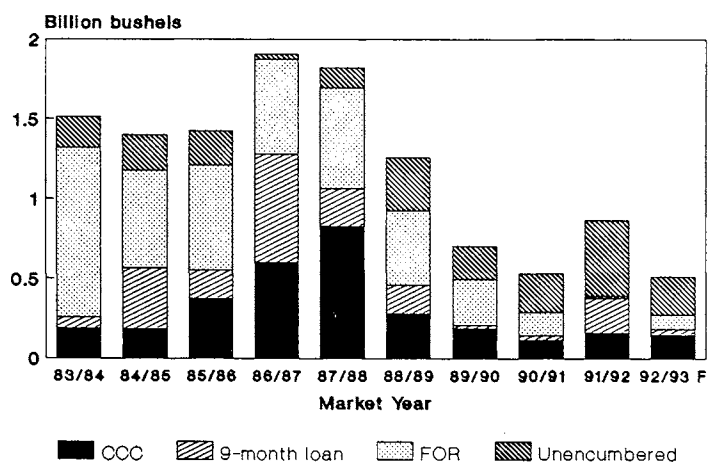
United States
Department of
Agriculture

Economic
Research
Service

WS - 295
November 1991

Wheat

Situation and Outlook Report



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Wheat Situation And Outlook.
Commodity Economics Division,
Economics Research Service,
U.S. Department of Agriculture,
November 1991. WS 295

Approved by the World Agricultural Outlook Board. Summary released November 19, 1990. The next summary of the *Wheat Situation and Outlook Report* is scheduled for February 14, 1991. Summaries and text may be accessed electronically. For details call (202) 720-5505.
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Summary

1992/93 Supplies Hinge on Production Prospects

The size of the 1992 U.S. wheat crop is critically important to 1992/93 supplies because 1991/92 carryout stocks are forecast lower than any time since 1974/75. Assuming the forecast carryin stocks and unchanged imports, 1992 production must increase by more than 350 million bushels, for 1992/93 supplies to match 1991/92's almost 2.9 billion bushels. And that was only the second dip below 3.0 billion since 1978/79.

U.S. wheat production is expected higher in 1992. Area planted is likely to be up, as the acreage reduction program has been reduced from 15 to 5 percent of program participants' wheat base. In addition, in recent months, wheat prices have outstripped those of most alternative crops. This is expected to encourage additional wheat planting by non-participants and on program flex acres.

Fall planting conditions in the Southern Plains were not favorable. Through October 26, parts of Kansas had gone over 40 days without measurable precipitation. While substantial precipitation has occurred since late October, only 75 percent of the Kansas crop had emerged as of November 17. This compares to a 95 percent, 5-year-average emergence. USDA reported the crop condition as much worse than average.

In the EC, several factors are influencing wheat area. Although the 1991/92 price package left grain support prices generally unchanged, it increased the basic coresponsibility levy, and introduced a new 1-year set-aside program.

Area sown to winter grains in the Soviet Union rebounded this fall. Warm weather and adequate moisture in the northern and western regions of European USSR promoted crop establishment. However, dry weather since September in some parts has created unfavorable conditions for winter grain emergence and establishment. In China, the government raised its wheat purchase price to encourage increased planting. But dry weather in major growing areas reportedly has caused some problems with emergence and plant establishment.

Policy changes in Argentina are already contributing to increased coarse grain planting and, if the economic environment remains favorable, producers are likely to sow more area to wheat in 1992. If wheat prices continue to strengthen, there likely will be an area expansion in Australia. In Canada, the government recently announced an aid package and this, together with the revenue insurance program, is likely to keep wheat area high.

U.S. 1991/92 exports are forecast at 30.5 million tons (1.125 billion bushels in the June/May marketing year). The pace of sales through mid-November has been brisk and export prices have risen in anticipation of large exports to the Soviet Union.

THE WHEAT SITUATION AT A GLANCE

All wheat: supply and disappearance 1/

Year beginning June 1	1987	1988	1989	1990 Estimated	1991 Projected
			Million bushels		
Beginning stocks	1,821	1,261	702	536	866
Production	2,108	1,812	2,037	2,736	1,981
Imports	16	23	23	36	40
Supply, total	3,945	3,096	2,762	3,309	2,886
Domestic					
Food	721	726	753	796	800
Seed	85	103	100	90	97
Feed and residual	280	146	139	489	350
Domestic, total	1,086	975	992	1,376	1,247
Exports	1,598	1,419	1,233	1,068	1,125
Disappear., total	2,684	2,394	2,225	2,444	2,372
Ending stocks	1,261	702	536	866	514

Wheat by classes: supply and disappearance 1/

Year beginning June 1	Hard red winter	Hard red spring	Soft red winter	White	Durum	Total
1990/91 (Estimated)		Million bushels				
Beginning stocks	215	155	32	85	50	536
Production	1,199	555	547	313	122	2,736
Supply, total 2/	1,414	717	579	408	192	3,309
Domestic disappear.	686	239	269	105	76	1,376
Exports	368	201	230	216	53	1,068
Disappear., total	1,054	440	499	321	129	2,444
Ending stocks	360	277	80	87	62	866
1991/92 (Projected)						
Beginning stocks	360	277	80	87	62	866
Production	901	431	325	219	104	1,981
Supply, total 2/	1,261	723	405	311	186	2,886
Domestic disappear.	555	256	264	91	81	1,247
Exports	510	300	90	170	55	1,125
Disappear., total	1,065	556	354	261	136	2,372
Ending stocks	196	167	51	50	50	514

1/ Includes flour and products in wheat equivalent. 2/ Total supply includes imports.

Forecast Low Beginning Stocks Make Production Prospects Critical

U.S. wheat production is likely to increase in 1992/93, mainly because of expanded area. However, 1991 fall planting conditions in the Southern Plains were not favorable.

Early Season Tough On Wheat

Fall planting conditions in the Southern Plains were not favorable. Through October 26, parts of Kansas had gone over 40 days without measurable precipitation. While substantial precipitation has occurred since late October, only 75 percent of the Kansas crop had emerged as of November 17. This compares to a 95 percent, 5-year-average emergence. Crop condition was reported much worse than normal, with 11 percent very poor, 38 percent poor, 31 percent fair, 15 percent good, and 5 percent excellent.

By the end of October, 96 percent of the Kansas wheat crop was planted, ahead of the 5-year-average, but dryness delayed germination, and created uneven emergence. However, wheat in the Southern Plains is often grazed in the fall if emergence is good, so the immediate effect was to curtail grazing. However, the wheat plants are poorly established in many areas, and although they could recoup if conditions are favorable, they will be more susceptible to adverse conditions.

The size of the 1992 U.S. wheat crop is critically important to 1992/93 supplies because 1991/92 carryout stocks are forecast lower than any time since 1974/75. Assuming the forecast carryin stocks and unchanged imports, 1992 production must increase by more than 350 million bushels, for 1992/93 supplies to match 1991/92's almost 2.9 billion bushels. And that was only the second dip below 3.0 billion since 1978/79.

U.S. wheat production is expected higher in 1992. Area planted is likely to be up, as the acreage reduction program has been reduced from 15 to 5 percent of program participants' wheat base. In addition, in recent months, wheat prices have outstripped those of most alternative crops. This is expected to encourage additional wheat planting by non-participants and on program flex acres. While winter wheat producers made their planting decisions on wheat this fall, spring wheat producers will make their planting decisions next spring. At that time, if there are indications of problems in the winter areas and/or a surge in demand, spring producers could respond with larger area planted.

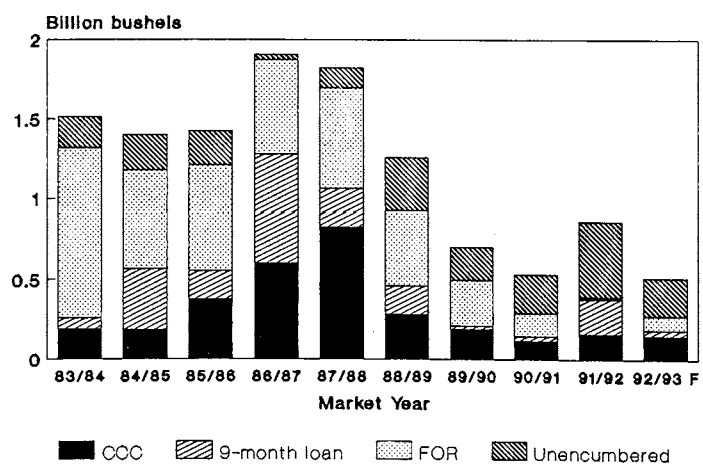
Wheat program participants who used the winter wheat option in 1991 are subject to flexibility provisions for the first time with the 1992 crop. This is a significant program change because over half of all participating wheat base acres were enrolled in the winter wheat option for 1991.

In 1991 4.7 million wheat base acres were subject to Normal Flex Acres (NFA) provisions. For 1992, an expected 10 million acres will be subject to NFA provisions. Participating producers do not receive deficiency payments on NFA regardless of whether the acres are planted to wheat, idled, or planted to another crop. Thus, planting decisions on NFA depend on market returns for wheat relative to other crops, with not planting any crop also an option.

Wheat prices have increased significantly—both absolutely and relative to other crops—since the July 1991 harvest-time lows. These price increases likely have encouraged the planting of wheat on NFA.

But other factors likely limited the increase in wheat plantings that might have occured as a result of higher prices. Producers in some soft red winter wheat areas have had two years of poor yields from disease and/or winterkill. These producers could very well have decided to plant less wheat regardless of stronger prices. Producers in the Southern Plains had very poor planting conditions this fall and likewise may have planted less than normal under a 5 percent ARP given that they no longer

Figure 1
U.S. Wheat Beginning Stocks



had deficiency payment coverage on NFA acres. Producers in marginal continuous cropping/summer fallow regions especially may fallow some of their poorer NFA land.

Stronger wheat prices have likely encouraged non-participants to plant more wheat, but they are subject to the constraints noted above. Program participation is expected to be high again for 1992 because many of the disincentives to participate in pre-1990 farm bill programs no longer apply. Most importantly, flexibility provisions now allow producers who have sufficient NFA from other base acres to plant more wheat than their permitted or base acres and still be in compliance. Before the 1990 farm bill, only producers outside the wheat program could plant beyond wheat *permitted* acres (base acres less the ARP requirement) and only if they did not participate in other crop programs on that farm could they plant beyond wheat *base* acres. Under current rules, idling 5 percent of base acres to participate in the 1992 wheat program can be lucrative — even for producers who want to expand wheat production, as long as they have sufficient NFA from other crop bases to do so.

Assume a farm with 100 base acres and the national-average program yield of 34 bushels to the acre. With a 5 percent ARP and 15 percent NFA, a producer planting 80 or more acres would receive deficiency payments on 80 acres. Assuming for illustration purposes a deficiency payment rate of $1 per bushel, a producer's payment would be the product of $1 times 34 bushels times 80 acres or $2,720. Thus, the gross deficiency payment from idling 5 acres and expanding production within the program relative to expanding production outside the program is $2,720 divided by 5 acres or $544 per acre.

With these observations and caveats, it is useful to examine how some of the prices farmers might use to make planting decisions have changed between the fall of 1990 and the fall of 1991 (figures 2 and 3). A line shows where national average cost and returns data suggest wheat profits equal to planting corn or soybeans. Prices above the breakeven line mean that wheat is not as profitable as the alternative crop, when using national average data. The September national average farm price, the September average cash market price in Chicago, and the Chicago July futures contract in the first week of October are used as benchmark prices. These prices reveal quite different relationships for wheat-soybeans and wheat-corn price movements.

Figure 2
Wheat/Soybean Prices

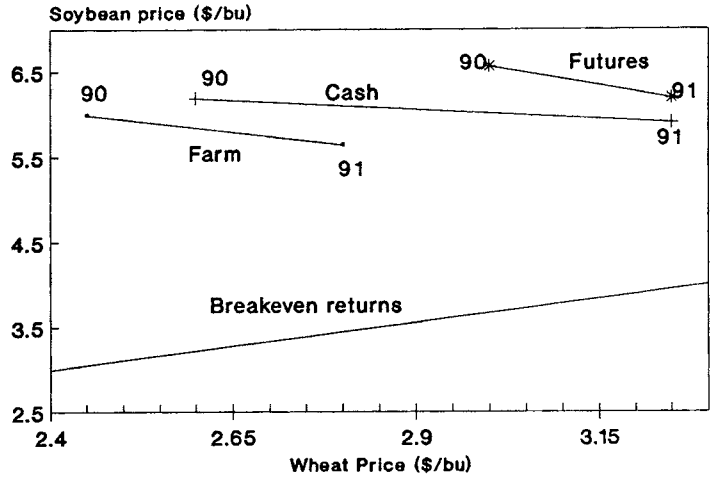
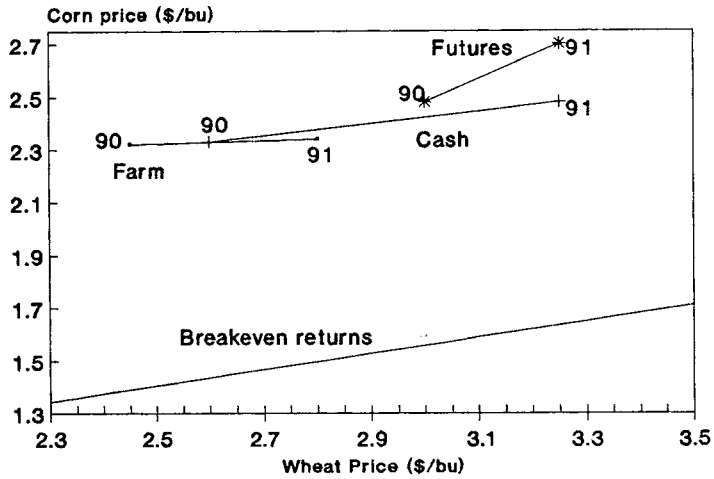


Figure 3
Wheat/Corn Prices



In the case of wheat-soybeans, 1991 prices have moved in favor of wheat compared to the previous year, i.e., wheat has become relatively more profitable this year but is still not near the breakeven profits line. The national average prices (farm, cash, and futures) are still not close to break even and clearly favor soybean production on prime soybean lands. However, in areas where the soybean yield potential is low, wheat may have become more profitable after the surge in wheat prices.

In contrast, wheat-corn price relationship (farm, cash, and futures) suggests mixed results. Although farm price changes have favored wheat, new crop futures favored corn. It is still clearly more profitable to grow corn than wheat on prime corn land.

Wheat Program Announced

Although the common program provisions for 1992 have not yet been announced, the ARP has been set at 5 percent of base, down from 15 percent in 1991. The 1992 target price is $4.00 per bushel, while the announced loan rate is $2.21 per bushel, up from $2.04 in 1991. The basic loan rate is $2.58. No paid land diversion is offered, but the 0/92 program will be available. Tentative signup dates were announced for February 10-17.

Northern Hemisphere Plantings Ongoing

Winter wheat crops have largely been planted in the northern hemisphere. Policy and price factors are likely to influence spring wheat and southern hemisphere plantings. Negotiations on GATT continue.

USDA will not make forecasts for 1992/93 until May 1992. However, 1992/93 winter wheat crops have been planted and policy changes in major producing countries are likely to influence 1992/93 production.

There are several factors influencing EC wheat area. Although the 1991/92 price package left grain support prices unchanged for the most part, it increased the basic coresponsibility levy and introduced a new 1-year set-aside program for the 1992/93 crop.

The new set-aside program (supplementing the existing 5-year set-aside program) requires grain producers to set aside at least 15 percent of their area eligible under the program, including at least 15 percent planted to grains. Participants will be reimbursed all coresponsibility levies paid on grains marketed during 1991/92 and will be eligible for per-hectare set-aside payments at least equal to the EC's contribution to the existing set-aside program. Individual countries, including France, are supplementing the payment to attract more participants. However, the impact will likely be muted because farms of less than 20 hectares are exempt from the program. These farms account for 40 percent of land planted to cereals.

Wheat area is also likely to be affected by relative prices of other crops. In addition, a proposed program for oilseeds discontinues the current system of payments to oilseed processors in favor of direct payments to producers. Since it is uncertain what oilseed prices will be, farmers might choose to shift area into grains.

Across northern Europe, weather at planting has generally been favorable, except for parts of Germany. For most areas, adequate moisture has helped establish winter grains.

Area sown to winter grains in the Soviet Union rebounded this fall. Warm weather and adequate moisture in the northern and western regions of European USSR promoted crop establishment. However, dry weather since September in some parts has created unfavorable conditions for winter grain emergence and establishment.

In China, the government raised its purchase price of wheat to encourage increased planting. But dry weather in major growing areas reportedly has caused some problems with emergence and plant establishment. Planting conditions, however, are favorable in India and Pakistan.

Policy changes in Argentina (described in "Competitors Use Large Supplies To Expand Exports") are already contributing to increased coarse grain planting and, if the economic environment remains favorable, producers are likely to sow more area to wheat in 1992.

If wheat prices continue to strengthen, there likely will be an area expansion in Australia.

In Canada, the government announced a CAN $800 million aid package for grain and oilseed producers to be distributed before spring planting. This, together with the revenue insurance program instituted in 1991, is likely to keep area planted to wheat high. Winter wheat area in Ontario will likely reach a record because of the revenue insurance program, an early soybean harvest, and ample soil moisture at planting.

GATT

A GATT agreement would likely change policies affecting world wheat trade. If an agreement were to be reached within the next few months, trade could be affected as early as 1992/93.

Technical discussions on agricultural trade have been proceeding since March. The Director General of the GATT has been chairing discussions on agriculture. He is expected to issue a paper which will provide the basis for political negotiations that will likely to take place later in the year.

The EC has been working on proposals to revise the EC's Common Agricultural Policy (CAP). While these efforts have been made apart from the GATT negotiations, they may open the way for reforms under the GATT.

Recently, Germany proposed a reduction in subsidized EC grain exports. Then, on November 9th, President Bush met with the president of the European Commission and offered to accept reduced targets in agricultural support reductions in the Uruguay Round if the EC agreed to a "continuation clause" which would guarantee that more reductions would occur after the first five years of the agreement.

There is considerable pressure to reach some sort of agreement by early 1992 because of upcoming elections in the United States and Europe, but the outcome of future negotiations remains uncertain.

Increased Soviet and Chinese Imports Boost World Trade

World wheat trade is forecast at 104.4 million tons, up 10 percent from 1990/91 (July-June). The USSR and China are expected to account for much of the trade increase.

World wheat production is forecast at 547 million tons, 8 percent below 1990/91. The drop in U.S. and Soviet production accounts for most of the decline. Foreign production is projected at 493 million tons, 5 percent below 1990/91. World ending stocks are forecast down 7 percent despite large increases in Canada and the EC. Prospects of reduced stocks and expectations of strong import demand have been fueling the rise in export prices since July.

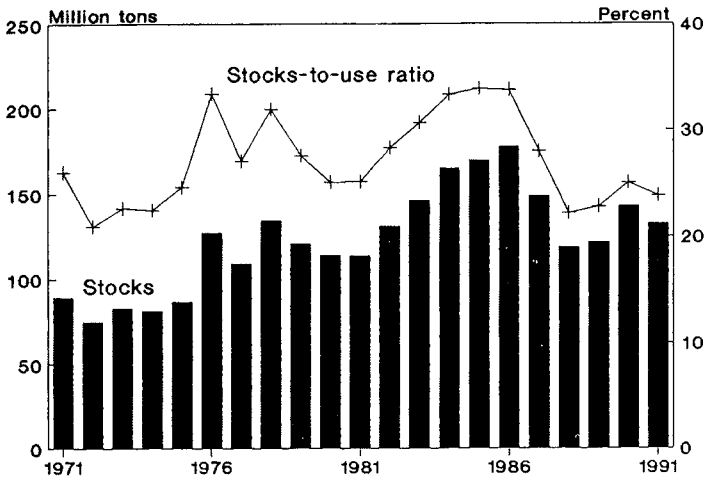
Production in the Soviet Union is estimated to have fallen 28 percent from 1990/91 to 78 million tons. As of mid-October, State procurements of wheat accounted for only 53 percent of the total volume procured a year ago. Producers appear to be keeping a larger proportion of wheat on farms for feeding livestock and for barter purposes.

One important use of State-procured grain is to supply bread to urban areas, particularly in the Russian Republic. Recent policy statements in the Russian Republic, if implemented, would eliminate subsidies for many food items.

Soviet imports of wheat are forecast at 21 million tons, up 42 percent from 1990/91. Several major exporters are developing credit and aid packages to assist with grain imports. In addition, some of the individual republics are reportedly making separate arrangements with smaller exporters. For example, the Russian Republic is reportedly bartering oil and other resources for wheat from Czechoslovakia and Hungary. Uzbekistan is reportedly bartering cotton for wheat from Yugoslavia.

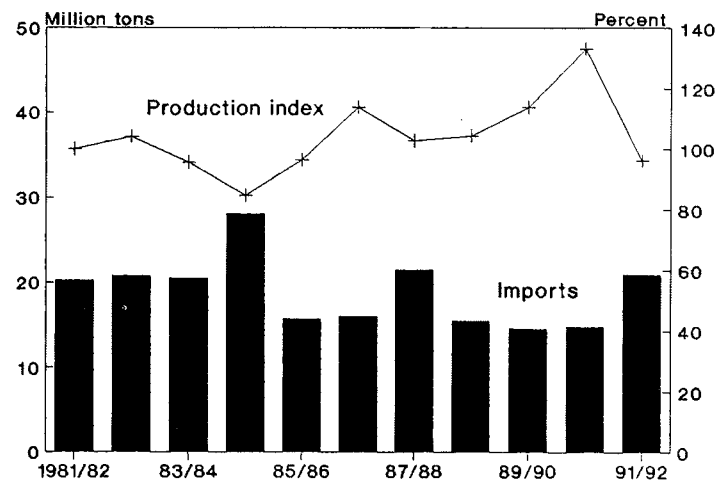
Since last January, the United States has provided the Soviet Union with $2.5 billion in GSM 102 credits. Credits that were scheduled to be released in February 1992 were advanced to the

Figure 4
World Wheat Stocks and Stocks/Use Ratio



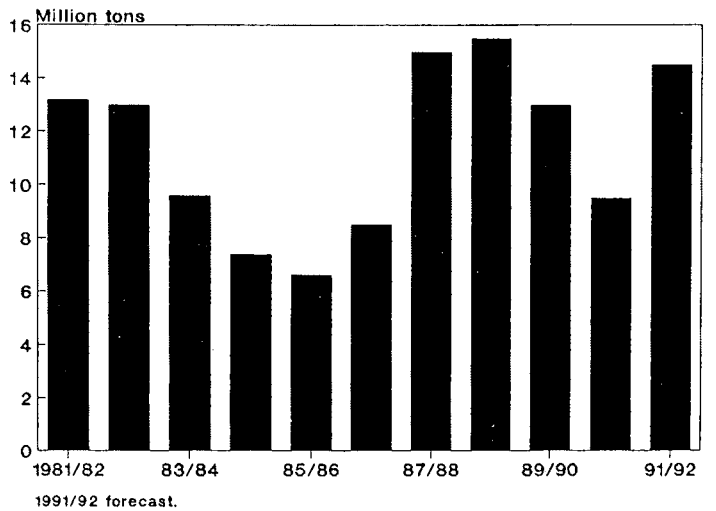
1991/92 forecast.

Figure 5
USSR Wheat Imports and Production Index



1991/92 forecast. 1980/81=100

Figure 6
China's Wheat Imports



1991/92 forecast.

beginning of the fiscal year (October 1991). In addition, USDA announced liberalized loan terms guaranteeing 100 percent of the principal for fiscal 1991 (for loans made after September 24th) and fiscal 1992 loans and loan interest equal to the coupon equivalent yield of the 52-week U.S. Treasury bill auction average. By October 20th, sales had been registered using all or nearly all the credits allocated for wheat, corn, soybeans, soybean meal, poultry, and to cover freight.

On November 20th, the U.S. announced the allocation of an additional $1.25 billion in agricultural export credit guarantees and $165 million in donations. Under this program $500 million of export credits are to be made available immediately and the remainder will be released in $250 million tranches on February 1st, March 1st, and April 1st.

Other exporters are also providing the Soviet Union with credit for grain. On November 1st, Canada announced that it had sold 4 million tons of spring wheat, durum, and barley to the Soviet Union. On the same day, an additional $500 million was added to the Canadian Wheat Board line of credit to finance this sale and possible further shipments. The new purchase is part of an extension of the USSR-Canadian 1986/87-90/91 long term grain agreement. The agreement calls for the Soviet Union to buy 5 million tons of grain per year from Canada during the next 2 years.

In December 1990, the EC announced a 500 million ECU credit package together with a 250 million ECU food aid grant. The EC and the Soviet Union are still negotiating the terms of the 500 million ECU credit package which is likely to include triangular trade with Eastern European countries. In this arrangement, the EC would use part of the 500 million ECUs to finance grain and other agricultural products from Eastern European countries for export to the Soviet Union. More recently, the EC announced another 1.25 billion ECU credit package for agricultural products, although the terms and allocations have yet to be negotiated.

Individual EC countries are also making separate credit or barter arrangements with the Soviet Union and individual republics. For example, Germany has provided credit to the USSR for 1 million tons of barley, 500,000 tons of wheat, and 200,000 tons of flour.

Despite several announced packages and barter arrangements, there still has not been enough financial assistance to cover the entire forecast 21 million tons of wheat imports. Thus, the USSR will need additional financial assistance or enter into more barter arrangements in coming months.

China's wheat crop is forecast at 96 million tons, down 2 percent from the 1990/91 record, but the second largest crop ever. Despite this, imports are forecast at 14.5 million tons, up over 50 percent from 1990/91. Several factors might account for the increase. First, reports indicate that floods damaged 4 million tons of grain stocks in central China. Second, the quality of China's winter and spring wheat crops is reported to be down because of heavy rains at harvest, likely increasing domestic wheat feeding, and reducing the wheat available for milling. Third, both the rural and urban populations appear to have a strong preference for wheat products. Rising incomes are, therefore, leading to increased demand for wheat. China has reportedly purchased at least 11 million tons from major exporters for delivery in 1991/92, including 5.8 million tons of U.S. wheat and nearly 2 million tons from the EC.

Timely rains across North Africa led to record crops in Morocco and Tunisia and a large crop in Algeria. Egypt is also expected to produce a record crop because of price policies favoring wheat over alternative crops. While Egypt is expected to import as much wheat in 1991/92 as in 1990/91, Algeria, Morocco, and Tunisia are projected to cut imports by 13, 52, and 55 percent, respectively.

Imports by Middle Eastern countries are forecast up 17 percent, mostly because of the projected increase in Iraqi imports. Prior to the embargo, Iraq imported an average of over 3 million tons annually. Iraq is forecast to import 2.5 million tons in 1991/92, but is having difficulty financing purchases. Iraq has so far rejected the U.N. terms that allow Iraq to sell oil to finance food purchases. However, Iraq has reportedly been able to purchase over 500,000 tons of wheat from the EC and Turkey, in addition to the 100,000 tons bought from Australia earlier in the marketing year.

In Latin America, Brazil's wheat crop is forecast only to match 1990/91's poor crop. While yields are projected up because of more favorable weather conditions, area is forecast down over 25 percent. Continued economic uncertainty and lack of production credit discouraged planting. Imports are forecast up over 20 percent to 3.5 million tons.

Brazil has recently abolished its system of wheat import duties, shifting to a flat duty for wheat of 25 percent from all destinations, except Argentina's preferential tariff of 13.25 percent. The government has announced that the flat duty rate will fall 5 percent per year to 10 percent by 1995. The preferential tariff on Argentina's wheat will decline even faster, until imports of Argentina's wheat are duty free by 1995.

Mexico's production fell 5 percent from 1990/91 because low irrigation supplies led to reduced area. However, favorable rains in the rainfed spring wheat area helped boost production above prior expectations. Imports are forecast at 600,000 tons, more than 20 percent above 1990/91.

East Asian imports are forecast up 3 percent in 1991/92. South Korea is forecast to boost imports 7 percent to 4.5 million tons because of a continuing rise in feed wheat imports. Japan is also projected to increase imports 3 percent because of a poor domestic crop.

Imports by several other Asian countries are also forecast up. A drought induced shortfall in Indonesia's rice crop is boosting that country's food grain imports. Bangladesh is also expected to supplement its food grain supplies with increased wheat imports. Wheat consumption continues to rise in the Philippines, particularly in urban areas, leading to greater imports. Pakistan is projected to increase imports to 1.6 million tons because of reduced government stocks, as the government has had difficulty procuring wheat from farmers.

1991/92 Outlook

Competitors Use Large Supplies To Expand Exports

Foreign exportable supplies are projected up, particularly in Canada, the EC, and smaller exporters. Increased supplies put them in a position to increase exports and market share slightly. Exports in many countries have already increased sharply from a year ago, but imports by the USSR, China, and Iraq remain critical to meeting export projections.

Major competitors' production, as a group, is forecast down slightly from 1990/91. However, beginning stocks are relatively high and exports are forecast up 5 percent. Projected record exports by Canada and the EC account for nearly all the gain. Argentina's July-June exports are expected to increase by 28 percent, mostly because of seasonal delays in its shipping program to Brazil. Australia's exports are projected to plummet because of a drought-reduced crop. As a group, the major competitor's market share is projected to fall slightly from a year ago.

EC production is estimated to have reached a record 90 million tons as France, Spain, and several smaller producers boosted area, and favorable weather and the spread of high yielding varieties increased yields.

The EC began the year with high carryin stocks. Thus far, more wheat from intervention stocks has been sold for export than from open market tenders. Large sales to China and North Africa have allowed EC sales to exceed those of the same time a year ago. However, except for 500,000 tons of wheat and 200,000 tons of flour from Germany, few sales have been made to the Soviet Union, restraining total exports, especially from France. Credit arrangements with the EC and individual member countries are still being negotiated. It is expected that the pace of EC exports will quicken as soon as more credit is made available.

EC exports are forecast at a record 23 million tons. However, ending stocks, at almost 20 million tons, still are projected to reach a record.

Canadian production is estimated at a record 33 million tons. A new revenue protection program encouraged farmers to increase area and favorable weather contributed to high yields.

Exports are forecast at a record 24 million tons. Strong sales to China and the Soviet Union since June have boosted commitments above those of the same time a year ago. Like the EC, Canada entered the new marketing year with relatively large stocks. And, like the EC, Canada is forecast to end the year with near-record ending stocks, despite record exports.

In October, there were fears that strikes at the major ports would hamper Canadian grain exports. But the strikes were short lived and exports have well exceeded the pace of a year earlier. That pace is expected to continue strong especially since the extension of the long-term grain agreement with the Soviet Union, a new credit allocation for the USSR, and the Soviet purchase of 4 million tons of grain, most of which is expected to be shipped before February 1992.

Argentina's production is forecast at 9 million tons, 14 percent below 1990/91. Argentina's producers faced prospects of low prices and economic uncertainty at planting and cut area 14 percent. Yields are expected to match those of a year ago.

Despite the lower crop, July/June exports are forecast at 6 million tons, up 28 percent from 1990/91. The increase is because of late shipments of last year's crop to Brazil in the first quarter of the July/June marketing year. Local marketing year (December/November) exports are projected to fall 11 percent to 4.7 million tons.

In November, Argentina announced that it was liberalizing its grain market, selling State-owned grain elevators at its ports, eliminating remaining export taxes, and abolishing the national grain board. All but a 1.5 percent "statistics" tax had already been removed from wheat exports. This policy change, together with reduced inflation of recent months and growing confidence in the economy, is likely to provide growers with economic incentives to expand and improve grain acreage. Since the wheat crop was planted before these policy changes were announced, they will not affect the 1991/92 wheat crop.

In Australia, production is forecast at 10 million tons, down a third from 1990/91, and the lowest since 1982/83. Low prices at planting and little expectation of improved prices encouraged farmers to sharply decrease planted area and a severe drought in Queensland and New South Wales has greatly reduced yield prospects. The weather in the south and west has been generally favorable, but dry weather is moving southward, creating concerns for further declines in the crop.

Exports are forecast at 7.1 million tons, down nearly 40 percent from 1990/91. Australia might buy wheat from other suppliers to satisfy export commitments, particularly for specific grades of wheat. Also, concerns that inadequate supplies of certain grades are raising the possibility of limited imports.

Minor Exporters

Large crops and a strong import market are expected to lead to sharply higher exports by smaller exporters, such as East European countries, Turkey, Saudi Arabia, and India. Their market share is projected to increase from 8 percent in 1990/91 to 13 percent in 1991/92.

Several Eastern European countries are exporting wheat in 1991/92 and the region as a whole will be a net exporter. Exports are forecast at 4.1 million tons, up 82 percent from 1990/91. Wheat production is projected down only slightly from the 1990/91 record. As markets are liberalized, consumption patterns are shifting. In 1990/91, less wheat was fed as the livestock industry contracted. As a result, in 1991/92, carryin stocks were large and exportable supplies increased. Hungary, Poland, Yugoslavia, and Czechoslovakia are seeking outlets for wheat exports. East European imports are projected to fall to 1.1 million tons, nearly half of estimated 1990/91 imports because of large crops and reduced wheat feedings that have lowered consumption.

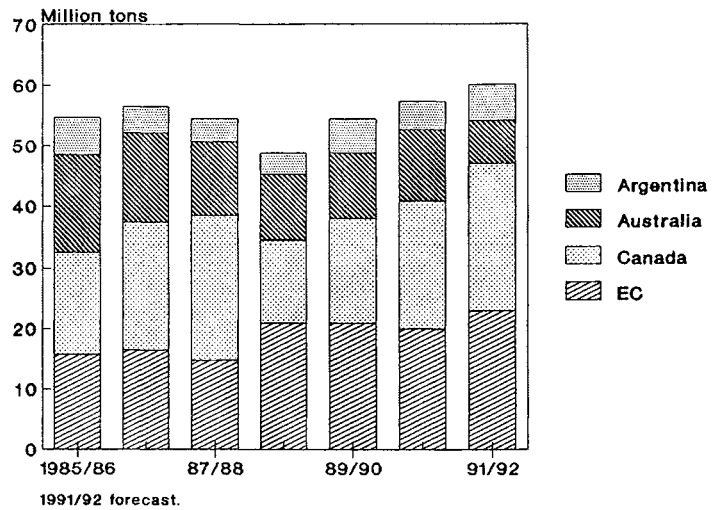
The Soviet Union is likely to be the largest customer for Eastern European wheat. Several countries reportedly have arranged to barter wheat for Soviet goods, particularly oil, natural gas, and cotton with the USSR and individual republics. Triangular trade is becoming an increasingly important option as a method to reduce large wheat stocks and earn foreign currency.

Turkey is projected to export 4 million tons of grain in 1991/92, up from 600,000 tons in 1990/91. Production reached a record 16 million tons in 1991/92, breaking the 1990/91 record of 15 million tons. Much of Turkey's exports reportedly have already been sold to international brokers. Several analysts believe that most of the grain will be imported by the Soviet Union and Middle Eastern countries.

Saudi Arabia's production continues to increase. The 1991/92 crop is estimated at 4 million tons, up 11 percent from 1990/91. Exportable supplies have increased and exports are forecast at 2.8 million tons in 1991/92, up more than two-thirds from 1990/91.

Smaller wheat crops in non-EC Western Europe, particularly Sweden, have reduced exportable supplies. Exports in 1991/92 are projected at 1.1 million tons, down a third from 1990/91. India is projected to export a record 700,000 tons. India harvested a large crop and is attempting to take advantage of abundant food grain supplies to earn foreign exchange.

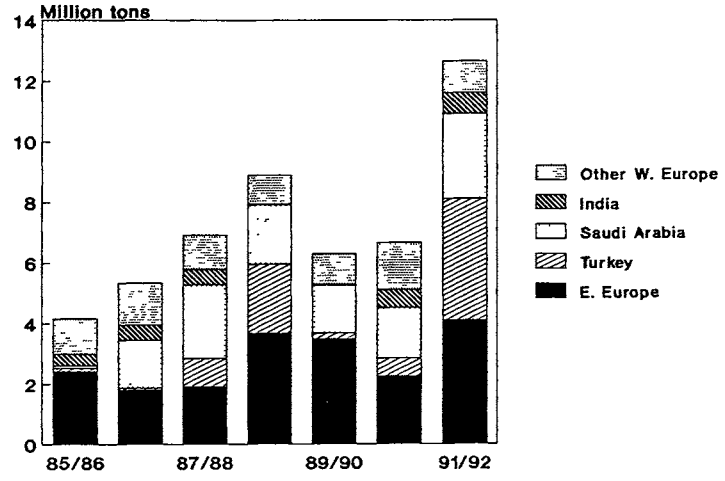
Figure 7
Major Competitor Wheat Exports



1991/92 forecast.

Figure 8

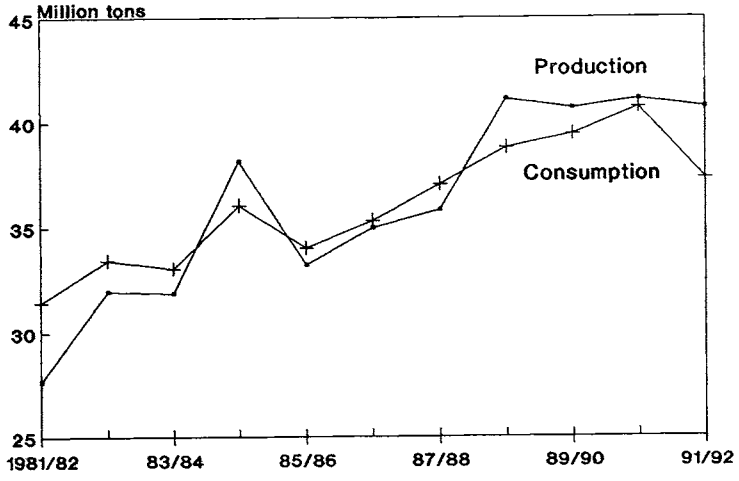
Wheat Exports From Minor Exporters



1991/92 forecast.

Figure 9

East Europe's Production and Consumption



1991/92 forecast.

U. S. Exports Expand

U.S. exports are forecast at 30.5 million tons (1.125 billion bushels in the June/May marketing year). The pace of sales through mid-November has been brisk, and export prices have risen in response to tightening U.S. stocks and anticipation of large exports to the Soviet Union.

While U.S. exports are forecast up 8 percent from 1990/91, world market share is projected down slightly to 29 percent. Large competitor supplies mean intense competition and tight U.S. supplies have led to higher U.S. prices. However, commitments for the first 5 months of the marketing year (June/May) are up 25 percent from a year ago.

Increased exports and sales to the Soviet Union and China account for much of the increase. All the wheat sold to the Soviet Union thus far this marketing year was sold with GSM-102 credits and Export Enhancement Program bonuses. There was some concern by the wheat industry that the USSR would prefer to use most of the allocated fiscal 1992 credit to buy coarse grains rather than wheat because, in fiscal 1991, over half the allocated credit was used for coarse grains and only 13 percent was used for wheat. However, when the fiscal 1992 credit was allocated, the Soviets chose to use 29 percent for wheat.

On November 20th the administration announced the allocation of another $1.25 billion of agricultural credit guarantees for fiscal 1992. No specific commodity breakout was immediately available.

China's commitments through October have reached 5.5 million tons, exceeding last year's commitments at this time by over 40 percent. China bought a large proportion of this wheat prior to the marketing year for delivery in 1991/92. In September, China was targeted for another 2 million tons of EEP wheat. In early October, China purchased nearly 1 million tons for March/May shipment and in mid-November purchased nearly 500,000 tons for January/May delivery.

Other countries have also boosted imports of U.S. wheat. Brazil has already imported more than 700,000 tons, the first sale of U.S wheat to Brazil since 1989/90 and the most since 1985/86. However, Brazil's new tariff system (described in "Increased Soviet and Chinese Imports Boost World Trade") is likely to discourage further imports of U.S. wheat this year. Sales and exports to the Philippines and Egypt are also taking place at a faster pace than a year ago. A decline in U.S. wheat exports to other North African countries is expected because of the region's record crop and subsequent decline in total imports.

The EEP program has been used aggressively since the beginning of the marketing year. EEP sales during June-October equaled 10.2 million tons, compared to 4.6 million tons at the same time a year earlier. The average EEP bonuses have risen from $38.05 per ton in June to $58.84 per ton in October. This represents the highest monthly average since the beginning of the program. In the first five months of the marketing year, EEP bonuses have been nearly 40 percent of the quoted average f.o.b. gulf price (for HRW No. 2), the highest ratio since December 1986.

The sharp rise in bonuses from 1990/91, when they averaged $36.72, can be attributed to rising U.S. wheat prices at a time when world export prices remain relatively low. Export prices (as defined by the quoted f.o.b. gulf price for HRW No. 2 less the weighted monthly average EEP bonus) rose over 30 percent from July to $88 per ton in October, which is above the 1990/91 (June/May) average but well below the average of the previous two years.

EEP bonuses traditionally have been generic certificates redeemable for Commodity Credit Corporation (CCC) stocks. However, lower CCC inventories encouraged USDA to announce that EEP bonuses would be awarded in cash as of November 7, 1991.

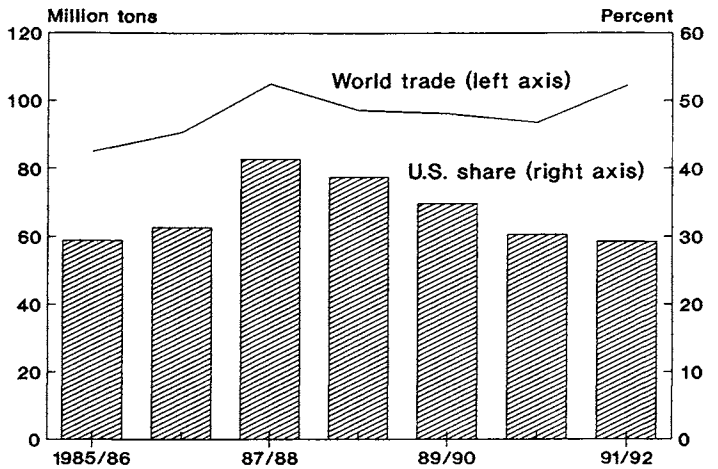
P.L. 480 Title I sales for wheat and wheat flour in fiscal 1991 reached almost 2.3 million tons, compared to 3.2 million in fiscal 1990. Title III shipments reached almost 1.3 million tons. Egypt was the largest recipient of Title I wheat, while Bangladesh and Sri Lanka were the largest recipients of Title III wheat. Over 4 million tons of wheat has been programmed for fiscal 1992, including 1.7 million tons under Title I, 1.1 million tons under Title II, and 1.3 million tons under Title III.

In fiscal 1991, GSM-102 credit guarantee allocations for wheat and flour reached $923.3 million and $818.8 million was approved. As of November 1, $784 million have been allocated for fiscal 1992. About 24 percent of those allocations were for the Soviet Union and have been exhausted. This amount does not include the November 20th GSM-102 allocation.

Allocations for GSM-103 for wheat and flour reached $161 million in fiscal 1991, compared to $278.7 in fiscal 1990. Approvals reached $35 million, with Tunisia, Jordan, and Sri Lanka the largest recipients. As of November 1, fiscal 1992 GSM-103 allocations have reached $45 million.

Figure 10

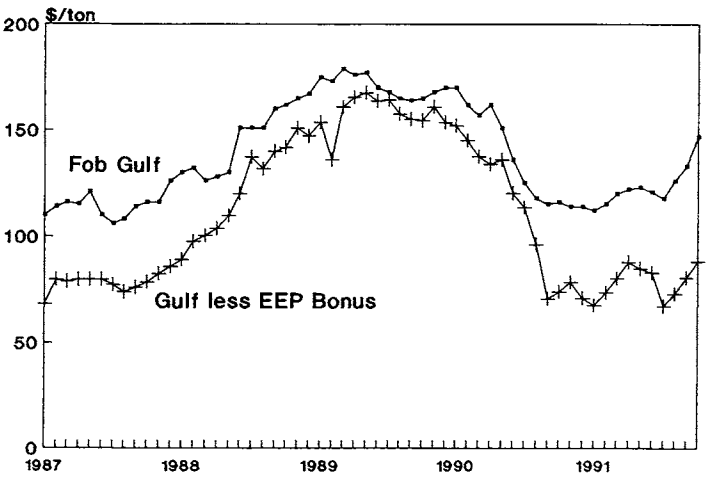
World Wheat Trade and U.S. Share



1991/92 forecast.

Figure 11

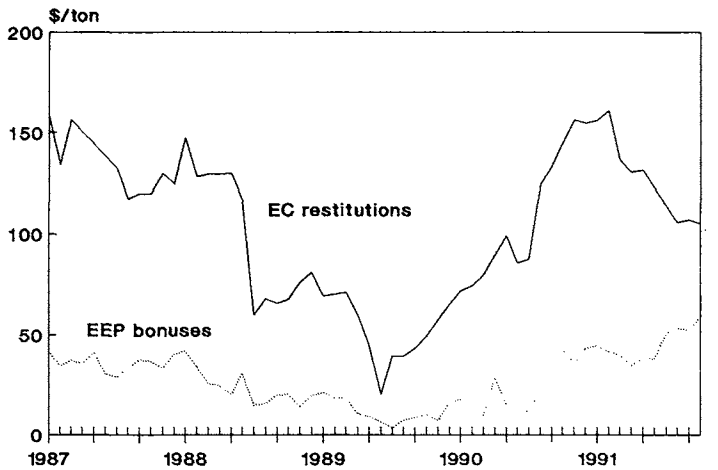
U.S. Wheat Export Prices



Fob Gulf price is HRW No. 2. EEP bonus is weighted average.

Figure 12

U.S. and EC Wheat Export Subsidies



Domestic Use Forecast Down 9 Percent, But Still Second Highest

Total domestic use is forecast at 1.25 billion bushels, down from last year's record, but still large by historical standards. A drop in feed and residual use will more than offset small increases in food and seed use.

Food Use Revised Lower

Food use is forecast to reach 800 million bushels, up slightly from a year ago, but below earlier expectations. The Census Bureau recently revised January through July 1991 mill-grind data down. This reduced both 1990/91 and 1991/92 food use. Moreover, food use can show aberrations in a given month because of the way it is calculated:

mill grind + non-flour food use + flour, pasta imports - flour, pasta exports (all data is in wheat equivalent).

Mill grind is the largest part of USDA's estimated wheat food use. A small estimate of non-flour food use is added to mill grind, and then the wheat equivalent of flour and pasta imports are added, while flour and pasta exports are subtracted. No adjustment is made for flour stock changes because flour stocks are reported only quarterly and in different months than wheat grain stocks.

In June 1991, the first month in 1991/92, flour exports were very large, reducing the estimated food use for that month. However, the mill grind for those exports likely occurred in the later months of marketing year 1990/91. The imperfect match between grind and exports likely overstates the late season 1990/91 food use and understates early season 1991/92. Even though food use during the first months of 1991/92 is actually running behind a year earlier, the underlying upward trend probably still exists.

Seed use is forecast up slightly based on an expected increase in area for the 1992 crop. The ARP is down from 15 percent to 5 percent, and wheat prices are stronger than some alternative crops when compared to a year earlier.

Figure 13
Wheat Food Use

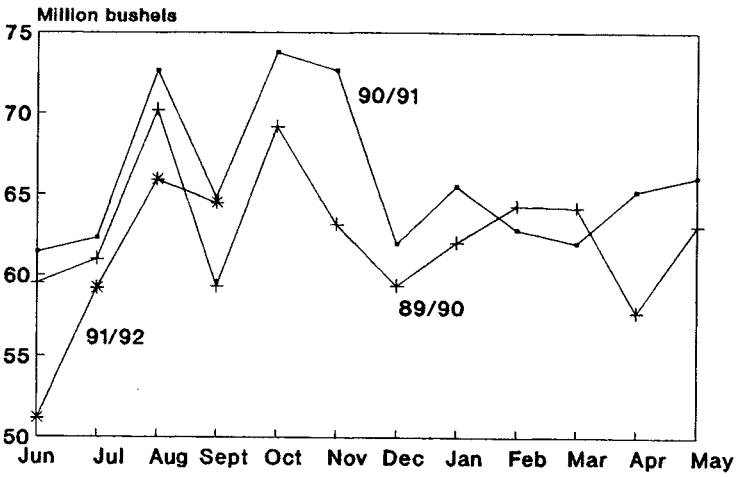
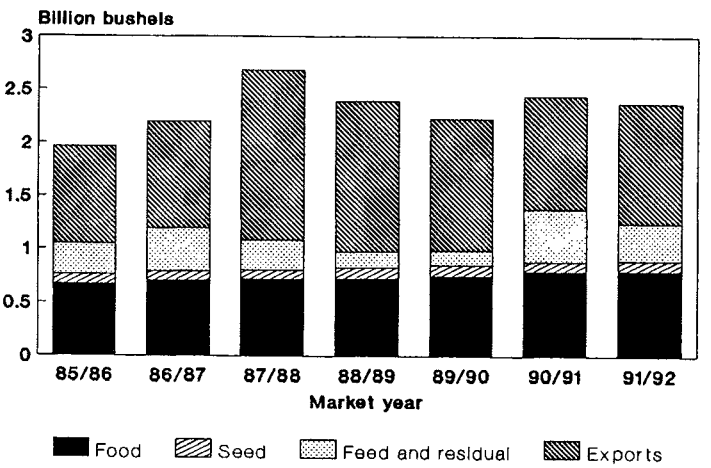


Figure 14
U.S. Wheat Disappearance



Feed and Residual Forecast Down 28 Percent

Feed and residual use is forecast at 350 million bushels in 1991/92. Although down sharply from the previous year, this would still be the fifth largest feed and residual use. Prices during the first months of 1991/92 and quality problems in some regions encouraged extensive feed use. However, recent wheat price increases, coupled with increased corn supplies during harvest, will likely sharply curtail wheat feeding for the remainder of the season.

Total Use Down Modestly

The modest increase in forecast exports is not enough to offset declining domestic use, leaving total disappearance down modestly. Total use has been greater than the 1991/92 forecast use 8 times, but except for last year, the large total use has come only when exports exceeded 1.4 billion bushels.

Outlook for 1991/92

Reduced Production, Declining Stocks Boost Prices

With production estimated below 2 billion bushels for only the second time since 1978/79, and continued relatively strong use, ending stocks are forecast at 514 million bushels, the lowest since 1974/75. Wheat prices received by farmers are expected to average between $2.75 and $2.95 per bushel.

Wheat Supplies Forecast Less Than 2.9 Billion Bushels

Beginning stocks were reported at 866 million bushels, the first increase in 5 years, and provided an important source of this year's supply when production dropped below 2 billion bushels. Moreover, a large portion of those stocks were not tied up in government programs, making them readily available to the market. Imports are forecast to increase to 40 million bushels, but remain a minor source of supply, just over 1 percent.

Wheat Prices Strengthen As Season Progresses

The forecast stocks-to-use ratio for 1991/92 is 21.7 percent, lower than the 24.1 percent in 1989/90 and the lowest since 1973/74. Prices, however, have not been as high as they were in other years of tight supplies. Given the large supplies in Canada and the EC there was considerable uncertainty in the trade about how well U.S. exports would fare in world markets. However as the United States has made several large sales to China, the USSR, and others; most private analysts have raised their projected U.S. exports. In addition, the forecasts of U.S. wheat production have dropped since the beginning of the season.

The tightening supplies and stocks prospects have been felt in U.S. domestic markets. Farm prices have rallied from $2.49 per bushel in July, to over $3.00. In October, #1 HRW reached $3.80 in the Kansas City cash market. However, new crop July 1992 futures are about 26 cents below December 1991 futures, indicating that the market thinks the current tight supplies may be a temporary phenomenon.

Quarterly Developments

In contrast to the previous year, the 1991/92 crop year started with relatively large stocks of 866 million bushels — 19 percent in CCC inventory, 2 percent in the FOR, 25 percent in 9-month loans, and the remaining 54 percent as unencumbered stocks. Total beginning stocks were about 62 percent greater in 1991/92 than the same time the previous year. However, because of the smaller crop, total supplies for the first quarter of the 1991/92 crop year dropped 13 percent to 2.86 billion bushels.

Total use during the first quarter of 1991/92 was down about 7 percent to 813 million bushels. There was a decline in food use of about 4 percent, and feed use and residual, at 382 million bushels, was down 6 percent. Exports also dropped 6 percent.

Even with the lower use in the first quarter, stocks as of September 1 at 2.04 billion bushels, were 15 percent lower than the same time last year. Of these stocks, 81 percent were unencumbered, 8 percent were in CCC inventory, 4 percent in Farmer Owned Reserves, and 7 percent in 9-month loans. Unencumbered stocks at the end of the first quarter of 1991/92 were about 20 percent lower than the same time the previous year.

Figure 15

U.S. Wheat Supply

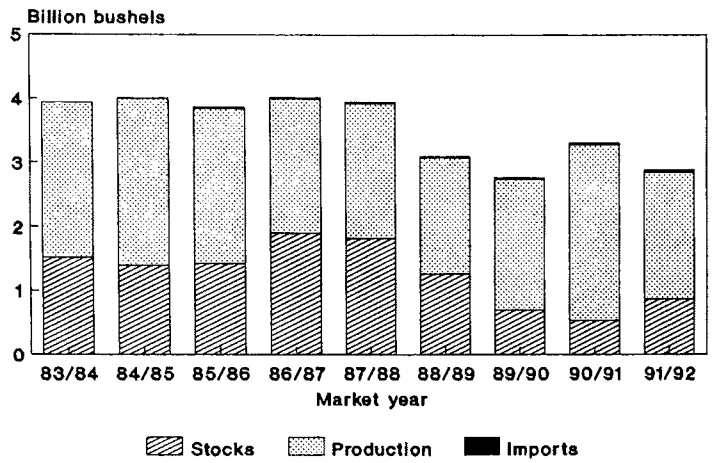


Table 1--Wheat supply, disappearance, and stocks, June-May

Item	1989/90	1990/91	1991/92
	Million bushels		
Stocks, June 1	702	536	866
CCC inventory	190	117	163
Farmer-Owned Reserve1/	287	144	14
Outstanding CCC loans	19	30	217
Uncommitted	206	245	472
Production	2,037	2,737	1.981
Imports	6	8	8
Total supply	2,744	3,281	2,855
Use, June-Aug.			
Food	191	196	177
Seed	2	2	2
Feed & residual	264	405	382
Exports	370	268	253
Total use	826	871	814
Stocks, Sept. 1	1,918	2,410	2,041
CCC inventory	168	105	163
Farmer-Owned Reserve1/	211	119	76
Outstanding CCC loans	48	120	149
Uncommitted	1,491	2,066	1,653
Imports	5	13	
Total supply	1,923	2,423	
Use, Sept.-Nov.			
Food	192	211	
Seed	68	61	
Feed & residual	-86	-35	
Exports	329	278	
Total use	503	515	
Stocks, Dec. 1	1,423	1,908	
CCC inventory	155	130	
Farmer-Owned Reserve1/	174	65	
Outstanding CCC loans	80	261	
Uncommitted	1,014	1,452	
Imports	5	8	
Total supply	1,427	1,916	
Use, Dec.-Feb.			
Food	186	193	
Seed	3	2	
Feed & residual	35	100	
Exports	260	225	
Total use	484	520	
Stocks, March 1	943	1,396	
CCC inventory	137	153	
Farmer-Owned Reserve1/	154	19	
Outstanding CCC loans	65	329	
Uncommitted	587	895	
Imports	8	7	
Total supply	951	1,403	
Use, March-May			
Food	185	196	
Seed	28	26	
Feed & residual	-76	19	
Exports	275	296	
Total use	412	537	

1/Includes Special Producer Loan Program.

Hard Wheat Exports Strong

HRW stocks are forecast to drop below 200 million bushels for the first time since 1973/74 and HRS exports are forecast to reach a record 200 million bushels.

Hard Red Winter Stocks Forecast Below 200 Million Bushels

HRW ending stocks are forecast at 196 million bushels, down 46 percent from beginning stocks. Total HRW use is forecast nearly unchanged from a year ago, but exports are forecast up almost 40 percent, driven by purchases by the USSR and China. Domestic use is forecast down, as the incentives to feed HRW in 1991/92 have been reduced.

HRW production dropped 25 percent in 1991, as an increased ARP combined with dryness in parts of the Southern Plains. Only an estimated 77 percent of planted area was harvested, down from 86 percent the year before. Estimated harvested area was down 16 percent, and average yields dropped 10 percent.

The breakout of domestic use for 1990/91 puts feed and residual disappearance at 324 million bushels, slightly larger than food use, and the largest feed and residual since World War II.

Record HRS exports Forecast

HRS exports are forecast up one third to 300 million bushels. The USSR, China, Philippines, Egypt, and Brazil have posted significant increases in purchases. Additionally, domestic use is forecast up 7 percent, pushing total use to record levels.

Area planted was down because of the increased ARP for 1991, and yields fell from the estimated record 36 bushels per acre in 1990 to 32 in 1991. Although production dropped over 120 million bushels, increased beginning stocks offset the decline, leaving total supplies for 1991/92 almost the same as for 1990/91. Imports are projected to double, but are still expected to contribute only 2 percent of HRS supplies.

Record use is forecast to reduce ending stocks by 40 percent. However, HRS ending stocks are forecast to remain above 1989/90 levels. Moreover the 30 percent stocks-to-use ratio for HRS is not as tight as for most other classes of wheat. However, substantial quantities of HRS are in the FOR and the Food Security Reserve.

SRW Yields Plummet

Disease outbreaks caused damage to large portions of the SRW crop in 1991. Estimated average yields dropped 20 percent and harvested area fell 26 percent as area planted fell and the percent of planted area not harvested for grain increased. Production dropped 40 percent. Moreover, quality problems complicated the marketing of the 1991/92 SRW crop. Low test weights and a mycotoxin, deoxynivalenol (DON), were significant problems.

A study of SRW submitted to be certified seed by Wilda Martinez published in *Wheat Technology* found that of the samples, "fifty-six percent of the uncleaned wheat had nondetectable levels of DON and another 21 percent had less than the FDA guidelines of 2 ppm. Eleven percent ranged from 5-15 ppm with less than 2 percent having levels above 15 ppm. Among these same samples, after cleaning and conversion to flour, 83 percent met the FDA guideline of 1 ppm or less, with 6 percent having values between 1 and 2 ppm, and 11 percent between 2 and 6 ppm."

Domestic use of SRW is expected to be little changed from 1990/91, but exports are forecast down by over 60 percent.

White Wheat Prices Strong

Prices in the Pacific Northwest are often higher than in other parts of the country, but in 1991/92 certain types of wheat are commanding very high premiums. During October 1991, for example, hard club wheat wholesale prices were quoted above $5 per bushel, double the year earlier when there was almost no

Table 2--HRW supply and demand1/

Item	1989/90	1990/91	1991/92F
Area	Million acres		
Planted	37.5	38.0	35.5
Harvested	26.1	32.6	27.4
Yield,bu./acre	27.2	36.8	33.0
Supply	Million bu.		
Production	711	1,199	901
Begin stocks	302	215	360
Tot. supply	1,013	1,414	1,261
Use			
Food	299	321	
Seed	46	40	
Residual	93	324	
Tot. domestic	438	686	555
Exports	360	368	510
Total use	798	1,054	1,065
Ending stocks	215	360	196

1/ERS estimates of area, yield, and domestic use.
F=forecast.

Table 3--HRS supply and demand1/

Item	1989/90	1990/91	1991/92F
Area	Million acres		
Planted	16.5	16.2	14.0
Harvested	15.9	15.4	13.5
Yield,bu./acre	27.3	36.1	31.9
Supply	Million bu.		
Production	433	555	431
Begin stocks	219	155	277
Imports	7	7	15
Tot. supply	660	717	723
Use			
Food	200	200	
Seed	19	19	
Residual	6	20	
Tot. domestic	225	239	256
Exports	280	201	300
Total use	505	440	556
Ending stocks	155	277	167

1/ERS estimates of area, yield, and domestic use.
F=forecast.

Table 4--SRW supply and demand1/

Item	1989/90	1990/91	1991/92F
Area	Million acres		
Planted	13.4	14.2	11.4
Harvested	12.0	12.8	9.5
Yield, bu./acre	45.8	42.9	34.4
Supply	Million bu.		
Production	549	547	325
Begin stocks	39	32	80
Tot. supply	588	579	405
Use			
Food	145	145	
Seed	24	19	
Residual	43	105	
Tot. domestic	212	269	264
Exports	345	230	90
Total use	557	499	354
Ending stocks	32	80	51

1/ERS estimates of area, yield, and domestic use.
F=forecast.

premium at all. Soft white exceeded $4 per bushel. The average farm price in Washington in September was 50 cents above the national average.

The winter white wheat crop experienced unprecedented winterkill in 1991. Over a million acres was replanted to spring wheats, mostly white wheat. Area harvested fell 17 percent, and the lower yielding spring wheat contributed to the drop in average white wheat yields from an estimated 62 to 52 bushels per acre. Production dropped 30 percent even though white spring wheat production more than doubled.

Reduced supplies and higher prices are expected to dampen both domestic use and exports. However, despite the lower use, ending stocks are forecast at only 50 million bushels, the lowest since 1974/75. These stocks would represent less than 20 percent of forecast use.

Durum Production Down, Imports Forecast to Remain Large

Durum supplies in 1991/92 are forecast to nearly match last year, but production is estimated down 15 percent. Although area and yield are both estimated down from last year, production is above 100 million bushels for only the second time in the last 5 years. Beginning stocks are estimated up almost enough to offset reduced production. Continued large imports could occur, reaching 11 percent of supplies and equivalent to 25 percent of domestic use. About one third of 1990/91 durum imports were the wheat equivalent of pasta imports. However, exports, mostly wheat grain, are forecast to be more than double imports, reducing the ending stocks forecast to 50 million bushels.

The breakout of domestic use for 1990/91 shows a dramatic increase in food use. This estimate is based on mill grind numbers reported by the Census Bureau. The increase in imports in 1990/91 seems to have been absorbed by increased food use. However, much lower durum mill grind numbers reported for the first months of 1991/92 make it difficult to interpret the trends in durum food use.

With adequate supplies, durum prices have not been as strong as for other classes of wheat. In September the average farm price for durum was 43 cents per bushel below the average for all wheat.

Table 5--White wheat supply and demand1/

Item	1989/90	1990/91	1991/92F
Area	Million acres		
Planted	5.4	5.2	5.9
Harvested	4.5	5.0	4.2
Yield bu./acre	55.8	62.3	52.3
Supply	Million bu.		
Production	251	313	219
Begin stocks	81	85	87
Imports	3	10	5
Tot. supply	335	408	311
Use			
Food	50	55	
Seed	6	7	
Residual	1	43	
Tot. domestic	57	105	91
Exports	193	216	170
Total use	250	321	261
Ending stocks	85	87	50

1/ERS estimates of area, yield, and domestic use.
F=forecast.

Table 6--Durum supply and demand1/

Item	1989/90	1990/91	1991/92F
Area	Million acre		
Planted	3.8	3.6	3.3
Harvested	3.7	3.5	3.2
Yield bu./acre	25.1	34.9	32.5
Supply	Million bu.		
Production	92	122	104
Begin stocks	60	50	62
Imports	13	19	20
Tot. supply	165	192	186
Use			
Food	59	75	
Seed	5	5	
Residual	-4	-4	
Tot. domestic	60	76	81
Exports	55	53	55
Total use	115	129	136
Ending stocks	50	62	50

1/ERS estimates of area, yield, and domestic use.
F=forecast.

Wheat Cleaning Practices of U.S. Commercial Elevators

Brian Just, Kristi McComas, Mark Ash, and Bengt Hyberg [1]

Abstract: Results from a National Grain and Feed Association survey indicate the prevalence of wheat cleaning in the United States. Elevators responding to the survey cleaned 10 percent of the wheat handled, on average. Nearly all the elevators in the North and South Dakota cleaned spring wheat. The average cleaning cost ranged from 4.5 to 7.3 cents per bushel, depending on the amount of dockage removed. According to the Millers National Federation survey, flour millers clean wheat regardless of its previous history.

Keywords: Cleaning, dockage, discounts, elevators.

Title XX from the 1990 Food, Agriculture, Conservation, and Trade Act outlines the USDA actions to enhance grain quality. It requires the Administrator of the Federal Grain Inspection Service to establish or amend the grain standards to include economically and commercially practical levels of cleanliness for wheat, corn, barley, sorghum, and soybeans if the changes would: (1) enhance competitiveness of U.S. exports, (2) maintain or increase export market share (3) maintain or increase producer income, and (4) be in the national interest, taking into consideration technical constraints, economic benefits and costs to producers and industry, price competitiveness, and importer needs.

Data on the extent of grain cleaning in the United States have not been available in the past. This article highlights responses from a nationwide survey of elevator managers conducted by the National Grain and Feed Association (NGFA) in April 1991. Responses from a similar survey of flour millers conducted in May 1991 by the Millers National Federation (MNF) are also summarized. This data might provide substantial insights for the economic implications of changing the grain standards.

Nature of the Surveys

In the NGFA survey, elevator managers were asked questions on grain purchasing, market premiums and discounts, cleaning, handling, and storage. Information on elevator cleaning operations, receiving, and loadout capacities was also requested. Questionnaires were sent to all 6,237 warehouses licensed by the Commodity Credit Corporation (CCC). This mailing produced 895 usable responses, representing about 17.5 percent of the estimated storage capacity of all U.S. elevators registered with the CCC. Of these elevators, 646 handled either winter or spring wheat.

Country elevators made up 90.6 percent of the respondents handling wheat, with inland terminals, river, and export elevators accounting for the remainder (6.0, 1.8, and 1.5 percent, respectively). Country elevators from the survey handled around 309 million bushels of wheat. The export elevators from the sample handled 359 million bushels of wheat, or about one-third of the 1990/91 U.S. export volume. The following results represent unweighted data from the survey respondents.

Respondents were asked to report the classes of wheat handled. Although further disaggregation of the data into the five major classes is possible, only a breakdown between winter and spring wheat will be analyzed for this article.

The Millers National Federation sent a flour millers survey to each of their members. This survey was similar in nature to the NGFA survey, in that information on contract specifications, discounts, and cost of cleaning was requested. The companies that responded to the MNF survey accounted for approximately 40 percent of total U.S. flour milling capacity (*4*).

Discounts for Dockage and Foreign Material

About three-fourths of the elevators surveyed deducted dockage from the gross weight of wheat. For 93 percent, weight deduction began at no more than 1 percent dockage, while 35 percent began deductions at 0 percent. Regions differed in purchasing practices, however. For instance, about 37 percent of the elevators in winter wheat regions made no weight deduction, but purchased on the basis of gross weight. This custom essentially forgives the dockage content. This practice may be more common for farmers' cooperative elevators, whose members ultimately bear the cost of dockage, anyway. By contrast, 97 percent of elevators handling spring wheat in the North and South Dakota deducted the weight of dockage.

Some elevators assessed discounts for dockage beyond the weight deduction. Of the elevators handling winter wheat, 76 percent had no price discount for dockage, even at 3 percent. And 86 percent had no discount for 1 percent dockage. By contrast, only 28 percent of spring wheat elevators had no price discount at 3 percent dockage and 46 percent had none at 1 percent. The proportion of spring wheat elevators that levied price discounts at high dockage levels rises much faster than winter wheat elevators.

Foreign material (FM) discounts were more common because it is a grade-determining factor. However, 47 percent of the elevators handling winter wheat and 32 percent handling spring wheat had no price discount for 1 percent FM. The average discount at 1 percent FM for all wheat classes was 0.7

1 The authors are agricultural economists with ERS.

cent per bushel. FM discounts were generally larger for spring wheat than winter wheat (A1-4). However, annual surveys by North Dakota State University indicate that discounts can vary from year to year by more than 1 cent per bushel for 1 percent FM.

Only about 1 percent of the elevators sampled paid premiums for wheat with less than 1 percent dockage or foreign material. The elevators that offered premiums paid an average of 1 cent per bushel.

Elevator Cleaning Capacity

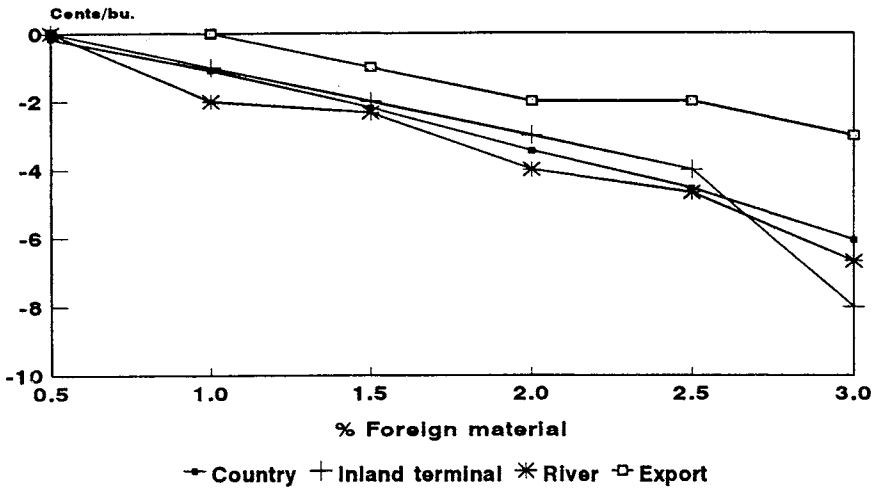
Sixty percent of all wheat elevators in the sample had grain cleaning equipment (A-5). Country elevators had by far the largest share (67 percent) of the reported wheat cleaning capacity. A higher proportion of export elevators had grain cleaners, but country elevators cleaned relatively more grain handled. Although 36 percent of the river elevators indicated that they had grain cleaners, none reported that they had regularly cleaned wheat. The survey data indicates that elevators cleaned about 10 percent of wheat handled.

Average operating capacity per elevator averaged 5,424 bushels per hour. Many of the elevators indicated that they did not approach the manufacturer's rated capacity for the cleaner. Elevators with cleaners had hourly operating capacities averaging 57 percent of their total hourly loadout capacity. The survey suggests that the rate that terminal and export elevators operated their cleaners relative to their loadout capacity was generally lower than country elevators.

Potential Added Cleaning Capacity

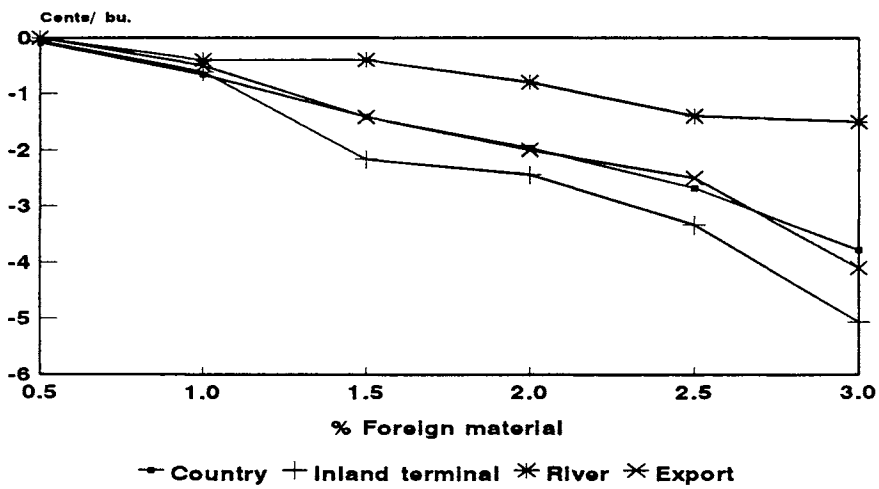
The survey showed that 36 percent of all respondents could install or increase the grain cleaning capacity within their current facility. The average capacity increase was 6,740 bushels per hour. Of the sample respondents, 72 percent indicated that the cost to increase cleaning capacity would be less than $100,000. However, half of the elevators with storage capacity exceeding 5 million bushels reported that they could only increase cleaning capacity at a cost exceeding $100,000.

Figure A-1
Spring Wheat Discounts for Foreign Material by Elevator Type



Source: National Grain & Feed Assn.

Table A-2
Winter Wheat Discounts for Foreign Material by Elevator Type



Source: National Grain & Feed Assn.

Assuming a workload of 700 hours per year times 233 elevators (36 percent of 646 wheat elevators), the survey indicates a potential to add 1.1 billion bushels to annual cleaning capacity. A greater proportion of the river elevators (57 percent) indicated an ability to increase capacity.

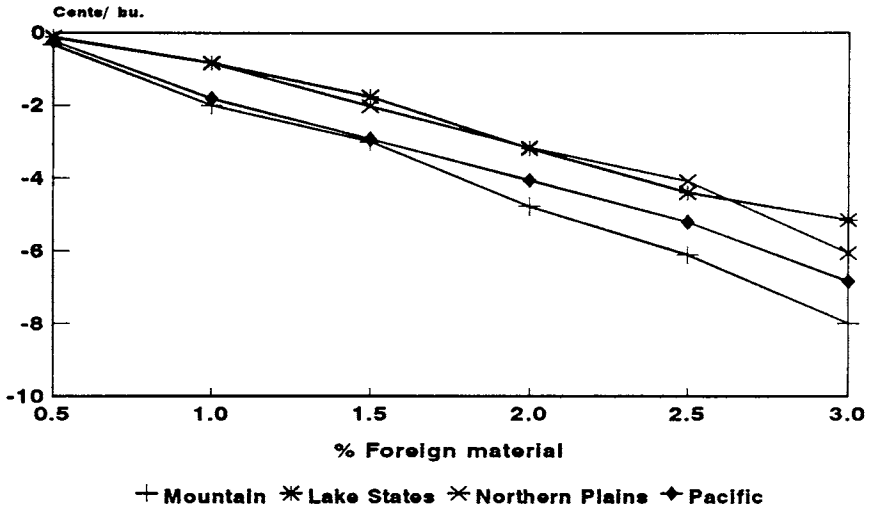
Cleaning the Classes of Wheat

Other observers have noted that if grain quality is usually good in an area, elevators are less likely to discourage patrons by discounting for dockage unless it is a widespread practice (*3*). The average dockage received by elevators that purchase on a gross weight basis is 0.9 percent, compared with 1.3 percent for elevators taking a weight deduction. Winter wheat elevators receive wheat that has less dockage on average than elevators taking spring wheat. This can change for any given year, however, due to weather conditions. The average level of dockage received by elevators was 1.0 percent for winter wheat and 1.85 percent for spring wheat. Therefore, proportionately fewer elevators in HRW regions discounted dockage.

Country elevators reported receiving higher-dockage wheat than export elevators. Average dockage levels for wheat of the reporting elevators declined from about 1.2 percent to under 0.5 percent as it moved through the grain marketing system. The range in dockage levels was also greater at country elevators. The average foreign material percentage also declined from 0.55 to 0.35 percent. There are several possible explanations for this outcome. First, elevators along the marketing channel reduce the average levels of dockage and foreign material through cleaning and blending. Second, country elevators sell the high-dockage wheat to the feed market. Third, some wheat importers may specify lower factor levels in their contracts than domestic wheat millers.

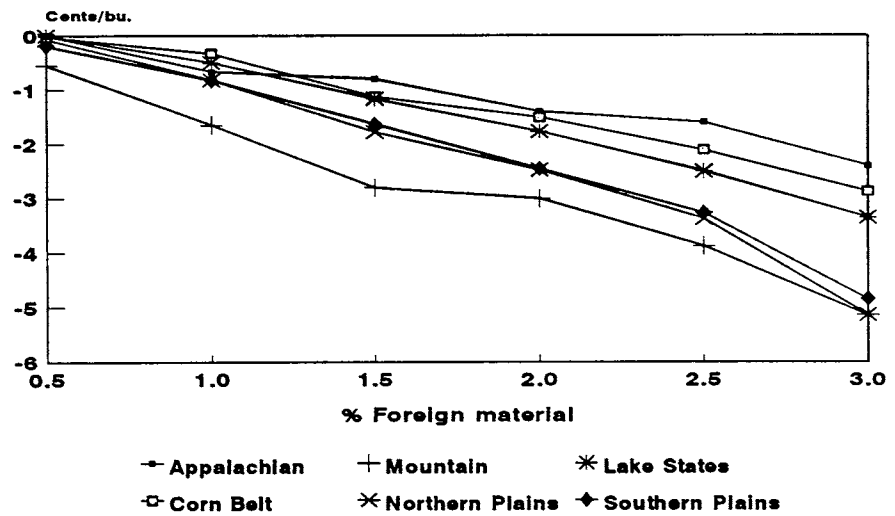
Elevators handling hard red spring wheat cleaned more often than those handling other classes. The following data excludes cleaning for seed wheat. About 60 percent of the spring wheat elevators cleaned compared with 17 percent of elevators handling winter wheat (A-6). This probably is a result of

Figure A-3
Spring Wheat Discounts for Foreign Material by Region



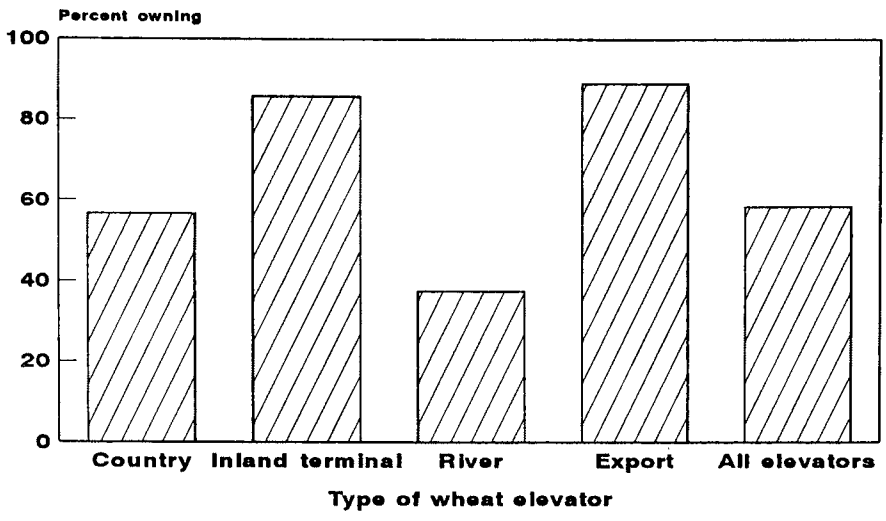
Source: National Grain & Feed Assn.

Figure A-4
Winter Wheat Discounts for Foreign Material by Region



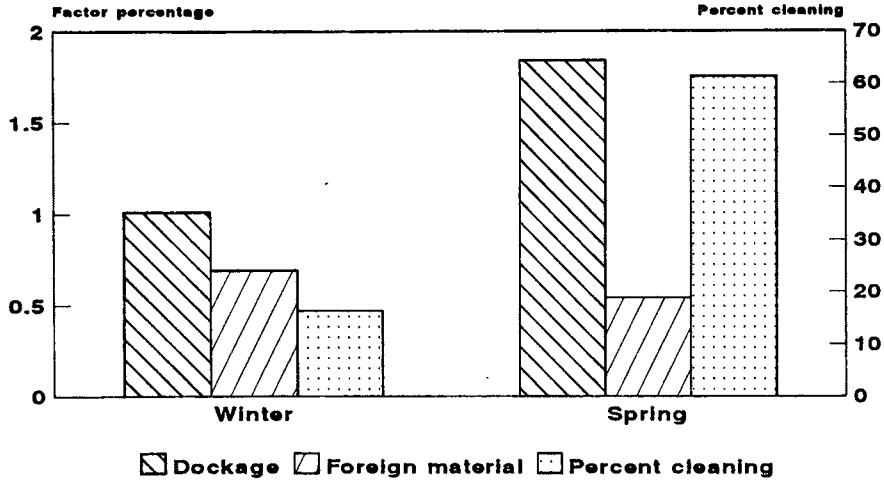
Source: National Grain & Feed Assn.

Figure A-5
Wheat Elevators That Own Cleaners



Source: National Grain & Feed Assn.

Figure A-6
Average Dockage and Foreign Material for Winter and Spring Wheat Elevators



Source: National Grain & Feed Assn.

the differing harvest practices and weather conditions (*5*).

Spring wheat is often windrowed prior to harvest. While this permits quicker drying and speeds harvest, the use of a windrow pickup header inevitably collects soil, weeds, and other trash with the wheat. Winter wheat generally dries naturally and is straight combined, resulting in delivery of less dockage and foreign material to elevators. FGIS inspection data for the 1986-90 wheat crops reported average dockage levels for HRW, SRW, and HRS at 0.86, 0.85, and 0.94 percent, respectively.

Stages of Cleaning

Wheat can be cleaned more than once. There is little additional breakage with each handling (unlike corn) but smaller, less dense kernels are lost by cleaning. Most country elevators that cleaned wheat did it promptly upon receipt from the farmer. However, there were some regional differences. Elevators cleaned proportionately twice as much winter wheat during storage or turning than spring wheat. Cleaning during storage requires an additional elevation, thus imposing more costs on a facility. Country elevators cleaned more grain upon receipt, while terminal and export elevators cleaned relatively more at loadout.

Most elevators from the survey are not currently equipped to reduce nongrain material to the very low levels (0.01 percent or less) desired by flour millers. According to the MNF survey, most millers said it costs no more to clean wheat with 1 percent dockage than 0.1 percent dockage. Consequently, the responding millers cleaned all of their wheat prior to milling, regardless of its previous history.

Very few of the responding flour millers offered premiums for low-dockage wheat or had maximum limits on the amount of dockage allowed. Millers that did offer premiums or had higher than average discounts for foreign material had higher costs of cleaning than other millers. The average variable cleaning cost from the MNF survey was 4.4 cents per bushel. This cost was based on a much lower final nongrain material content than the elevators with cleaners reported. Nearly all the millers

responding combined grain cleanings with the milling byproducts, which are sold for feed. A regular market for milling byproducts is already well-developed in the United States.

Geography of Cleaning Wheat

States in which hard red spring wheat is harvested cleaned more than other states. In the year covered by the survey, 97 percent of the elevators in North and South Dakota cleaned spring wheat. In South Dakota, half of the elevators cleaned all the grain they handled. In North Dakota, half of the elevators cleaned at least 75 percent of the wheat handled. About half of the Minnesota elevators cleaned at least 50 percent of the wheat handled. By contrast, only 33 percent of elevators cleaned winter wheat in Texas and Oklahoma. And elevators in the white wheat areas of the Pacific Northwest cleaned minimally. Larger elevators (export or terminal) typically cleaned a smaller percentage of their total grain volume.

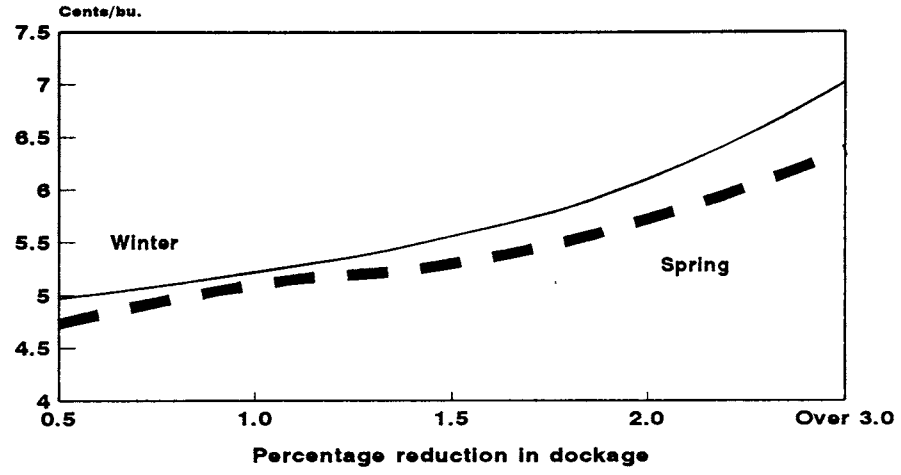
Costs To Clean

The operating cost of a grain cleaner depends on the efficiency of the model and its throughput capacity. The amount of dockage in incoming wheat (or the desired level of cleanliness) then determines the hours of use. The conjunction of these factors determines the variable costs, which include electricity, labor, and maintenance.

The elevators' variable cost of cleaning wheat increased with the amount of dockage removed (figure A-7). The weighted average of the cost estimates provided by elevators was about 4.9 cents per bushel for a 1 percent reduction in dockage and 7.3 cents for a reduction greater than 2 percent. When elevators clean, they remove, on average, 1.7-2.0 percent of the volume as dockage.

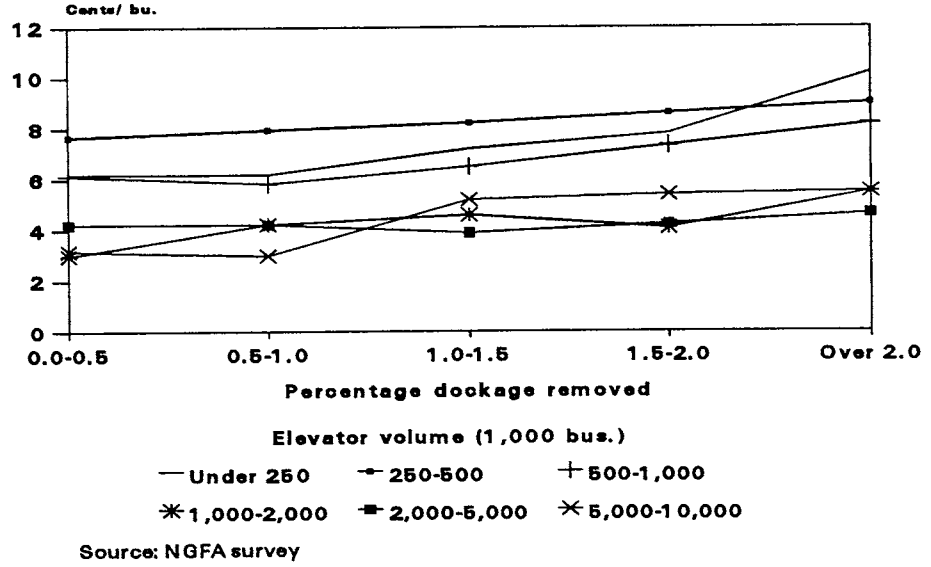
According to the survey, elevators' variable cleaning cost also varies with the volume handled (figure A-8). Elevators that clean a high proportion of their grain had a lower per-unit cleaning cost, and vice-versa.

Figure A-7
Estimated Cost to Reduce Dockage at Country Elevators



Source: National Grain & Feed Assn

Figure A-8
Average Cost to Clean Wheat by Elevator Volume



Source: NGFA survey

Disposition of Wheat Screenings

The screenings and aspirated liftings generated by cleaning wheat can be an additional source of revenue to the elevator (*2*). About 87 percent of those screenings are sold to the livestock feed market. In the year surveyed, elevators were unable to sell or use only 1.7 percent of the supply of screenings. Elevators sold screenings throughout the year but the greatest amount was sold in August and September, after completion of harvest. The elevators that cleaned generally maintained sufficient storage space to hold 40 percent of their annual screenings production.

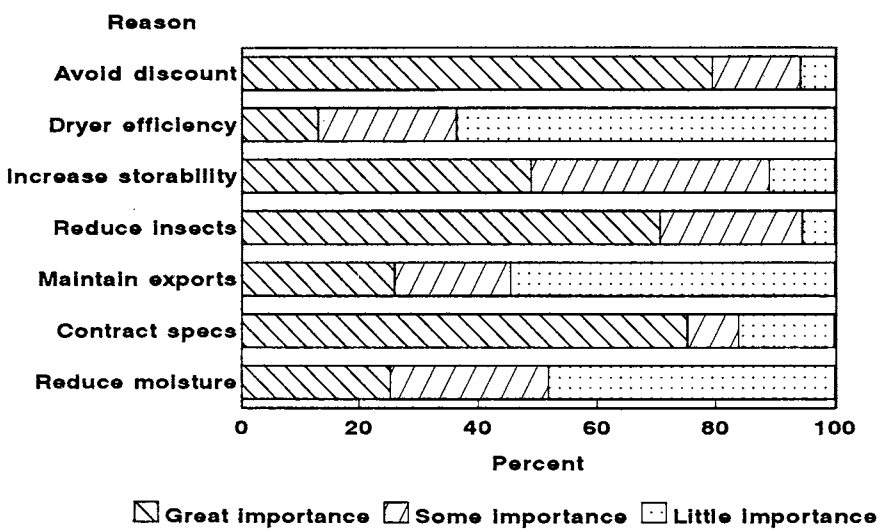
The NGFA survey data indicates an average of $38 per short ton for wheat screenings. This price varied negligibly from month to month. At this relatively low price, most elevators sold screenings locally (about 70 percent were hauled less than 20 miles). However, only 7 percent of elevators that cleaned had pelleting equipment. This equipment likely belonged to elevators that also had a feed mill.

Reasons for Cleaning

There are many reasons for cleaning wheat. About 80 percent of the responding elevators that cleaned wheat rated "to avoid discount" of great importance in their decision (figure A-9). Reasons of lesser importance included: contracts specified low-dockage wheat; cleaning increased test weight and reduced transportation costs; cleaning conserved storage space; selling screenings added revenue; cleaning improved air circulation in bins which permits storage at a higher moisture content, thus reducing shrinkage and energy costs; and cleaning improved cargo uniformity within and between export shipments.

So, why don't more elevators clean grain? Many cited economic reasons (*1*). Foremost among the reasons given was that investment in grain cleaners

Figure A-9
Reasons for Cleaning Spring Wheat



Source: National Grain & Feed Assn.

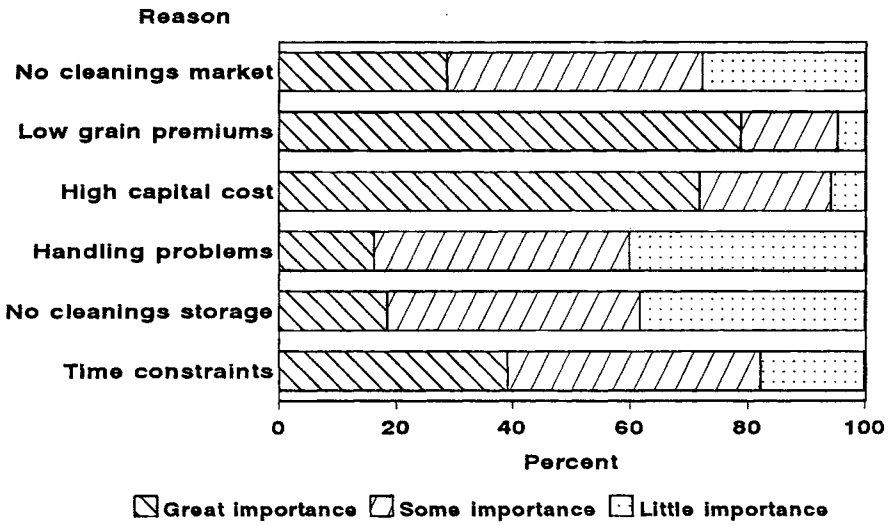
can be expensive and difficult to justify given their perception of a limited demand for cleaned wheat. At smaller country elevators there was a concern for recouping the equipment cost while at terminal and export elevators there was the high cost of retrofitting the facilities. Premiums paid for wheat of low dockage were nearly nonexistent.

In many areas, dockage was an infrequent problem, occurring only when harvest conditions were poor.

In addition, because country elevators usually cleaned grain upon receipt, they had less time at harvest to operate the cleaners, generally cleaning only the dirtiest wheat. Cleaning all grain that came in could slow throughput substantially. Other disincentives cited were the lack of a local market for screenings and difficulty handling and storing screenings (figure A-10).

The feasibility of investment in additional capacity depends, in part, on the market offering elevators a more attractive economic incentive to clean grain than presently exists.

Figure A-10
Reasons That Elevators Do Not Clean Spring Wheat



Source: National Grain & Feed Assn.

References

1. Fridirici, R., H.L. Kiser, L.D. Schnake, and J.A. Wingfield. *A View of the Economics of Removing Dockage from Wheat*. Contribution No. 84-342-D. Kansas Agricultural Experiment Station, Manhattan, July 1984.

2. Kiser, Harvey L. *Cleaning Wheat at a Country Elevator: A Case Study*. Kansas Wheat Commission and Kansas Agricultural Experiment Station, Manhattan, December 1984.

3. Kiser, Harvey and David Frey. *Dockage Treatment During the 1990 Kansas Wheat Harvest*. Contribution No. 91-263-D. Kansas Agricultural Experiment Station, Manhattan, 1991.

4. Sosland Companies, Inc. *1991 Milling Directory*. Merriam, KS: Sosland Publishing Co., 1991.

5. U.S. Congress, Office of Technology Assessment. *Enhancing the Quality of U.S. Grain for International Trade*, OTA-F-399, Washington DC, February 1989.

6. U.S. Department of Agriculture, Federal Grain Inspection Service. *Report on the Effects of Including Dockage and Foreign Material as a Grading*

List of Tables

Appendix table 1--Wheat: Marketing year supply, disappearance, area, and price, 1985/86-1991/92

Item	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91 (Preliminary)	1991/92 (Projected)
				Million acres			
Area:							
Planted	75.5	72.0	65.8	65.5	76.6	77.2	69.9
Harvested	64.7	60.7	55.9	53.2	62.2	69.3	57.7
Set aside and diverted	18.8	21.0	23.9	22.5	9.6	7.5	15.3
Acreage reduction	11.9	15.8	20.2	19.2	6.1	2.2	10.0
Diverted	6.9	3.9	0.0	0.0	0.0	0.0	0.0
PIK; 0-92 1/	---	1.3	3.7	3.3	3.5	5.3	5.3
Conservation Reserve Program 2/	---	0.6	4.2	7.1	8.8	10.3	10.4
National base acreage	94.0	92.2	91.8	91.9	91.1	90.8	89.8
				Bushels per acre			
Yield/harvested acre	37.5	34.4	37.7	34.1	32.7	39.5	34.3
				Million bushels			
Supply:							
June 1 stocks	1,425	1,905	1,821	1,261	702	536	866
Production	2,424	2,091	2,108	1,812	2,037	2,736	1,981
Imports 3/	16	21	16	23	23	36	40
Total supply	3,865	4,017	3,945	3,096	2,762	3,309	2,886
				Million bushels			
Disappearance:							
Food	674	712	721	726	753	796	800
Seed	93	84	85	103	100	90	97
Feed and residual 4/	284	401	280	146	139	489	350
Total domestic	1,051	1,197	1,086	975	992	1,376	1,247
Exports 3/	909	999	1,598	1,419	1,233	1,068	1,125
Total disappearance	1,960	2,196	2,684	2,394	2,225	2,444	2,372
				Million bushels			
Ending stocks:							
May 31	1,905	1,821	1,261	702	536	866	514
Farmer-owned reserve	433	463	467	287	144	14	90
Special program 5/	163	169	0	0	0	0	0
CCC inventory 6/	602	830	283	190	117	163	150
Outstanding loans 7/	678	236	178	19	30	217	35
Other	29	123	333	206	245	472	239
				$/bushel			
Prices:							
Received by farmers	3.08	2.42	2.57	3.72	3.72	2.61	2.75-2.95
Loan rate	3.30	2.40	2.28	2.21	2.06	1.95	2.04
Target	4.38	4.38	4.38	4.23	4.10	4.00	4.00
				$ million			
Value of production	7,374	5,044	5,497	6,684	7,578	7,142	5,546

--- = Not applicable.
1/ PIK - 1983/84-1985/86; 0-92 - 1986/87-1989/90. 2/ Through the tenth sign up, 10.4 million acres of wheat base have been enrolled in CRP. 3/ Imports and exports include flour and other products expressed in wheat equivalent. 4/ Residual approximates feed use and includes negligible quantities used for alcoholic beverages. 5/ Projected amount of free-stock carryover in the special producer storage loan program. 6/ From 1981/82 on, includes 147 million bushels (2 million tons) in Food Security Reserve. 7/ Projected amount of free-stock carryover under 9-month loan.

Appendix table 2--Wheat: Marketing year supply and disappearance, 1960/61-1991/92 1/

Year Beginning June 1	Supply				Disappearance						Ending stocks May 31		
					Domestic use								
	Beginning stocks	Production	Imports 2/	Total	Food	Seed	Feed 3/	Total	Exports 2/	Total disappearance	Govt. owned	Privately owned 4/	Total
	Million bushels												
1960/61	1,384.2	1,354.7	8.1	2,747.0	496.5	64.3	30.4	591.0	653.5	1,244.5	1,224.6	277.8	1,502.4
1961/62	1,502.4	1,232.4	5.9	2,740.7	504.0	56.3	44.0	604.4	715.7	1,320.1	1,074.4	346.2	1,420.6
1962/63	1,420.6	1,092.0	5.3	2,517.9	502.7	61.4	34.7	598.8	649.4	1,248.2	1,101.8	167.9	1,269.7
1963/64	1,269.7	1,146.8	4.0	2,420.6	487.9	64.9	28.6	581.5	845.6	1,427.1	799.8	193.7	993.5
1964/65	993.5	1,283.4	1.8	2,278.7	514.4	65.5	54.9	634.9	722.7	1,357.6	634.8	286.3	921.1
1965/66	921.1	1,315.6	0.9	2,237.6	517.9	61.5	145.9	725.3	851.8	1,577.1	299.2	361.3	660.5
1966/67	660.5	1,304.9	1.7	1,967.1	505.1	77.4	100.5	683.1	771.3	1,454.3	122.0	390.8	512.8
1967/68	512.8	1,507.6	1.0	2,021.4	517.8	71.3	36.8	625.8	765.3	1,391.2	100.1	530.1	630.2
1968/69	630.2	1,556.6	1.1	2,187.9	522.4	60.8	156.5	739.7	544.2	1,283.9	139.5	764.5	904.0
1969/70	904.0	1,442.7	2.9	2,349.5	520.1	55.5	188.4	764.0	603.0	1,367.0	277.2	705.4	982.6
1970/71	982.6	1,351.6	1.4	2,335.7	517.1	62.1	193.0	772.1	740.8	1,512.9	352.6	470.2	822.8
1971/72	822.8	1,618.6	1.1	2,442.5	523.7	63.2	262.4	849.3	609.8	1,459.1	355.1	628.3	983.4
1972/73	983.4	1,546.2	1.3	2,530.9	531.8	67.4	199.5	798.7	1,135.1	1,933.8	6.3	590.8	597.1
1973/74	597.1	1,710.8	2.6	2,310.5	544.3	84.0	125.1	753.4	1,217.0	1,970.4	0.6	339.5	340.1
1974/75	340.1	1,781.9	3.4	2,125.4	545.0	92.0	34.9	671.9	1,018.5	1,690.4	NA	435.0	435.0
1975/76	435.0	2,126.9	2.4	2,564.3	588.5	100.0	37.3	725.8	1,172.9	1,898.7	NA	665.6	665.6
1976/77	665.6	2,148.8	2.7	2,817.1	588.0	92.0	74.4	754.4	949.5	1,703.9	NA	1,113.2	1,113.2
1977/78	1,113.2	2,045.5	1.9	3,160.6	586.5	80.0	192.5	859.0	1,123.8	1,982.8	48.3	1,129.5	1,177.8
1978/79	1,177.8	1,775.5	1.9	2,955.2	592.4	87.0	157.6	837.0	1,194.1	2,031.1	51.1	873.0	924.1
1979/80	924.1	2,134.1	2.1	3,060.3	596.1	101.0	86.0	783.1	1,375.2	2,158.3	187.8	714.2	902.0
1980/81	902.0	2,380.9	2.5	3,285.4	610.5	113.0	59.0	782.5	1,513.8	2,296.3	199.7	789.4	989.1
1981/82	989.1	2,785.4	2.8	3,777.3	602.4	110.0	134.8	847.2	1,770.7	2,617.9	190.3	969.1	1,159.4
1982/83	1,159.4	2,765.0	7.6	3,932.0	616.4	97.0	194.8	908.2	1,508.7	2,416.9	192.0	1,323.1	1,515.1
1983/84	1,515.1	2,419.8	3.8	3,938.8	642.6	100.0	371.2	1,113.8	1,426.4	2,540.2	188.0	1,210.6	1,398.6
1984/85	1,398.6	2,594.8	9.4	4,002.8	651.0	98.0	407.1	1,156.1	1,421.4	2,577.6	377.6	1,047.6	1,425.2
1985/86	1,425.2	2,424.1	16.3	3,865.6	674.3	93.0	284.2	1,051.5	909.1	1,960.7	601.7	1,303.3	1,905.0
1986/87	1,905.0	2,090.6	21.3	4,016.8	712.2	84.0	401.2	1,197.4	998.5	2,195.9	830.1	990.8	1,820.9
1987/88	1,820.9	2,107.7	16.1	3,944.7	720.7	85.0	280.3	1,086.0	1,597.8	2,683.8	283.0	977.8	1,260.8
1988/89	1,260.8	1,812.2	22.7	3,095.7	725.8	103.0	146.1	974.9	1,419.2	2,394.1	190.5	511.1	701.6
1989/90	701.6	2,036.6	23.4	2,761.7	753.0	100.4	138.5	991.9	1,233.3	2,225.2	116.6	419.9	536.5
1990/91 5/	536.5	2,736.4	36.4	3,309.3	795.9	90.3	489.4	1,375.6	1,067.9	2,443.5	162.7	703.0	865.7
1991/92 6/	866.0	1,981.0	40.0	2,886.0	800.0	97.0	350.0	1,247.0	1,125.0	2,372.0	150.0	364.0	514.0

NA = Not available.
1/ Total may not add because of rounding. 2/ Imports and exports include flour and other products expressed in wheat equivalent.
3/ Residual; approximates feed use and includes negligible quantities used for distilled spirits. 4/ Includes outstanding and reserve loans.
5/ Preliminary. 6/ Projected.

Appendix table 3--Wheat: Quarterly supply and disappearance, 1984/85-1991/92 1/

Year and periods beginning June 1	Supply				Disappearance						Ending stocks		
					Domestic use								
	Beginning stocks	Production	Imports 2/	Total	Food	Seed	Feed 3/	Total	Exports 2/	Total disappearance	Govt. owned	Privately owned 4/	Total
	Million bushels												
1984/85:													
June-Aug.	1,398.6	2,594.8	3.8	3,997.2	157.8	1.0	279.6	438.4	398.7	837.1	278.1	2,882.0	3,160.1
Sept.-Nov.	3,160.1	---	2.2	3,162.3	168.5	69.0	101.5	339.0	484.8	823.8	359.4	1,979.1	2,338.5
Dec.-Feb.	2,338.5	---	1.1	2,339.6	164.2	4.0	35.5	203.7	335.1	538.8	375.7	1,414.7	1,800.8
Mar.-May	1,800.8	---	2.3	1,803.1	160.5	24.0	-9.5	175.0	202.9	377.9	377.6	1,047.6	1,425.2
Mkt. year	1,398.6	2,594.8	9.4	4,002.8	651.0	98.0	407.1	1,156.1	1,421.4	2,577.6	377.6	1,047.6	1,425.2
1985/86:													
June-Aug.	1,425.2	2,424.1	5.1	3,854.4	165.8	1.0	235.5	402.3	248.6	650.9	406.7	2,796.8	3,203.5
Sept.-Nov.	3,203.5	---	5.1	3,208.6	185.6	63.0	65.9	314.4	250.7	565.2	517.1	2,126.3	2,643.4
Dec.-Feb.	2,643.4	---	2.7	2,646.1	162.2	4.0	1.8	168.0	222.3	390.3	526.3	1,729.5	2,255.8
Mar.-May	2,255.8	---	3.5	2,259.3	160.8	25.0	-18.9	166.8	187.4	354.3	601.7	1,303.3	1,905.0
Mkt. year	1,425.2	2,424.1	16.3	3,865.6	674.3	93.0	284.2	1,051.5	909.1	1,960.7	601.7	1,303.3	1,905.0
1986/87:													
June-Aug.	1,905.0	2,090.6	4.3	3,999.9	171.2	1.0	352.3	524.4	318.9	843.3	793.8	2,362.7	3,156.5
Sept.-Nov.	3,156.5	---	3.6	3,160.1	192.8	57.0	-20.8	229.0	257.7	486.7	863.9	1,809.6	2,673.5
Dec.-Feb.	2,673.5	---	6.0	2,679.5	171.7	3.0	48.7	223.4	205.7	429.1	905.3	1,345.1	2,250.4
Mar.-May	2,250.4	---	7.3	2,257.7	176.6	23.0	20.9	220.5	216.3	436.8	830.1	990.8	1,820.9
Mkt. year	1,905.0	2,090.6	21.3	4,016.8	712.2	84.0	401.2	1,197.4	998.5	2,195.9	830.1	990.8	1,820.9
1987/88:													
June-Aug.	1,820.9	2,107.7	2.7	3,931.3	181.0	1.0	363.8	545.8	409.0	954.8	798.8	2,189.7	2,976.5
Sept.-Nov.	2,976.5	---	4.5	2,981.0	193.0	58.0	-79.1	172.0	308.5	480.4	755.4	1,750.5	2,500.6
Dec.-Feb.	2,500.6	---	3.7	2,504.3	172.1	3.0	-7.3	167.7	413.0	580.8	450.1	1,473.4	1,923.5
Mar.-May	1,923.5	---	5.1	1,928.7	174.6	23.0	2.9	200.5	467.3	667.8	283.0	977.8	1,260.8
Mkt. year	1,820.9	2,107.7	16.1	3,944.7	720.7	85.0	280.3	1,086.0	1,597.8	2,683.8	283.0	977.8	1,260.8
1988/89:													
June-Aug.	1,260.8	1,812.2	8.6	3,081.6	183.3	1.0	282.2	466.4	361.6	828.1	250.0	2,003.6	2,253.6
Sept.-Nov.	2,253.6	---	6.3	2,259.8	197.3	67.0	-49.4	214.9	329.0	543.9	213.0	1,502.9	1,715.9
Dec.-Feb.	1,715.9	---	3.7	1,719.6	173.4	3.0	-45.1	131.3	360.5	491.9	203.2	1,024.5	1,227.7
Mar.-May	1,227.7	---	4.2	1,231.9	171.8	32.0	-41.6	162.2	368.0	530.2	190.5	511.1	701.6
Mkt. year	1,260.8	1,812.2	22.7	3,095.7	725.8	103.0	146.1	974.9	1,419.2	2,394.1	190.5	511.1	701.6
1989/90:													
June-Aug.	701.6	2,036.6	5.9	2,744.1	190.7	1.7	263.8	456.2	369.9	826.1	167.9	1,750.1	1,918.0
Sept.-Nov.	1,918.0	---	7.1	1,925.2	191.6	68.4	-85.9	174.1	328.6	502.7	154.5	1,268.0	1,422.5
Dec.-Feb.	1,422.5	---	4.7	1,427.1	185.7	2.8	35.9	224.4	259.7	484.0	136.5	806.6	943.1
Mar.-May	943.1	---	5.8	948.9	185.0	27.5	-75.3	137.2	275.2	412.4	116.6	419.9	536.5
Mkt. year	701.6	2,036.6	23.4	2,761.7	753.0	100.4	138.5	991.9	1,233.3	2,225.2	116.6	419.9	536.5
1990/91:													
June-Aug.	536.5	2,736.4	8.0	3,280.9	196.4	1.6	405.3	603.3	268.1	871.4	104.6	2,304.9	2,409.5
Sept.-Nov.	2,409.5	---	13.4	2,422.9	211.2	60.5	-34.8	236.9	278.0	514.9	129.9	1,778.1	1,908.0
Dec.-Feb.	1,908.0	---	7.8	1,915.8	192.7	2.0	99.6	294.3	225.5	519.8	152.5	1,243.5	1,396.0
Mar.-May	1,396.0	---	7.2	1,403.2	195.6	26.2	19.3	241.1	296.3	537.5	162.7	703.0	865.7
Mkt. year	536.5	2,736.4	36.4	3,309.3	795.9	90.3	489.4	1,375.6	1,067.9	2,443.5	162.7	703.0	865.7
1991/92:													
June-Aug.	865.7	1,980.7	7.8	2,854.2	177.4	1.5	381.6	560.5	252.7	813.2	162.8	1,878.2	2,041.0
Sept.-Nov.													
Dec.-Feb.													
Mar.-May													
Mkt. year 5/	866.0	1,981.0	40.0	2,886.0	800.0	97.0	350.0	1,247.0	1,125.0	2,372.0	150.0	364.0	514.0

--- = Not applicable.
1/ Totals may not add because of rounding. 2/ Imports and exports include flour and other products expressed in wheat equivalent. 3/ Residual; approximates feed use and includes negligible quantities used for distilled spirits. 4/ Includes outstanding and reserve loans. 5/ Preliminary.

Appendix table 4--Quarterly government stock activity for wheat, 1989/90-1991/92

	1989/90				1990/91				1991/92
	June-Aug.	Sept.-Nov.	Dec.-Feb.	March-May	June-Aug.	Sept.-Nov.	Dec.-Feb.	March-May	June-Aug.
	Million bushels								
9-month loans:									
Carryin outstanding	19.2	48.2	80.4	65.4	30.0	120.3	260.9	328.6	216.8
Loans made	42.6	47.1	17.8	4.2	113.0	164.2	124.5	3.5	67.4
Certificate exchange	0.0	0.1	0.1	0.0	0.1	0.3	0.4	0.0	1.4
Cash redemption	13.5	14.8	32.7	39.2	22.6	23.3	56.2	103.2	68.3
CCC collateral acquired	0.1	0.0	0.0	0.4	0.0	0.0	0.2	0.1	0.7
Reserve conversion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	64.7
Carryout outstanding	48.2	80.4	65.4	30.0	120.3	260.9	328.6	216.8	149.1
FOR loans:									
Carryin FOR	287.0	211.4	173.6	153.6	143.9	118.8	64.6	19.1	13.7
Reserve conversion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	64.7
Cash redemption	39.6	8.7	3.7	0.0	0.5	1.8	0.6	0.3	2.2
CCC collateral acquired	24.1	23.2	10.9	3.1	13.7	33.2	28.0	13.7	0.0
Certificate exchange	11.9	5.9	5.4	6.6	10.9	19.2	16.9	3.4	0.1
Carryout FOR	211.4	173.6	153.6	143.9	118.8	64.6	19.1	13.7	76.1
CCC owned:									
Carryin CCC	190.5	167.9	154.5	136.5	116.6	104.6	129.9	152.5	162.7
CCC collateral acquired	24.2	23.2	10.9	3.5	13.7	33.2	28.2	13.8	0.7
Certificate exchange	3.5	42.9	13.5	3.7	1.5	1.0	0.1	0.2	0.1
Other 1/	43.3	(6.3)	15.4	19.7	24.2	6.9	5.5	3.4	0.5
Carryout CCC	167.9	154.5	136.5	116.6	104.6	129.9	152.5	162.7	162.8

1/ Includes PL480 exchanges for Title II, off-grade sales, domestic programs, section 416 export programs, and residual errors.

Appendix table 5--Wheat: Status of price support loans on specified dates, 1980/81-1991/92

Crop year	Total stocks	Total CCC inventory	Outstanding CCC loans	Farmer-Owned Reserve 1/	Unencumbered stocks
			Million bushels		
1980/81:					
Jun. 1	902.0	187.8	99.3	259.9	355.0
Sept.1	2,714.0	202.1	96.7	211.0	2,204.2
Dec. 1	2,092.3	202.9	128.2	210.5	1,550.7
Mar. 1	1,522.8	203.2	114.3	303.8	901.5
1981/82:					
Jun. 1	989.1	199.7	54.6	359.6	375.2
Sept.1	3,056.0	195.4	147.0	398.6	2,315.0
Dec. 1	2,338.4	190.6	195.4	459.1	1,493.3
Mar. 1	1,777.6	190.2	182.2	515.2	890.0
1982/83:					
Jun. 1	1,159.4	190.3	112.0	560.4	296.7
Sept.1	3,229.3	193.3	77.5	763.3	2,195.2
Dec. 1	2,642.8	189.7	105.6	986.3	1,361.2
Mar. 1	2,072.0	184.6	92.5	1,117.1	677.8
1983/84:					
Jun. 1	1,515.1	192.0	65.2	1,060.6	197.3
Sept.1	3,233.1	365.0	294.1	824.8	1,749.2
Dec. 1	2,535.7	375.8	396.0	736.6	1,027.3
Mar. 1	1,951.5	313.8	443.9	610.7	583.1
1984/85:					
Jun. 1	1,398.6	188.0	379.1	611.2	220.3
Sept.1	3,160.1	278.1	254.9	657.9	1,969.2
Dec. 1	2,338.5	359.4	247.2	674.9	1,057.0
Mar. 1	1,800.8	375.7	218.4	673.8	532.9
1985/86:					
Jun. 1	1,425.2	377.6	175.0	657.1	215.5
Sept.1	3,203.5	406.7	493.7	689.5	1,613.6
Dec. 1	2,643.4	517.1	734.9	653.7	737.7
Mar. 1	2,255.8	526.3	770.8	633.1	325.6
1986/87:					
Jun. 1	1,905.0	601.7	677.7	596.4	29.2
Sept.1	3,156.5	793.8	455.8	629.9	1,277.0
Dec. 1	2,673.5	863.9	527.6	657.7	624.3
Mar. 1	2,250.4	905.3	419.8	662.6	262.7
1987/88:					
Jun. 1	1,820.9	830.1	235.6	631.8	123.4
Sept.1	2,976.5	798.8	245.1	597.5	1,335.1
Dec. 1	2,500.6	755.4	383.1	553.4	808.7
Mar. 1	1,923.5	450.1	293.8	517.9	661.7
1988/89:					
Jun. 1	1,260.8	283.0	177.5	466.8	333.5
Sept.1	2,253.6	250.0	108.1	391.0	1,504.5
Dec. 1	1,715.9	213.0	93.1	381.2	1,028.6
Mar. 1	1,227.7	203.2	46.9	377.9	599.7
1989/90:					
Jun. 1	701.6	190.5	19.2	287.0	204.9
Sept.1	1,918.0	167.9	48.2	211.4	1,490.5
Dec. 1	1,422.5	154.5	80.4	173.6	1,014.0
Mar. 1	943.1	136.5	65.4	153.6	587.6
1990/91:					
Jun. 1	536.5	116.6	30.0	143.9	246.0
Sept.1	2,409.5	104.6	120.3	118.8	2,065.8
Dec. 1	1,908.0	129.9	260.9	64.6	1,452.6
Mar. 1	1,396.0	152.5	328.6	19.1	895.8
1991/92:					
Jun. 1	865.7	162.7	216.8	13.7	472.5
Sept.1	2,041.0	162.8	149.1	76.1	1,653.0

1/ Includes any quantity in the special producer storage loan program.

Source: Agricultural Stabilization and Conservation Service, USDA.

Appendix table 6--Wheat classes: Estimated acreage, yield, and production, 1979-91 1/

Year	Planted acreage	Harvested acreage	Yield	Production
	---Million acres---		Bu./acre	Million bushels
Hard red winter:				
1979	38.2	31.3	34.88	1,091.6
1980	40.7	35.8	33.00	1,181.3
1981	43.4	37.9	29.34	1,112.1
1982	43.2	37.0	33.61	1,243.6
1983	41.3	30.2	39.66	1,197.8
1984	43.6	34.1	36.67	1,250.6
1985	42.5	34.5	35.66	1,230.1
1986	39.4	31.5	32.31	1,017.8
1987	36.3	28.6	35.69	1,020.8
1988	34.4	26.8	32.91	881.9
1989	37.5	26.1	27.21	711.0
1990	38.0	32.6	36.75	1,198.8
1991	35.5	27.4	32.96	2/ 901.3
Hard red spring:				
1979	14.2	14.0	26.34	368.8
1980	16.3	13.6	22.90	311.4
1981	16.1	15.8	29.35	463.8
1982	15.5	15.2	32.41	492.7
1983	11.1	10.7	30.16	322.7
1984	12.0	11.7	34.94	408.8
1985	14.0	13.1	35.13	460.2
1986	14.6	14.1	32.01	451.4
1987	13.3	13.0	33.12	430.6
1988	13.0	10.1	17.94	181.2
1989	16.5	15.9	27.34	433.5
1990	16.2	15.4	36.08	554.7
1991	14.0	13.5	31.93	2/ 431.2
Durum:				
1979	4.0	3.9	27.36	106.7
1980	5.5	4.8	22.58	108.4
1981	5.8	5.7	32.11	183.0
1982	4.3	4.2	34.74	145.9
1983	2.6	2.5	29.20	73.0
1984	3.3	3.2	32.31	103.4
1985	3.2	3.1	36.29	112.5
1986	3.0	2.9	33.76	97.9
1987	3.3	3.3	28.07	92.6
1988	3.3	2.8	15.75	44.8
1989	3.8	3.7	25.11	92.2
1990	3.6	3.5	34.91	122.4
1991	3.3	3.2	32.52	2/ 104.0
Soft red winter:				
1979	8.4	7.6	40.74	309.6
1980	11.7	10.6	41.68	441.8
1981	16.7	15.3	44.31	678.0
1982	17.2	15.8	37.27	588.9
1983	15.6	12.8	39.39	504.2
1984	14.5	12.6	42.17	531.4
1985	10.6	9.1	40.48	368.4
1986	10.1	7.7	37.99	292.5
1987	9.0	7.6	45.99	349.5
1988	10.9	9.6	49.24	472.7
1989	13.4	12.0	45.79	548.9
1990	14.2	12.8	42.89	547.1
1991	11.4	9.5	34.41	2/ 325.2
White:				
1979	6.6	5.6	45.96	257.4
1980	6.6	6.3	53.65	338.0
1981	6.2	6.0	58.08	348.5
1982	6.0	5.7	51.58	294.0
1983	5.9	5.3	60.75	322.0
1984	5.8	5.3	56.72	300.6
1985	5.3	4.9	51.82	253.9
1986	4.9	4.5	51.56	232.0
1987	3.9	3.5	61.65	215.8
1988	4.0	3.8	60.95	231.6
1989	5.4	4.5	55.78	251.0
1990	5.2	5.0	62.28	313.4
1991	5.9	4.2	52.26	2/ 219.0

1/ 1991 data based on winter wheat seedlings. 2/ Indicated November 1, 1991.

Source: National Agricultural Statistics Service and Economic Research Service (estimates), USDA.

Appendix table 7--Wheat classes: Marketing year supply and disappearance, 1982/83-1991/92 1/

Year beginning June 1	Supply			Disappearance			Ending stocks May 31
	Beginning stocks	Pro-duction	Total 2/	Domestic use	Exports	Total	
	Million bushels						
1982/83:							
Hard winter	538	1,243	1,781	348	679	1,027	754
Hard spring	346	492	842	195	239	434	408
Soft red	60	590	650	251	325	576	74
White	109	294	403	53	207	260	143
Durum	106	146	256	61	59	120	136
All classes	1,159	2,765	3,932	908	1,509	2,417	1,515
1983/84:							
Hard winter	754	1,198	1,952	503	704	1,207	745
Hard spring	408	323	732	198	220	418	314
Soft red	74	504	578	284	220	504	74
White	143	322	465	78	220	298	167
Durum	136	73	212	51	62	113	99
All classes	1,515	2,420	3,938	1,114	1,426	2,540	1,399
1984/85:							
Hard winter	745	1,251	1,996	564	715	1,279	717
Hard spring	314	409	727	173	183	356	371
Soft red	74	531	605	289	252	541	64
White	167	301	469	86	210	296	173
Durum	99	103	206	45	61	106	100
All classes	1,399	2,595	4,002	1,157	1,421	2,578	1,425
1985/86:							
Hard winter	717	1,230	1,947	545	393	938	1,009
Hard spring	371	460	841	178	165	343	498
Soft red	64	367	431	204	148	352	79
White	173	254	428	80	150	230	198
Durum	100	113	216	42	53	95	121
All classes	1,425	2,424	3,865	1,051	909	1,960	1,905
1986/87:							
Hard winter	1,009	1,017	2,026	624	429	1,053	973
Hard spring	498	451	957	268	199	467	490
Soft red	79	292	371	180	114	294	77
White	198	232	437	77	175	252	185
Durum	121	98	225	49	82	131	95
All classes	1,905	2,091	4,017	1,197	999	2,196	1,821
1987/88 :							
Hard winter	973	1,019	1,992	514	911	1,425	567
Hard spring	490	431	925	268	255	523	402
Soft red	77	349	427	192	160	352	75
White	185	216	403	59	210	269	135
Durum	95	93	197	52	62	114	83
All classes	1,821	2,108	3,945	1,086	1,598	2,684	1,261
1988/89:							
Hard winter	567	882	1,449	507	639	1,146	302
Hard spring	402	181	590	176	195	371	219
Soft red	75	473	547	193	315	508	39
White	135	232	370	40	250	290	81
Durum	83	45	139	59	20	79	60
All classes	1,261	1,812	3,096	975	1,419	2,394	702
1989/90 :							
Hard winter	302	711	1,013	438	360	798	215
Hard spring	219	433	660	225	280	505	155
Soft red	39	549	588	212	345	557	32
White	81	251	335	57	193	250	85
Durum	60	92	165	60	55	115	50
All classes	702	2,037	2,762	992	1,233	2,225	536
1990/91: 3/							
Hard winter	215	1,199	1,414	686	368	1,054	360
Hard spring	155	555	717	239	201	440	277
Soft red	32	547	579	269	230	499	80
White	85	313	408	105	216	321	87
Durum	50	122	192	76	53	129	62
All classes	536	2,736	3,309	1,376	1,068	2,444	866
1991/92: 4/							
Hard winter	360	901	1,261	555	510	1,065	196
Hard spring	277	431	723	256	300	556	167
Soft red	80	325	405	264	90	354	51
White	87	219	311	91	170	261	50
Durum	62	104	186	81	55	136	50
All classes	866	1,981	2,886	1,247	1,125	2,372	514

1/ Data, except production, are approximations. Imports and exports include flour and products in wheat equivalent. 2/ Total supply includes imports. 3/ Preliminary. 4/ Projected.

Appendix table 8--U.S. wheat exports: Grain, flour, and products, by month, 1981/82-1991/92 1/

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Total
						Thousand bushels							
						Wheat (grain only)							
1981/82	124,521	138,168	145,428	194,148	156,993	127,495	137,757	124,163	138,719	159,078	148,181	116,496	1,711,147
1982/83	156,914	117,914	124,336	130,992	98,520	94,638	88,457	143,141	146,594	131,134	112,451	96,235	1,441,326
1983/84	113,506	116,701	87,823	119,263	114,810	102,880	128,887	118,357	111,096	118,713	97,132	112,813	1,341,980
1984/85	105,344	133,276	146,187	242,731	137,298	97,283	131,941	106,430	85,493	57,969	67,811	56,588	1,368,352
1985/86	84,264	63,877	86,863	72,210	85,649	82,384	61,853	70,079	70,869	66,236	56,437	46,216	846,936
1986/87	79,497	104,677	114,853	98,234	84,769	59,182	53,837	65,047	67,764	65,529	65,426	64,603	923,419
1987/88	119,769	157,706	112,758	119,945	101,680	71,166	113,609	140,228	143,959	149,146	152,830	147,667	1,530,462
1988/89	121,842	111,498	107,562	127,564	93,153	93,309	100,149	115,846	127,165	141,828	115,899	91,579	1,347,393
1989/90	90,808	137,971	131,989	150,700	89,343	68,664	81,816	78,344	87,655	104,914	84,611	71,649	1,178,465
1990/91	88,274	80,840	92,682	105,985	83,883	77,265	56,444	66,467	91,313	112,239	88,526	81,760	1,025,677
1991/92	56,228	79,385	97,417	95,120									
						Flour (grain equivalent) 2/							
1981/82	5,794	2,779	3,438	2,496	668	411	902	1,767	8,068	5,775	6,955	5,983	45,036
1982/83	4,577	1,364	3,488	2,508	3,904	2,483	999	3,998	8,865	6,532	10,530	7,521	56,769
1983/84	9,611	8,198	7,849	8,801	8,473	3,504	1,245	2,330	2,344	7,066	7,306	8,148	74,875
1984/85	6,614	4,105	1,166	1,596	3,242	633	941	392	6,297	5,148	6,335	4,020	40,489
1985/86	3,640	2,638	1,638	1,038	1,289	2,902	6,680	3,174	5,521	5,157	6,411	2,381	42,469
1986/87	5,104	4,795	6,675	4,731	5,999	2,332	6,664	6,681	3,676	6,173	6,722	6,365	65,918
1987/88	5,450	6,816	4,749	3,999	3,418	6,746	4,316	6,934	2,556	10,776	2,463	2,520	60,743
1988/89	7,036	6,400	6,002	2,402	7,908	3,368	6,086	4,178	6,515	6,841	6,540	5,214	68,490
1989/90	907	1,897	5,775	8,915	3,579	6,817	3,606	4,943	3,124	4,466	6,132	3,289	53,450
1990/91	1,139	2,244	2,785	2,865	3,390	3,508	4,480	2,698	3,809	6,301	3,719	3,525	40,464
1991/92	9,609	5,536	4,215	3,986									
						Wheat products (grain equivalent) 3/							
1981/82	1,827	1,150	1,009	1,037	1,171	1,406	572	1,211	1,875	351	2,246	692	14,547
1982/83	971	465	1,073	984	529	2,604	472	796	492	586	630	935	10,537
1983/84	632	1,075	1,300	578	502	904	1,346	600	939	780	363	503	9,523
1984/85	717	670	587	1,076	429	497	824	1,831	935	916	1,956	2,164	12,600
1985/86	1,984	2,472	1,256	2,097	1,683	1,476	1,543	1,449	1,172	1,103	1,590	1,903	19,727
1986/87	1,052	1,563	685	1,149	896	371	723	670	611	447	542	463	9,173
1987/88	447	751	549	234	364	901	743	423	277	551	1,133	251	6,624
1988/89	421	424	449	490	673	154	577	20	20	59	30	25	3,328
1989/90	31	33	457	74	463	72	78	44	44	50	45	32	1,422
1990/91	50	41	65	464	533	104	61	107	103	95	76	97	1,797
1991/92	86	105	80	84									
						Total wheat, flour, and products							
1981/82	132,142	142,097	149,875	197,681	158,832	129,312	139,231	127,141	148,662	165,204	157,382	123,171	1,770,730
1982/83	162,462	119,743	128,897	134,485	102,952	99,726	89,928	147,935	155,950	138,252	123,611	104,691	1,508,632
1983/84	123,750	125,974	96,972	128,642	123,785	107,288	131,479	121,287	114,378	126,559	104,801	121,464	1,426,378
1984/85	112,675	138,051	147,940	245,403	140,968	98,414	133,705	108,653	92,725	64,033	76,102	62,771	1,421,442
1985/86	89,888	68,986	89,757	75,344	88,622	86,763	70,075	74,703	77,562	72,495	64,438	50,499	909,131
1986/87	85,654	111,036	122,214	104,114	91,665	61,884	61,224	72,398	72,052	72,148	72,690	71,431	998,511
1987/88	125,666	165,273	118,057	124,178	105,462	78,813	118,668	147,585	146,793	160,472	156,426	150,437	1,597,829
1988/89	129,299	118,322	114,013	130,455	101,735	96,831	106,811	120,044	133,700	148,727	122,469	96,818	1,419,224
1989/90	91,747	139,901	138,221	159,688	93,385	75,553	85,499	83,331	90,822	109,430	90,788	74,970	1,233,335
1990/91	89,462	83,125	95,533	109,315	87,806	80,877	60,985	69,272	95,225	118,635	92,320	85,382	1,067,938
1991/92	65,922	85,027	101,711	99,190									

1/ Totals may not add because of independent rounding. 2/ Includes meal and groats, and durum. 3/ Includes macaroni, rolled wheat, and bulgar.

Sources: U.S. Bureau of the Census.

Appendix table 9--U.S. wheat imports: Grain, flour and products, by month, 1983/84-1991/92

Crop year	June	July	August	September	October	November	December	January	February	March	April	May	Total 1/
						Thousand bushels							
1983/84:													
Grain	0	6	17	27	8	1	0	0	5	4	7	2	78
Flour and Products	326	67	283	266	274	355	342	403	336	324	408	379	3,762
Total	326	73	300	293	282	356	342	403	341	328	415	382	3,840
1984/85:													
Grain	1,247	721	734	506	449	33	1	1	10	12	15	1,100	4,829
Flour and Products	332	413	357	394	391	419	412	346	349	467	358	374	4,611
Total	1,578	1,134	1,091	900	840	451	412	346	360	479	374	1,474	9,440
1985/86:													
Grain	1,564	1,758	513	2,187	716	1,001	1,120	226	66	194	411	1,655	11,412
Flour and Products	482	325	426	389	450	323	414	464	403	419	435	347	4,875
Total	2,046	2,083	939	2,576	1,165	1,325	1,533	690	469	612	846	2,002	16,287
1986/87:													
Grain	968	408	1,791	222	1,088	983	1,776	1,327	1,514	1,353	2,403	1,987	15,821
Flour and Products	333	428	373	345	430	570	525	445	436	548	554	443	5,430
Total	1,301	836	2,165	567	1,519	1,553	2,300	1,772	1,950	1,900	2,957	2,430	21,250
1987/88:													
Grain	432	218	559	1,087	940	948	943	460	803	1,131	1,060	1,409	9,989
Flour and Products	470	529	501	362	581	607	522	539	455	590	460	480	6,097
Total	902	747	1,060	1,449	1,521	1,555	1,465	999	1,259	1,721	1,520	1,889	16,086
1988/89:													
Grain	1,956	2,372	2,698	1,824	2,094	880	520	819	813	679	958	257	15,870
Flour and Products	508	463	586	438	492	539	591	492	428	890	702	669	6,798
Total	2,465	2,835	3,284	2,261	2,586	1,419	1,111	1,311	1,240	1,569	1,660	927	22,668
1989/90:													
Grain	655	641	1,830	785	931	2,785	1,194	985	471	412	864	1,994	13,548
Flour and Products	1,024	945	772	863	1,112	672	678	591	732	595	689	1,225	9,899
Total	1,679	1,587	2,602	1,648	2,043	3,457	1,873	1,576	1,203	1,008	1,553	3,219	23,447
1990/91:													
Grain	1,105	842	3,013	3,868	3,776	3,265	2,687	829	1,322	1,327	2,404	1,103	25,540
Flour and Products	741	1,393	905	935	784	762	1,278	605	1,032	749	890	763	10,835
Total	1,846	2,234	3,918	4,803	4,560	4,027	3,965	1,434	2,354	2,076	3,294	1,866	36,375
1991/92:													
Grain	1,299	1,418	2,564	354									
Flour and Products	838	817	860	765									
Total	2,137	2,234	3,424	1,119									

1/ Totals may not add because of rounding.

Appendix table 10--U.S. wheat exports: By selected programs

Fiscal year	P.L. 480	Section 416	Aid 1/	Total concessional	CCC export credit	Export enhancement program 2/	Total U.S. wheat exports	P.L. 480, CCC export credit, and EEP exports divided by total exports (%) 3/
	1,000 metric tons							Percent
1978/79	3,234	0	7	3,241	2,684	0	31,340	19
1979/80	2,785	0	44	2,829	1,945	0	36,066	13
1980/81	2,537	0	4	2,541	3,261	0	42,246	14
1981/82	2,978	0	0	2,978	3,725	0	44,607	15
1982/83	3,340	0	123	3,463	8,597	0	36,701	33
1983/84	3,442	0	0	3,442	11,406	0	41,699	36
1984/85	4,392	0	74	4,466	8,221	0	28,524	44
1985/86	4,685	76	513	5,274	7,740	4,800	24,626	59
1986/87	3,927	406	1	4,334	8,125	12,350	28,204	68
1987/88	3,321	1,186	291	4,799	9,273	25,100	40,523	78
1988/89	3,020	138	806	3,964	8,897	17,700	37,774	69
1989/90 4/	3,444	0	20	3,464	7,727	13,200	27,999	68
1990/91 5/	3,787	0	20	3,807	8,215	15,130	26,700	81

1/ Shipment mostly under the Commodity Import Program, financed with foreign aid funds. 2/ Unofficial estimates of shipments compiled from EEP press releases. 3/ Adjusted for estimated overlap between CCC export credit and EEP shipments. 4/ Unofficial estimates for concessional sales. 5/ Fiscal year 1991 concessional shipments, EEP shipments, GSM/EEP overlap, and total exports are unofficial estimates. Credit guarantee shipments are preliminary.

Source: For concessional exports, ERS/USDA data; for credit guarantee programs, FAS/USDA Export Credits Division; for EEP, ERS/USDA estimates of shipments.
Contact: Karen Ackerman and Nydia Suarez (202) 219-0820.

Appendix table 11--Wheat and flour price relationships at milling centers, annual and by periods, 1982/83-1991/92

Year and period	At Kansas City					At Minneapolis				
	Cost of wheat to produce 100 lb. of flour 1/	Wholesale price of				Cost of wheat to produce 100 lb. of flour 1/	Wholesale price of			
		Bakery flour per 100 lb. 2/	Byprod-ucts obtained 100 lb. flour 3/	Total products			Bakery flour per 100 lb. 2/	Byprod-ucts obtained 100 lb. flour 3/	Total products	
				Actual	Over cost of wheat				Actual	Over cost of wheat
	Dollars									
1982/83:										
June-Sept.	9.24	10.14	1.39	11.53	2.29	9.31	10.43	1.25	11.68	2.37
Oct.-Dec.	9.22	10.06	1.58	11.64	2.42	9.22	10.43	1.29	11.72	2.50
Jan.-Mar.	9.60	10.40	1.47	11.87	2.27	9.15	10.41	1.10	11.51	2.36
Apr.-May	9.77	10.26	1.65	11.91	2.14	10.11	10.88	1,40	12.28	2.17
Mkt. year	9.46	10.22	1.52	11.74	2.28	9.45	10.54	1.26	11.80	2.35
1983/84:										
June-Sept.	9.54	10.36	1.72	12.08	2.54	9.97	11.17	1.47	12.64	2.67
Oct.-Dec.	9.48	10.00	2.16	12.16	2.68	9.76	10.79	1.90	12.69	2.93
Jan.-Mar.	9.22	9.52	1.83	11.35	2.13	9.56	10.28	1.49	11.77	2.21
Apr.-May	9.57	10.06	1.62	11.17	2.11	10.08	10.74	1.49	12.23	2.15
Mkt. year	9.45	9.99	1.83	11.69	2.37	9.80	10.75	1.59	12.34	2.54
1984/85:										
June-Sept.	9.21	9.78	1.47	11.26	2.05	9.64	10.31	1.21	11.52	1.89
Oct.-Dec.	9.05	9.85	1.47	11.32	2.27	9.16	10.56	1.11	11.67	2.50
Jan.-Mar.	8.77	9.90	1.16	11.06	2.29	9.09	11.27	0.83	12.11	3.01
Apr.-May	8.62	9.58	1.16	10.74	2.12	9.34	11.22	0.88	12.11	2.77
Mkt. year	8.96	9.78	1.32	11.09	2.13	9.27	10.84	1.01	11.85	2.58
1985/86:										
June-Sept.	7.99	8.94	1.10	10.04	2.05	8.60	10.96	0.77	11.73	3.13
Oct.-Dec.	8.37	9.07	1.38	10.45	2.08	9.24	11.65	1.09	12.70	3.50
Jan.-Mar.	8.37	9.38	1.10	10.48	2.11	9.02	11.95	0.83	12.78	3.76
Apr.-May	8.38	9.73	1.21	10.94	2.56	9.35	11.05	0.95	12.00	2.65
Mkt. year	8.28	9.28	1.19	10.47	2.20	9.05	11.39	0.90	12.29	3.25
1986/87:										
June-Aug.	6.19	7.90	0.79	8.69	2.50	6.86	9.70	0.62	10.32	3.46
Sept.-Nov.	6.27	8.18	0.85	9.03	2.76	6.78	9.52	0.64	10.16	3.38
Dec.-Feb.	6.70	7.97	0.99	8.96	2.26	7.03	8.55	0.66	9.21	2.18
Mar.-May	7.00	8.18	0.74	8.92	1.92	7.30	9.10	0.58	9.68	2.38
Mkt. year	6.54	8.06	0.84	8.90	2.36	7.00	9.22	0.63	9.85	2.85
1987/88:										
June-Aug.	6.62	7.85	0.72	8.57	1.95	6.80	8.63	0.51	9.14	2.34
Sept.-Nov.	7.04	7.85	1.19	9.04	2.00	7.07	8.98	0.90	9.88	2.81
Dec.-Feb.	7.51	7.97	1.53	9.50	1.99	7.36	9.77	1.18	10.95	3.59
Mar.-May	7.43	8.18	1.12	9.30	1.87	7.50	10.17	0.98	11.15	3.65
Mkt. year	7.15	7.96	1.14	9.10	1.95	7.18	9.39	0.89	10.28	3.10
1988/89:										
June-Aug.	8.83	9.57	1.57	11.13	2.30	9.72	11.00	1.48	12.48	2.76
Sept.-Nov.	9.34	9.88	1.76	11.64	2.30	9.78	9.80	1.67	11.47	1.69
Dec.-Feb.	9.93	10.37	1.81	12.18	2.24	9.96	10.05	1.70	11.75	1.79
Mar.-May	10.37	11.03	1.59	12.62	2.25	10.32	10.72	1.62	12.34	2.01
Mkt. year	9.62	10.21	1.68	11.89	2.27	9.94	10.39	1.62	12.01	2.07
1989/90:										
June-Aug.	9.86	11.07	1.14	12.21	2.35	9.84	10.63	1.15	11.78	1.94
Sept.-Nov.	9.67	10.33	1.64	11.97	2.30	9.36	9.70	1.51	11.21	1.86
Dec.-Feb.	9.68	10.35	1.58	11.93	2.25	9.50	9.92	1.47	11.38	1.88
Mar.-May	9.17	10.10	1.32	11.42	2.25	9.03	9.60	1.26	10.86	1.83
Mkt. year	9.58	10.41	1.45	11.86	2.28	9.48	10.00	1.36	11.36	1.89
1990/91:										
June-Aug.	7.46	8.62	1.29	9.91	2.45	8.03	8.85	1.21	10.06	2.03
Sept.-Nov.	6.53	7.25	1.42	8.67	2.14	6.45	7.18	1.35	8.54	2.08
Dec.-Feb.	6.54	7.32	1.34	8.66	2.12	6.46	7.17	1.26	8.42	1.96
Mar.-May	6.93	7.95	1.10	9.05	2.11	6.97	7.72	1.03	8.75	1.78
Mkt. year	6.86	7.78	1.29	9.07	2.21	6.98	7.73	1.21	8.94	1.96
1991/92:										
June-Aug.	6.86	8.02	1.05	9.07	2.21	6.90	7.72	1.00	8.71	1.81
Sept.	7.62	8.70	1.13	9.83	2.22	7.32	8.40	1.07	9.47	2.15
Oct.	8.37	9.30	1.34	10.64	2.27	8.39	8.95	1.21	10.16	1.77

1/ Based on 73-percent extraction rate, cost of 2.28 bushels: At Kansas City, No. 1 hard winter, 13-percent protein; and at Minneapolis, No. 1 dark northern spring, 14-percent protein. 2/ Quoted as mid-month bakers' standard patent at Kansas City and spring standard patent at Minneapolis, bulk basis.
3/ Assumed 50-50 millfeed distribution between bran and shorts or middlings, bulk basis.

Source: Compiled from reports of Agricultural Marketing Service and Department of Labor.

Appendix table 12--Farm prices for leading wheat classes and major feed grains in U.S. regions, 1984/85-1991/92 1/

Crop year	June	July	Aug.	Sept.	Oct. 2/	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Average	Loan rate
						$/60-pound bushel								
						Central and So. Plains 3/								
Wheat (hard red winter):														
1984/85	3.46	3.30	3.42	3.45	3.43	3.41	3.36	3.34	3.34	3.34	3.39	3.25	3.37	3.23
1985/86	3.06	2.90	2.85	3.00	3.07	3.21	3.24	3.16	3.10	3.21	3.33	2.92	3.09	3.23
1986/87	2.38	2.19	2.23	2.26	2.25	2.39	2.43	2.45	2.50	2.49	2.52	2.60	2.39	2.37
1987/88	2.39	2.26	2.29	2.42	2.51	2.58	2.65	2.68	2.74	2.71	2.72	2.91	2.57	2.26
1988/89	3.30	3.36	3.42	3.62	3.72	3.74	3.90	3.90	3.93	4.04	4.03	3.99	3.75	2.21
1989/90	3.84	3.80	3.74	3.74	3.77	3.81	3.87	3.82	3.63	3.50	3.55	3.31	3.70	2.04
1990/91	3.01	2.75	2.53	2.45	2.40	2.34	2.37	2.36	2.38	2.52	2.57	2.60	2.52	2.00
1991/92	2.58	2.54	2.69	2.89	3.11									
Sorghum:														
1984/85	3.01	2.89	2.77	2.57	2.49	2.48	2.51	2.52	2.51	2.59	2.68	2.76	2.65	2.59
1985/86	2.71	2.58	2.24	2.06	2.05	2.13	2.25	2.23	2.16	2.25	2.36	2.33	2.28	2.59
1986/87	2.16	1.97	1.67	1.50	1.54	1.51	1.51	1.51	1.47	1.53	1.61	1.71	1.64	1.95
1987/88	1.73	1.62	1.53	1.52	1.58	1.67	1.69	1.70	1.81	1.83	1.82	1.82	1.69	1.86
1988/89	2.57	2.78	2.59	2.61	2.55	2.44	2.45	2.49	2.47	2.52	2.59	2.53	2.55	1.80
1989/90	2.43	2.37	2.28	2.28	2.22	2.19	2.21	2.22	2.21	2.30	2.40	2.47	2.30	1.69
1990/91	2.59	2.55	2.44	2.32	2.18	2.19	2.27	2.34	2.38	2.43	2.43	2.42	2.38	1.11
1991/92	2.30	2.33	2.43	2.46	2.39									
						Corn Belt 4/								
Wheat (soft red winter):														
1984/85	3.26	3.22	3.29	3.29	3.29	3.40	3.42	3.44	3.39	3.42	3.44	3.19	3.34	3.28
1985/86	3.01	2.94	2.74	2.66	2.77	3.10	3.22	3.18	3.24	3.37	3.42	2.87	3.04	3.28
1986/87	2.40	2.30	2.28	2.27	2.57	2.65	2.73	2.71	2.77	2.85	2.75	2.65	2.58	2.36
1987/88	2.42	2.37	2.41	2.51	2.66	2.74	2.90	3.02	3.07	2.85	2.96	3.08	2.75	2.35
1988/89	3.33	3.39	3.53	3.67	3.84	3.93	4.06	4.13	4.08	4.14	4.00	3.91	3.83	2.33
1989/90	3.80	3.75	3.76	3.82	3.87	3.99	4.01	3.99	3.85	3.76	3.62	3.52	3.81	2.14
1990/91	3.04	2.85	2.66	2.45	2.39	2.34	2.42	2.38	2.36	2.50	2.63	2.68	2.56	2.09
1991/92	2.52	2.38	2.67	2.86	3.08									
Corn:														
1984/85	3.80	3.66	3.50	3.17	2.83	2.76	2.76	2.84	2.85	2.91	2.95	2.91	3.08	2.76
1985/86	2.89	2.85	2.65	2.38	2.21	2.38	2.47	2.48	2.49	2.48	2.50	2.59	2.53	2.76
1986/87	2.56	2.19	1.84	1.54	1.46	1.56	1.61	1.59	1.57	1.60	1.67	1.85	1.75	1.94
1987/88	1.88	1.74	1.61	1.62	1.68	1.79	1.82	1.95	2.02	2.05	2.10	2.18	1.87	1.98
1988/89	2.75	3.08	2.98	2.91	2.78	2.73	2.79	2.87	2.85	2.87	2.84	2.88	2.86	1.95
1989/90	2.80	2.76	2.58	2.52	2.45	2.46	2.53	2.56	2.56	2.64	2.83	2.97	2.64	1.80
1990/91	3.03	2.97	2.83	2.56	2.38	2.35	2.45	2.52	2.56	2.64	2.69	2.69	2.64	1.78
1991/92	2.59	2.59	2.65	2.56	2.51									
						Northern Plains 5/								
Wheat (other spring):														
1984/85	3.86	3.69	3.52	3.49	3.47	3.46	3.41	3.45	3.46	3.49	3.57	3.56	3.54	3.34
1985/86	3.50	3.30	3.05	3.18	3.36	3.49	3.58	3.51	3.47	3.51	3.57	3.48	3.42	3.34
1986/87	2.81	2.41	2.38	2.34	2.30	2.51	2.59	2.69	2.66	2.63	2.65	2.69	2.55	2.40
1987/88	2.50	2.36	2.37	2.55	2.62	2.66	2.70	2.77	2.78	2.74	2.78	2.95	2.65	2.28
1988/89	3.30	3.62	3.66	3.80	3.83	3.74	3.81	3.92	3.90	3.99	3.96	3.99	3.79	2.21
1989/90	3.89	3.81	3.68	3.59	3.59	3.58	3.60	3.58	3.50	3.47	3.47	3.49	3.60	2.06
1990/91	3.33	2.96	2.57	2.44	2.43	2.39	2.43	2.44	2.43	2.52	2.60	2.64	2.60	2.04
1991/92	2.57	2.47	2.51	2.69	2.96									
Wheat (durum):														
1984/85	3.96	3.73	3.84	3.78	3.75	3.77	3.69	3.63	3.61	3.55	3.60	3.55	3.71	3.34
1985/86	3.53	3.34	3.18	3.08	3.01	3.07	3.16	3.17	3.17	3.21	3.29	3.41	3.22	3.34
1986/87	3.30	2.38	2.24	2.29	2.36	2.54	2.65	2.89	2.93	3.04	3.12	3.14	2.74	2.40
1987/88	3.15	3.02	2.87	3.19	3.29	3.33	3.20	3.21	3.27	2.93	3.22	3.40	3.17	2.28
1988/89	4.61	5.18	5.28	5.21	4.99	4.93	4.72	4.31	4.61	4.44	3.78	4.19	4.69	2.21
1989/90	3.83	3.65	3.48	3.25	3.31	3.27	3.36	3.31	3.31	3.34	3.44	3.50	3.42	2.06
1990/91	3.36	3.11	2.53	2.39	2.44	2.44	2.47	2.61	2.56	2.62	2.62	2.57	2.64	2.04
1991/92	2.56	2.44	2.24	2.37	2.60									
						Pacific Northwest 6/								
Wheat (white):														
1984/85	3.71	3.26	3.32	3.31	3.38	3.38	3.35	3.43	3.45	3.53	3.57	3.54	3.44	3.43
1985/86	3.35	2.97	3.05	3.16	3.29	3.39	3.44	3.40	3.41	3.52	3.60	3.49	3.34	3.43
1986/87	2.97	2.44	2.36	2.35	2.40	2.48	2.56	2.61	2.69	2.69	2.74	2.73	2.59	2.50
1987/88	2.60	2.54	2.48	2.57	2.70	2.62	2.73	2.88	2.89	2.79	2.95	3.09	2.74	2.39
1988/89	3.44	3.72	3.80	3.97	4.13	4.19	4.31	4.48	4.48	4.36	4.40	4.31	4.13	2.32
1989/90	4.13	4.12	4.14	4.04	4.06	3.98	4.15	4.06	3.66	3.47	3.39	3.37	3.88	2.17
1990/91	3.26	3.04	2.82	2.69	2.48	2.47	2.51	2.56	2.61	2.78	2.86	2.94	2.75	2.14
1991/92	2.98	2.98	3.06	3.23	3.35									
Barley:														
1984/85	3.50	3.15	2.98	2.98	2.92	2.98	3.02	3.00	2.98	2.99	2.95	2.87	3.03	2.74
1985/86	2.68	2.73	2.63	2.55	2.52	2.69	2.77	2.73	2.65	2.53	2.48	2.54	2.63	2.74
1986/87	2.19	2.14	2.31	2.19	2.29	2.24	2.26	2.29	2.35	2.28	2.32	2.37	2.27	1.67
1987/88	2.43	2.64	2.53	2.48	2.36	2.45	2.53	2.56	2.55	2.25	2.29	2.43	2.46	1.77
1988/89	2.94	3.15	3.30	3.13	3.06	3.27	3.20	3.23	3.05	3.25	3.28	3.22	3.17	1.74
1989/90	3.08	2.90	3.17	2.91	2.82	3.00	3.22	3.15	3.13	2.93	3.15	3.04	3.04	1.60
1990/91	3.07	3.10	2.93	2.87	2.89	3.09	2.87	2.98	3.08	3.01	2.87	2.81	2.96	1.53
1991/92	2.80	2.81	3.05	2.89	2.80									
						U.S. average 7/								
Wheat:														
1984/85	3.46	3.29	3.43	3.43	3.43	3.45	3.38	3.38	3.38	3.38	3.43	3.30	3.39	3.30
1985/86	3.09	2.93	2.89	3.01	3.10	3.22	3.25	3.19	3.16	3.28	3.37	3.01	3.08	3.30
1986/87	2.47	2.25	2.26	2.28	2.30	2.43	2.49	2.53	2.58	2.57	2.63	2.66	2.42	2.40
1987/88	2.45	2.31	2.35	2.54	2.62	2.69	2.70	2.75	2.79	2.74	2.79	2.97	2.57	2.28
1988/89	3.37	3.50	3.61	3.74	3.84	3.88	3.94	4.02	4.03	4.07	4.03	4.01	3.72	2.21
1989/90	3.85	3.78	3.74	3.72	3.75	3.72	3.79	3.71	3.56	3.48	3.49	3.40	3.72	2.06
1990/91	3.08	2.79	2.58	2.46	2.43	2.39	2.40	2.42	2.42	2.52	2.60	2.64	2.61	1.95
1991/92	2.55	2.49	2.63	2.80	3.08								2.75-2.95	2.04

1/ Data revised for January 1989 to December 1990. 2/ October 1991 data is preliminary. 3/ Kansas, Nebraska, Texas, Oklahoma, and Arkansas. 4/ Ohio, Indiana, Illinois, and Missouri. 5/ Wheat prices by class represent averages for the entire United States. 6/ Washington, Oregon, and Idaho. 7/ Season average prices do not include an allowance for unredeemed loans and purchases beginning 1979/80.

Source: National Agricultural Statistics Service & Economic Research Service, USDA.

Appendix table 13--Cash prices for leading wheat classes at major markets, 1984/85-1991/92

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Simple average
						$/bushel							
Kansas City, no.1 hard red winter (ordinary protein):													
1984/85	3.80	3.67	3.80	3.89	3.86	3.85	3.76	3.76	3.74	3.67	3.62	3.42	3.74
1985/86	3.38	3.17	3.03	3.07	3.15	3.35	3.42	3.32	3.30	3.36	3.45	3.40	3.28
1986/87	2.80	2.50	2.48	2.53	2.60	2.68	2.68	2.70	2.80	2.90	2.90	3.02	2.72
1987/88	2.70	2.59	2.65	2.78	2.90	2.90	3.10	3.20	3.28	3.10	3.14	3.20	2.96
1988/89	3.79	3.77	3.78	4.03	4.13	4.18	4.25	4.40	4.37	4.32	4.46	4.55	4.17
1989/90	4.44	4.28	4.24	4.18	4.28	4.36	4.39	4.30	4.13	4.04	4.13	3.91	4.22
1990/91	3.60	3.11	2.89	2.82	2.81	2.78	2.78	2.71	2.77	2.94	2.98	3.04	2.94
1991/92	2.99	2.91	3.10	3.31	3.64								
Kansas City, no.1 hard red winter (13% protein):													
1984/85	4.15	3.99	3.98	4.03	4.01	3.99	3.91	3.87	3.87	3.80	3.84	3.72	3.93
1985/86	3.72	3.53	3.36	3.41	3.50	3.70	3.81	3.69	3.65	3.67	3.70	3.65	3.62
1986/87	2.90	2.70	2.55	2.66	2.75	2.84	2.89	2.95	2.98	3.00	3.05	3.17	2.87
1987/88	2.95	2.86	2.90	3.01	3.10	3.15	3.20	3.30	3.38	3.21	3.26	3.31	3.14
1988/89	3.92	3.85	3.85	4.08	4.16	4.23	4.26	4.41	4.40	4.55	4.50	4.60	4.23
1989/90	4.48	4.29	4.24	4.18	4.23	4.31	4.34	4.28	4.12	4.02	4.07	3.91	4.21
1990/91	3.71	3.17	2.94	2.89	2.86	2.84	2.89	2.83	2.88	3.03	3.04	3.05	3.01
1991/92	3.00	2.92	3.11	3.34	3.67								
Chicago, no. 2 soft red winter:													
1984/85	3.51	3.44	3.49	3.47	3.51	3.62	3.49	3.51	3.55	3.58	3.63	3.34	3.51
1985/86	3.27	3.09	2.87	2.83	3.04	3.33	3.46	3.34	3.37	3.40	3.39	3.25	3.22
1986/87	2.52	2.58	2.44	2.36	2.57	2.73	2.76	2.87	2.91	3.11	3.16	3.08	2.76
1987/88	2.63	2.54	2.61	2.77	2.82	2.80	3.00	3.23	3.23	2.94	3.02	3.13	2.89
1988/89	3.56	3.52	3.61	3.84	4.07	4.09	4.25	4.39	4.30	4.31	4.04	4.07	4.00
1989/90	3.87	3.92	3.94	3.93	4.07	4.07	4.13	4.03	3.92	3.61	3.83	3.71	3.92
1990/91	3.26	3.04	2.83	2.62	2.62	2.41	2.52	2.50	2.53	2.76	2.80	2.83	2.73
1991/92	2.86	2.79	2.97	3.24	3.50								
St. Louis, no. 2 soft red winter:													
1984/85	3.45	3.44	3.50	3.52	3.60	3.72	3.67	3.69	3.65	3.67	3.65	3.24	3.57
1985/86	3.29	3.07	2.84	2.85	3.10	3.42	3.58	3.48	3.49	3.64	3.66	2.74	3.26
1986/87	2.61	2.60	2.54	2.55	2.88	3.05	3.06	3.08	3.05	3.09	2.88	3.03	2.87
1987/88	2.63	2.58	2.59	2.77	2.95	2.97	3.22	3.24	3.18	2.98	3.10	3.20	2.95
1988/89	3.50	3.56	3.73	3.94	4.13	4.22	4.33	4.46	4.30	4.39	4.22	4.20	4.08
1989/90	3.89	3.95	3.79	4.03	4.05	4.20	4.19	4.13	4.00	3.87	3.88	3.33	3.94
1990/91	3.27	3.02	2.85	2.66	2.57	2.65	2.71	2.61	2.64	2.85	2.91	2.98	2.81
1991/92	2.89	2.65	2.76	2.86	3.00								
Toledo, no. 2 soft red winter:													
1984/85	3.50	3.44	3.44	3.44	3.43	3.53	3.43	3.52	3.56	3.54	3.58	3.30	3.48
1985/86	3.22	3.02	2.77	2.74	2.90	3.18	3.39	3.32	3.34	3.47	3.30	3.22	3.16
1986/87	2.58	2.55	2.45	2.33	2.61	2.75	2.81	2.92	2.93	3.06	2.99	3.07	2.75
1987/88	2.60	2.55	2.54	2.69	2.86	2.82	3.10	3.21	3.20	2.92	2.99	3.07	2.88
1988/89	3.63	3.63	3.73	3.93	4.02	4.06	4.26	4.37	4.24	4.26	4.02	4.09	4.02
1989/90	3.86	3.86	3.86	3.84	3.95	3.99	4.09	3.96	3.86	3.83	3.90	3.52	3.88
1990/91	3.28	3.05	2.78	2.57	2.49	2.41	2.49	2.50	2.53	2.72	2.75	2.77	2.70
1991/92	2.82	2.78	3.01	3.25	3.51								
Toledo, no. 2 soft white:													
1984/85	3.35	3.37	3.42	3.42	3.41	3.51	3.41	3.50	3.53	3.48	3.48	3.18	3.42
1985/86	3.13	3.02	2.89	2.89	3.12	3.30	3.42	3.26	3.26	3.31	2.89	2.93	3.12
1986/87	2.50	2.52	2.48	2.29	2.54	2.69	2.73	2.80	2.84	2.87	2.79	2.89	2.66
1987/88	2.63	2.57	2.69	2.81	2.88	2.95	3.14	3.28	3.27	2.96	3.02	3.09	2.94
1988/89	3.62	3.61	3.69	3.87	3.94	3.95	4.11	4.22	4.02	4.06	3.80	3.91	3.90
1989/90	3.81	3.82	3.83	3.79	3.91	3.93	4.01	3.86	3.74	3.70	3.72	3.44	3.80
1990/91	3.21	2.96	2.69	2.48	2.39	2.28	2.38	2.37	2.52	2.61	2.67	2.68	2.60
1991/92	2.69	2.62	2.86	3.09	3.32								
Portland, no. 1 soft white:													
1984/85	4.03	3.73	3.74	3.70	3.73	3.78	3.76	3.77	3.83	3.93	3.94	3.91	3.82
1985/86	3.73	3.57	3.45	3.57	3.72	3.77	3.80	3.75	3.74	3.85	3.88	3.78	3.72
1986/87	3.03	2.75	2.68	2.70	2.78	2.84	2.86	2.93	3.07	3.07	2.99	3.09	2.90
1987/88	2.87	2.79	2.73	2.94	3.08	2.97	3.05	3.26	3.21	3.10	3.32	3.36	3.06
1988/89	3.79	4.05	4.15	4.39	4.46	4.68	4.81	4.98	4.97	4.81	4.63	4.66	4.53
1989/90	4.47	4.47	4.50	4.56	4.55	4.56	4.63	4.44	4.11	3.76	3.68	3.61	4.28
1990/91	3.59	3.44	3.21	3.10	2.87	2.86	2.89	2.92	3.03	3.20	3.35	3.43	3.16
1991/92	3.45	3.37	3.48	3.67	3.91								
Minneapolis, no. 1 dark no. spring (14% protein):													
1984/85	4.45	4.34	4.07	3.97	4.03	4.02	3.92	3.90	3.92	3.94	4.36	4.02	4.08
1985/86	3.99	3.77	3.56	3.76	3.91	4.09	4.16	3.97	3.90	4.00	4.17	4.03	3.94
1986/87	3.17	3.00	2.86	2.85	2.98	3.09	3.04	3.08	3.13	3.19	3.17	3.24	3.07
1987/88	3.07	2.94	2.94	3.04	3.15	3.11	3.13	3.24	3.32	3.15	3.30	3.42	3.15
1988/89	4.32	4.23	4.24	4.32	4.33	4.22	4.26	4.44	4.40	4.56	4.47	4.55	4.36
1989/90	4.41	4.36	4.18	4.08	4.14	4.12	4.23	4.21	4.06	3.96	4.08	4.09	4.16
1990/91	3.96	3.56	3.05	2.84	2.85	2.80	2.82	2.83	2.85	3.00	3.07	3.10	3.06
1991/92	3.04	2.94	3.10	3.21	3.68								
Minneapolis, no. 1 hard amber durum:													
1984/85	4.68	4.57	4.65	4.43	4.47	4.46	4.43	4.34	4.37	4.33	4.36	4.32	4.45
1985/86	4.16	4.05	3.99	4.07	4.03	4.08	4.09	4.01	4.01	3.99	4.07	4.24	4.07
1986/87	3.79	3.08	3.04	3.21	3.31	3.49	3.60	3.68	3.78	3.89	3.93	4.03	3.57
1987/88	3.91	3.66	3.80	4.30	4.31	4.33	4.22	4.19	4.22	4.02	4.21	4.39	4.13
1988/89	6.13	6.30	5.85	5.84	5.70	5.56	5.17	5.20	5.33	5.30	5.02	5.01	5.53
1989/90	4.64	4.50	4.33	4.08	4.12	4.02	4.20	4.23	4.12	4.13	4.30	4.31	4.25
1990/91	4.08	3.73	3.41	3.27	3.34	3.24	3.37	3.49	3.55	3.44	3.51	3.37	3.48
1991/92	3.19	3.02	3.08	2.96	3.55								

Source: Grain and Feed Market News, Agricultural Marketing Service, USDA.

Appendix table 14--Domestic and foreign wheat prices, 1980-91

Year and month	United States				Foreign		
	Farm 1/	Kansas City 2/	Gulf Ports 3/	Rotterdam 4/	Argentina 5/	Canada 6/	Australia 7/
	$/metric ton						
Calendar year:							
1980	143	159	176	213	203	192	176
1981	142	160	176	210	190	194	175
1982	129	147	161	187	166	165	160
1983	132	145	158	185	138	169	161
1984	127	140	153	180	135	166	153
1985	117	125	137	169	106	173	141
1986	100	107	117	148	88	161	120
1987	94	104	114	141	89	134	115
1988	122	134	146	176	125	177	150
1989	142	160	171	190	151	202	176
1990	110	126	137	164	107	158	145
1987:							
January	93	100	110	141	82	136	110
February	95	103	114	145	92	138	112
March	94	107	116	140	90	139	115
April	97	107	115	138	88	134	115
May	98	111	120	146	88	136	119
June	90	100	110	144	86	130	111
July	85	95	106	134	84	126	107
August	87	97	108	134	84	124	109
September	93	103	114	139	89	130	115
October	96	105	116	139	95	134	118
November	99	105	116	140	95	134	118
December	99	114	126	148	95	142	126
1988:							
January	101	118	130	158	94	148	127
February	103	120	132	155	106	151	135
March	101	114	126	149	107	143	131
April	103	115	128	156	108	145	133
May	109	118	130	159	107	152	131
June	124	140	151	191	125	166	158
July	129	139	151	200	141	209	157
August	133	139	151	193	140	206	154
September	137	148	160	190	152	202	160
October	141	152	162	190	147	202	169
November	143	154	165	185	152	202	171
December	145	156	167	189	NQ	206	173
1989:							
January	148	162	175	205	NQ	213	179
February	148	161	173	207	NQ	212	178
March	150	166	179	192	NQ	210	183
April	148	164	176	192	NQ	207	179
May	147	167	177	193	NQ	209	182
June	141	161	170	187	156	204	178
July	139	157	168	185	155	204	175
August	137	155	165	181	155	196	170
September	137	153	164	180	149	188	171
October	138	156	165	183	149	190	172
November	137	159	168	183	147	191	174
December	139	161	170	191	149	194	176
1990:							
January	136	158	169	193	143	193	175
February	131	151	162	186	137	189	165
March	128	148	157	178	123	191	161
April	128	151	162	182	124	179	165
May	125	143	151	179	122	171	159
June	113	131	136	171	119	165	149
July	103	114	125	152	112	148	134
August	95	105	118	143	95	139	127
September	90	104	115	142	79	130	125
October	89	102	116	144	79	128	126
November	88	101	114	144	74	126	129
December	88	102	114	150	74	132	130
1991:							
January	89	99	112	143	73	132	NQ
February	89	101	115	143	67	134	NQ
March	93	107	121	136	87	136	NQ
April	96	109	122	143	113	137	NQ
May	97	110	123	143	108	136	NQ
June	94	109	121	147	108	135	NQ
July	91	107	118	146	100	130	NQ
August	97	113	126	149	103	NQ	NQ
September	103	121	133	158	107	NQ	NQ
October 8/	113	133	147	171	106	NQ	NQ

NQ = No quotes.
1/ All wheat, U.S. season average. 2/ No.1, hard red winter, ordinary protein. 3/ No. 2, hard red winter, ordinary protein, f.o.b. vessel. 4/ U.S., no. 2 dark northern spring, 14 percent, c.i.f. 5/ f.o.b. Buenos Aires. 6/ No. 1, Canadian western red spring, 13.5 percent in-store, St. Lawrence. 7/ Australian standard wheat, f.o.b. 8/ October 1991 data is preliminary.

Appendix table 15--Wheat and wheat flour: World trade, production, stocks, and use, 1985/86-1991/92 1/

Country or region	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91 2/	1991/92 3/
			Million metric tons				
Exports:							
Canada	16.8	20.8	23.6	13.5	17.0	20.8	24.0
Australia	16.0	14.8	12.2	10.8	10.8	11.8	7.1
Argentina	6.1	4.3	3.8	3.5	5.6	4.7	6.0
EC-12 4/	15.7	16.5	14.8	21.0	21.0	20.0	23.0
USSR	0.5	0.5	0.5	0.5	0.5	0.5	0.5
All others	4.9	5.4	7.8	10.3	7.8	7.4	13.3
Total non-U.S.	60.0	62.3	62.7	59.6	62.6	65.1	73.9
U.S. 5/	25.0	28.4	43.4	37.6	33.5	28.3	30.5
World total	85.0	90.7	106.1	97.2	96.1	93.5	104.4
Imports:							
EC-12	3.4	2.7	2.2	2.5	2.0	1.9	1.8
USSR	15.7	16.0	21.5	15.5	14.6	14.8	21.0
Japan	5.5	5.8	5.7	5.4	5.6	5.6	5.8
E. Europe 6/	2.9	3.4	2.9	2.3	1.7	2.0	1.1
China	6.6	8.5	15.0	15.5	13.0	9.5	14.5
All others	50.9	54.3	58.9	56.0	59.2	59.7	60.3
World total	85.0	90.7	106.1	97.2	96.1	93.5	104.4
Production: 7/							
Canada	24.3	31.4	26.0	16.0	24.6	32.7	33.0
Australia	16.2	16.1	12.4	14.1	14.2	15.1	10.0
Argentina	8.5	8.9	8.8	8.4	10.2	10.5	9.0
EC-12	75.6	76.2	75.5	78.4	82.0	84.7	90.3
USSR 8/	78.1	92.3	83.3	84.4	92.3	108.0	78.0
E. Europe	33.2	35.0	35.8	41.1	40.7	41.1	40.7
China	85.8	90.0	85.8	85.4	90.8	98.2	96.0
India	44.1	47.1	44.3	46.2	54.1	49.7	54.0
All other foreign	68.4	76.7	73.1	78.0	73.6	78.8	82.5
U.S.	66.0	56.9	57.4	49.3	55.4	74.5	53.9
World total	500.1	530.7	502.4	501.3	537.9	593.3	547.4
Utilization: 9/							
U.S.	28.6	32.6	29.6	26.5	27.0	37.4	33.9
USSR	91.6	102.8	101.5	100.4	103.4	119.3	104.0
China	100.4	101.5	102.8	104.4	104.5	106.0	109.5
All other foreign	275.6	285.4	297.3	300.5	299.5	309.4	310.2
World total	496.2	522.5	531.2	531.8	534.4	572.1	557.7
Stocks, ending: 10/	168.2	176.4	148.8	118.3	121.7	142.9	132.6

1/ July-June years. 2/ Forecast as of November 1991. 3/ Projected as of November 1991. 4/ Includes former East Germany. 5/ Includes transshipments through Canadian ports; excludes products other than flour. 6/ Excludes formar East Germany . 7/ Includes all harvests occuring within the July-June year shown, except that small grain crops from the early harvesting Northern Hemisphere areas are moved forward; i.e., the May 1984 harvests in areas such as India, North Africa, and southern United States are actually included in 1984/85 accounting period, which begins July 1, 1984. 8/ "Bunker weight" basis; not discounted for excess moisture and foreign material. 9/ Utilization data are based on an aggregate of differing marketing years. For countries for which stock data are not available, utilization estimates represent apparent utilization, i.e., they are inclusive of annual stock level adjustments. 10/ Stocks data are based on an aggregate of differing marketing years and should not be construed as representing world stock levels at a fixed point in time.

Source: World Grain Situation and Outlook, Foreign Agricultural Service, USDA.

Appendix table 16--Rye: Supply, disappearance, area, and price, 1983/84-1991/92

Item	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91 1/	1991/92 2/
				Million acres					
Area:									
Planted	2,707	2,971	2,543	2,334	2,428	2,374	2,014	1,625	1,671
Harvested	892	979	708	661	671	595	484	375	396
				Bushels per acre					
Yield/harvested acre	30.3	33.1	28.8	28.8	29.1	24.7	28.2	27.1	24.6
				Million bushels					
Supply:									
Beginning stocks	5.8	0.0	19.8	21.9	18.6	18.9	10.3	5.6	3.3
Production	27.0	32.4	20.4	19.1	19.5	14.7	13.6	10.2	9.8
Imports	1.6	0.6	2.2	1.0	1.2	0.2	0.0	3.9	5.5
Total supply	34.4	33.0	42.4	41.9	39.3	33.8	24.0	19.7	18.6
Disappearance:									
Food	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Feed and residual	11.9	3.2	10.9	13.7	10.6	11.4	9.0	7.7	6.9
Seed	4.7	4.1	3.8	3.7	3.8	3.2	3.0	3.0	3.0
Industry	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0
Total domestic	22.2	12.8	20.3	22.9	19.9	20.1	17.5	16.2	15.4
Exports	1.0	0.4	0.2	0.5	0.5	3.4	0.8	0.2	0.2
Total disappearance	23.2	13.2	20.5	23.4	20.4	23.5	18.3	16.4	15.6
Ending stocks	0.0	19.8	21.9	18.6	18.9	10.3	5.6	3.3	3.0
				$/bushel					
Prices:									
Loan rate	2.25	2.17	2.17	1.63	1.55	1.50	1.40	1.33	1.38
Season average price	2.17	1.79	2.03	1.49	1.63	2.52	2.06	2.09	2.10
				$1,000					
Value of production	60,074	57,996	41,902	29,159	31,641	37,006	28,099	21,268	20,498

1/ Preliminary. 2/ Projected.

Appendix table 17--Rye: Production by major States, 1983-91

State	1983	1984	1985	1986	1987	1988	1989	1990	1991
				1,000 bushels					
Georgia	1,470	1,760	2,070	1,785	1,540	1,890	1,610	1,320	1,300
Indiana	270	336	308	280	162	210	204	124	100
Michigan	600	588	651	713	640	650	825	580	360
Minnesota	4,960	6,650	3,300	1,600	1,200	920	1,088	868	648
Nebraska	1,265	1,392	1,242	1,035	1,150	1,375	600	750	1,000
N. Jersey	390	261	320	310	232	310	182	144	192
N. York	416	429	420	429	300	396	480	260	264
N. Carolina	440	550	665	595	600	780	525	345	500
N. Dakota	4,320	5,400	2,640	4,250	5,115	1,350	1,064	780	992
Oklahoma	780	704	828	840	360	720	532	420	665
Pennsylvania	578	578	740	630	525	684	576	496	297
S. Carolina	320	546	532	391	528	720	644	594	630
S. Dakota	8,740	10,800	4,440	4,440	5,040	2,250	3,240	1,870	1,152
Virginia	312	378	312	364	435	560	264	256	264

Appendix table 18--Wheat base acres and Conservation Reserve Program by State 1/

State	Signups									Total enrolled acres to date 1-11
	1985 Farm Act			1990 Farm Act						
	Total enrolled acres 1-9	Total retired ----base acres---- 1-9	Retired wheat 1-9	Total enrolled acres 10	Total retired ----base acres---- 10	Retired wheat 10	Total enrolled acres 11	Total retired ----base acres---- 11	Retired wheat 11	
Alabama	519,529	198,930	104,354	18,009	8,017	2,002	16,088	8,352	2,758	553,626
Alaska	24,701	16,332	24	691	0	0	0	0	0	25,392
Arkansas	225,353	120,801	64,969	10,739	6,545	3,538	13,360	7,342	3,741	249,452
California	183,054	93,846	24,025	87	87	0	5,838	2,604	12	188,979
Colorado	1,953,042	1,119,255	803,076	2,527	1,460	1,088	14,634	8,701	6,839	1,970,203
Connecticut	10	10	0	0	0	0	0	0	0	10
Delaware	984	607	80	26	14	5	0	0	0	1,010
Florida	123,013	45,966	16,331	3,051	1,152	315	4,148	1,629	670	130,212
Georgia	663,156	358,412	179,148	13,209	7,586	3,324	16,537	9,803	4,639	692,902
Hawaii	85	0	0	592	0	0	0	0	0	677
Idaho	791,061	499,223	254,384	20,635	13,081	6,804	38,081	27,142	13,965	849,777
Illinois	633,580	372,111	112,832	32,734	18,299	6,218	79,436	46,925	18,957	745,750
Indiana	364,729	204,303	50,772	16,723	8,940	2,270	41,981	22,379	6,520	423,433
Iowa	1,970,158	1,214,889	37,089	46,726	28,829	965	110,536	67,404	2,327	2,127,420
Kansas	2,861,786	2,102,380	1,265,724	11,075	8,934	5,668	43,424	33,903	21,865	2,916,285
Kentucky	416,799	222,429	81,558	8,858	4,011	1,352	11,362	6,731	3,128	437,019
Lousiana	132,907	54,864	16,262	7,878	4,180	754	5,047	2,759	661	145,832
Maine	37,222	6,288	124	278	25	0	433	160	0	37,933
Maryland	16,059	8,358	1,587	1,638	1,036	206	1,968	1,144	170	19,665
Massachusetts	32	21	0	0	0	0	0	0	0	32
Michigan	196,305	107,254	22,079	22,623	11,911	2,432	52,413	28,463	6,893	271,341
Minnesota	1,830,672	1,228,619	390,716	27,736	17,028	5,009	59,140	40,743	16,081	1,917,548
Mississippi	726,898	250,890	137,434	39,145	16,934	4,780	43,851	17,295	6,939	809,894
Missouri	1,504,413	734,868	370,552	37,613	17,764	8,009	96,729	45,109	23,926	1,638,755
Montana	2,720,133	1,761,101	987,710	51,258	33,500	22,860	61,600	39,527	28,372	2,832,991
Nebraska	1,348,929	884,893	312,478	13,654	8,518	1,993	39,969	26,414	10,498	1,402,552
Nevada	3,123	839	225	0	0	0	0	0	0	3,123
New Hampshire	0	0	0	11	0	0	0	0	0	11
New Jersey	661	162	48	0	0	0	20	0	0	681
New Mexico	480,765	391,794	239,533	36	4	4	2,445	1,867	570	483,246
New York	54,606	22,427	2,727	3,574	995	317	3,711	1,344	363	61,891
North Carolina	137,040	64,097	23,235	4,351	1,898	644	6,388	2,451	1,031	147,779
North Dakota	3,137,199	2,089,408	1,123,219	14,849	9,593	5,284	19,518	12,611	6,650	3,171,566
Ohio	254,130	126,359	33,989	23,361	11,995	3,314	56,988	29,120	11,302	334,479
Oklahoma	1,155,450	927,347	696,612	6,473	5,160	3,456	24,731	20,265	16,280	1,186,654
Oregon	517,150	439,209	287,708	2,686	1,774	726	8,306	7,127	5,300	528,142
Pennsylvania	92,465	35,688	5,029	2,161	880	91	4,345	1,848	396	98,971
Puerto Rico	440	0	0	15	0	0	0	0	0	455
South Carolina	265,513	126,970	61,886	3,605	1,855	681	6,436	3,451	1,031	275,554
South Dakota	2,084,557	1,404,472	617,733	6,381	3,989	1,834	13,168	7,952	2,723	2,104,106
Tennessee	429,352	202,474	88,270	12,909	6,417	2,348	19,069	10,322	4,045	461,330
Texas	3,921,378	3,159,080	1,265,635	45,010	33,986	9,549	93,855	72,704	23,360	4,060,243
Utah	232,318	119,770	96,481	0	0	0	285	590	569	232,603
Vermont	187	16	0	0	0	0	6	1	0	193
Virginia	73,938	35,838	11,437	1,467	642	175	2,187	965	256	77,592
Washington	975,320	593,255	370,690	12,877	9,114	4,775	37,799	28,223	17,330	1,025,996
West Virginia	610	251	24	0	0	0	0	0	0	610
Wisconsin	604,060	292,146	13,673	37,715	19,092	1,087	64,642	32,940	1,547	706,417
Wyoming	257,022	125,171	104,338	0	0	0	588	161	143	257,610
Total	33,921,898	21,763,422	10,275,802	564,989	325,245	113,878	1,121,062	678,469	271,856	35,607,949

1/ Totals may not add because of independent rounding.

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