balance Sheet (Million Head)

Item	1973	1974	1975	1976*	1977*
Jan. 1 Number:					
Stock Sheep	14.8	13.7	12.4	11.4	10.2
On Feed	2.9	2.7	2.1	1.9	1.8
Total	17.7	16.4	14.5	13.3	12.0
Lamb Crop	11.5	10.5	9.8	8.9	8.0
Net Imports	-0.2	-0.2	-0.3	-0.3	-0.3
Total Supply	29.0	26.7	24.0	21.9	19.7
Slaughter	9.8	9.1	8.1	7.2	6.5
Other Disappearance	2.8	3.1	2.6	2.7	2.5
Total Disappearance	12.6	12.2	10.7	9.9	9.0
Dec. 31 Number:	16.4	14.5	13.3	12.0	10.7

Source: Various reports of USDA
* Estimates made by American Meat Institute.

The 1976 lamb crop is estimated to be 8.9 million head. This is a 10 percent decline from 1975 and 16 percent below 1974 levels.

Commercial sheep and lamb slaughter during the first 7 months of 1976 was down about 15 percent from the same period in 1975. Sheep and lamb slaughter is expected to decrease

seasonally in fourth quarter 1976, and remain 10-12 percent below 1975 levels through the fourth quarter of 1976.

Fed lamb prices increased sharply over the first two quarters of 1976, peaking at over $60 per cwt. in May 1976 (table 2). This increase was attributed largely to sharply reduced lamb slaughter and higher prices for competing meat products. Since May, however, fed lamb prices have declined sharply. Some strength in fed lamb prices is expected in the fall quarter of 1976. The average is expected to be in the low-$40's per cwt. on choice lambs, basis So. St. Paul, Minnesota.

Table 2. Choice Lamb Prices - South St. Paul

Month	Fed Lambs		Feeder Lambs	
	1975	1976	1975	1976
	per cwt.			
January	$37.72	$46.94	$34.31	$47.18
February	40.42	46.56	34.78	46.00
March	42.44	50.92	36.74	50.21
April	44.18	55.77	37.00	52.39
May	50.18	64.75	37.79	53.72
June	45.94	50.01	37.35	45.80
July	44.09	46.02	37.10	44.14
August	39.91	40.00	35.52	40.00
September	42.14		36.63	
October	43.14	$41.00-$43.00	41.70	$42.00-$44.00
November	43.58		43.58	
December	46.18		46.11	

Predicted declines in lamb supplies and expected improvement in beef prices should increase fourth quarter lamb prices from August levels. Choice lamb prices should be back in the mid-$40's per cwt. at major markets.

Wool prices have rebounded further from the lows in late 1974. Wool prices in mid-August 1976 were back to over 70 cents per pound. Wool prices are expected to range from 55 cents to 60 cents per pound through much of the 1976-77 marketing year.

Profits to native flocks could be decreased in 1977 from 1976 levels. Prices would have to average near $50 per cwt. to provide a breakeven level for a good lamb producer (table 3).

Table 3. Average Costs Per Ewe

Feed Costs*	Per Ewe
Protein & Minerals	$ 2.03
Corn	16.25
Hay	35.00
Pasture	5.00
Total Feed	$58.28
Labor & Facilities	6.00
Other Costs	7.30
Total Costs	$71.58**

* Prices used are: corn $2.50/bushel, hay $60/ton, protein $10/cwt.

** Assuming a 20 percent replacement rate, 1.4 lambs sold per ewe and a $1.50 credit for 20 percent ewe sale, this would mean a breakeven of $50 per cwt. per 105-pound lamb sold.

Lamb Feeding

Lamb feeding returns in the 1975-76 feeding year were generally good. The level partly depended on when the lambs were sold. Assuming an average purchase price of $43 per cwt. or $33 per head on 70-75 pound lambs last fall, and a sale price of $46 on a 105-pound lamb in January or February, a typical lamb feeder would have ended up with a gross margin of approximately $15.30 per feeder lamb--somewhat above a "breakeven" level assuming $2.60 per bushel corn. Because of the strength in fed lamb prices, sales in March meant much higher returns.

Feeder lamb supplies for the 1976-77 feeding year will be lower because of the reduction in the 1976 lamb crop. Demand will be about the same or slightly stronger in view of the good return to lamb feeding in 1975-76. Prices are expected to average about the same as a year ago in the $42 to $44 range.

Fed lamb prices should increase into the mid-$40's per cwt. by first quarter 1977 when most of the fall-placed lambs will be sold. Lamb prices quite often follow fed cattle prices, and an increase is expected in cattle prices into first quarter 1977.

Lamb feeders could cover all estimated costs at fed lamb prices in the mid-$40's per cwt. if feeder lambs can be purchased at below $45 per cwt. this fall, and if our feedlot cost estimates are accurate (table 4).

Table 4. Typical Feedlot Costs Per Feeder Lamb 75 Pounds In to 110 Pounds Out and Breakeven Prices

Feedlot Costs

Feed Cost	$10.00
Building Equipment	.50
Labor & Management	1.00
Other Costs	3.00
Total Costs	$15.50

Breakeven Lamb Feeding Prices At Various Laid-In Prices

Laid-In 75-Pound Feeders At Price Per Cwt.	Net Sale Weight Of 105 Pounds Price Needed to Cover All Costs
$36.00	$40.50 per cwt.
38.00	41.90
40.00	43.30
42.00	44.70
44.00	46.10
46.00	47.50

POULTRY

AT A GLANCE: Summer 1976 hatchings, birds on hand and percent of molt all indicate that egg production will slightly exceed 1975 levels by late fall. The rate of lay is at an all-time high. Consumer demand for eggs is steady. Storage stocks of egg products are depleted. The 1976 feed crop harvest and price situation suggests lower poultry feed prices. Egg prices are currently or slightly above breakeven levels for average producers. Egg prices should drop from 66 to 62 cents per dozen for large eggs, New York wholesale basis, during the rest of the year. Winter prices should be about 61 cents. Spring prices should be closer to 53 cents. Little recovery is anticipated in the summer of 1977 if the expected increases in chick hatches occur.

New York turkey prices should continue in the 52 to 53 cent range (8 to 16 pound hens) to the end of 1976. 1977 prices will be higher due to the current below total cost profit situation experienced by turkey growers.

Poultry feed prices in 1977 will be close to those of 1976. Some increase in protein cost will be offset by a decline in feed grains. The industry is now operating with a new set of cost-price relationships. This new set of relative prices for poultry production, as well as for red meats, requires careful and continued analysis by producers. The demand factors of expected declines in pork prices, cholesterol concerns, higher consumer incomes and the price stabilization influences of EGG MAR are worth watching.

Eggs

Prices: Late summer 1976 New York egg prices were 8 cents above those of 1975. The New York large price should decline but hold above 62 cents for the rest of 1976. The seasonally low period of May and June may show a drop to 53 cents. Most other 1976 months should have a 56 cent egg price minimum.

Production: Birds on farms were 1 percent below 1975 levels in June. They should rise above 1975 levels by September. The forced molting rate continues well over 15 percent. The replacement hatch is up over last year. The hatch is estimated as a total of 475 million chicks this year compared to 454 million in 1975. Expected lower feed prices may foretell an increase in replacement rates in 1977. This will put downward pressure on prices by mid-year, if not earlier.

Stocks: Cold storage stocks and frozen egg supplies should remain minimal. Egg product demand is firm, suggesting a strong demand for breaking purposes in the fresh egg market.

Demand: There are several changing demand factors. The pluses and minuses seem to be balancing out. Promotion influences of the American Egg Board are likely to have little effect this first year of operation.

Breakeven: The producer breakeven price appears to remain in the 61 to 66 cent range (New York large egg basis) for typical upper midwest producers in 1976-77, assuming feed cost of $2.40 per bushel for corn and with soybean meal in the $180 per ton range. High prices will trigger expansion. Lower prices will prompt contraction.

Implications: Profit potentials for most of 1977 should be similar to 1976. Watch hatchery settings for signs of (over) expansion past mid-1977. Don't buy feed ahead.

Turkeys

Prices: Young hens (8 to 16 pounds) should average 52 to 53 cents per pound in New York from August to December 1976. While turkey stocks were down in mid-year, the slaughter in the last half of 1976 is up 7 1/2 percent over 1975. A noted increase in cut-up turkey production indicates some lessening of the seasonal demand for turkey. Turkey undoubtedly will remain primarily a holiday market item for some time. The quantity of turkey available, red meat prices and broiler prices are all negative price factors in 1976. These are offsetting any positive effect of consumer income increases in employment levels.

Production: Production is well above 1975 levels. The profit potentials of 1975 were sufficient to trigger an over-expansion in 1976 from the standpoint of producer profitability. This will cause sufficient contraction to move turkey production into the profitable range in 1977 unless feed prices drop substantially in late year.

Implications: Do not buy feed ahead. The carryover of frozen birds might be profitable but should be done only with some careful budgeting of expected cost and returns as well as tax effects. It might be advisable to review the profitability of recent years following low turkey price years in one's experience and plan accordingly.

USDA ESTIMATES— ACCURACY AND IMPACT

Official USDA crop and livestock production forecasts are made regularly throughout the agricultural year. Now that surpluses have vanished and farm markets are highly volatile, public attention is often riveted on each new set of forecasts. Some farmers and farm organizations say (or imply) that these official numbers are manipulated to drive prices up or down for political reasons. Others say that the estimates are so much in error that they are useless. For one or the other of these reasons, some groups advise farmers not to provide information to USDA.

A review of recent research studies on this general topic leads to the following conclusions:

1. There is no credible evidence of manipulation or early leakage of crop and livestock data by state or federal officials.

2. A 13 year study of monthly corn and soybean production forecasts shows that over-estimates of final figures are just as likely as under-estimates. There are no systematic biases in the direction of the "error" from year to year.

3. The largest over- or under-estimates of production occur early in the growing season. They diminish as the crop year advances (see table 1).

4. Taking out the corn blight year of 1970, the largest "error" in forecasted corn production was 11.6 percent above the final data. This occurred in July 1964. In soybeans it was 8.3 percent above the final figure, occurring in September 1974.

5. Overall, the average monthly "error" in corn crop forecasting is 4.1 percent. For soybeans, it is only 2.8 percent.

6. Immediately after the release of crop forecast data, prices on major commodity markets are just as likely to go up as to go down (see table 2). There seems to be some tendency for daily prices to rise if the current forecast is lower than the previous one and fall if the current forecast is higher than previously. But quite often, daily prices rise with favorable crop forecasts and fall with unfavorable ones. No strong pattern exists. Anyone who alleges that prices behave in a particular way just after release of the figures, simply hasn't looked at the data.

Table 1. A Comparison of Crop Estimates with Final Crop Production Figures in Recent Years

Corn

Year	Projected Aug. 1	Sept. 1	Oct. 1	Nov. 1	Final
	million bushels				
1975	5,850	5,687	5,737	5,804	5,767
1974	4,966	4,995	4,718	4,621	4,651
1973	5,661	5,768	5,763	5,678	5,643
1972	4,948	5,124	5,266	5,400	5,573
1971	5,345	5,266	5,400	5,552	5,641

Soybeans

Crop Year	Projection Date Aug. 1	Sept. 1	Oct. 1	Nov. 1	Final Crop
	million bushels				
1975	1,458	1,442	1,474	1,520	1,521
1974	1,314	1,316	1,262	1,244	1,233
1973	1,540	1,599	1,588	1,575	1,567
1972	1,270	1,286	1,317	1,351	1,271
1971	1,235	1,186	1,175	1,200	1,176

Table 2. Corn Prices - Following Corn Production Forecasts

Date	One Day Later		One Week Later	
	Higher	Lower	Higher	Lower
	cents per bushel		cents per bushel	
1973				
August	+15		no change	
September		-12	+1	
October		-15		-3
November	+9		+18	
1974				
August	+34		+25	
September	+8			-11
October	+9		+4	
November		-2		-18
1975				
July	+5		+10	
August	+7			-5
September	+10		+18	
October		-12		-19
November		-5		-3
Number of changes	8	5	6	6

Source: Agricultural Situation, U.S. Department of Agriculture, Statistical Reporting Service, August 1976.

About This Publication

This publication was prepared by extension economists in farm management and marketing at the University of Minnesota. Authors identified are primarily responsible for material in the respective articles. Yet, the group of authors collaborated in consultation and preparation, so all materials are a joint responsibility.

This is a report on the situation and outlook for agriculture and major commodities in Minnesota. Other commodities are important to specific groups, yet do not hold state-wide interest. This report represents analysis and judgment of data available in late August, 1976. By nature, outlook material is very dated. Therefore, it behooves the reader to stay current on changing market conditions throughout the year.

-- the authors