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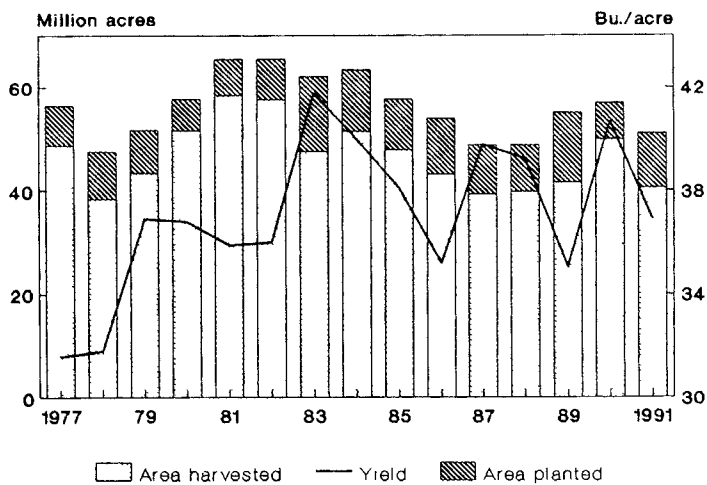
Situation and Outlook Report

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U.S. Winter Wheat Area and Yield



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Summary

U.S. Production Projected Down, Prices Up in 1991/92

Reduced plantings, harvest of a smaller portion of plantings in certain key States, and a forecast drop in winter wheat yields from last year's near-record are expected to lower 1991 wheat production nearly 25 percent from 1990 to 2.07 billion bushels. The drop in production is projected to more than offset higher beginning stocks in 1991/92, shrinking supply to less than 3 billion bushels for only the second time since 1979/80.

A sharp reduction in the feed use of wheat is projected to offset increases in all other uses, lowering total use 6 percent from 1990/91. Ending stocks on May 31, 1992, are projected at 652 million bushels, more than 200 million below forecast beginning stocks, but still about 100 million above stocks carried into 1990/91. The projections imply a stocks-to-use ratio of 28 percent, down from the 35-percent forecast for 1990/91, and near 1988/89's 29 percent.

Wheat prices are projected to range between \$2.80 and \$3.20 per bushel, up from the preliminary \$2.61 in 1990/91, but well below the \$3.72 posted in 1988/89 and 1989/90. Although supplies are lower, prices are not likely to reach 1988/89 levels because the United States and other major exporters can easily increase next year's wheat area. In addition, foreign import demand is not as large. However, if foreign demand is significantly above current projections—due to weather-reduced yields, eased credit constraints, or changed political conditions (in the Middle East, for example)—prices could rally above projections. On the other hand, larger global supplies or reduced demand could work to lower prices.

World wheat production is forecast at 555 million tons in 1991/92, 6 percent below a year earlier. Foreign output is forecast at 498 million tons, 4 percent lower, with the Soviet Union, Canada, Australia, and China posting the largest declines. Low world prices have caused wheat producers to plant less

area in some countries. Yields are projected down from the 1990/91 record, but foreign production is still expected to be the second largest on record. Imports are projected up 5 percent to 96 million tons.

U.S. competitors are entering 1991/92 with record beginning stocks. Despite production declines (except in the EC),

large carryin stocks will mean ample supplies in most countries and ensure continued strong competition for market share. In addition, Turkey is projected to have relatively large exports. As world trade expands, U.S. exports are projected to rise to 30.5 million tons (1.125 billion bushels in the June-May marketing year), 7 percent above 1990/91.

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	856	
Production	2,108	1,812	2,037	2,739	2,071	
Imports	16	23	23	35	35	
Supply, total	3,945	3,096	2,762	3,310	2,962	
Domestic						
Food	721	726	753	790	815	
Seed	85	103	100	89	95	
Feed and residual	280	146	139	500	275	
Domestic, total	1,086	975	992	1,379	1,185	
Exports	1,598	1,419	1,233	1,075	1,125	
Disappear., total	2,684	2,394	2,225	2,454	2,310	
Ending stocks	1,261	702	536	856	652	
Wheat by classes: supply and disappearance 1/						
Year beginning June 1	Hard red winter	Hard red spring	Soft red winter	White	Durum	Total
Million bushels						
1989/90						
Beginning stocks	302	219	39	81	60	702
Production	711	433	549	251	92	2,037
Supply, total 2/	1,013	660	588	335	165	2,762
Domestic disappear.	438	225	212	57	60	992
Exports	360	280	345	193	55	1,233
Disappear., total	798	505	557	250	115	2,225
Ending stocks	215	155	32	85	50	536
1990/91 (Estimated)						
Beginning stocks	215	155	32	85	50	536
Production	1,199	555	549	313	122	2,739
Supply, total 2/	1,414	722	581	407	186	3,310
Domestic disappear.	660	274	284	91	70	1,379
Exports	365	210	230	220	50	1,075
Disappear., total	1,025	484	514	311	120	2,454
Ending stocks	389	238	67	96	66	856

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

U.S. Production Projected Down Dramatically

Reduced plantings, harvest of a smaller portion of plantings in certain key States, and a forecast drop in winter wheat yields from last year's near-record are expected to lower 1991 wheat production nearly 25 percent from 1990 to 2.07 billion bushels. The drop in production is projected to more than offset higher beginning stocks in 1991/92, shrinking supply to less than 3 billion bushels for only the second time since 1979/80.

Area Down as Farmers Respond to Programs and Prices

Winter wheat plantings are estimated at 51 million acres, down 10 percent from a year earlier. Low wheat prices in the fall of 1990 and the higher acreage reduction program (ARP) requirements kept area below a year earlier. Area planted in the Corn Belt, southern, and eastern United States fell more than in the Southern Plains.

Program participants reduced area in response to the increased ARP and planting flexibility provisions, while low wheat prices caused nonparticipants to do the same. The preliminary signup report indicates very high program participation, 84 percent. Spring wheat producers signaled lower planting intentions, responding more than winter wheat producers to planting flexibility provisions.

Preliminary results of 1991 program signup are the first indicator of how farmers are responding to the 1990 farm legislation. A little more than half of enrolled wheat base acres were enrolled under the winter wheat option and are not subject to flexibility provisions. The remaining base acres were subject to flexibility and 2.1 million acres of wheat base reportedly were flexed out of wheat production. Of these flexed acres, 0.8 million are reported to be moving to soybeans, 0.7 million to other program crops, and only 0.2 million to minor oilseeds. Some 0.4 million acres were reported flexed into wheat, despite low wheat prices. The net flexed was 1.6 million acres out of wheat.

The 0/92 Program continues to idle a large area of wheat base with 5.2 million

acres reported. A new legislative provision allows minor oilseeds to be planted on 0/92 acres. Producers reported that they would plant 268,535 acres of minor oilseeds on 0/92 wheat base — more than on wheat flex acres.

Area Harvested Down More Than Area Planted

Wheat area planted in the Southern Plains declined less than in other regions because some farmers normally plant wheat for pasture, hay, or green chop to feed to cattle. Some of these farmers plant more than their permitted area, planning to graze out, hay, or disc/plow up those acres they think have the lowest yield potential. In 1991 the ARP increase may cause more acres to fall in this category.

Winter wheat area harvested is forecast down more than planted area, because relatively low wheat prices and strong cattle prices in the spring of 1991 have encouraged the graze-out of wheat. Additionally, an outbreak of unusually cold weather during December caused extensive winterkill in Washington. Severe dryness in the Texas panhandle and into parts of Oklahoma and Kansas also are contributing to lower forecast harvested acres.

Below Average Yield Forecast

In May, USDA forecast winter wheat yields at 36.9 bushels per acre, down from the near record 40.7 posted in 1990, and less than the 38.0 averaged during 1986-90. The Kansas yield is forecast down 15 percent from last year, while the drop in Oklahoma is 19 percent, and Texas 23 percent. Yield

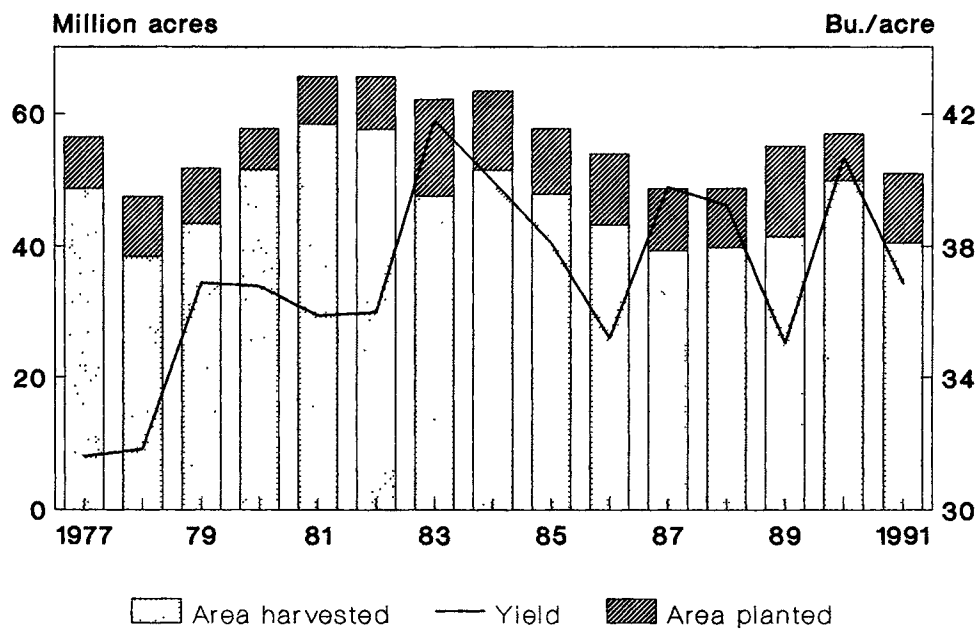
declines in the Southern Plains and Pacific Northwest will more than offset improved yield prospects in the Corn Belt, particularly in Missouri.

Generally favorable fall planting weather encouraged good germination for the winter wheat crop, but severe cold during December caused extensive winterkill in Washington. A prolonged dry spell in parts of the Southern Plains during the winter and early spring caused blowing dust and sharply reduced forecast yields. Some late freezes also may have damaged wheat. Disease and insect damage have been reported, with army cutworms and mosaic most notable. Although important for individual farmers, so far, disease and insect damage probably have not been a major cause of lower forecast yields. Excessive rains have been a problem in some eastern and southern wheat areas.

Spring Wheat Production Projected Down 18 Percent

Expected spring wheat production is implied in the projection of total wheat production published in the *World Agricultural Supply and Demand Estimates* and the forecast for winter wheat production released by USDA's National Agricultural Statistics Service. USDA projects spring wheat production of 575 million bushels, down from 705 million in 1990. This spring wheat projection is based on the *Prospective Plantings* report released in late March, and assumes an average portion of planted area will be harvested. Average yields are assumed for each State.

Figure 1
U.S. Winter Wheat Area and Yield



Reduced Supplies, Higher Prices Projected for 1991/92

Reduced production is projected to more than offset higher beginning stocks in 1991/92, dropping projected supply to less than 3 billion bushels for only the second time since 1979/80.

Large Beginning Stocks Cushion Supply Drop

Stocks on June 1, 1991, are forecast at 856 million bushels, up about 300 million from a year earlier. A major unknown likely to cause a change in forecast 1990/91 use and ending stocks is feed and residual use during the March-May quarter.

Much of the 1991/92 carryin stocks will be readily available to the market, as only 165 million bushels are expected to be in CCC inventory. The Farmer-Owned Reserve (FOR) is forecast nearly empty at 15 million as practically all the remaining 1980-83 FOR loans will have matured and 1990-crop wheat will have just begun to enter. Outstanding 9-month loans are forecast at 210 million bushels, with much of that wheat remaining under loan in order to be eligible to enter the FOR during 1991/92. This leaves an estimated 491 million bushels unencumbered, about 100 million more than a year earlier.

Imports are forecast to match the 1990/91 record of 35 million bushels. Supply and price relationships with Canada will determine import volume. Abundant Canadian supplies and higher wheat prices in the United States could set the stage for large imports. Factors that could determine the size of imports include the size of the 1991 Canadian eastern white wheat crop and the quality of the U.S. crop.

Total supply in 1991/92 is projected at just under 3 billion bushels, more than 10 percent below 1990/91 and 100 million bushels less than in 1988/89. During the 1980's supplies near 3 billion bushels occurred in years with low CCC inventory, declining stocks, and increased prices.

Use Projected Down In 1991/92

A sharp reduction in the feed use of wheat is projected to offset increases in all other wheat uses, dropping total use 6 percent below 1990/91 and domestic use 14 percent. Higher wheat prices and forecast lower coarse grain prices likely will cut feed and residual use from an estimated record 500 million bushels in 1990/91, to about 275 million in 1991/92.

The Bureau of the Census made upward revisions in the historical series on mill grind for calendar years 1989 and 1990, increasing wheat food use estimates for 1988/89, 1989/90, and 1990/91. The data now show that food use grew each year since 1981/82, and at a faster pace than population growth in 1990/91. With nutritionists emphasizing the health benefits of consuming more complex carbohydrates and fiber, wheat food use is expected to continue to grow faster than population in 1991/92.

Seed use is projected to increase in 1991/92 as tighter supplies and higher prices will likely encourage expanded plantings for 1992/93. U.S. exports in

1991/92 are also projected to increase (see international section).

Ending Stocks Projected Lower

Ending stocks on May 31, 1992, are projected at 652 million bushels, more than 200 million below forecast beginning stocks, but still about 100 million above stocks carried into 1990/91. A sharp reduction in the feed use of wheat is projected to offset increases in all other uses, lowering total use 6 percent from 1990/91. The projections imply a stocks-to-use ratio of 28 percent, down from the 35 percent forecast for 1990/91, and near 1988/89's 29 percent.

Farm Price Increase Projected

Wheat prices are projected to range between \$2.80 and \$3.20 per bushel, up from the preliminary \$2.61 in 1990/91, but well below the \$3.72 posted in 1988/89 and 1989/90. Although supplies are lower, prices are not likely to reach 1988/89 levels because the United States and other major exporters can easily increase next year's wheat area. In addition, foreign import demand is not as large. However, if foreign demand is significantly above current projections—due to weather-reduced yields, eased credit constraints, or changed political conditions (in the Middle East, for example)—prices could rally above projections. On the other hand, larger global supplies or reduced demand could work to lower prices.

Figure 2
U.S. Wheat Supply

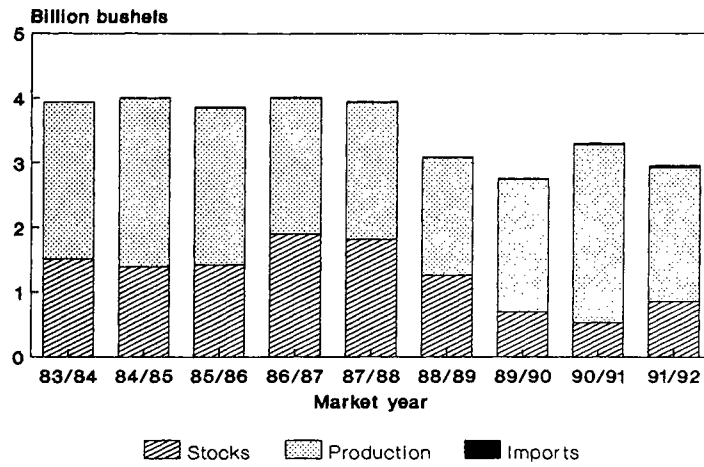
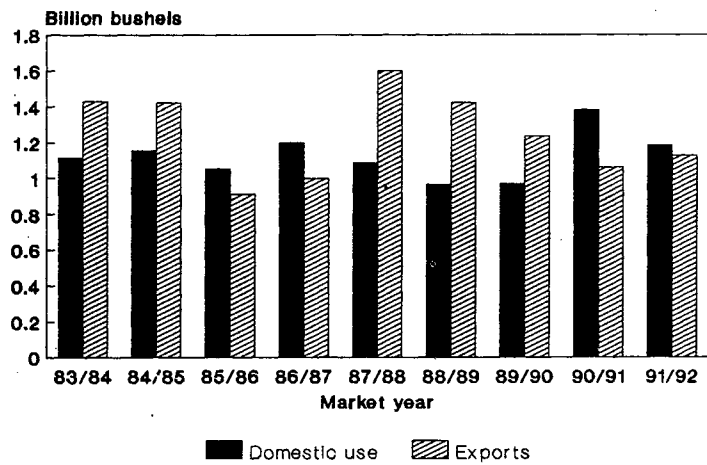


Figure 3
U.S. Domestic Use and Export



CRP Enrollment Shifts Eastward from the Great Plains

Enrollment in the tenth signup of the Conservation Reserve Program (CRP), held March 4-15, 1991, is quite different than in the first nine. The bid acceptance process has been significantly redesigned and new eligibility criteria focus entry more towards water quality protection.¹⁷ As a result, a smaller share of total acreage enrolled is in wheat base than in the past.

Overall, USDA accepted 564,989 new acres in the tenth signup, about 23 percent of farmers' bids for the entry of highly erodible and environmentally-sensitive cropland. However, enrollment could be somewhat less than reported because farmers must endorse their accepted contracts. Enrollment of all 564,989 new acres would bring total CRP enrollment to about 34.5 million.

New Rules Alter CRP

The 1990 farm act created several new conservation programs. It created an umbrella program, the Environmental Conservation Acreage Reserve Program (ECARP), which contains the CRP and a new Wetlands Reserve Program (WRP). The 1990 act mandates bringing total ECARP enrollment to 40-45 million acres by the end of 1995.

Enrollment goals for ECARP provide an indication of potential CRP enrollment. Between 1986 and 1990, about 33.9 million acres were enrolled in the CRP. USDA plans to enroll 600,000 acres in the WRP. As a result, an average of 1.1 million acres per year must enter the CRP to meet ECARP's 40-million-acre minimum goal.^{2/} The next CRP signup period will be held July 8-19, 1991.

Although the 1990 act does not change the basic nature of the CRP, it contains several new or revised CRP provisions. For instance, the act broadens CRP eligibility to encompass not only highly erodible land, (the predominant land type eligible in the past), but also water

quality lands and certain other types of land. It provides incentives for planting hardwood trees and establishes the Chesapeake Bay, Great Lakes, and Long Island Sound regions as priority areas. (See the April 19, 1991 *Federal Register*.)

For the tenth signup, USDA developed a new bid acceptance process designed to enroll those lands with the highest conservation and environmental benefits relative to the federal costs of enrollment. Farmers may submit up to four different types of CRP bids:

- "Standard" bids—Contain conservation practices that do not require useful-life easements.
- "Easement" bids—Contain practices that require useful-life easements of 15-30 years (e.g., filter strips).
- "Wellhead standard" bids—Contain practices on land within a State-approved wellhead protection area.
- "Wellhead easement" bids—Contain land within a State-approved wellhead protection area requiring a useful-life easement.

As part of the evaluation process, all bids are reviewed by the local county committee of the Agricultural Stabilization and Conservation Service (ASCS) at the end of signup. The committee flags those bids where the land is not eligible for enrollment. All bids are then forwarded to the national offices of ASCS.

At the national level, the rental payment requested by a farmer is screened against a bid-specific and soil-specific estimate of the farm income that would be foregone if the land were enrolled in the CRP. Bids exceeding that amount

are rejected. The "easement," "wellhead easement," and "wellhead standard" bids that survive this phase of the evaluation process are automatically accepted.

All other surviving bids must compete for the remaining acreage that can be enrolled in that signup. This competition is based on a formula that ranks the bids by the ratio of an environmental benefits index (EBI) to the Federal cost of the contract. The EBI measures the land's expected contribution to conservation and environmental goals—such as water quality and soil productivity—if it were enrolled in the CRP.

Enrollment Shifts Are Substantial

Largely because of the new eligibility criteria specified in the 1990 farm act and USDA's new bid acceptance process, regional enrollment in the tenth signup has changed significantly. States like Montana, Kansas, and North Dakota—where a large share of all CRP acres were enrolled in the past—had a relatively small share of their bids accepted. In contrast, certain Delta and Corn Belt States had about half of their bids accepted (see table 1).

Overall, the Corn Belt, Delta, and Lake States comprised 54 percent of enrollment in the tenth signup, while the Plains and Mountain States accounted for only 30 percent.^{3/} In contrast, the latter States comprised 62 percent of enrolled acreage in signups 1-9.

^{3/} States are categorized within regions as: Corn Belt—Illinois, Indiana, Iowa, Missouri, Ohio; Delta—Arkansas, Louisiana, Mississippi; Lake States—Michigan, Minnesota, Wisconsin; Plains—Kansas, Oklahoma, Nebraska, North Dakota, South Dakota, Texas; Mountain—Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming.]

¹⁷ For more information, see Tim Osborn, "Revamped CRP Growing Again." *Agricultural Outlook*. AO-175. June 1991.

^{2/} The 1990 farm act calls for 1 million acres per year to be reserved for CRP enrollment in calendar years 1994 and 1995.

Acreage that is scheduled to be planted to trees is higher than in the past. In the March signup, 18 percent of the acres are scheduled to be planted to trees, up from 6 percent in signups 1-9. An additional 3,400 acres will likely be in filter strips, and 20,700 acres will likely be used to benefit wildlife. Grass cover will likely claim about three-fourths of the enrolled acreage.

Unlike previous signups, USDA will purchase 15-30 year easements on the 27,800 acres signed up for wildlife habitat improvement, filter strips, grassed waterways, windbreaks, shelterbelts, and certain other uses. Farmers must maintain these practices for the useful life of the practice, although CRP rental payments are made only for the first 10-15 years.

Wheat Is a Lower Share of Enrollment

As a requirement of CRP participation, a farm's commodity base must be reduced in proportion to the farm's acreage enrolled in the CRP. These acres are ineligible for commodity program participation during the term of the CRP contract. In signups 1-9, nearly 22 million acres of commodity base were removed from production. Wheat base accounted for 47 percent of this total, while corn base comprised 17 percent.

When compared with corn base, the share of wheat base removed from production in the tenth signup will likely be relatively lower than in the past (see table 2). The tenth signup is expected to remove 325,000 additional base acres from production. About 35 percent is anticipated to reflect wheat base and 31 percent, corn base.

Because of the 1990 farm act's new eligibility criteria and USDA's new bid acceptance process, the nature of erosion reduction will change. In signups 1-9, most of the soil erosion reduction was in wind erosion in the Plains. In contrast, 70 percent of the estimated erosion reduction in the tenth signup is expected to be caused by lower sheet and rill erosion in the East and South. Reduced sheet and rill erosion is particularly important in improving water quality and wildlife habitats.

Annual rental payments received by farmers in the tenth signup will average \$53.96 per acre, slightly higher than the average \$50.99 received in the ninth

signup. The increase is caused by the relatively greater entry of Eastern and Midwestern cropland, which typically carries a higher rental value than in the West.

Table 1--CRP bid acceptances for selected States 1/

State	Acre bid	Acre accepted	Percent of bids accepted
	Number	Number	Percent
Alabama	32,252	18,009	55.8
Colorado	120,211	2,527	2.1
Georgia	38,771	13,209	34.1
Idaho	49,294	20,635	41.9
Illinois	63,650	32,734	51.4
Indiana	37,644	16,723	44.4
Iowa	99,477	46,726	47.0
Kansas	172,475	11,075	6.4
Michigan	58,068	22,623	39.0
Minnesota	99,942	27,736	27.8
Mississippi	56,187	39,145	69.7
Missouri	73,664	37,613	51.1
Montana	450,365	51,258	11.4
Nebraska	122,609	13,654	11.1
N. Dakota	148,330	14,849	10.0
Ohio	49,262	23,361	47.4
Oklahoma	45,229	6,473	14.3
S. Dakota	148,934	6,381	4.3
Texas	212,531	45,010	21.2
Washington	52,147	12,877	24.7
Wisconsin	81,173	37,715	46.5
Wyoming	35,711	0	0
Selected States	2,247,926	500,333	22.3
United States	2,453,686	564,989	23.0

1/ States with more than 30,000 acres bid.

Table 2--Share of wheat and corn base enrolled by signup period

Signup period 1/	Wheat base enrolled		Corn base enrolled		Total base enrolled
	1,000 acres	Percent	1,000 acres	Percent	1,000 acres
1-- Mar. 1986	202	45.6	79	17.8	443
2-- May 1986	899	50.7	176	9.9	1,772
3-- Aug. 1986	1,634	50.9	330	10.3	3,211
4-- Feb. 1987	2,377	39.5	1,737	28.8	6,023
5-- Jul. 1987	1,461	52.5	277	9.9	2,785
6-- Feb. 1988	1,029	48.9	272	12.9	2,105
7-- Jul. 1988	798	48.1	271	16.3	1,658
8-- Feb. 1989	752	47.3	276	17.4	1,589
9-- Aug. 1989	1,124	51.7	363	16.7	2,176
10--Mar. 1991	114	35.1	101	31.1	325
Total signups 1-9	10,276	47.2	3,781	17.4	21,762
Total signups 1-10	10,390	47.0	3,882	17.6	22,087

1/ A special corn bonus was paid in the fourth signup period (February 1987).

International Outlook

Foreign Wheat Production To Fall; Imports To Increase

World production in 1991/92 is forecast at 555 million tons, 6 percent below a year earlier. World trade is forecast up 5 percent to 96 million tons.

Foreign production is forecast at 498 million tons, 4 percent lower, with the Soviet Union, Canada, Australia, and China posting the largest declines. Low world prices have caused wheat producers to plant less area in some countries. Yields are projected down from the 1990/91 record, but foreign production is still expected to be the second largest on record.

Soviet production in 1991/92 is projected at 92 million tons, down 15 percent from 1990/91. Grain area has been trending down and wet weather and other problems at planting reduced winter grains area. Yields are also projected down from last year's record. Losses from winterkill, while expected to be below average, will likely affect more wheat area than the unusually low affected area in 1990/91. Inadequate availabilities and the uneven distribution of seed, inputs, fuel, and spare parts for machinery are likely to contribute to the overall yield decline.

Total Soviet grain production is projected at 210 million tons (bunker-weight basis), down 11 percent from estimated 1990/91 output. The decline is expected to lead to lower procurements by the State and higher import needs. Wheat imports are projected up 25 percent to 15 million tons. In 1990/91 most Soviet wheat imports were obtained with credit, barter arrangements, or other exporter assistance. Such assistance will continue to be critical to the volume of Soviet grain imports in 1991/92.

China's wheat production in 1991/92 is projected at 95 million tons, down 3 percent from the alltime high in 1990/91, but still the second largest on record. Domestic market prices fell in 1990/91 and government procurement centers ran out of money to buy all of the crop. More wheat remained on farms, reducing farmers' incentives to

plant wheat. However, the government continued to pressure farmers to plant food grains instead of more profitable crops. Area is projected up slightly, but yields are likely to come down from the 1990/91 record.

China's wheat imports in 1991/92 are forecast up 5 percent to 10.5 million tons. China recently raised the retail flour price by more than 50 percent. This is the first time retail prices have been allowed to increase since the mid-1960's. The previously low prices encouraged waste and put enormous budgetary pressures on the government. The price increase is likely to result in reduced per capita wheat consumption as consumers respond to higher prices. In addition to the likely decline in per capita consumption, carryin stocks are projected above those of 1990/91, keeping projected wheat imports relatively small.

Wheat production in the Middle East is forecast up, mostly because of the projected near-record crop in Turkey. Turkey's production is projected at 15.5 million tons, up 3 percent from 1990/91. Production is projected down in several other Middle Eastern countries.

Wheat imports by Middle Eastern countries are projected to expand 27 percent from 1990/91 to 13.6 million tons in 1991/92. Iraq is expected to return to the world grain market and the influx of refugees has expanded the need for wheat in several countries, including Iran and Turkey. Syria's wheat production is projected to fall and wheat and flour imports are likely to remain high.

Eastern Europe's 1991/92 production is projected at 39 million tons, down 8 percent from 1990/91, when excellent growing conditions in the northern countries contributed to a near-record crop. In 1991/92, yields are expected to

return to normal in the north, but continuing dry conditions, particularly in Romania and Bulgaria, are constraining production in the region. Despite the projected production decline, imports are expected to increase only slightly. Foreign exchange constraints will likely limit imports by Romania and Bulgaria. In addition, traditional consumption patterns in several East European countries, with their heavy emphasis on wheat, continue to change.

Favorable moisture conditions are expected to result in record wheat production across North Africa. In addition, wheat prices in Egypt relative to other crops remain high and production there is projected up 11 percent to 4.8 million tons. However, North Africa generally produces only about a third of its consumption. So while imports are projected to drop 8 percent, they are still expected to reach 13.3 million tons.

East Asian imports are projected down 3 percent, mostly because wheat prices are likely to be higher relative to corn than they were in 1990/91. South Korea's wheat imports are projected down 8 percent to 3.7 million tons, as the feed industry there substitutes more corn for wheat in feed rations. In 1990/91, Japan increased wheat product imports at the expense of grain. In 1991/92, a lower domestic wheat crop, the stronger value of the dollar relative to the yen, and internal policy shifts are expected to favor grain over product imports.

South Asian imports in 1991/92 are projected at 3.8 million tons, up 4 percent from 1990/91. India is projected to harvest a near record crop of 54 million tons, up 9 percent from 1990/91. Favorable monsoon weather in 1990 provided adequate irrigation supplies. Indian farmers began harvesting the 1991/92 crop in March and April. Pakistan benefitted from the same

favorable moisture conditions, boosting production in rainfed areas. Favorable weather helped both the irrigated and dryland areas. Pakistan's wheat production is projected at a record 15 million tons. However, Bangladeshi imports are projected at 1.8 million tons, up 20 percent from 1990/91. Bangladeshi imports might rise further when assessments of the cyclone damage and food needs are completed.

In Latin America, the wheat production decline in Mexico is likely to be more than offset by a projected 35-percent increase in Brazil. In 1990/91, lack of production credit led to reduced area and input use in Brazil. Unfavorable weather cut yields and production even further.

Brazilian farmers began to plant the 1991/92 crop in May. Area is expected to rise slightly, although access to production credit is likely to remain problematical. Assuming normal weather, yields are expected to be up from 1990/91. Thus, imports are projected at 2.2 million tons, down 37 percent from 1990/91. Private sector imports will likely play a larger role in the coming year as the government loosens its control over imports.

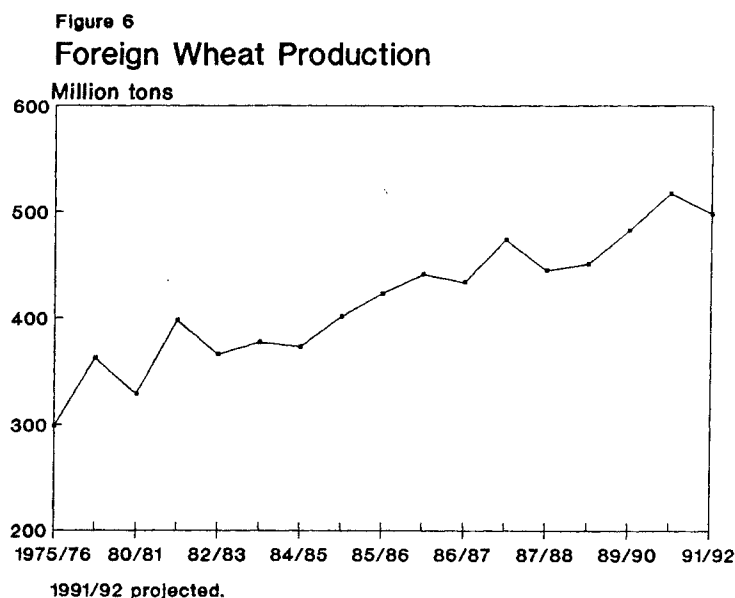
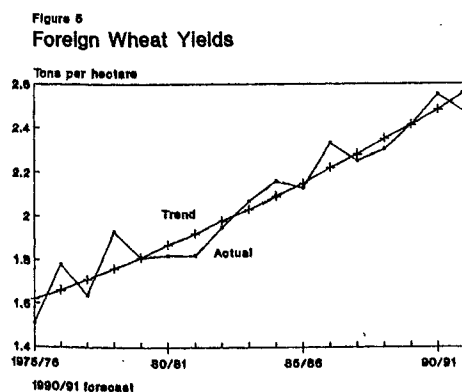
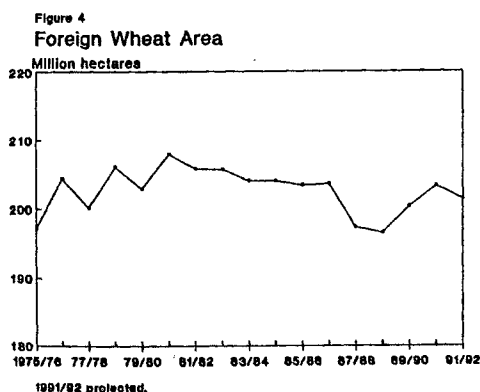
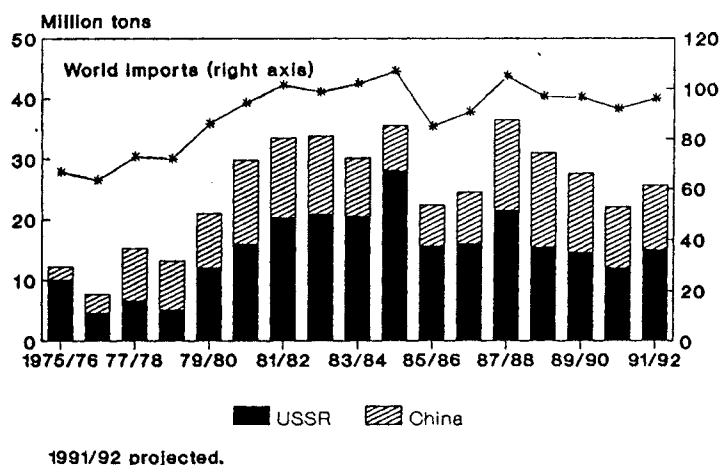


Figure 7
Soviet Union and China Exert Strong Influence on World Trade



Competitor Supplies Remain High

Competitors are entering 1991/92 with record beginning stocks. Despite production declines (except in the EC), large supplies in most countries will ensure continued strong competition for market share. In addition, Turkey is projected to have relatively large exports.

Production in major competitor countries is forecast down 4 percent to 138 million tons. However, beginning stocks are large, so despite the production decline, competitor supplies are forecast up 6 percent. Even so, relatively low imports by the Soviet Union, China, and North African countries will limit competitor opportunities for expanding exports.

EC wheat production (including the former East Germany) is forecast up 5 percent in 1991/92. The vast majority of EC wheat is winter wheat. EC farm policies generally protect farmers from fluctuations in commodity prices. Last autumn, winter wheat prices appeared more favorable than oilseeds and farmers responded by expanding wheat planting in several countries. Thus, despite falling world wheat prices in 1990/91, wheat area in France, Spain, and Portugal is up.

Yields are also forecast up as reports indicate that farmers in the UK and France continue to switch to higher yielding soft wheat varieties. In addition, the weather has been generally favorable across the EC, including the southern European countries that were affected by drought in 1990/91.

The EC is expected to carry in near-record wheat stocks, which are projected to increase another 6 million tons by the end of the 1991/92 marketing year. While EC exports are forecast up 5 percent to 21 million tons, further expansion is likely to be constrained by strong competition from the United States and other exporters, and the EC budget constraints.

Canadian production is projected at 26.1 million tons, down 18 percent from 1990/91, when Canada achieved record yields, thanks to excellent weather and high prices in 1989/90. In the past, low world wheat prices, such as those in

1990/91, would encourage some Canadian farmers to reduce planted area. However, this year area is projected to remain nearly the same as 1990/91 because of a new government program designed to provide revenue protection (see special article). Despite little change in area, yields are projected to return to the 5-year average, pulling production down.

Like the EC, Canada will enter the 1991/92 marketing year with huge stocks, and total supplies are forecast up 6 percent. Exports are projected at 19 million tons, up 9 percent from 1990/91. Nevertheless, stocks are projected to continue climbing.

Planting in the Southern Hemisphere began in April and May. Area is projected down in both Australia and Argentina. In Australia, wheat prices in 1990/91 were the lowest in many years. Some wheat growers are likely to substitute barley or minor crops such as lupines.

In the past, many Australian wheat growers switched to raising sheep when wheat prices were low. This year, wool and meat prices also are low and wool stocks are huge. The government has eliminated its price support scheme and wool prices have dropped to 50 percent of the old support price. So, rather than shift to sheep, some farmers are likely to leave land fallow. Wheat area is projected down 12 percent, and assuming average yields, production is projected at 12.5 million tons, down 20 percent from 1990/91. Tight supplies are expected to result in lower exports. Exports are projected at 9.5 million tons, down 14 percent from 1990/91.

In Argentina, farmers once again face much economic uncertainty. Wheat prices fell in 1990/91, but have risen in recent weeks. The government removed export taxes on wheat, but

some farmers fear that taxes will be reimposed later in the year. Production costs have risen as well. Therefore, area is forecast down 10 percent to 5.3 million hectares. Assuming average yields, production is projected at 10 million tons, down 11 percent from 1990/91. Exports are projected at 5.6 million tons, down 7 percent.

Some smaller exporters are expected to expand their market share in 1991/92. Turkey is projected to export 2.6 million tons, 2 million more than in 1990/91. Turkey has reportedly arranged to export over 1 million tons of wheat and products to the Soviet Union, much of which is expected to be shipped in the new crop year. Turkey is also in a good position to ship wheat to Iraq.

India's large crop has created surpluses that India hopes to export to the Soviet Union and the Middle East for badly needed foreign exchange. Other exporters, including non-EC Western Europe, and some East European countries, will also be strong competitors in the world market.

Figure 8
Middle East: Wheat Production
and Imports

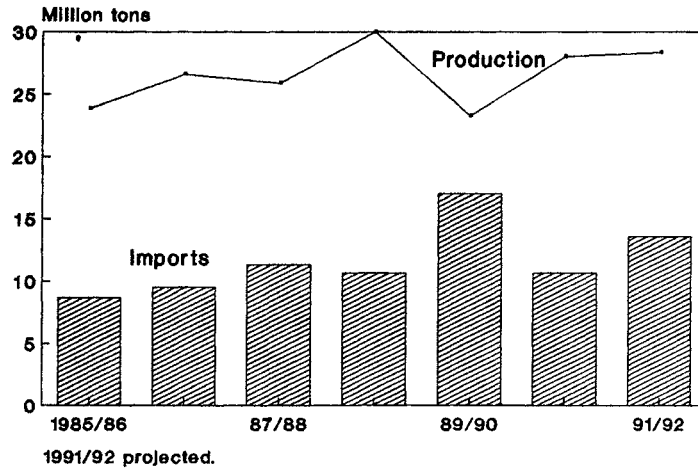
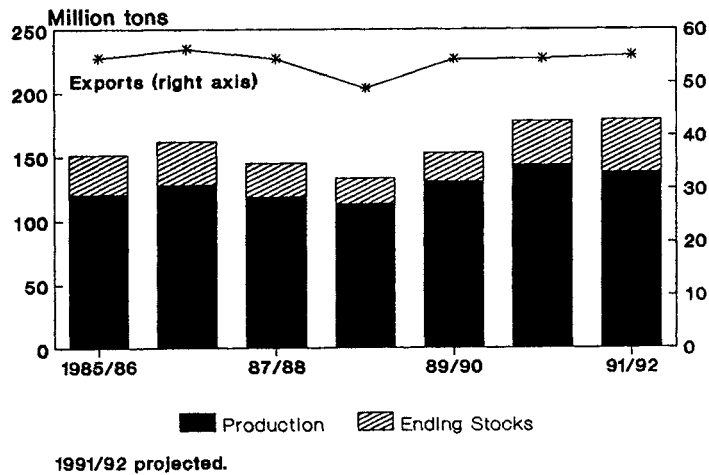


Figure 9
Major Competitors' Wheat Supplies and
Exports Increase Slightly



U. S. Exports To Expand

U.S. exports in 1991/92 are projected to expand to 30.5 million tons (1.125 billion bushels in the June/May marketing year), up 7 percent from 1990/91 as world trade expands.

Competition for market share is expected to be intense in 1991/92. While production among major exporters (except the EC) is projected down, large beginning stocks will provide ample exportable supplies.

As usual, the Export Enhancement Program (EEP) will be a critical element of the U.S. competitive position in 1991/92. Because there is now no cap on available EEP funds for fiscal 1991 and because the President's budget specifies a \$1.2 billion program level for fiscal 1992, the United States should be able to compete effectively with the EC in many markets. EEP activity during the summer quarter is expected to be particularly strong.

There is some concern that China, the largest U.S. customer in 1990/91, will cut back on U.S. wheat imports if it loses its Most Favored Nation (MFN) status. However, China, as of May 10, has already purchased more than 2.1 million tons of wheat under EEP for shipment in the new marketing year and is likely to keep up its strong purchase pace prior to any legislative action.

The Soviet Union is expected to meet the terms of the Long Term Grain Agreement in calendar 1991. Under

this agreement, the USSR is required to purchase a minimum of 4 million tons annually. However, the volume to be purchased each year is somewhat flexible. In calendar 1991, the Soviet Union needs to buy at least 3.25 million tons of wheat. As of May 10, the Soviet Union had already purchased 937,000 tons, leaving 2.3 million tons still to be sold to meet the 1991 minimum requirement. Access to credit or other forms of U.S. Government assistance will be critical. The Soviet Union has asked the United States for \$1.5 billion of credit for agricultural products. As of May 10th, no decision had been made regarding the Soviet request.

The United States-Canada Free Trade Agreement, which went into effect January 1, 1989, will remove all tariff and some non-tariff barriers to agricultural trade between the two countries within the next 10 years.

The agreement states that Canada's requirement for import licenses for wheat, barley, oats, and related products will be removed as soon as the U.S. support levels for these products are equal or less than those of Canada. Both countries reserve the right to impose or reimpose import restrictions on particular grains if imports increase sig-

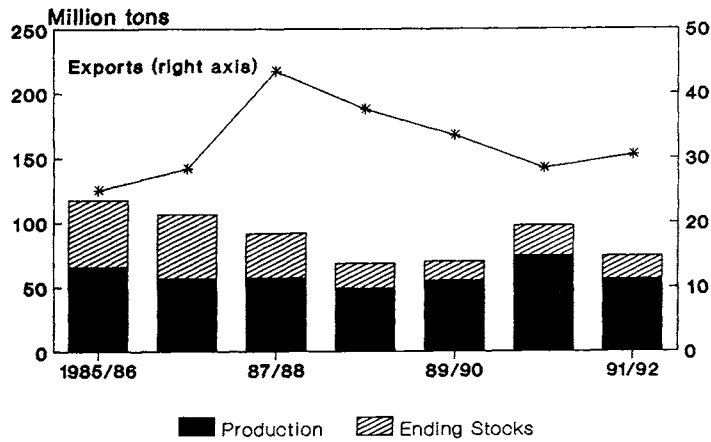
nificantly as a result of a substantial change in either country's support program for that grain. U.S. grain imports from Canada have not been restricted in more than a decade.

In May, it was determined that U.S. subsidies were less than those of Canada. The recent announcement that Canada will no longer require import licenses for wheat paves the way for Canadian imports of U.S. wheat. In the past, Canada imported small quantities of U.S. wheat only when drought reduced domestic supplies. Even then, all imports were required to be licensed by the Canadian Wheat Board.

Recently, U.S. trade with Canada has been limited to modest amounts of wheat products. Now that the licensing requirement is to be lifted, wheat can flow freely across the border. However, Canada will still require that imported wheat have an end use certificate to keep it from entering export channels and that wheat for feed be denatured.

Figure 10

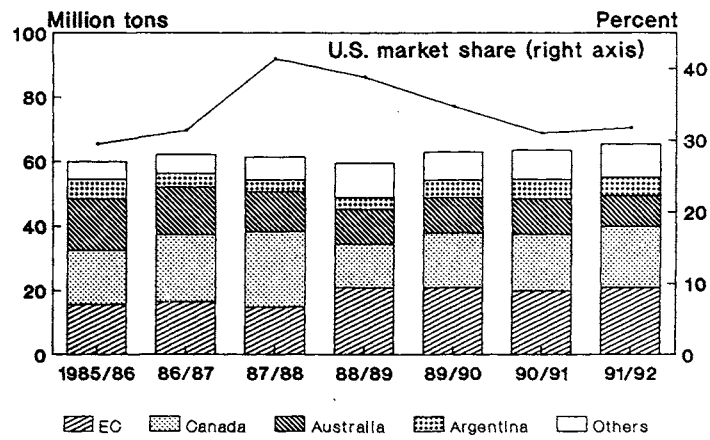
U.S. Supplies Fall; Exports To Increase in 1991/92



1991/92 projected.

Figure 11

Competitor Wheat Exports and U.S. Market Share



World Wheat Prices Begin To Rise at the End of 1990/91

The pace of world wheat purchases slowed in early 1991. World wheat prices have begun to climb from the low point in February and buyers are likely waiting for the new crop to take advantage of harvest prices.

In 1990/91, many major wheat producing countries produced record or near-record crops. Farmers in many of the major exporting and importing countries responded to relatively high prices in early 1989 and increased area. Generally favorable weather increased yields. World trade is forecast at 91.9 million tons, down 5 percent from 1989/90. Much of the decline is due to reduced imports by the Soviet Union, China, and Iraq.

The Soviet Union has bought nearly all of its 1990/91 wheat with credit, under barter arrangements, or with other forms of exporter assistance. Despite a large domestic wheat crop, government wheat procurement did not expand much beyond 1989/90. Procurements of milling quality wheat reportedly fell. Economic turmoil and the tight foreign exchange situation did not allow the Soviet Union to purchase as much grain as expected, given this level of procurements. Total 1990/91 Soviet wheat imports are forecast at 12 million tons, down 8 percent from 1989/90.

China's record grain crop and large stocks have led to reduced wheat imports. China's 1990/91 wheat imports are forecast at 10 million tons, down 23 percent from 1989/90 and the lowest since 1986/87.

Imports by Middle Eastern countries are also down 37 percent from 1989/90. Turkey shifted from being a large net importer in 1989/90 to a net exporter. The embargo on Iraq led to a 3.1-million-ton decline in wheat imports from 1989/90. However, some countries, such as Jordan and Yemen, increased imports, most likely to increase stocks prior to the war and to meet the needs of refugees and workers returning from Iraq, Kuwait, and other Gulf states.

Other regions expanded wheat imports modestly in 1990/91. In Latin America, Brazil's crop plummeted 43 percent

from a year earlier to an estimated 3.1 million tons. Brazil's imports are forecast at 3.5 million tons, more than double those of a year earlier. North African imports are also forecast up 4 percent as several countries took advantage of low export prices to boost their supply. South Africa increased its imports to a forecast 700,000 tons, the highest since 1966/67, to supplement 1990's poor wheat harvest.

World wheat prices were low relative to corn, encouraging increased wheat feeding. Foreign consumption of wheat for feed rose 18 percent from 1989/90, and trade in wheat for feed expanded. South Korea doubled its wheat imports from 1989/90 to 4 million tons. East European countries also increased imports of wheat for feeding.

In 1990/91, the major exporters competed fiercely for the reduced world market early in the year. But budgetary pressures since early 1991 have led to higher wheat prices and a sluggish import pace.

In the EC, budgetary pressures have limited export activity. Less than 100,000 tons per month have been granted licenses since February. The 1990/91 USDA forecast for EC exports has been reduced to 20 million tons from 21 million in 1989/90. Ending stocks are forecast at a near-record 17.1 million tons, the highest since 1987/88.

Canada's exports are forecast at 17.5 million tons, only 3 percent higher than 1989/90 despite a record crop. Slow sales to China and a number of other countries have constrained exports. Ending stocks are forecast to reach a record 14.3 million tons.

Australia's exports are forecast at 11 million tons, up 2 percent from 1989/90. Despite the loss of the Iraqi market, Australia was able to boost exports to the Soviet Union and maintain steady

sales to China and Middle Eastern markets.

Argentina's exports have lagged early in 1991. Exports are forecast at 6 million tons, 7 percent higher than in 1989/90. However, some exports of old-crop wheat, particularly to Brazil, will likely be pushed into the summer quarter.

U.S. exports are forecast at 28.5 million tons, down 15 percent from 1989/90, due mainly to reduced exports to the Soviet Union, China, and Iraq. The pace of U.S. sales slowed in early 1991. Sales under the Export Enhancement Program slowed to a trickle as the \$425-million funding cap for fiscal 1991 was approached. However, sales picked up again toward the end of April when a supplementary spending bill removed the cap on EEP funds. Much of the new sales activity is for new-crop wheat.

EEP sales between July 1, 1990, and May 10, 1991, reached 13 million tons, compared with 10.9 million for the same period a year earlier. Average bonuses in April fell to \$34.25 from the February high of \$41.42. The average between July and April equals \$38.22 per ton, compared with \$14.32 per ton a year earlier. Bonuses have begun to rise since the end of April. Recent bonuses to China have averaged over \$40 per ton.

P.L. 480 Title I programming for wheat and wheat flour in fiscal 1991 have reached 2.1 million tons as of May 2 compared with 2.6 million tons at the same time a year earlier. The major recipients are Egypt, Morocco, and Guatemala. The volume of sales registered as of May 3 was 1.2 million tons, only about 30,000 tons less than the sales registered at the same time a year earlier. The major purchasers have been Egypt, Jamaica, and El Salvador. As of May 3, the only government-to-government grant agreement signed

under the new Title III provisions has been with Honduras for 97,000 tons of wheat.

As of May 11, \$4.2 billion of GSM-102 credit guarantees have been announced. Of this, slightly more than \$990 million have been allocated for wheat and/or flour in fiscal 1991, compared with \$1.5 billion a year earlier. GSM-102 credit guarantees of about \$440 million have been approved, only 58 percent of the amount approved this time last year. The top fiscal 1991 markets have been the USSR, South Korea, and Algeria.

Approvals for GSM-103 credit guarantees have reached about \$33 million as of May 11, down more than 75 percent from a year-ago. Importers in Jordan, Sri Lanka, and Tunisia have used GSM-103 guarantees to purchase U.S. wheat and/or flour.

Figure 12

U.S. Wheat Export Prices

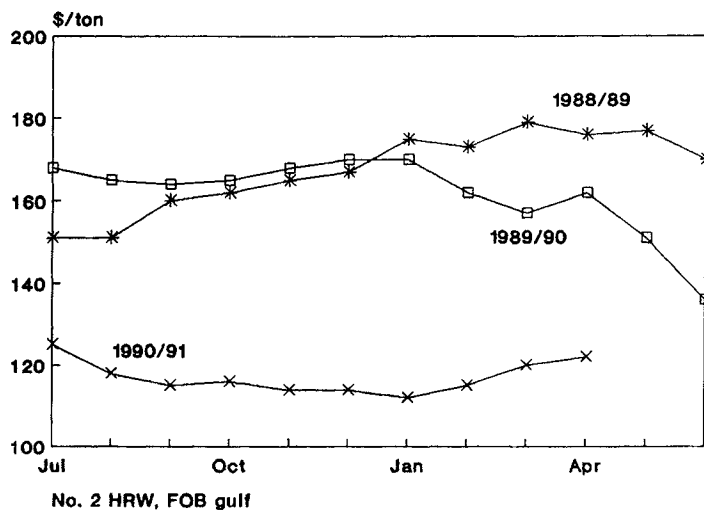
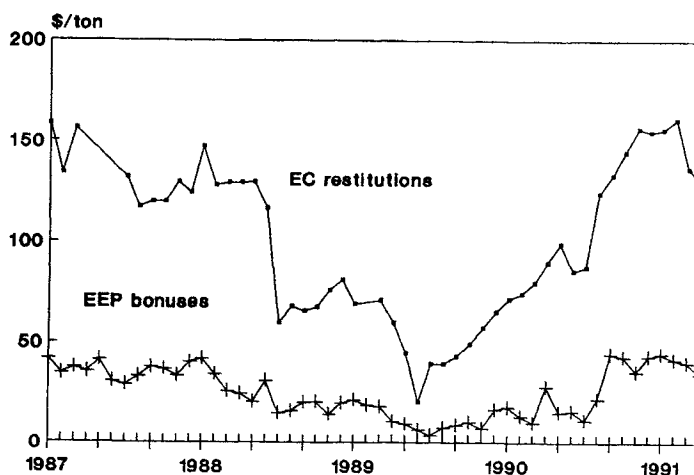


Figure 13

U.S. and EC Wheat Export Subsidies



1990/91 To Post Record Domestic Use, Lower Prices, and Exports

Near-record production with lower prices and weak export demand stimulated increased domestic disappearance in 1990/91. Feed use and residual are forecast to reach a record 500 million bushels. Despite increased domestic use, ending stocks are forecast to rise 60 percent to 856 million bushels.

Sharp Jump In Production

Wheat production in 1990/91 is estimated at 2.74 billion bushels, approaching the record 2.79 billion produced in 1981. Production was up more than 34 percent from 1989. An unusually large percentage of planted area, 90 percent, was harvested for grain in 1990/91. Good yield prospects, a low 5-percent ARP, a modified contract option which allowed program participants to increase their harvested acres (up to 105 percent of their base) if they reduced payment acres, and relatively high wheat prices at harvest all contributed to the increased harvested acres.

Overall favorable growing conditions, in spite of the mix of good and bad weather, increased yields 21 percent from 1989's poor performance and 2 percent above the July 1990 USDA forecast. The national average wheat yield reached a record 39.5 bushels per acre.

After accounting for the wheat base retired under the CRP, the available wheat base for 1990/91 was 80.5 million acres. From the available base, 66.8 million acres were enrolled in the wheat program, 2.2 million acres were idled in ARP, and 4.8 million acres entered the 0/92 program. Some 19 million acres were enrolled under the modified contracts option. Modified contracts reduced idled acres (and payment acres) by 1.1 million acres.

Stocks Increased

Wheat stocks carried into 1990/91 were an unusually low at 536 million bushels. About 54 percent were tied up in government programs (26.7 percent in FOR, 21.7 percent in CCC inventory, and 5.6 percent in 9-month loans) compared with 71 percent in 1989/90. Un-

encumbered (free) stocks at the beginning of 1990/91 were 246 million bushels, 20 percent higher than the previous year.

The increase in unencumbered stocks in 1990/91 is largely due to the reduction in outstanding FOR as loans matured and to reduction in CCC inventories. Partly, the increase in unencumbered stocks possibly also indicated holders' expectations of higher prices in view of relatively low U.S. and world carryover supplies. For example, in 1986/87 when supplies exceeded 4 billion bushels, unencumbered stocks were the lowest—29 million bushels—since World War II. On the other hand, when supplies started to fall in 1988/89, unencumbered stocks jumped to 333 million bushels, more than 11 times the 1986/87 level.

For 1990/91, unencumbered beginning stocks remained high at about 246 million bushels. Due to the high redemption value, about 62 percent of the FOR stocks were forfeited to the CCC. Remaining FOR stocks were redeemed with certificates and became available to the market.

In 1990/91, the CCC inventory is expected to be about 165 million bushels with 147 million bushels in the Food Security Wheat Reserve (FSWR). At the beginning of the marketing year, the stocks-to-use ratio stood at 24 percent, down from 29 percent the previous year. Ending stocks are expected to increase to 856 million bushels mainly because of a large increase in production. This is an increase of more than 300 million bushels (or 60 percent) over beginning stocks. The increased stocks will raise the stock-to-use ratio to about 35 percent.

Imports Reach New Highs

Though imports comprise only about 1 percent of U.S. supplies, they are forecast to reach a record 35 million bushels in 1990/91. The more than 50-percent rise in imports from the previous year is largely due to shipments from Canada. A large eastern white crop in Canada and unusually low prices prompted increased shipments of this type of wheat into the U.S. In addition, red spring wheat and wheat product imports are forecast to increase. However, the U.S.-Canada Free Trade Agreement opens the possibility of making adjustments to achieve more symmetrical wheat trade.

The bumper crop plus 536 million bushels of beginning stocks and 35 million bushels of imports boosted U.S. wheat supplies to 3.31 billion bushels in 1990/91. Beginning stocks were tight for the fourth year in a row and imports were still less than 1 percent of the supply. The increase in 1990/91 U.S. wheat supplies came after 3 straight years of smaller supplies. However, supplies remain well below the 4 billion bushels reached in 1984/85 and again in 1986/87. The sharp increase in production will contribute to higher ending stocks.

Domestic Disappearance Expands Dramatically

Domestic disappearance was record high in 1990/91. The combined increase in food, seed, and feed use and residual reached an estimated 1.38 billion bushels, 39 percent over 1989/90.

Food Use Up 5 Percent

Historically, wheat food use in the United States has largely depended on population size, with year-to-year changes reflected by long term trends in

population growth. However, in recent years changes in dietary tastes and preferences have boosted growth rates above population growth. Increasingly, consumer health concerns may have contributed to an increase in consumption of variety breads and other high fiber, low-fat wheat products. Price changes are considered to have a relatively little effect on wheat food use in countries as affluent as the United States.

In 1990/91 wheat food use was an estimated 790 million bushels which is in line with trend growth from 1987/88 and 1988/89. Wheat food use, based on revised Census data, turned out to be 9 and 5 percent higher than 1988/89 and 1989/90, respectively. Record mill grind and modest flour exports supported the increase in wheat food use.

Feed Use and Residual Set New Record

The forecast for wheat feed use and residual in 1990/91 shows a record 500 million bushels, more than three times the 1989/90 level. Feed and residual use reached its previous high, 407 million bushels, in 1984/85. Feed use and residual tends to rise sharply when wheat prices are sufficiently low to be competitive with corn and other feed grain prices.

In regions where wheat and livestock production is concentrated, as in much of the Southern Plains, it is quite common to use wheat, especially off-grade wheat, in feed rations because of the high cost of transporting feed grains into the region. In 1990/91, low wheat prices in relation to corn/sorghum prices encouraged large scale wheat feeding not only in regions that traditionally feed wheat, but across much of the country.

The quarterly pattern of feed and residual use in recent years shows this use tends to be large and positive in the first quarter, negative in the second quarter, and either positive or negative in the second half of the year. In 1990/91 low wheat prices favored large wheat feeding and the implied feed and residual disappearance was a record 407 million bushels in the first quarter. This equaled the previous record annual total in 1984/85. With wheat prices remaining low in the following months, feed and residual use was large and positive in the third quarter.

Figure 14

U.S. Wheat Stocks

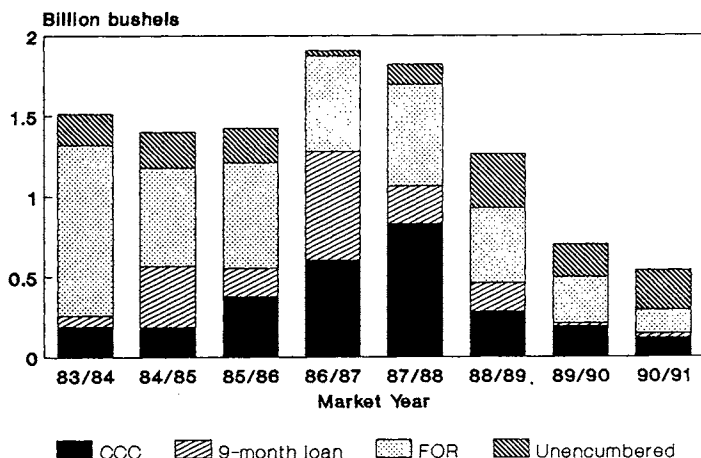


Figure 15

U.S. Wheat Disappearance

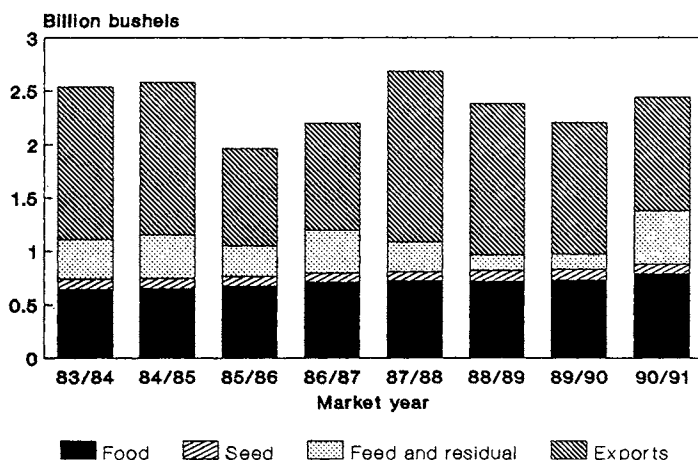


Figure 16

Average Farm Prices for Wheat and Corn

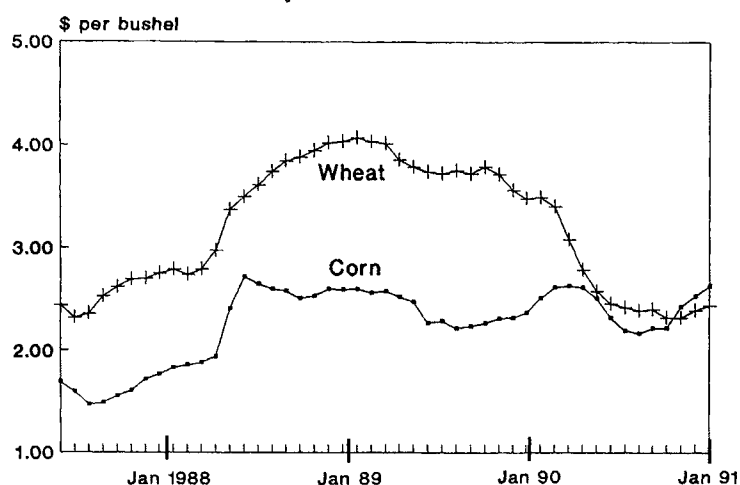
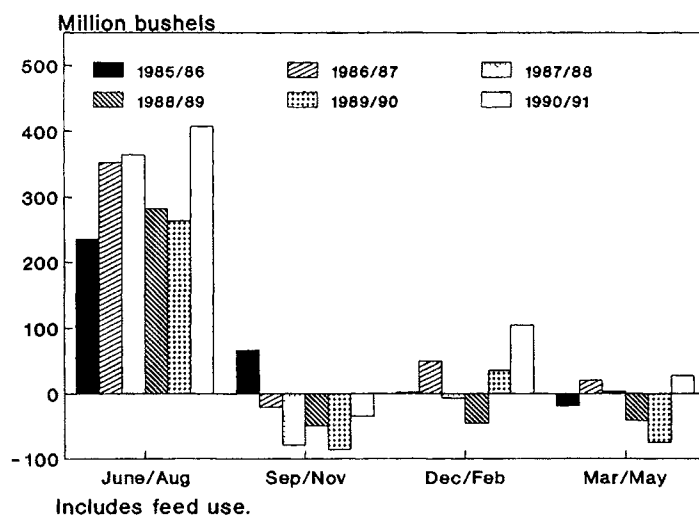


Figure 17

Quarterly Residual Use



Includes feed use.

There are caveats to feed and residual use forecasts. The relationship between wheat and feed grain prices is an important indicator of the economics of wheat feeding. The feed and residual use category for wheat includes all nonfood and nonseed uses, including the statistical residuals (errors) from all categories of wheat supply and demand. Large, irregular, negative numbers in the feed and residual estimates in the quarterly supply and demand illustrate how difficult feed use and residual forecasts are.

Seed Use Is Down

Seed use in 1990/91 is estimated at 89 million bushels, 11 percent below 1989/90. Seed use is determined by the area planted for the next season, and the increased ARP and low wheat prices at planting reduced area for harvest in 1991.

Exports Declined

Exports for 1990/91 are pegged at 1.075 billion bushels, 13 percent below 1989/90 (see the discussion on exports in the international situation section).

Quarterly Developments

The 1990/91 crop year started with relatively tight stocks of 536 million bushels (22 percent in CCC inventory, 27 percent in the FOR, 5 percent in 9-month loans, and the remaining 46 percent as unencumbered stocks), 24 percent lower than the previous year. The tight stocks situation did not fuel the price increase because of the favorable production outlook. A bumper production of 2.74 billion bushels resulted in second quarter stocks swelling to 2.41 billion bushels with 2.07 billion (86 percent) in unencumbered stocks.

The increase in supply with lower exports and prices prompted a large increase, almost two times the previous year, in feed use and residual in the third quarter. In spite of higher feed use and residual, increased supply in 1990/91 is expected to add more than 300 million stocks are expected to be 856 million bushels, 60 percent higher than in 1989/90. Given the forecast for ending stocks, the implied use for the last quarter is projected to be 530 million

bushels, 28.6 percent higher than in 1989/90. The marked difference in use this quarter, compared to the same quarter in 1989/90, is a large increase in feed use and residual. The increase in feed use and residual is prompted by sufficiently low wheat prices which are competitive with corn prices and high livestock prices. The exports are also expected to be about 5 percent higher than the same time last year.

Total use of wheat increased in 1990/91 as record domestic use outpaced lower exports. Increased feed use was in response to lower prices caused by large supplies stemming from bumper production.

The forecast increase in ending CCC inventory for 1990/91 is because if forfeitures from maturing 1980-83 FOR loans. Much of the FOR forfeited loans were used to replenish the Food Security Wheat Reserve. Practically, all of the remaining 1980 to 1983 FOR loans will have been either redeemed or forfeited by the end of 1990/91. Producers will have the opportunity to enter 1990-crop wheat in the new FOR (see special article in the February 1991 Wheat Situation and Outlook) but only 15 million of the 239 million bushels originally eligible for FOR entry are estimated to be in the FOR by the end of 1990/91.

Under provisions of 1990 farm legislation, 9-month loans must mature before entry into the FOR is allowed. About 210 million bushels are estimated to be under 9-month loan at the end of 1990/91. Without FOR-entry opportunities, a much smaller share of the 405 million bushels of 1990-crop wheat placed under loan would still be under loan. Market prices are expected to remain well above the loan rate during 1991/92 so regular 9-month loans are not expected to be forfeited.

Table 3--Wheat supply, disappearance, and stocks, June-May

Item	1988/89	1989/90	1990/91
Million bushels			
Stocks, June 1	1,261	702	536
CCC inventory	283	190	117
Farmer-Owned Reserve 1/	467	287	144
Outstanding CCC loans	178	19	30
Uncommitted	333	206	245
Production	1,812	2,037	2,739
Imports	9	6	8
Total supply	3,082	2,744	3,283
Use, June-Aug.			
Food	183	191	196
Seed	1	2	2
Feed & residual	282	264	407
Exports	362	370	268
Total use	828	826	873
Stocks, Sept. 1	2,254	1,918	2,410
CCC inventory	250	168	105
Farmer-Owned Reserve 1/	391	211	119
Outstanding CCC loans	108	48	120
Uncommitted	1,505	1,491	2,066
Imports	6	5	13
Total supply	2,260	1,923	2,423
Use, Sept.-Nov.			
Food	197	192	211
Seed	67	68	61
Feed & residual	-49	-86	-35
Exports	329	329	278
Total use	544	503	515
Stocks, Dec. 1	1,716	1,423	1,908
CCC inventory	213	155	130
Farmer-Owned Reserve 1/	383	174	65
Outstanding CCC loans	93	80	261
Uncommitted	1,027	1,014	1,452
Imports	4	5	8
Total supply	1,720	1,427	1916
Use, Dec.-Feb.			
Food	173	186	193
Seed	3	3	2
Feed & residual	-45	35	100
Exports	361	260	225
Total use	492	484	520
Stocks, March 1	1,228	943	1,396
CCC inventory	203	137	153
Farmer-Owned Reserve 1/	378	154	19
Outstanding CCC loans	47	65	329
Uncommitted	600	587	895
Imports	4	8	6
Total supply	1,232	951	1,402
Use, March-May			
Food	172	185	1902/
Seed	32	28	252/
Feed & residual	-42	-76	272/
Exports	368	275	2882/
Total use	530	412	5302/
Stocks, June 1	702	536	8563/
CCC inventory	190	117	1653/
Farmer-Owned Reserve 1/	287	144	153/
Outstanding CCC loans	19	30	2103/
Uncommitted	206	245	4663/

1/Includes Special Producer Loan Program. 2/Quarterly use implied by the annual estimates. 3/Forecast.

White and Hard Red Winter Lead Forecast 1991 Production Drop

White and hard red winter (HRW) are forecast to lead the declines in winter wheat production in 1991. Area planted to white and HRW was reduced only moderately from a year earlier, but harvested area and yields have suffered from adverse weather.

HRW Production Down 27 Percent in 1991

Dryness in parts of Texas, Oklahoma, and Kansas, as well as livestock prices and the increased ARP that have encouraged grazing of wheat, have sharply reduced estimated harvested area and yields, leading USDA to forecast HRW production at 874 million bushels, the second lowest since 1972. Less than half the wheat planted in Texas is forecast to be harvested for grain, down from 63 percent in 1990. Area harvested is forecast down 1 million acres in Kansas and more than that in Oklahoma.

Yields are forecast down 23 percent in Texas, 19 percent in Oklahoma, and 15 percent in Kansas. Many fields may have been grazed out or hayed because of high cattle prices and expected poor grain yields. According to preliminary reports, wheat base entering the 0/92 program totaled 1,175,772 acres in Texas, and 688,656 acres in Oklahoma. Oklahoma posted a surprising 13,670 acres of wheat base planted to minor oilseeds under 0/92 provisions.

The 1991/92 HRW supply, implied by forecast June 1, 1991, HRW stocks and production forecasts, is down 11 percent from a year earlier and the second lowest since 1974/75. Prospective tight supplies will likely limit feed use of new-crop HRW.

Forecast HRW ending stocks for 1990/91 are 389 million bushels. Except for 1988/89 and 1989/90, they are the lowest since 1975/76. However, exports, forecast at 365 million bushels, are barely above 1989/90, the lowest in almost two decades.

HRS 1991 Planting Intentions Down

Prospects for 1991 point to reduced hard red spring (HRS) wheat production. Based on farmers' planting intentions, area planted to HRS is projected to be down 16 percent from a year earlier. Program participation remains well above average in North Dakota, South Dakota, and Montana, so the increased ARP will effectively limit production. However, not as much area is expected to move from wheat to minor oilseeds in these States as a simple comparison of average relative returns would have indicated. Less than a million acres of wheat base were signed up to be planted to minor oilseeds under 0/92 provisions in North Dakota.

Record domestic use of HRS is forecast in 1990/91 based on increased U.S. mill grind. Exports are forecast down from the 1989/90 record, as competition from HRW increased. Nevertheless, total HRS use is forecast to be the third largest on record, limiting the stock buildup from the record large 1990 crop to only 83 million bushels.

SRW Production Forecast Down 16 Percent in 1991

Soft red winter wheat (SRW) production is forecast at 461 million bushels, down 88 million from 1990. However, SRW yields are estimated higher than in 1990. Yields in Missouri are expected to rise over 20 percent. All SRW producing States have below-average program participation, so much of the reduced plantings can be attributed to nonparticipants' response to low wheat prices in 1990. SRW regions have received ample moisture, establishing good potential yields. However, certain areas have been plagued by excessive moisture. Excessive moisture could cause disease problems potentially

reducing yields. The SRW supply in 1991/92 may be down less than 10 percent if stocks build as expected in 1990/91. A forecast export drop in 1990/91 of one-third from 1989/90 could result in higher stocks despite strong domestic use.

White Winter Wheat Devastated by Freeze Damage

Extremely cold temperatures in December 1990 caused extensive winterkill, particularly in Washington. Less than half of Washington's planted winter wheat area is forecast to be harvested as winter wheat in 1991. Much of the winter-killed winter wheat has been reseeded to spring wheat, but this reduces potential yields in this high-yielding State. Yields from the remaining winter wheat are forecast to drop from 63 bushels per acre to 52. Yields are also forecast down in Idaho, Oregon, and Michigan. Total white winter wheat production is forecast down more than 40 percent from a year earlier.

Increased exports and domestic use of white wheat in 1990/91 are expected to limit any stock increases despite the large production. Ending stocks are forecast to remain below 100 million bushels.

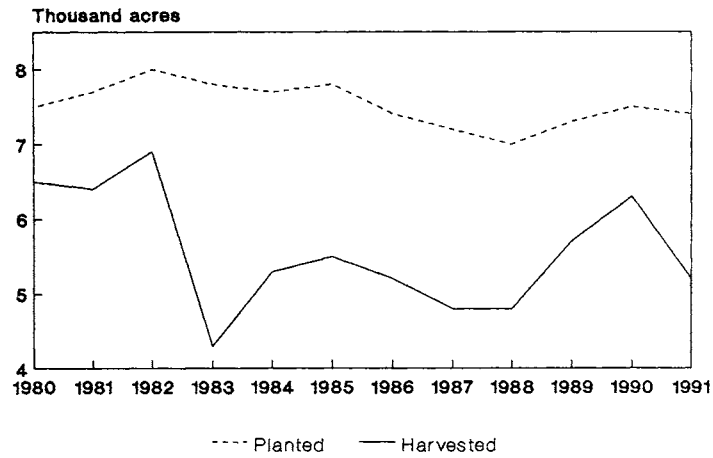
Durum Food Use Increases Sharply

Durum mill grind reported by the Bureau of the Census provides the basis for increased durum domestic use in 1990/91. Larger domestic use is forecast to offset slightly lower exports, limiting stock increases during 1990/91 to only 16 million bushels. The Prospective Plantings report indicates farmers intend to reduce durum planted area in 1991, 8 percent from a year earlier.

Figure 18
Kansas Wheat Yields



Figure 19
Oklahoma Area



Canada's GRIP Program: A Boon for Canada's Wheat Producers?^{1/}

Mark Simone and Joy Harwood

Abstract: Canada's Gross Revenue Insurance Plan (GRIP) provides a new safety net for grain and oilseed producers beginning in the 1991/92 (August/July) crop year. Under GRIP, a farmer can reduce income risk by signing up for revenue protection, thereby adding price protection to the yield protection offered by the crop insurance program. Although GRIP is appealing to wheat producers under current market conditions, its broad crop coverage and the possibility of "moral hazard" cause the outlook for 1991/92 Canadian wheat production to remain uncertain.

Keywords: Gross Revenue Insurance Plan, safety net, Canadian Wheat Board, moral hazard, crop insurance.

Canada's two new farm safety net programs are the Gross Revenue Insurance Plan (GRIP) and the Net Income Stabilization Account (NISA). GRIP is designed to stabilize farm incomes by reducing the revenue risk from yield and/or price declines. NISA allows farmers to accumulate savings in prosperous times and to draw down these funds in downturns. The programs represent two of Canada's most significant pieces of agricultural legislation in the last 50 years.

The new programs are the result of a national agricultural policy review initiated in December 1989. The policy review developed a "new vision of agriculture" that rests on four policy pillars:

- *More market-responsiveness*—Policy reform should remove barriers to markets and develop new products for these markets.
- *Greater self-reliance in the agri-food sector*—Support should be tailored to ensure a stable, equitable, and predictable environment.
- *A recognition of regional diversity*—Supports should build on regional strengths and advantages.
- *Increased environmental sustainability*—Government programs should ensure that farmers respect the need to preserve the carrying capacity of the natural resource base.

After analyzing eight options, the review committee concluded that a combined proposal including both GRIP and NISA best met the policy pillars. Both GRIP and NISA are voluntary programs that will be jointly funded by producers, provincial governments, and the federal government. The programs will begin in the 1991/92 (August/July) crop year.

Under the proposed Farm Income Protection Act, GRIP and NISA are designed to eventually supplant several current programs. These programs include the Western Grain Stabilization Program (WGSP), the Agricultural Stabilization Act (ASA), and the ad hoc support of recent years, most notably

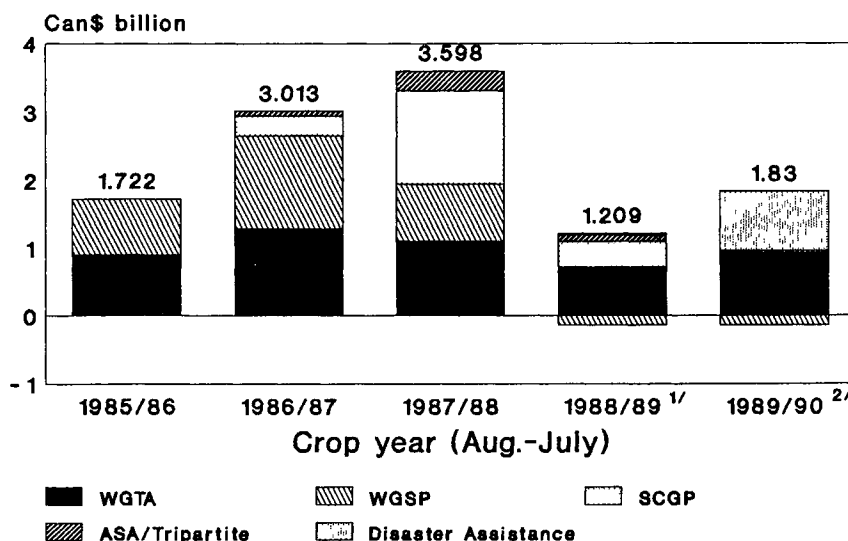
the Special Canadian Grains Program (SCGP).^{2/} (See box for Canada's spending on major support programs.) The Canadian Government estimates that GRIP alone could be expected to pay out about Can\$2.7 billion in 1991/92. (See figure A-1 for historical payments under Canadian support programs.)

GRIP, in particular, has received considerable attention recently from

^{2/} In addition, the Western Grain Transportation Act (WGTA) establishes a rail subsidy for eligible grains and oilseeds transported from western Canada to west coast ports and Thunder Bay, Ontario. Once the grains and oilseeds reach these destinations, they can be exported or used internally. GRIP and NISA will not supplant WGTA.

Figure A-1

Canada's Budget Outlays for Grains and Oilseeds



^{1/} The authors would like to thank Fred Kessel for providing statistical information and background. He is the Foreign Agricultural Service's Agricultural Attache in the U.S. Embassy in Ottawa.

^{1/} WGSP producer payments exceeded government payouts in 1988/89 and 1989/90.

^{2/} Does not include \$708 million from the Special Federal/Provincial Assistance Program instituted in June 1990.

Current Canadian Safety Net Programs

The Western Grain Stabilization Program (WGSP), established in 1976, stabilizes net cash flow to grain and oilseed producers in the Prairie Provinces of Alberta, Manitoba, and Saskatchewan. Payouts from the program are triggered when net cash flow from the seven major crops (wheat, barley, oats, rye, rapeseed, flaxseed, and mustard) grown in the Prairie region falls below 90 percent of the previous 5-year average. The program is jointly funded by producers and the federal government.

The Agricultural Stabilization Act (ASA) provides price support for certain commodities: wool, potatoes, corn, soybeans, oats, wheat, and barley grown outside the Prairie Provinces. Other commodities, mainly horticultural products, also can be designated for support.

In 1986, the Tripartite Stabilization Program was begun for cattle, hogs, and lambs, replacing the previous ASA support. Under this program, the federal government, provincial governments, and producers contribute equally to a fund that makes deficiency payments to producers when market prices fall below established support prices. The program also covers sugarbeets, apples, onions, and dry beans.

The temporary Special Canadian Grains Program (SCGP) was created to cushion grain and oilseed producers from lower world prices. Over Can\$1.6 billion was paid out under the SCGP during 1986-1988. The SCGP was terminated in 1989 but other ad hoc programs have been instituted. These include the Crop Drought Assistance Program in 1988/89 and the combined federal-provincial farm aid program in 1990.

producer groups, policymakers, and agricultural economists in Canada and the United States.³⁷ The program will offer support for many eligible crops at levels that are currently above world prices. It also offers coverage for some crops that have received much lower support in the past. This article explains how GRIP works, and discusses the potential response of farmers to the incentives created by this new program.

How GRIP Works

GRIP provides revenue protection rather than just the yield protection of the current crop insurance program. The provincial crop insurance agencies will administer GRIP. To receive GRIP protection, a farmer must sign up for the

program and pay a premium. Producers enrolling in GRIP can sign up for both crop insurance and revenue protection, or for revenue protection only. Producers can also choose to sign up for only crop insurance. Premium costs differ depending on the producer's choice (table A-1).

The producer's choice among the three program options (crop insurance only, revenue insurance only, or crop insurance and revenue insurance combined) also affects the likelihood of collection (table A-2). For instance, if prices are high and yields are high, the producer would not collect under any of the three options. In contrast, if prices are low and yields are high, the producer who signed up for revenue insurance (only) or revenue insurance and crop insurance (combined) might be able to collect. In this situation, the producer who signed up only for crop insurance would not be eligible for a payment.

Crops currently eligible for GRIP include wheat, barley, oats, canola, soybeans, rye, flaxseed, mustard seed, canary seed, mixed grain, and perennial crops. For a farmer who signs up for GRIP, all of that farmer's production of eligible crops has the potential to

receive GRIP payments. Commodities not eligible, including livestock, sugar beets, and horticultural products, will continue to receive price support under the National Tripartite Stabilization Program or the Agricultural Stabilization Act.

GRIP allows participating farmers to guarantee minimum levels of "target revenue" for eligible crops. Target revenue for each crop is established at planting time based on a farmer's historical yields, the farmer's seeded acreage, the province's support price, and the coverage level selected by the province. Target revenue will be calculated as:

Target Revenue = Historical yield x seeded acreage x support price x coverage level

The support price for each province will be based on a 15-year moving average of market prices, indexed for input costs, known as the Indexed Moving Average Price (IMAP). For 1991/92, the minimum coverage level is 70 of the IMAP. Payout to program participants from the revenue component (for farmers who choose revenue insurance and crop insurance combined or revenue insurance only) will be made when market revenue falls below target

³⁷ This article focuses on GRIP because it has received more attention than NISA and has stirred considerable controversy. This article does not address NISA in detail. Briefly, NISA allows a farmer to set up a trust account and to make contributions to that account based on qualifying sales of eligible commodities during the year, up to a maximum of Can\$250,000. Farmer's contributions would not be tax deductible and would not be taxable when withdrawn. The government contribution and interest on funds in the account would be taxed only when withdrawn. The account would earn interest at a competitive rate and contributions would be matched by both the federal and provincial governments.

Table A-1--Share of premiums paid by producers, the federal government, and the provincial governments

Coverage	Premium share paid by---		
	Producer	Federal government	Provincial government
	Percent		
Revenue and crop insurance	40	35	25
Revenue insurance only 1/	33 1/3	41 2/3	25
Crop insurance only	50	25	25

1/ For 1991/92, the federal government agreed to pay 10 additional percentage points of the provincial share of premiums and reduce the producer premium by 25 percent. These changes apply only to the revenue insurance component and are only for the 1991/92 crop year under the Farm Support and Adjustment Measures (FASM) program. These changes provide greater incentive for GRIP participation by provincial governments and producers.

Table A-2--Likelihood of producer collection under different program options 1/

		Price	
		High	Low
Yield	High	Does not collect	Revenue insurance 2/ Revenue + crop insurance 2/
	Low	Crop Insurance Revenue insurance 2/ Revenue + crop insurance 2/	Crop insurance Revenue insurance Revenue + crop insurance

1/ GRIP includes two options: revenue insurance only or revenue insurance plus crop insurance combined. A farmer can also buy only crop insurance (without participating in GRIP).

2/ Depends on interaction of price and yield.

revenue. 4/ Market revenue will be calculated at the end of the crop year as:

Market Revenue = Average market price x actual yield x seeded acreage

The market price is the weighted average price in that province received over the crop year for the actual grade of the commodity produced by the farmer.

The following is an example of how GRIP works under adverse market and production conditions for a farmer enrolling 500 acres of wheat in the program. The assumptions are:

- the farmer's historical yield is 30 bushels per acre;

^{4/} Farmers who sign up only for crop insurance receive a payment when the farmer's actual yield falls below his historical yield multiplied by his coverage level.

- the farmer's actual yield is 19 bushels per acre;
- crop insurance coverage is 70 percent;
- the IMAP is Can\$5.71 per bushel;^{5/}
- coverage of the IMAP is 70 percent; and
- the actual market price is Can\$2.50 per bushel.

The steps used to calculate the farmer's payment under GRIP, with both revenue and crop insurance components, are:

^{5/} Throughout this article, prices per bushel are expressed in Canadian dollars. For the past 18 months, 1 Canadian dollar has equalled about 84-86 U.S. cents.

1. Calculate target revenue

= Coverage x IMAP x historical yield x seeded acreage

= 70% x Can\$5.71/bu x 30 bu/acre x 500 acres

= Can\$59,955

2. Calculate market revenue

= Average market price x actual yield x seeded acreage

= Can\$2.50/bu x 19 bu/acre x 500

= Can\$23,750

3. Calculate crop insurance payment

Crop insurance guarantee (CIG)

Coverage x historical yield

70% x 30 bu/acre = 21 bu/ac

Payment

= (CIG - actual yield) x market price x seeded acreage

= (21 bu/acre - 19 bu/acre) x Can\$2.50/bu x 500 acres

= Can\$2,500

4. Calculate revenue insurance payment

= Target revenue - (market revenue + crop insurance payment)

= Can\$59,955 - (Can\$23,750 + Can\$2,500)

= Can\$33,705

5. Total support under the revenue insurance plan and crop insurance

= Revenue insurance payment + crop insurance payment

= Can\$33,705 + Can\$2,500

= Can\$36,205

6. Total support from the market and revenue insurance plan and crop insurance

= Market revenue + GRIP payment

= Can\$23,750 + Can\$36,205

= Can\$59,955

In this example, the return per acre from participating in GRIP would be Can\$72.41 (Can\$36,205/500), while nonparticipants would only receive Can\$47.50 (Can\$23,750/500) from the market. Of course, producers participating in GRIP would have to subtract the premium cost to determine their final net return. In 1991/92, these premiums are expected to range from Can\$10 to \$13 per acre in the main

wheat producing regions—the Prairie Provinces of Alberta, Manitoba, and Saskatchewan.

Because the CWB has a monopoly on wheat and barley exports, its policy is to not publish prices for individual sales. The CWB considers this confidentiality necessary for the welfare of its producer members. However, the CWB has been accused, primarily by the United States, of using this policy of discriminatory pricing as a quasi-export subsidy, because it provides the CWB an opportunity to export wheat below its initial price to some customers.

Since 1935, support prices for wheat have effectively been set by the Canadian Wheat Board (CWB) in the form of initial payments. (See box for

an explanation of the CWB.) While the CWB will continue this pricing policy, the IMAP will likely have considerable relevance for Canadian wheat farmers in 1991/92.

The IMAP will have a strong effect because 1991/92 initial wheat payments likely will decline substantially from 1990/91 levels. The Canadian Wheat Board apparently overestimated the initial price for the 1990/91 wheat crop by not adequately reflecting the price-depressing effects of abundant world wheat harvests and increased export competition. As a result, the Canadian wheat pool for western red spring wheat, as of March 1991, is anticipated to have a deficit of at least Can\$650 million, the largest on record.

The Canadian Wheat Board

The CWB is the largest marketing board in Canada in terms of sales value. It is the main authority for interprovincial and international trade of Canadian wheat and barley. CWB activities include: setting prices to producers, regulating producer deliveries through quotas, and organizing grain handling and transportation.

The CWB is mandated by the Canadian Parliament to achieve three main objectives: (1) to market as much grain as possible at the best possible price; (2) to provide price stability to grain producers; and (3) to ensure that each producer obtains an equitable share of the available grain market.

The CWB achieves price stability for grain marketed by producers through a price-pooling policy. All money received by the CWB from wheat and barley sales (domestic or foreign) is placed in a wheat or barley pool account and used to make payments to producers.

An advance payment, called an initial payment, is made when the producer delivers grain to a primary elevator. The initial payment is set by the Canadian government based on CWB market projections and is the government-guaranteed price to the producer.

If the average price received for the wheat or barley generates greater revenues than the initial payment plus handling and administrative costs, producers receive a final payment at the end of the crop year. If the pool is in deficit, the Canadian government pays the deficit. The most recent pool deficits for wheat occurred in 1985/86 and for barley in 1986/87.

Export price quotes for wheat and barley are established daily by the CWB for different grades and types of grain at each port. However, wheat is sometimes sold at prices below these quotes. Many factors influence the CWB's daily price quotes, including competitors' prices, other nations' export and import subsidies, exportable supplies of Canadian grain, ocean freight rates, and exchange rates.

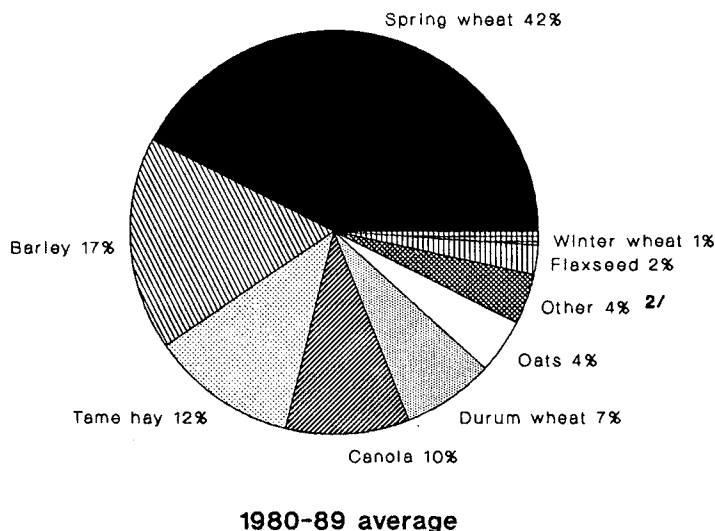
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Table A-3--Average GRIP support prices for Prairie Provinces and 1990/91 CWB initial prices¹

Wheat Class	GRIP support prices 1991/92	CWB initial prices 1990/91
	Can\$/bu	
Red spring	4.15	3.67
Durum	4.49	3.40

Figure A-2

Acreage in the Prairie Provinces^{1/}



1/ Includes Alberta, Manitoba, and Saskatchewan.

2/ Includes mainly rye, mustard seed, and dry peas.

The Prairie Provinces announced their GRIP support prices in March 1991. The prices are based on 70 percent of the IMAP for eligible crops for 1991/92. Because the IMAP is based on a 15-year moving average of market prices, it includes the relatively high prices from the late 1970's and the early 1980's. Except for the high prices induced by the 1988/89 North American drought, wheat prices have trended downward during the past decade. The GRIP support prices, even at 70 percent, exceed the current CWB initial prices. (See table A-3.)

Acreage Responses to GRIP Are Uncertain

Unlike the U.S. target price/loan rate program for grains, GRIP does not im-

pose an acreage reduction requirement for participating producers to receive program benefits. However, GRIP places a 10 percent cap on the increase in a farm's total seeded acreage for 1991/92 over the farm's average acreage of the last three crop years. This cap applies for all provinces. GRIP does not put any control on the individual crops a producer can plant within this seeded acreage base, except in Saskatchewan. Saskatchewan has placed a 20 percent cap on the individual crop acreage increase over 1990/91 acreage.

Depending on anticipated relative net returns, GRIP might significantly affect the acreage planted to certain crops in 1991/92. The acreage planted to wheat, in particular, has received considerable

attention. Wheat accounts for about 50 percent of the acreage planted in the Prairie Provinces (see figure A-2).

Those observers anticipating a decline in Canadian wheat production in 1991/92 cite several reasons. They argue that wheat area may be displaced because certain grains and oilseeds are covered under GRIP that do not receive support from the CWB. GRIP may provide an incentive to grow these non-CWB crops, such as canola, flax, oats, and rye, and specialty crops, such as canary seed, lentils, peas, and safflower.

Producers' planting decisions depend largely on market net returns and GRIP net returns. A comparison of GRIP net returns and average market net returns, using estimates for 1991/92 prices and yields, shows that growing wheat may not maximize net revenue in certain cases. (See table A-4.) Based on these estimates, some farmers may have the greatest incentive to produce canola in 1991/92. (Potential effects are based on the price and yield assumptions stated in table A-4.)

Specifically, table A-4 indicates the returns to different crops, by province, for participants and nonparticipants in the GRIP program. Using canola as an example, a Saskatchewan producer is guaranteed Can\$144.83 under GRIP in 1991/92. Subtracting the revenue premium (Can\$5.29), the crop insurance premium (Can\$5.00), and input costs (Can\$31.00) leaves the producer with a net return to participating in the GRIP program of Can\$103.54. In contrast, a Saskatchewan canola producer who does not participate in GRIP in 1991/92, but buys crop insurance, can expect a net return of Can\$95.42 (Can\$131.42 in market revenue less Can\$5.00 in crop insurance premium less Can\$31.00 in input costs).

Other analysts disagree with the arguments presented by those who think wheat plantings will be lower. They argue that farmers often follow historic cropping patterns and that dramatic shifts in production are not often seen, particularly in the first year of a new program. In addition, wheat plantings—including the introduction of marginal land into production—may be more attractive because GRIP serves as a safety net for revenue.

	Red Spring Wheat	Durum Wheat	Barley	Oats	Canola	Flax	Rye
Canadian dollars per acre							
Target revenue 1/ Alberta	126.69	121.99	109.04	82.49	146.60	141.62	88.62
Saskatchewan	105.09	101.49	91.68	63.04	144.83	119.14	69.38
Manitoba	123.05	124.75	103.82	68.26	136.38	121.57	92.98
1990/91 market revenue 2/ Alberta	120.74	100.30	118.78	53.89	131.66	114.59	46.46
Saskatchewan	100.16	83.45	100.33	40.54	125.84	92.01	31.71
Manitoba	117.27	104.89	113.61	43.90	119.92	100.17	42.34
1991/92 market revenue 3/ Alberta	91.28	80.70	92.54	92.18	134.31	144.22	68.00
Saskatchewan	75.72	67.14	78.16	70.50	131.42	120.49	51.48
Manitoba	88.66	84.39	88.51	80.44	123.18	122.00	67.26
1991/92 revenue insurance premium 4/ Alberta	7.06	6.47	4.86	3.70	4.29	6.22	6.94
Saskatchewan	8.80	7.96	5.01	3.68	5.29	6.39	5.88
Manitoba	7.42	9.23	4.82	3.85	5.46	5.29	7.05
Average crop insurance premium Alberta	2.50	3.00	2.50	2.50	5.00	5.50	3.00
Saskatchewan	2.50	3.00	2.50	2.50	5.00	5.50	3.00
Manitoba	5.00	5.00	5.00	4.00	7.00	7.00	4.50
Average input costs 5/ Alberta	26.00	26.00	24.00	15.00	30.00	31.00	17.00
Saskatchewan	26.00	26.00	24.50	15.00	31.00	31.00	17.00
Manitoba	26.00	26.00	24.50	15.00	30.00	30.00	17.00
Net returns from GRIP in 1991/92 6/ Alberta	91.13	86.52	77.68	61.29	107.31	98.90	61.68
Saskatchewan	67.79	64.53	59.67	41.86	103.54	76.25	43.50
Manitoba	84.63	84.52	69.50	45.41	93.92	79.28	64.43
Net returns from market in 1990/91 7/ Alberta	92.24	71.30	92.28	36.39	96.66	78.09	26.46
Saskatchewan	71.66	54.45	73.33	23.04	89.84	55.51	11.71
Manitoba	86.27	73.89	84.11	24.90	82.92	63.17	20.84
Net returns from market in 1991/92 8/ Alberta	62.78	51.70	66.04	74.68	99.31	107.72	48.00
Saskatchewan	47.22	38.14	51.16	53.00	95.42	83.99	31.48
Manitoba	57.66	53.39	59.01	61.44	86.18	85.00	45.76

1/ Target revenue = (1991/92 INAP) x (10-year average historical yield (1980/81-1989/90)).

2/ 1990/91 market revenue = (1990/91 CWB initial price for spring wheat, durum, and barley) or (weighted average price received by Prairie farmers (August 1990 through March 1991) for all other crops) x (1990/91 predicted yields). Sources: Canadian Grain Commission, USDA Foreign Agricultural Service.

3/ ERS forecast using anticipated 1991/92 initial payments for spring wheat, durum, and barley. For all other crops, 5-year weighted average (1985/86-1989/90) of prices received by Prairie farmers. All yields are a 10-year historical average (1980/81-1989/90).

4/ For 1991/92 only, revenue premiums are reduced 25 percent to encourage GRIP participation.

5/ Source: Agricultural Attache, U.S. Embassy, Ottawa, Canada.

6/ Target revenue less input costs, revenue insurance premium, and crop insurance premium.

7/ Expected 1990/91 market revenue less input costs and crop insurance premium.

8/ Expected 1991/92 market revenue less input costs and crop insurance premium.

GRIP Enrollment Lower than Expected

The deadline for GRIP signup is May 15. But as of May 5, farmer enrollment in GRIP has been below the Government of Canada's expectations. According to one industry poll, nearly one-quarter of growers in the Prairie Provinces have decided not to enroll in GRIP. The May 5 data indicate that the largest share of producers are signing up in Saskatchewan:

Province	Producer enrollment	CWB permit holders
Number		
Alberta	9,000	45,500
Manitoba	10,000	24,000
Saskatchewan	39,000	69,000

Several factors might account for the lower-than-expected enrollment. Because GRIP is a new program, there is expected to be a "learning curve" for farmers and a certain hesitation concerning program provisions and operation. In addition, farmers are confronting uncertainty about market conditions. CWB initial prices have not yet been released, and may not be released until late in the summer. Data released after the May 15 deadline will indicate final GRIP enrollment for the 1991/92 year.

One factor affecting acreage response with the new GRIP program in place is farmers' participation in the program. As of May 5, farmer enrollment in GRIP was running below original Government of Canada predictions (see box). However, enrollment in some provinces is well over 40 percent. More information will be available in June.

Input Use and Yields Also Are Uncertain

Besides acreage responses, another issue surrounds the effects of GRIP on yield response. Under certain circumstances, some farmers may reduce their levels of input use with the GRIP program in place. For example, a farmer might sign up for GRIP with the expectation that he would reduce his input use, trigger a GRIP payment, and realize a higher return than if he had not suffered a loss and sold his (higher-yielding) crop in the market.

This situation is known as "moral hazard." It involves changes in a farmer's management practices after the purchase of insurance—such as reduced input use—that increase the probability of that farmer's collection. In the case of GRIP, certain farmers may find that they can maximize their net

revenue by lowering production costs and triggering a GRIP payment. Moral hazard is a potentially large problem in a year such as 1991, when expected market prices are low relative to their historical average.

In deciding whether to reduce input use, the producer would need to compare the target revenue (less the reduced production costs and GRIP premium) with the expected market return that would result from "normal" input use, higher production costs, and no GRIP payment.

Specifically, a farmer would have an incentive to reduce input use if total revenue (including GRIP return and market return with lower yields) minus:

- production costs with lower inputs
- the revenue premium
- the crop insurance premium

is greater than the market revenue less production costs with "normal" input use.

Several precautions partially help offset the attractiveness of reduced input use

and moral hazard. These precautions, built into the GRIP program, include:

- *Multiyear signups*—Farmers who sign up for GRIP must do so for a multiyear period (4 years in Saskatchewan and Alberta, 5 years in Manitoba). Farmers may leave GRIP, but must give at least 2 years' notice. As a result, a farmer can't just sign up in a given year when market prices are expected to be low.
- *Coverage effects*—A farmer influences his future coverage if he signs up for GRIP, reduces his input use, and realizes a loss. Low yields in any one year contribute to lower coverage in future years. This is because the producer's yield for GRIP purposes is calculated as a 15-year moving average of that producer's historical yields.

In general, producers would be most likely to reduce input use if market conditions favored GRIP payment collection, as described above, or if the farmer planned on leaving the GRIP program in the near future. In the latter situation, the producer would not be concerned with reduced future coverage or higher premiums.

An August 1990 report to the Ministers of Agriculture notes that special attention will be required to control program abuse in years when the revenue guarantee is substantially above expected returns. Specifically, the report states that greater use of special investigators or compliance officers would help minimize the potential for moral hazard.

However, for many producers, moral hazard and reduced input use will not be a main reason for GRIP signup. These producers see the program as a long-run risk management plan to ensure against crop failure or very low market prices.

Conclusion

The effects of Canada's GRIP program on wheat area and yields are uncertain. Some analysts believe that Canadian wheat production will rise because producers have a safety net that offers more certainty than in the past. Wheat production may be particularly attractive for producers whose net returns for wheat are higher than for their cropping alternatives. If they suffer poor yields and their revenue trigger is reached, they have the income support of the GRIP program.

Other analysts disagree. They believe that wheat area will drop. First, they argue that producers may decide to plant crops that will be covered by GRIP but not under the CWB—such as canary seed, mustard seed, and other crops. Second, they argue that net revenue for farmers in many areas could be higher for certain other crops than for wheat. In addition, some farmers may reduce their input use in order to trigger a GRIP

payment, resulting in a drop in wheat yields. Clearly, GRIP's effects on wheat production depend not only on land use, but on input use and yields.

Data on Canadian planting intentions were first made available in Statistics Canada's *Field Crop Reporting Series* in March. This report indicated that Canadian farmers intend to seed 32.7 million acres of spring wheat in 1991/92, down 3 percent from the previous year. Durum wheat seedings are expected to be 5.5 million acres, unchanged from last year.

The report notes that GRIP will have a major influence, and that farmers might not have had a full understanding of the GRIP program at the time of the survey:

"During the survey, we received some comments from respondents stating that they were not yet fully aware of all of the implications (of GRIP) for their farming operation. As a result, they indicated that their crop intentions may change. Other factors such as spring weather conditions and crop rotation requirements may also alter prospective cropping patterns."

More information on acreage will be available closer to planting, which should be completed by the end of May. And knowledge of input use and yields will not be available until closer to harvest, which begins in late August and early September.

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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	77.3	69.0
Harvested	64.7	60.7	55.9	53.2	62.2	69.4	57.5
Set aside and diverted	18.8	21.0	23.9	22.5	9.6	7.0	13.8
Acreage reduction	11.9	15.8	20.2	19.2	6.1	2.2	10.2
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	4.8	3.6
Conservation Reserve Program	---	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	90.8
Bushels per acre							
Yield/harvested acre	37.5	34.4	37.7	34.1	32.7	39.5	36.0
Million bushels							
Supply:							
June 1 stocks	1,425	1,905	1,821	1,261	702	536	856
Production	2,424	2,091	2,108	1,812	2,037	2,739	2,071
Imports 2/	16	21	16	23	23	35	35
Total supply	3,865	4,017	3,945	3,096	2,762	3,310	2,962
Million bushels							
Disappearance:							
Food	674	712	721	726	753	790	815
Seed	93	84	85	103	100	89	95
Feed and residual 3/	284	401	280	146	139	500	275
Total domestic	1,051	1,197	1,086	975	992	1,379	1,185
Exports 2/	909	999	1,598	1,419	1,233	1,075	1,125
Total disappearance	1,960	2,196	2,684	2,394	2,225	2,454	2,310
Million bushels							
Ending stocks:							
May 31	1,905	1,821	1,261	702	536	856	652
Farmer-owned reserve	433	463	467	287	144	15	140
Special program 4/	163	169	0	0	0	0	0
CCC inventory 5/	602	830	283	190	117	165	150
Outstanding loans 6/	678	236	178	19	30	210	70
Other	29	123	333	206	245	466	292
\$/bushel							
Prices:							
Received by farmers	3.08	2.42	2.57	3.72	3.72	2.61	2.80-3.20
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	7,542	7,148	6,213

--- = Not applicable.

NA = Not available.

1/ PIK - 1983/84-1985/86; 0-92 - 1986/87-1989/90. 2/ Imports and exports include flour and other products expressed in wheat equivalent. 3/ Residual approximates feed use and includes negligible quantities used for alcoholic beverages. 4/ Projected amount of free-stock carryover in the special producer storage loan program. 5/ From 1981/82 on, includes 147 million bushels (2 million tons) in Food Security Reserve. 6/ Projected amount of free-stock carryover under 9-month loan.

Appendix table 2--Wheat: Area, yield, and production by major States, 1983-91

State	1983	1984	1985	1986	1987	1988	1989	1990	1991 1/
Area harvested (million acres):									
Arkansas	1.5	1.4	0.6	0.8	0.8	1.1	1.2	1.4	1.0
Colorado	3.1	3.3	3.5	3.0	2.6	2.4	2.3	2.6	2.4
Idaho	1.3	1.3	1.4	1.3	1.1	1.2	1.4	1.4	0.8
Illinois	1.4	1.6	0.8	0.8	1.0	1.3	1.8	1.9	1.5
Kansas	10.8	11.2	11.4	10.2	9.9	9.5	8.9	11.8	10.8
Minnesota	2.1	2.6	2.7	2.8	2.5	2.3	2.7	2.9	0.1
Missouri	1.9	2.1	1.3	0.6	0.8	1.6	1.9	2.0	1.6
Montana	4.5	4.6	4.0	4.8	4.7	3.8	5.2	5.2	2.1
Nebraska	2.3	2.3	2.3	2.0	2.0	2.0	2.1	2.3	2.1
N. Dakota	7.2	8.7	8.9	9.4	9.1	7.2	10.3	10.9	0.1
Ohio	1.2	1.1	1.0	1.1	0.9	0.9	1.2	1.4	1.1
Oklahoma	4.3	5.3	5.5	5.2	4.8	4.8	5.7	6.3	5.2
Oregon	1.1	1.1	1.1	1.0	0.8	0.8	0.9	1.0	0.8
S. Dakota	2.7	3.7	3.8	3.8	3.5	2.6	3.5	3.8	1.3
Texas	4.6	5.0	5.9	4.8	3.6	3.2	3.0	4.2	2.8
Washington	2.7	2.6	2.7	2.4	2.0	2.1	2.3	2.5	0.9
Yield (bu/acre):									
Arkansas	39.0	44.0	32.0	41.0	41.0	53.0	44.0	35.0	39.0
Colorado	39.9	35.3	39.8	32.6	38.1	33.8	27.4	33.6	29.0
Idaho	70.3	63.6	53.4	62.4	75.0	65.7	66.7	72.7	68.0
Illinois	46.0	44.0	49.0	44.0	59.0	54.0	59.0	48.0	54.0
Kansas	41.5	38.5	38.0	33.0	37.0	34.0	24.0	40.0	34.0
Minnesota	36.9	47.3	52.7	36.8	40.7	23.0	38.0	48.4	35.0
Missouri	38.0	41.0	39.0	33.0	46.0	49.0	47.0	38.0	46.0
Montana	30.7	22.6	12.7	29.1	32.2	15.7	27.7	28.1	30.0
Nebraska	43.0	36.0	39.0	38.0	44.0	36.0	27.0	38.0	34.0
N. Dakota	26.9	32.8	36.4	31.2	29.5	14.3	23.5	35.3	28.0
Ohio	49.0	44.0	62.0	46.0	58.0	50.0	51.0	59.0	54.0
Oklahoma	35.0	36.0	30.0	29.0	27.0	36.0	27.0	32.0	26.0
Oregon	60.4	61.8	52.6	57.0	65.3	68.6	58.5	59.5	57.0
S. Dakota	32.9	34.1	29.6	28.3	30.2	14.4	23.6	33.8	34.0
Texas	35.0	30.0	31.7	25.0	28.0	28.0	20.0	31.0	24.0
Washington	63.9	61.4	47.7	48.5	56.7	60.5	48.7	60.5	52.0
Production (million bushels):									
Arkansas	58.5	61.6	18.2	33.4	34.4	56.7	52.8	49.0	38.2
Colorado	122.1	115.3	2/ 139.3	96.4	97.4	79.5	62.1	87.0	69.6
Idaho	91.7	81.4	72.0	81.8	85.5	75.5	91.4	99.6	52.4
Illinois	64.4	70.4	36.8	36.1	56.1	67.5	105.0	91.2	81.0
Kansas	448.2	431.2	433.2	336.6	366.3	323.0	213.6	472.0	367.2
Minnesota	79.0	120.7	2/ 142.4	103.7	102.6	51.7	102.5	138.6	1.8
Missouri	70.3	84.1	49.9	18.8	35.4	76.0	87.0	76.0	71.3
Montana	136.9	104.7	50.2	138.5	151.2	60.0	145.0	145.9	63.0
Nebraska	98.9	81.0	89.7	76.0	85.8	72.0	55.4	85.5	69.7
N. Dakota	194.1	284.2	323.3	292.3	269.1	103.4	242.3	385.2	2.0
Ohio	58.8	48.4	58.9	48.3	49.3	46.0	62.7	79.7	59.4
Oklahoma	150.5	190.8	165.0	150.8	129.6	172.8	153.9	201.6	135.2
Oregon	65.6	68.9	56.0	58.4	52.9	51.8	53.8	57.6	45.9
S. Dakota	89.7	2/ 126.0	111.2	108.7	106.7	38.0	83.1	128.0	44.2
Texas	161.0	150.0	2/ 187.2	120.0	100.8	89.6	60.0	130.2	67.2
Washington	2/ 172.6	160.4	128.3	116.9	114.3	124.6	110.6	150.1	46.8

1/ Indicated -winter wheat only. 2/ Record production.

Appendix table 3--Wheat classes: Estimated acreage, yield, and production, 1978-91

Year	Planted acreage	Harvested acreage	Yield	Production
	---Million acres---		Bu./acre	Million bushels
Hard red winter:				
1978	36.5	28.5	29.1	829.9
1979	38.2	31.3	34.9	1,091.6
1980	40.7	35.8	33.0	1,181.3
1981	43.4	37.9	29.3	1,112.1
1982	43.2	37.0	33.6	1,243.6
1983	41.3	30.2	39.7	1,197.8
1984	43.6	34.1	36.7	1,250.6
1985	42.5	34.5	35.7	1,230.1
1986	39.4	31.5	32.3	1,017.8
1987	36.3	28.6	35.7	1,020.8
1988	34.4	26.8	32.8	881.9
1989	37.5	26.1	27.2	711.0
1990	38.3	32.9	36.5	1,198.9
1991 1/	35.4	27.8	31.4	874.0
Hard red spring:				
1978	13.5	13.2	28.8	379.7
1979	14.2	14.0	26.3	368.8
1980	16.3	13.6	22.9	311.4
1981	16.1	15.8	29.4	463.8
1982	15.5	15.2	32.4	492.7
1983	11.1	10.7	30.2	322.7
1984	12.0	11.7	34.9	408.8
1985	14.0	13.1	35.1	460.2
1986	14.6	14.1	32.0	451.4
1987	13.3	13.0	33.0	430.6
1988	13.0	10.1	17.9	181.2
1989	16.5	15.9	27.3	433.5
1990	16.2	15.3	36.1	554.7
1991 1/	13.6	NA	NA	NA
Durum:				
1978	4.1	4.0	33.1	133.3
1979	4.0	3.9	27.1	106.7
1980	5.5	4.8	22.4	108.4
1981	5.8	5.7	32.4	183.0
1982	4.3	4.2	34.9	145.9
1983	2.6	2.5	29.3	73.0
1984	3.3	3.2	32.1	103.4
1985	3.2	3.1	36.4	112.5
1986	3.0	2.9	34.0	97.9
1987	3.3	3.3	28.2	92.6
1988	3.3	2.8	15.7	44.8
1989	3.8	3.7	25.1	92.2
1990	3.6	3.5	34.9	122.2
1991 1/	3.3	NA	NA	NA
Soft red winter:				
1978	6.2	5.5	34.3	188.9
1979	8.4	7.6	40.7	309.6
1980	11.7	10.6	41.7	441.8
1981	16.7	15.3	44.3	678.0
1982	17.2	15.8	37.3	588.9
1983	15.6	12.8	39.4	504.2
1984	14.5	12.6	42.2	531.4
1985	10.6	9.1	40.5	368.4
1986	10.1	7.7	38.0	292.5
1987	9.0	7.6	45.9	347.7
1988	10.9	9.6	49.3	472.7
1989	13.4	12.0	45.8	548.9
1990	14.1	12.7	43.4	549.5
1991 1/	11.4	9.8	46.8	460.9
White:				
1978	5.7	5.3	46.0	243.7
1979	6.6	5.6	46.0	257.4
1980	6.6	6.3	53.7	338.0
1981	6.2	6.0	58.1	348.5
1982	6.0	5.7	51.6	294.0
1983	5.9	5.3	60.8	322.0
1984	5.8	5.3	56.7	300.6
1985	5.3	4.9	51.8	253.9
1986	4.9	4.5	51.6	232.0
1987	3.9	3.5	61.6	215.8
1988	4.0	3.8	61.1	231.6
1989	5.4	4.5	55.8	251.0
1990	5.2	5.0	63.1	313.4
1991 1/	5.3	NA	NA	NA

NA = Not available.

1/ Based on Prospective Plantings or May NASS forecasts.

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

Appendix table 4--Wheat: Quarterly supply and disappearance, 1983/84-1990/91

Year and periods beginning June 1	Supply				Disappearance						Ending stocks		
	Begin- ning stocks	Pro- duction	Imports 1/	Total	Domestic use				Exports 1/	Total disap- pearance	Govt. owned	Pri- vately owned 3/	Total
					Food	Seed	Feed 2/	Total					
Million bushels													
1983/84:													
June-Aug.	1 515.1	2,419.8	0.7	3,935.6	158.7	1.0	196.1	355.8	346.7	702.5	365.0	2,868.1	3,233.1
Sept.-Nov.	3,233.1	---	0.9	3,234.0	163.1	75.0	100.5	338.6	359.7	698.3	375.8	2,159.9	2,535.7
Dec.-Feb.	2,535.7	---	1.1	2,536.8	166.8	3.0	48.3	218.1	367.1	585.3	313.8	1,637.7	1,951.5
Mar.-May	1,951.5	---	1.1	1,952.6	154.0	21.0	26.2	201.2	352.8	554.0	188.0	1,210.6	1,398.6
Mkt. year	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:													
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	35.8	224.3	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	1,233.4	2,225.2	116.6	419.9	536.5
1990/91: 4/													
June-Aug.	536.5	2,738.6	8.0	3,283.0	196.4	1.6	407.4	605.4	268.1	873.5	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	100.0	294.7	225.5	520.2	152.5	1,243.1	1,395.6
Mar.-May	1,395.6	---	5.8	1,401.4	189.7	25.0	27.4	242.1	303.4	545.5	165.0	690.9	855.9
Mkt. year	536.5	2,738.6	35.0	3,310.0	790.0	89.1	500.0	1,379.1	1,075.0	2,454.1	165.0	690.9	855.9

--- = Not applicable.

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

Appendix table 5--Wheat classes: Marketing year supply and disappearance, 1982/83-1990/91 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	660	365	1,025	389
Hard spring	155	555	722	274	210	484	238
Soft red	32	549	581	284	230	514	67
White	85	313	407	91	220	311	96
Durum	50	122	186	70	50	120	66
All classes	536	2,739	3,310	1,379	1,075	2,454	856

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

Appendix table 6--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	1,909.5	129.9	260.9	64.6	1,454.1
Mar. 1	1,395.6	152.5	328.6	19.1	895.4
1991/92: F/					
Jun. 1	856.0	165.0	210.0	15.0	466.0

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

Source: Agricultural Stabilization and Conservation Service, USDA.

Appendix table 7--U.S. wheat exports: Grain, flour, and products, by month, 1981/82-1990/91 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	78,345	87,655	104,914	84,611	71,649	1,178,466
1990/91	88,274	80,840	92,682	105,985	83,883	77,265	56,444	66,467	91,313	112,239			
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			
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	564	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			
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	106,798	120,044	133,700	148,727	122,469	96,818	1,419,211
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			

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.
USDA/ERS calculations.

Appendix table 8--U.S. wheat imports: Grain, flour and products, by month, 1983/84-1990/91 1/

Crop year	June	July	August	September	October	November	December	January	February	March	April	May	Total
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			
Flour and Products	741	1,393	905	935	784	762	1,278	605	1,032	749			
Total	1,846	2,234	3,918	4,803	4,560	4,027	3,965	1,434	2,354	2,076			

1/ Totals may not add because of rounding.

Appendix table 9--Wheat flour: Supply and disappearance, United States, 1960-90

Calendar year	Wheat ground	Millfeed pro- duction	Flour pro- duction	Flour and product imports 2/	Total supply	Exports		Domestic disappearance	Total population July 1	Per capita disappearance
						-----	-----			
						Flour	Pro- ducts 2/			
-----1,000-----										
	bushells	tons	-----1,000 cwt.-----					Million	Pounds	
1960	582,719	4,827	255,596	141	255,737	42,135	58	213,544	180.7	118
1961	591,999	4,858	260,709	131	260,840	43,528	42	217,270	183.7	118
1962	595,353	4,876	262,403	132	262,535	47,719	22	214,794	186.5	115
1963	589,245	4,794	260,291	136	260,427	44,498	19	215,910	189.2	114
1964	591,654	2,890	261,905	142	262,047	42,328	26	219,693	191.8	115
1965	564,724	4,645	250,591	145	250,736	30,597	194	219,945	194.2	113
1966	568,673	4,619	253,176	179	253,355	33,091	178	220,086	196.5	112
1967	549,801	4,423	245,390	222	245,612	21,056	16	224,540	198.6	113
1968	569,649	4,511	254,310	233	254,543	28,068	133	226,342	200.6	113
1969	567,956	4,458	254,194	274	254,468	26,333	158	227,977	202.6	113
1970	563,714	4,409	253,094	325	253,419	26,054	14	227,351	205.1	111
1971	555,092	4,279	249,810	341	250,151	20,685	15	229,451	207.7	110
1972	557,801	4,303	250,441	477	250,918	20,335	19	230,564	209.9	110
1973	567,287	4,395	254,661	550	255,211	16,107	26	239,078	211.9	113
1974	562,962	4,483	251,097	665	251,762	14,453	33	237,276	213.9	111
1975	582,675	4,701	258,985	621	259,606	12,364	22	247,220	216.0	114
1976	618,284	4,920	275,077	604	275,681	16,064	44	259,573	218.0	119
1977	618,125	4,787	275,784	604	276,388	22,053	37	254,298	220.2	115
1978	621,321	4,860	277,950	773	278,723	22,170	43	256,510	222.6	115
1979	636,375	4,945	284,051	823	284,874	20,927	86	263,861	225.1	117
1980	628,559	4,866	282,655	904	283,559	17,378	54	266,127	227.7	117
1981	634,381	5,045	283,966	1,166	285,132	18,655	84	266,393	229.9	116
1982	653,206	5,228	290,907	1,496	292,403	20,926	154	271,323	232.2	117
1983	698,951	5,655	311,587	1,590	313,177	37,315	150	275,712	234.3	118
1984	675,271	5,426	299,832	2,005	301,837	19,933	160	281,744	236.3	119
1985	700,151	5,556	313,815	2,064	315,879	18,387	141	297,351	238.5	125
1986	737,537	5,799	326,316	2,226	328,542	25,842	123	302,577	240.7	126
1987	767,507	6,260	341,565	2,632	344,197	28,529	142	315,526	242.8	130
1988	769,699	6,163	344,154	2,696	346,850	28,169	182	318,499	245.1	130
1989	761,021	6,072	342,762	3,303	346,065	26,357	182	319,526	247.4	129
1990 3/	797,589	6,255	359,639	3,572	363,211	18,380	273	344,558	249.9	138

1/ Commercial production of wheat flour, whole wheat, industrial, and Durum flour and farina reported by Bureau of Census. Production prior to 1970 includes estimate for noncommercial wheat milled. 2/ Imports and exports of macaroni and noodle products (flour equivalent). 3/ Preliminary.

Appendix table 10--Wheat and flour price relationships at milling centers, annual and by periods, 1982/83-1990/91

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
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.	6.91	7.55	1.30	8.85	1.94	6.84	7.45	1.17	8.62	1.78

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 11--Wheat farm prices for leading classes and major feed grains in U.S. regions, 1984/85-1990/91

Crop year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. 1/	May	Average	Loan rate
\$/60-pound bushel														
Central and So. Plains 2/														
Wheat (hard 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	3.89	4.04	4.03	4.01	3.74	2.21
1989/90	3.84	3.80	3.74	3.76	3.79	3.81	3.87	3.82	3.63	3.50	3.53	3.30	3.70	2.04
1990/91	3.02	2.75	2.53	2.45	2.40	2.34	2.37	2.36	2.38	2.52	2.61			
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	2.48	2.47	2.52	2.58	2.53	2.55	1.80
1989/90	2.43	2.38	2.28	2.28	2.22	2.17	2.21	2.22	2.21	2.30	2.40	2.47	2.30	1.69
1990/91	2.58	2.55	2.44	2.31	2.18	2.19	2.27	2.34	2.38	2.43	2.48			
Corn Belt 3/														
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	4.02	4.12	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	3.59	3.52	3.81	2.14
1990/91	3.04	2.85	2.66	2.45	2.40	2.34	2.42	2.38	2.36	2.50	2.68			
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	2.79	2.87	2.84	2.87	2.86	1.95
1989/90	2.80	2.75	2.57	2.52	2.45	2.46	2.52	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	2.44	2.52	2.56	2.64	2.69			
Northern Plains 4/														
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	2.56	2.40
1987/88	2.50	2.36	2.37	2.55	2.62	2.65	2.70	2.76	2.77	2.74	2.78	2.98	2.65	2.28
1988/89	3.30	3.62	3.67	3.79	3.83	3.74	3.81	3.92	3.94	3.99	3.96	3.98	3.80	2.21
1989/90	3.89	3.80	3.66	3.59	3.60	3.58	3.62	3.58	3.51	3.47	3.49	3.49	3.61	2.06
1990/91	3.33	2.96	2.57	2.44	2.43	2.39	2.43	2.44	2.43	2.52	2.62			
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	2.64	2.88	2.93	3.05	3.12	3.14	2.74	2.40
1987/88	3.15	3.06	2.87	3.19	3.30	3.33	3.20	3.21	3.29	2.93	3.22	3.47	3.19	2.28
1988/89	4.61	5.18	5.28	5.21	4.99	4.93	4.72	4.29	4.43	4.44	3.78	4.18	4.67	2.21
1989/90	3.83	3.65	3.50	3.25	3.31	3.27	3.36	3.33	3.31	3.34	3.44	3.50	3.42	2.06
1990/91	3.36	3.11	2.53	2.39	2.43	2.44	2.48	2.61	2.56	2.62	2.69			
Pacific Northwest 5/														
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	4.49	4.37	4.41	4.31	4.14	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	2.47	2.47	2.51	2.56	2.61	2.78	2.91			
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	3.06	3.25	3.28	3.22	3.17	1.74
1989/90	3.08	2.90	3.19	2.91	2.83	3.00	3.22	3.15	3.13	2.93	3.15	3.04	3.04	1.60
1990/91	3.07	3.10	2.97	2.87	2.90	3.09	2.87	2.98	3.08	3.04	2.70			
U.S. average 6/														
Wheat:														
1984/85	3.46	3.29	3.43	3.43	3.43	3.45	3.38	3.38	3.38	3.38	3.33	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	2.44	2.32	2.36	2.53	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	2.43	2.53	2.63		2.61	1.95

1/ April 1991 data is preliminary. 2/ Kansas, Nebraska, Texas, Oklahoma, and Arkansas. 3/ Ohio, Indiana, Illinois, and Missouri. 4/ Wheat prices by class represent averages for the entire United States. 5/ Washington, Oregon, and Idaho. 6/ 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 12--Wheat cash prices for leading classes at major markets, 1984/85-1990/91

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	4.14	4.04	4.13	3.91	4.22
1990/91	3.60	3.11	2.89	2.83	2.81	2.78	2.78	2.71	2.77	2.94	2.98		
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	4.24	4.31	4.34	4.27	4.13	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		
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	2.53	2.52	2.50	2.53	2.76	2.80		
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	3.97	4.03	4.05	4.20	4.19	4.13	4.00	3.87	3.88	3.33	3.96
1990/91	3.27	3.02	2.85	2.66	2.57	2.65	2.71	2.61	2.64	2.85	2.91		
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	2.37	2.52	2.72	2.75		
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	3.92	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	2.40	2.61	2.67		
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	4.72	4.74	4.63	4.44	4.11	3.76	3.68	3.61	4.31
1990/91	3.59	3.44	3.21	3.10	2.87	2.86	2.89	2.92	3.03	3.20	3.35		
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	4.11	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		
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	4.08	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		

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

Appendix table 13--Domestic and foreign wheat prices, 1980-90

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	8/ 149
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	97	109	122	143	113	NQ	NQ

NQ = No quotes.

1/ All wheat, U.S. season average. 2/ No. 1, hard winter, ordinary protein. 3/ No. 2, hard 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/ January to October average.

Appendix table 14--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	1990/9 9/	1991/92 10/
Million metric tons							
Exports:							
Canada	16.8	20.8	23.6	13.5	17.0	17.5	19.0
Australia	16.0	14.8	12.2	10.8	10.8	11.0	9.5
Argentina	6.1	4.3	3.8	3.5	5.6	6.0	5.6
EC-12 2/	15.7	16.5	14.8	21.0	21.0	20.0	21.0
USSR	0.5	0.5	0.5	0.5	0.5	0.5	0.5
All others	4.9	5.4	6.6	10.3	8.1	8.4	9.9
Total non-U.S.	60.0	62.3	61.5	59.6	63.0	63.4	65.5
U.S. 3/	25.0	28.4	43.4	37.6	33.5	28.5	30.5
World total	85.0	90.7	104.9	97.2	96.5	91.9	96.0
Imports:							
EC-12	3.4	2.7	2.2	2.5	2.5	2.5	2.5
USSR	15.7	16.0	21.5	15.5	14.6	12.0	15.0
Japan	5.5	5.8	5.7	5.4	5.6	5.6	5.6
E. Europe 4/	2.9	3.4	2.9	2.3	1.7	2.2	2.1
China	6.6	8.5	15.0	15.5	13.0	10.0	10.5
All others	50.9	54.3	57.6	56.0	59.1	59.6	60.3
World total	85.0	90.7	104.9	97.2	96.5	91.9	96.0
Production: 5/							
Canada	24.3	31.4	26.0	16.0	24.6	31.8	26.1
Australia	16.2	16.1	12.4	14.1	14.1	15.7	12.5
Argentina	8.5	8.9	8.8	8.4	10.2	11.2	10.0
EC-12	75.6	76.2	75.5	78.4	82.0	84.9	89.0
USSR 5/	78.1	92.3	83.3	84.4	92.3	108.0	92.0
E. Europe	33.2	35.0	35.8	41.1	40.9	41.0	37.9
China	85.8	90.0	85.8	85.4	90.8	97.5	95.0
India	44.1	47.1	44.3	46.2	54.1	49.7	54.0
All other foreign	68.4	76.7	73.1	77.1	73.5	78.2	81.7
U.S.	66.0	56.9	57.4	49.3	55.4	74.5	56.4
World total	500.1	530.7	502.3	500.4	537.9	592.5	554.5
Utilization: 6/							
U.S.	28.6	32.6	29.6	26.5	27.0	37.5	32.3
USSR 7/	91.6	102.8	101.5	100.4	103.4	118.5	108.0
China	100.4	101.5	102.8	104.4	104.5	105.6	105.6
All other foreign	275.6	285.4	296.4	300.7	299.8	307.7	310.6
World total	496.2	522.5	530.3	532.0	534.7	569.3	556.5
Stocks, ending: 8/	168.2	176.4	148.4	117.9	121.1	144.2	142.3

1/ July-June years. 2/ Includes former East Germany. 3/ Includes transshipments through Canadian ports; excludes products other than flour. 4/ Excludes former East Germany. 5/ Production data include all harvests occurring 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. 6/ 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. 7/ "Bunker weight" basis; not discounted for excess moisture and foreign material. 8/ 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. 9/ Forecasted as of May 1991. 10/ Projected as of May 1991.

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

Appendix table 15--Quarterly Government stock activity for wheat, 1988/89-1990/91

	1988/89				1989/90				1990/91		
	June-Aug.	Sept.-Nov.	Dec.-Feb.	March-May	June-Aug.	Sept.-Nov.	Dec.-Feb.	March-May	June-Aug.	Sept.-Nov.	Dec.-Feb.
Million bushels											
9-month loans:											
Carryin outstanding	117.0	108.1	93.1	46.9	19.2	48.2	80.4	65.4	30.0	120.3	260.9
Loans made	60.1	34.2	10.8	1.7	42.6	47.1	17.8	4.2	113.0	164.2	124.5
Certificate exchange	5.8	0.7	0.5	0.2	0.0	0.1	0.1	0.0	0.1	0.3	0.4
Cash redemption	118.2	47.1	55.2	23.1	13.5	14.8	32.7	39.2	22.6	23.3	56.2
CCC collateral acquired	5.0	1.4	1.3	6.1	0.1	0.0	0.0	0.4	0.0	0.0	0.2
Reserve conversion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carryout outstanding	108.1	93.1	46.9	19.2	48.2	80.4	65.4	30.0	120.3	260.9	328.6
FOR loans:											
Carryin FOR	466.8	391.0	383.4	377.9	287.0	211.4	173.6	153.6	143.9	118.8	64.6
Reserve conversion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cash redemption	0.0	0.5	1.8	68.4	39.6	8.7	3.7	0.0	0.5	1.8	0.6
CCC collateral acquired	23.2	3.4	1.8	2.9	24.1	23.2	10.9	3.1	13.7	33.2	28.0
Certificate exchange	52.6	3.7	1.9	19.6	11.9	5.9	5.4	6.6	10.9	19.2	16.9
Carryout FOR	391.0	383.4	377.9	287.0	211.4	173.6	153.6	143.9	118.8	64.6	19.1
CCC owned:											
Carryin CCC	283.0	250.0	213.0	203.2	190.5	167.9	154.5	136.5	116.6	104.6	129.9
CCC collateral acquired	28.2	4.8	3.1	9.0	24.2	23.2	10.9	3.5	13.7	33.2	28.2
Certificate exchange	20.2	23.6	9.0	6.6	3.5	42.9	13.5	3.7	1.5	1.0	0.1
Other 1/	41.0	18.2	3.9	15.1	43.3	(6.3)	15.4	19.7	24.2	6.9	5.5
Carryout CCC	250.0	213.0	203.2	190.5	167.9	154.5	136.5	116.6	104.6	129.9	152.5

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

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	1,709
Harvested	892	979	708	661	671	595	484	373	426
Bushels per acre									
Yield/harvested acre	30.3	33.1	28.8	28.8	29.1	24.7	28.2	27.1	28.2
Million bushels									
Supply:									
Beginning stocks	5.8	0.0	19.8	21.9	18.6	18.9	10.3	5.6	3.0
Production	27.0	32.4	20.4	19.1	19.5	14.7	13.6	10.1	12.0
Imports	1.6	0.6	2.2	1.0	1.2	0.2	0.0	2.8	2.8
Total supply	34.4	33.0	42.4	41.9	39.3	33.8	24.0	18.5	17.8
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	6.7	6.0
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	15.2	14.5
Exports	1.0	0.4	0.2	0.5	0.5	3.4	0.8	0.3	0.3
Total disappearance	23.2	13.2	20.5	23.4	20.4	23.5	18.3	15.5	14.8
Ending stocks	0.0	19.8	21.9	18.6	18.9	10.3	5.6	3.0	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	21,105	25,200

1/ Preliminary. 2/ Projected.

Appendix table 17--Rye: Production by major States, 1982-90

State	1982	1983	1984	1985	1986	1987	1988	1989	1990
1,000 bushels									
Georgia	1,470	1,470	1,760	2,070	1,785	1,540	1,890	1,610	1,320
Indiana	260	270	336	308	280	162	210	204	124
Michigan	522	600	588	651	713	640	650	825	580
Minnesota	3,300	4,960	6,650	3,300	1,600	1,200	920	1,088	868
Nebraska	1,269	1,265	1,392	1,242	1,035	1,150	1,375	600	750
N. Jersey	319	390	261	320	310	232	310	182	144
N. York	341	416	429	420	429	300	396	480	260
N. Carolina	525	440	550	665	595	600	780	525	345
N. Dakota	2,400	4,320	5,400	2,640	4,250	5,115	1,350	1,064	780
Oklahoma	736	780	704	828	840	360	720	532	342
Pennsylvania	408	578	578	740	630	525	684	576	496
S. Carolina	621	320	546	532	391	528	720	644	594
S. Dakota	4,680	8,740	10,800	4,440	4,440	5,040	2,250	3,240	1,870
Virginia	364	312	378	312	364	435	560	264	256

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