United States
Department of
Agriculture

Economic
Research
Service

WS-259

February 1982

Wheat

OUTLOOK & SITUATION

Table 1--Wheat: Supply, disappearance, area and prices, marketing years 1978-81*

Item	1978/79	1979/80	1980/81 (prel.)	1981/82 (Proj.)
		Million bushels		
Supply				
Beginning stocks, June 1	1,178	924	902	989
Production	1,776	2,134	2,374	2,793
Imports 1/	2	2	2	2
Total	2,955	3,060	3,278	3,784
Domestic disappearance				
Food	592	596	614	625 ± 5
Seed	87	101	114	112 ± 5
Feed 2/	158	86	51	135 ± 25
Total	837	783	779	872 ± 30
Exports 1/	1,194	1,375	1,510	1,850 ± 100
Total disappearance	2,031	2,158	2,289	2,722 ± 125
Ending stocks, May 31	924	902	989	1,062 ± 125
		Million acres		
Area				
Planted	66.0	71.4	80.6	88.9
Harvested	56.5	62.5	71.0	80.9
Set-aside and diverted	9.6	8.2	--	--
Allotment/Nat'l program	58.8	70.1	75.0	84.5
		Bushels per acre		
Yield per harvested acre	31.4	34.2	33.4	34.5
		Dollars per bushel		
Prices				
Received by farmers	2.97	3.78	3.91	3.65-3.75
Loan rate	2.35	2.50	3.00	3.20
Target rate	3.40	3.40	3.63	3.81

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 spirts.

* Totals may not add due to rounding.

In This Issue

	Page
Outlook for 1982/83	5
The Current Situation	6
1981 World Wheat Wrapup	7
Wheat By Class	8
Special Articles:	
Calculation of White Pan Bread Marketing Spreads by L.D. Schnake	11
Wheat Marketing Patterns in the United States by Mack N. Leath	14
Index of Tables	31

The *Wheat Situation* is published in February, May, August, and November.

Approved by
The World Agricultural
Outlook Board
and Summary released
February 2, 1982

Contributors
(202) 447-8776
Allen Schienbein-Analyst
Alberta Smith-Statistics

National Economics Division
Economics Research Service
U.S. Department of Agriculture
Washington, D.C. 20250

Summary

Record U.S. Winter Wheat Crop In Prospect

Winter wheat growers provided the first clue to the size of the 1982 U.S. crop by planting over 66 million acres last fall. Although up only slightly from 1981, this is the largest winter wheat acreage in history. Based on this acreage and early estimates of good to excellent crop development, production is forecast at a record 2.13 billion bushels for 1982. However, the final outcome of the harvest rests on the weather and with growers' participation in the Government's 15-percent reduced-acreage program. Spring wheat growers haven't been surveyed yet, but the lowest prices in 3 years and prospects for burdensome carryover stocks will heavily influence producers' decisions to comply with acreage reduction requirements.

Only farmers who participate in the 1982 reduced-acreage program will be eligible for program benefits, including a $4.05-a-bushel target price, a regular loan of $3.55 a bushel, and $4 for wheat placed in the farmer-owned reserve. Immediate entry into the reserve is permitted, and farmers will receive 26.5 cents a bushel in storage payments.

Despite exceptionally strong export and feed disappearance and expansion of stocks in the farmer-owned reserve, large supplies continue to pressure wheat prices. In coming months, the export pace, the condition of winter wheat as it comes out of dormancy, and the crop outlook for other major producers in the Northern Hemisphere will affect cash prices. Currently, these factors indicate that the average U.S. farm price for 1981/82 will likely be about 20 cents a bushel below last season's $3.91.

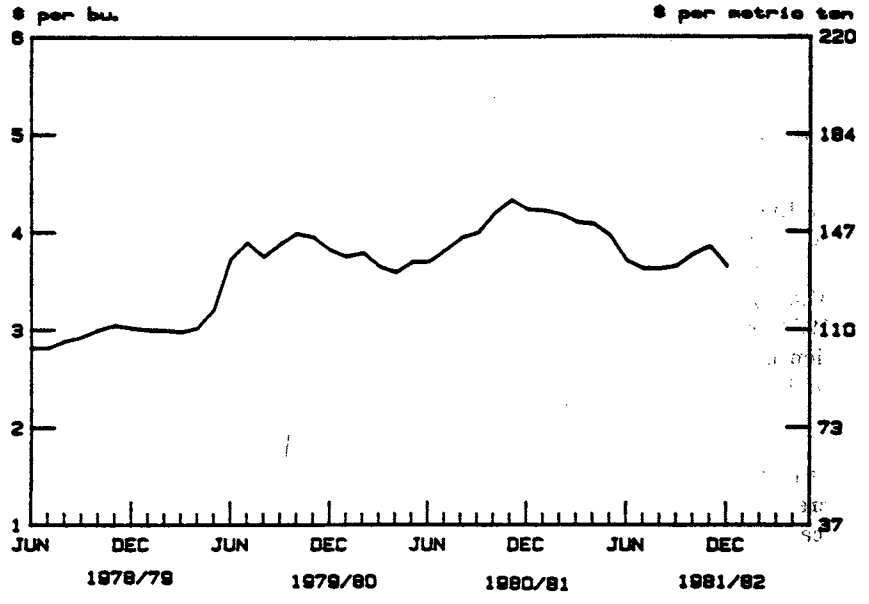
U.S. wheat exports during June-December surpassed 1 billion bushels for the first time. This was in response to record world trade, of which the United States is expected to provide about 50 million tons (1.85 billion bushels), or about half. This season's stepped-up overseas business stems from large purchases by the Soviet Union and China. With total commitments already exceeding 80 percent of expected exports, sales will likely be slower through season's end.

A larger-than-expected crop in the Southern Hemisphere helped make 1981/82 world wheat production a record 452 million metric tons. Smaller harvests in many importing nations and larger production in major exporting countries combined to boost trade to a record 101 million tons. For the season, total world consumption will likely fall below production, resulting in a small increase in stocks.

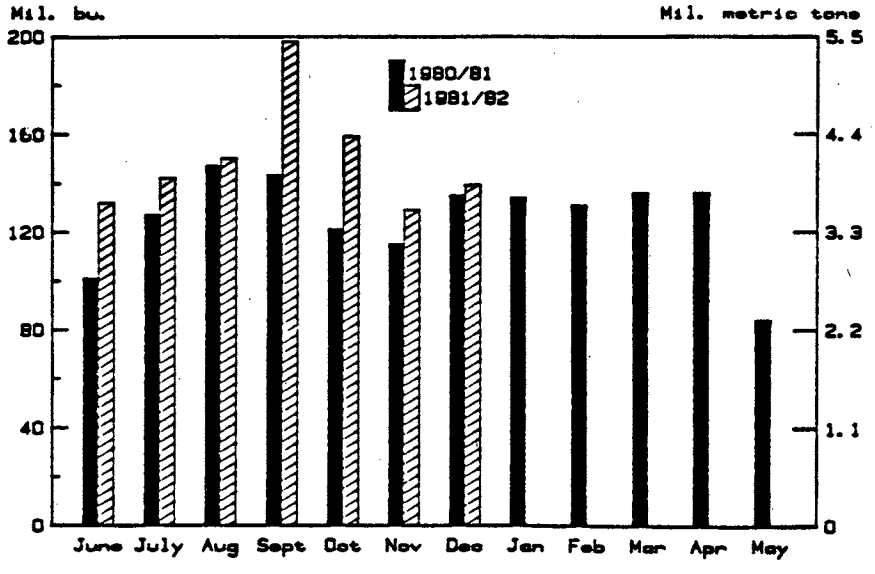
The U.S. wheat marketing season is well past the halfway mark, and disappearance was a record-setting 1.6 billion bushels during June-December. In perspective, as recently as 1976/77, wheat disappearance was only 1.7 billion for the entire year. The 1.1-billion-bushel disap-

pearance expected for the remainder of the season means that ending stocks will be up about 75 million from a year earlier, exceeding 1 billion bushels for the first time in 4 years. About two-thirds of expected yearend stocks will be isolated in the reserve program or owned by the Commodity Credit Corporation (CCC). As a result, the "free" supply of wheat will be sharply below recent years' levels.

Wheat Prices Received by Farmers



U. S. Wheat Exports by Months, Marketing Years 1980/81 and 1981/82



Includes flour and products in wheat equivalent.

Wheat Situation

OUTLOOK FOR 1982/83

Winter Wheat Seedings Top Last Year's Record; 1982 Crop in Good Condition

Winter wheat growers provided the first clue to the size of the 1982 U.S. wheat crop when they indicated fall plantings of 66.3 million acres. Although up only slightly from 1981, this is the largest acreage ever. However, many producers in the Southern Plains had finished seeding before USDA announced intentions for a 15-percent reduced-acreage program. Others lacked information regarding participation benefits because of the delayed passage of the 1981 Farm Act. Wet fields prevented seedbed preparation in major soft wheat areas in the Eastern Cornbelt, but last season's favorable outcome on double-cropped land in the Southeast encouraged record plantings throughout that area. Pacific Northwest producers reduced seedings about 7 percent while some winter wheat acreage expansion may occur in California and Arizona, because farmers switched from "desert Durum" to hard winter wheat. On balance, it looks as if the low wheat price last fall, higher production costs, and the reduced-acreage (set-aside) program had minimal impact on farmers' planting decisions.

Based on the record reported acreage and an early yield estimate of 32.1 bushels a seeded acre, winter wheat production is forecast at a record 2.13 billion bushels for 1982. Going into winter dormancy, the crop was rated in good-to-excellent condition. But the final outcome at harvest rests on the weather and with growers' participation in the Government reduced-acreage program (RAP).

Seeding intentions by Durum and other spring wheat growers will be reported in the USDA's Prospective Planting report coming out in mid-February. Fall and winter precipitation over most of the spring wheat areas suggests that the crop could be planted with fair-to-good soil moisture conditions. However, the lowest prices in 3 years, prospects for a burdensome carryover, and disappointing new-crop futures prices will bear heavily on producers decisions to reduce acreage by complying with the 15-percent reduced-acreage program. If 60 to 65 percent of last year's spring wheat acreage is in the program, 1982 seedings would be cutback about 2 million acres.

Final decisions concerning growers' participation in the reduced-acreage program do not have to be made until 4 to 6 weeks before harvest. So, there will be plenty of time for farmers to modify earlier intentions. Although current indications suggest an overall participation rate below the 50 to 65 percent of the most recent set-aside programs, price and yield prospects will heavily influence final compliance as the new crop year unfolds. Many winter wheat growers would have to plow-up, graze-out, or hay a growing crop if they decide to comply.

Basically, farmers will be comparing expected benefits from the farm program to what they give up by taking land out of production. Benefits from participating include eligibility for deficiency payments and use of the loan and reserve programs. To gauge the costs of participation, winter wheat farmers will only be looking at expected returns above harvesting costs, because the crop is already in the ground. Spring wheat growers will be looking at returns above total variable costs. So, participation would likely be greater for spring wheat growers.

1982 Wheat Program Provisions

Under the authority of the Agriculture and Food Act of 1981, a voluntary 15-percent reduced-acreage program (RAP) that is crop-specific has been announced for the 1982 crop. This requirement means that producers must reduce 1982's wheat-for-harvest acreage by at least 15 percent from their wheat base and devote that land to conservation uses. The base will be either the higher of the 1981 wheat acreage or the average of the 1980/81 wheat acreages. Only participants will be eligible for target price protection, price support loans, and the farmer-owned reserve program. Major provisions include:

- Producer signup will begin February 16, 1982 through April 16.
- Producer signup will begin February 16, 1982 through April 16.
- The 1982 target price will be at $4.05 per bushel. Deficiency payments will be paid, on production from 1982 acreage planted for harvest, if the average farm price during June-October 1982 is less than $4.05.
- The regular loan rate will be $3.55 a bushel with an added 45 cents a bushel paid for grain placed in the reserve loan program. The storage payment on grain placed in the 3-year reserve remains at 26.5 cents a bushel. Interest will be charged for the first year of the reserve and waived thereafter. Producers may place their wheat directly into the reserve program at harvest time. When the national average farm price reaches $4.65 a bushel, 1982 crop wheat can be redeemed from the reserve without penalty.

  The land taken from production and devoted to conservation must be eligible cropland protected from wind and water erosion. Land which had been planted to wheat and then designated as reduced acreage, may be cut for hay or grazed, but cannot

be harvested mechanically for grain. There will be no payment on the grazed acres, as in previous years.

Neither offsetting compliance nor cross-compliance will be required. A farmer owning or operating more than one farm need not participate on all farms in order to be eligible for program benefits on the participating farms. Also, compliance in the wheat program is not necessary to qualify for benefits from reduced acreage programs in effect on other crops grown on the farm.

THE CURRENT SITUATION

January 1 Wheat Stocks Top 2 Billion

Wheat stocks were an alltime high 2.17 billion bushels on January 1, 14 percent above a year earlier and the third consecutive year of higher January stocks. Stocks of Hard Red Spring and Durum wheat were especially large, reflecting the record 1981 crop. Although the Soft Red wheat harvest was also at another high, exceptionally large export loadings since last June held midseason stocks to only 50 million bushels above a year ago. Accelerated exports and a smaller 1981 crop caused a decline in January's Hard Red Winter stocks. By late that month, stocks isolated from the market included 190 million bushels owned by the CCC and another 500 million held in the 3-year reserve program. Hard Red Winter and Hard Red Spring wheat represent the largest share of these reserve stocks—about 235 and 150 million bushels, respectively.

Disappearance during June-December was a record-setting 1.6 billion bushels. In perspective, as recent as 1976/77, wheat disappearance was only 1.7 billion bushels for the entire year. The 1.1-billion-bushel disappearance expected during the remainder of the marketing year means that carryover stocks will be around 1.06 billion, 7 percent above a year earlier and the largest since June 1, 1978. However, close to two-thirds of this expected carryover could be isolated from the market in the reserve program or owned by the CCC, leaving readily marketable stocks at a relatively low level.

Feed use of wheat during June-December totaled 116 million bushels, a sharp increase from the 39 million during the same period last year. But, the economic advantage for feeding wheat disappeared as feed grain prices fell sharply late in the summer. This relationship will continue to limit wheat in feed rations for the remainder of the crop year. Still, total feed use will likely be close to 135 million bushels, the largest since 1978/79.

Wheat mill grind during June-September was at an accelerated pace, indicating purchasers took advantage of the record supplies and lower prices. However, for the October-December quarter, apparent food use slowed, because millers and bakers were reluctant to carry typical flour inventories under uncertain economic conditions.

Record Export Pace Expected to Slow

Wheat exports moved at a record-setting pace during June-December, totaling over 1 billion bushels for the first time, or nearly 160 million more than the same period a year ago. This season's stepped-up overseas business stems from large purchases by the Soviet Union and China. To date, these two destinations account for a fourth of total shipments, and when tallied at yearend, they may have taken nearly one-third of U.S. wheat exports. Compared with last year, Eastern Europe is the only major U.S. market that is down significantly, partly because of credit financing problems and political instability. Comparable shipments to China and Mexico are also lower. Exports by class indicate that soft wheats are responsible for trade strength, so far this year, although hard wheat shipments are well on the way to a new high. Early-season dockside prices favored bargain buying of Soft Red—China being the most important purchaser, with Turkey also being a sizable buyer.

Estimates of total U.S. wheat exports for 1981/82 were initially placed at a banner 1.9 billion bushels (51.7 million metric tons). This was in response to an estimated record world wheat import demand of over 100 million metric tons. By January, the export forecast was adjusted downward but still remains at a record 1.85 billion bushels. Commitments already represent 80 percent of expected exports, therefore, sales will likely be at a reduced pace until season's end.

Prospects for Wheat Price Strength Limited

Disappearance of wheat during the first half of 1981/82 has been at a record pace because of exceptionally strong exports and feed use. Despite the expansion of stocks in the farmer-owned reserve, prices continue under pressure from large grain supplies, the recession and political unrest in Poland. Even at midseason, prospects for a seasonal recovery of cash prices for some wheat classes may be limited, and some futures contract prices could see more lows.

Wheat: Supply and disappearance

Item	June-December	
	1980	1981
	Million bushels	
June 1 stocks	902	989
Production	2,374	2,793
Total supply[1]	3,278	3,784
Exports	890	1,049
Food	364	362
Seed	82	83
Feed	39	116
Total disappearance	1,375	1,610
January 1 stocks	1,903	2,174

[1]Includes imports.

Key price factors in coming months are the export pace and the condition of the 1982 winter wheat crop as it comes out of dormancy and the level of participation in the RAP. It now looks like the export pace is slackening. The effect of the severe winter weather on the crop is still unknown. New crop prospects for other major Northern Hemisphere wheat producers can also be influential for both futures and cash prices.

January farm prices continued to fall after December's sharp market downturn and are still the lowest in 3 years. For the year, the average farm price will likely be around 20 cents a bushel below last season's $3.91. Because the national average farm price of $3.66 a bushel during June-October was below the 1981 target price of $3.81, eligible wheat growers (those who certified their 1981 production with the Agricultural Stabilization and Conservation Service) received a 15-cent-a-bushel deficiency payment. Total payments amounted to $395 million.

1981 WORLD WHEAT WRAPUP

Record 1981 Global Wheat Production

With the winding down of a banner wheat harvest in the Southern Hemisphere, it appears that final 1981/82 production may be around 452 million metric tons, 3 percent above a year ago and the largest ever. A record outturn for North American crops more than compensated for reduced harvests in the Soviet Union and Eastern Europe. Total production was at an alltime high for the five major exporters. The most significant reduction was a 10-million-ton shortfall in the Soviet Union, caused by drought. This was the third successive poor wheat crop in that country, forcing it to again be the largest single wheat importer.

World Trade Also to be a Record

Global wheat trade during 1981/82 (July/June) is expected to top 100 million tons for the first time—reaching 101 million. This is 7 million tons more than last year and over 40 percent above the average yearly trade for the 1970's. The high level of trade this season is fueled by smaller production in major importing countries and sharply higher production in major exporting countries. Because of larger production and total supply, the United States is the major beneficiary of the increased trade. Although estimates of world wheat trade have recently been revised downward, the United States will still account for most of the increase.

U.S. average retail prices for cereals and bakery products, 1981

Cereals and bakery products:	October	November	December
	Dollars per 1-pound		
Flour, white all purpose	0.23	0.22	0.22
Rice, white, long grain, precooked	1.29	1.31	1.35
Rice, white, long grain, uncooked	.56	.55	.54
Spaghetti	NA	NA	NA
Bread, white pan	.52	.53	.52
Bread, French	.86	.86	.85
Bread, whole wheat, pan	.78	.80	.81
Bread, wheat blend, pan	.67	.69	.69
Rolls, hamburger	.88	.87	.87
Cupcakes, chocolate	1.72	1.74	1.74
Cookies, chocolate chip	1.77	1.74	1.77
Crackers, soda, salted	.85	.83	.86

NA = Not Available.

Canada's record production is expected to result in aggressive selling on the world market, with exports likely to also be the largest ever. The bumper crops produced in the European Community the past few years prompted a trade expansion policy that is likely to continue through 1981/82, but wheat exports may be down slightly because of a reduced harvest. Based on the recovery from last year's poor harvest, Australia's larger 1982 wheat supplies will prompt a slight increase in exports. India, Iran, Egypt, and the Soviet Union have been early buyers. Argentina's wheat exports should about match last year's 3.9 million tons.

Import demand focuses again on the Soviet Union, which is expected to buy a record 19 million tons from the world market. Purchases from the United States have been particularly strong. This country may ultimately provide one-third of Soviet needs during 1981/82. China will also be a strong buyer of world wheat, despite an improved 1981 crop. After a lapse of several years from the list of wheat buyers, India's total imports are expected to reach 3 million tons, probably divided between Australia and the United States. Despite a poorer crop, Eastern European imports are expected to be down slightly because of financial constraints, especially credit uncertainties for Poland.

In the final analysis for 1981/82's global supply/demand outlook, it appears that total use may fall below production, resulting in a slight increase in carryover stocks. Most of the increase in the carryover will be in the exporting nations. The stocks to use ratio is projected at about 17 percent, below the average of 21 percent for the early 1970's.

1982 World Wheat Conditions Favorable

Winter wheat in the Northern Hemisphere was planted under generally favorable conditions. Although wet conditions delayed sowing in Western Europe, indications point to more winter wheat area than in 1981. Prospects for output recovery in the Iberian Peninsula appear uncertain because winter precipatation has not completely remedied last year's drought conditions. In Eastern Europe, wheat area may be about the same or up slightly, but the shortage of fertilizer could affect final production. Conditions have been relatively favorable for wheat planting and crop development in the Soviet Union. The area may be increased, although it will remain short of the target. India's farmers have been urged to increase

wheat area, with greater supplies of seed and fertilizer being made available. Pakistan's plans also called for increased output. Most winter grain areas in China continue to have dry winter weather and will need timely precipitation as the crop breaks dormancy. All in all, early conditions indicate that the Northern Hemisphere's 1982 winter wheat production could be around last year's record harvest.

WHEAT BY CLASS

HRW Exports Expand; Carryover May be Trimmed

Although 1981's HRW production was down 6 percent, supplies were at an alltime high as 1981/82 began. And despite strong export activity during June-December, January 1 stocks of hard Red Winter (HRW) totaled over a billion bushels for the second successive year, slightly up from a year ago. Nearly 365 million bushels of these stocks were either CCC-owned or in the farmer-owned reserve program. These stocks, isolated from the market at current prices, account for over a third of the total wheat supply and will represent a major portion of projected yearend carryover. Total 1981/82 HRW disappearance is projected to exceed production, pulling June 1 stocks down to around 440 million bushels. Thus, as this season winds down, readily marketable HRW supplies will tighten. However the potential for a record 1982 harvest could hold off any significant price advances.

The brisk pace of HRW export sales during the first half of 1981/82 will likely slacken, becuase the Soviet Union, the largest purchaser of HRW, has already made the majority of its buying commitments. Still, this year's total exports are expected to top 1979/80's record 725 million bushels (grain and products) (table 2).

Indicated seedings for the 1982 HRW crop are record high, about 400,000 acres above a year ago. The initial forecast places potential output at a record 1.26 billion bushels, up 13 percent from 1981. However, this estimate will change in response to the weather and producers' participation in the reduced-acreage program.

Hard Red Spring Exports Up; Stocks Remain Large

As a result of the record 1981 harvest, January 1 stocks of Hard Red Spring wheat (HRS) totaled about 510 million bushels, nearly a third larger than a year ago. Over a third of these stocks are in the grain reserve or owned by the CCC. June-December disappearance rebounded from the effect of last season's reduced supply and high prices, but prospects for using all of the 1981 crop are not bright. This means that HRS carryover stocks (June 1, 1982) will rise to over 300 million bushels, after declining for 3 successive years.

Early-season HRS exports lagged behind those of a year ago, but as the record harvest was garnered and prices tumbled, overseas shipments increased substantially until the Great Lakes were closed in December. Current HRS export commitments are about 10 percent ahead of last year's pace. However, Canada's aggressive selling of its record 1981 crop will likely limit expansion of U.S. exports to around 215 million bushels.

While large supplies have dominated HRS market prices, this year's bumper harvest, with an above-average protein level in both spring and winter hard wheats, caused protein premiums to be almost nonexistent in the pricing of HRS. Cash prices for higher protein HRS have been the lowest since 1978/79. If this price prospect continues into the spring planting season, HRS producers could decide to participate heavily in the reduced-acreage program.

Durum Stocks At Alltime High; Prices Down Sharply

On January 1, Durum stocks are the highest ever for midseason, despite a rebound in disappearance during June-December. This is due mainly to 1981's record harvest of 186 million bushels, nearly 80 million larger than a year ago and 40 percent above the previous high in 1978. These large midyear supplies will continue to dampen price prospects and will likely cause yearend stocks to top 100 million bushels for the first time. Durum stocks in the reserve program are likely to be around 25 million.

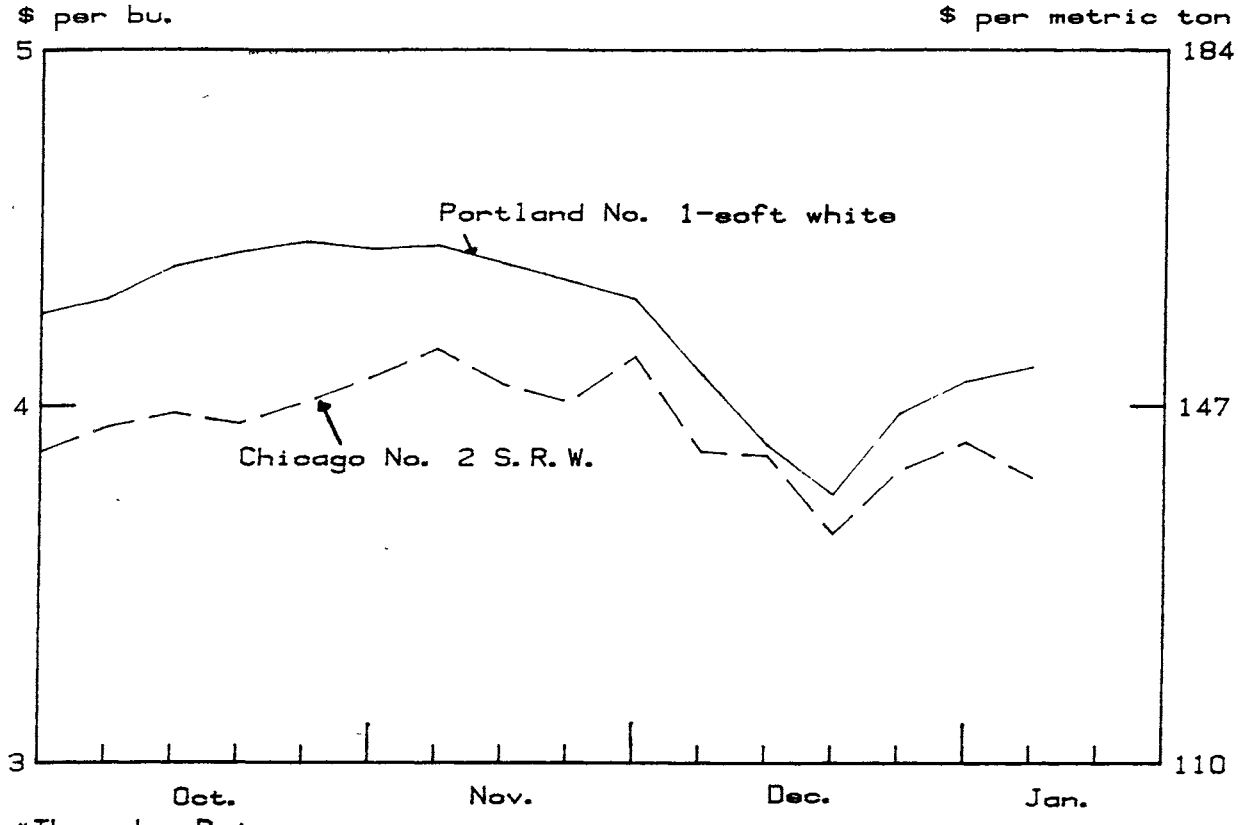
Because of low prices, abundant supplies, and short 1981 wheat crops in Italy and Morocco, foreign purchases of U.S. Durum have been very strong during June-December. Export commitments are nearly 50 percent ahead of 1980's short supply season and may well exceed the record 83 million bushels shipped overseas in 1979/80.

While price levels for all wheat classes have declined below a year ago, the extent of the drop was most severe for Durum. Current prices are around $4.50 a bushel at Minneapolis compared with $7.40 last January. Considering this situation, the use of hard wheat flours (farina) in semolina blends during 1980/81 will likely decline, and domestic food use of Durum will return to a pre-1980/81 growth trend. This year's low prices will likely cause producers to reduce 1982 Durum plantings. Some Durum acreage in the Southwest will shift to HRW, while producers in the Northern Plains are expected to decrease acreage in response to the RAP.

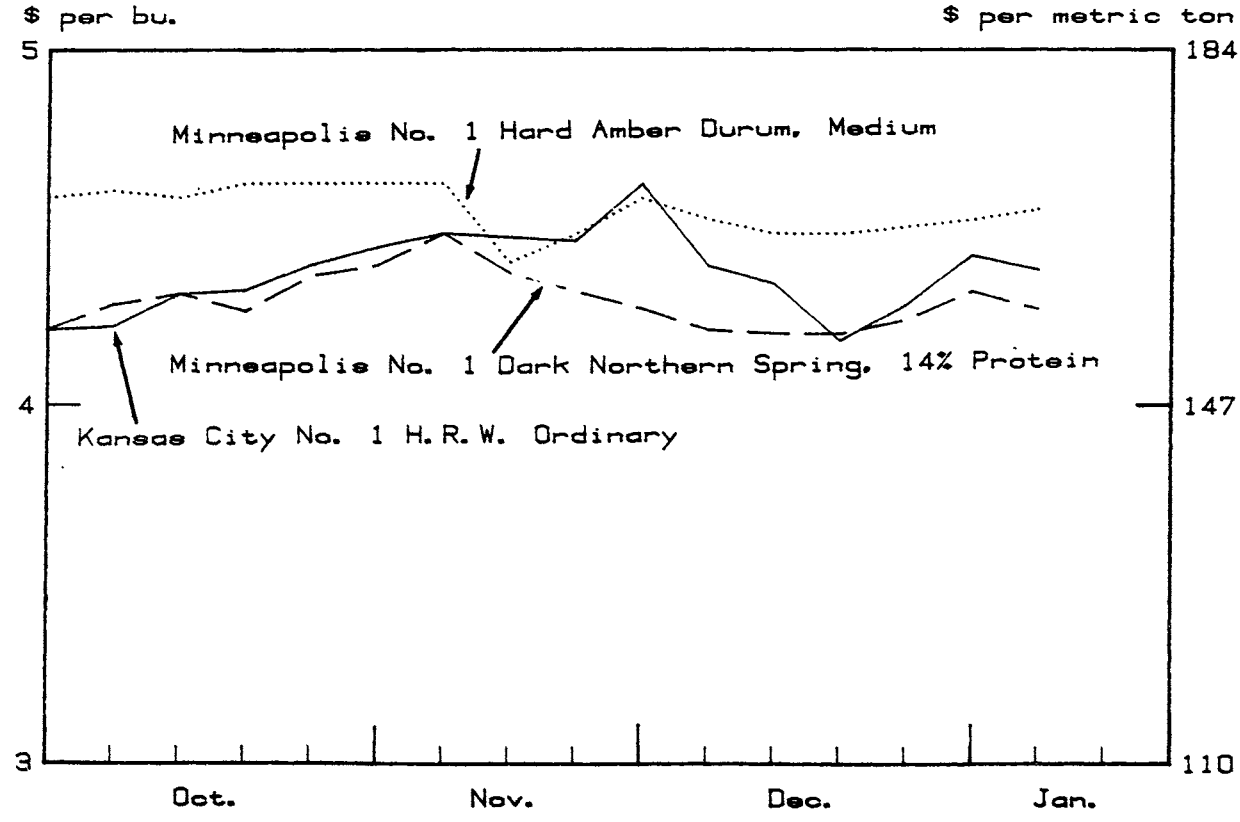
SRW Disappearance Expands; 1982 Production May be Down

Despite a sharp increase in exports of Soft Red Winter wheat (SRW) during June-December, January 1 stocks were up 50 percent from a year ago. The bumper 1981 crop—238 million bushels over 1980's—increased SRW supplies 50 percent and caused this year's farm prices in many locations to plummet to near or below the $3.20-a-bushel loan level. These bargain prices encouraged large overseas purchases and made wheat a relatively attrac-

Cash Wheat Prices, 1981/82*



*Thursday Price



*Thursday Price.

tive substitute for feed grains, particularly for the southeastern poultry industry. The supply/demand situation for SRW in recent years, has been characterized by high stocks as the year began, with expanding disappearance through the season that consumed most of the year's production throughout the rest of the season. Most of this year's record crop will be sold off again, resulting in a carryover of 60 to 70 million bushels compared with carryin stocks of 38 million.

Total SRW exports are forecast to top last season's record by over 40 percent. China will again be the destination for a major share. Purchases by traditional SRW buyers, such as Egypt and Eastern Europe, are noticeably reduced, but expanded sales to Turkey, Iran, and Brazil have filled the gap. By midseason, shipments plus outstanding sales were over 90 percent of expected exports, signaling a diminished pace for the remainder of the year.

The record 1981 SRW crop came in response to expanded acreage in the Southeast and good crop yields. Southeastern producers further expanded wheat acreage by about 1.5 million acres for 1982. However, some of their increase will be offset by the reduction of seedings in major Central States that produce soft wheat. The initial 1982 forecast is for another harvest of over 600 million bushels. But, output should be down about 8 percent from 1981's 673 million.

Midseason White Wheat Stocks Lower

Despite a record 1981 White wheat harvest, January 1 stocks totaled around 230 million bushels, 4 percent lower than a year ago. Strong early-season exports lifted June-December disappearance to over 200 million bushels, which was over half the available supply. A fourth of January 1 stocks are in the wheat reserve or are owned by the CCC. Total disappearance may fall short of the record 1981 production, resulting in a June 1 carryover of over 100 million bushels (table 2).

White wheat exports in 1980/81 were an alltime high, and the outlook is for a continuation of the record-setting pace in 1981/82. While commitments as of mid-January were ahead of last year, total sales and loadings may be lower than expected earlier. Continued strength for White wheat exports may be tied to India's import decisions—currently at a standstill. Egypt, a newcomer to the U.S. White wheat market, has found this class to be very satisfactory for their milling and food-product needs. They could even top Japan as the Number 1 traditional buyer of U.S. White wheat.

Low wheat prices, wet fields in the East, and perhaps some decisions to participate in the reduced-acreage program caused the seeding of winter White wheat to decline about 400,000 acres. Acreage was down about 7 percent in the Pacific Northwest and 15 percent in the East. The initial 1982 forecast for winter White wheat was 256 million bushels, 17 percent below last year's record.

1982 Rye Production May Expand

The area seeded to rye, from which the 1982 rye-grain crop will be harvested, is expected to remain close to the 2.5 to 2.6 million acres sown the previous 2 years. However, the major States producing rye for grain in the North Central area (Minnesota, North Dakota, South Dakota, and Nebraska) increased plantings 12 percent. This could signify a possible rise in 1982 rye-grain production because strong market prices could cause farmers to expand their harvested acreage. While 1981/82 prospects are for sharply lower rye exports, the supply/demand outlook suggests that yearend stocks will not be excessive.

Rye: Supply and disappearance

Item	June-December	
	1980	1981
	Million bushels	
June 1 stocks	12.2	4.1
Production	16.5	18.6
Total supply[1]	28.7	22.8
Exports	6.3	1.4
Food	2.1	2.1
Seed	4.0	4.0
Industrial	0.9	0.9
Feed	6.1	6.6
Total disappearance	19.4	15.0
January 1 stocks	9.3	7.8

[1]Includes imports.

CALCULATION OF WHITE PAN BREAD MARKETING SPREADS

By

L.D. Schnake[1]

ABSTRACT: This article describes the calculation of marketing spreads for white pan bread. The marketing spreads are reported in each issue of the *Wheat Situation.* An example using data for the April-June 1981 quarter is presented.

KEYWORDS: Bread, marketing spread, wheat

The article, "Revised White Pan Bread Marketing Spreads," in the November 1981 issue of the Wheat Situation presented a revised bread formula and discussed general procedures used to estimate prices and marketing spreads associated with a 1-pound loaf of white pan bread. A marketing or price spread is the difference in the price of a commodity or product at two different points between production and consumption. For example, the difference between the price of wheat at the farm and at the flour mill is a farm-to-mill price spread. The difference between the price of bread at the wholesale level and at the retail level is a wholesale-to-retail price spread.

The Farm Value of Wheat in A Loaf of Bread

The farm value of wheat is the amount farmers get paid for the wheat. Five items of data are necessary to determine the farm value of the wheat in white pan bread. They are: 1) the flour-milling extraction rate, 2) the price received by farmers for wheat, 3) the price received by millers for millfeed, 4) the price of flour, f.o.b. mill, and 5) the bake-out—the amount of bread produced with a given amount of flour.

The flour milling extraction rate is the proportion of wheat milled into flour for white pan bread. The April-June 1981 extraction rate was estimated to be .72. As a result, it takes 2.315 bushels, or 138.89 pounds, of wheat to produce 100 pounds of flour. The process leaves 38.89 pounds of millfeed.

Because the milling of wheat results in two separate products—flour and millfeed—both of which have value in the market, the value of 2.315 bushels of wheat cannot all be attributed to flour. Rather, the farm value of wheat in 100 pounds of flour is apportioned on the basis of the value of the flour and millfeed. For example, the following shows the flour and millfeed values:

Product	Value f.o.b. mill	Share of value
	Dollars	*Percent*
100.00 pounds of flour	10.77	83.8
38.89 pounds of millfeed	2.08	16.2
Total	12.85	100.0

At the farm, the value of 2.315 bushels of wheat was $9.19 during April-June, and 83.8 percent of that value, or $7.72, represented the farm value of wheat in 100 pounds of flour.

The bake-out of 100 pounds of flour, plus other ingredients, is 160.79 pounds of bread, according to the American Institute of Baking's (AIB) bread formula. Thus, the farm value of wheat in a 1-pound loaf of bread was 4.8 cents for the April-June quarter ($7.72/160.79 pounds = 4.8 cents).

The Mill Value of Wheat

The mill value of wheat in a cwt of flour is how much the mill paid for the wheat to produce the flour. The value of the 2.31 bushels of wheat at the mill is different than the value at the farm because of transportation, storage, and merchandising. The procedure for allocating the miller's cost of wheat between flour and millfeed is similar to the procedure for determining the farm value of wheat.

The mill price of wheat is the weighted-average price for 13-percent protein Hard Red Winter wheat at Kansas City and Los Angeles and 14-percent protein Hard Red Spring wheat at Minneapolis and Portland. For the quarter used in this example, the mill price of wheat was $4.73 a bushel, compared with $3.98 at the farm. Using the same procedures for calculating farm value, the mill value of wheat in 100 pounds of flour was $10.93, and the mill value of wheat in a loaf of bread was 5.7 cents.

Farm Value of Other Farm-Source Ingredients

There are five other ingredients in the white pan bread formula that are derived from farm products. These ingredients are: .6 pound of lard, 1.7 pounds of soybean oil, 6.2 pounds of high fructose corn syrup (HFCS), 1.2 pounds of corn syrup (CS), and 2.2 pounds of soy-whey blend.

The procedure for determining the farm value of the other farm-source ingredients is similar to determining

[1]The author is an agricultural economist with the Economic Research Service, USDA, stationed at the U.S. Grain Marketing Research Laboratory, Manhattan, Kansas 66502, (913) 539-9141.

the farm value of wheat. For example, for HFCS, the estimated values of products from wet processing 1 bushel of corn are:

Product	Quantity	Processor price	Value
	Pounds	*Cents per pound*	*Dollars*
Corn gluten feed	13	5.9	.77
Corn gluten meal	3	12.4	.37
Corn oil	1.8	13.8	.25
HFCS	33	22.1	7.29
Total value			8.68

Proportionally, HFCS makes up 84 percent of the value of products resulting from wet milling 1 bushel of corn. Attributing this proportion to the value of corn at the farm gives a farm value of $2.70 on the basis of $3.22 a bushel for corn during April-June 1981. Dividing this value by 33—which represents the quantity of HFCS produced from 1 bushel of corn—places the value of corn at 8.2 cents a pound of HFCS. Multiplying 8.2 cents by 6.2—the number of pounds of HFCS in the formula—determines a farm value of 50.8 cents for the HFCS in 160.79 pounds of bread, or .3 cent a 1-pound loaf.

The total farm value of other farm ingredients, including HFCS, during April-June 1981 was computed on the basis of the following data:

Ingredient	Quantity	Farm price	Farm value
	Pounds	*Cents per pound*	*Dollars*
Lard	.6	18.1	.11
Soybean oil	1.7	24.1	.41
HFCS	6.2	8.2	.51
Corn syrup	1.2	7.5	.09
Soy-whey blend	2.2	11.4	.25
Total			1.37

The farm value of other farm ingredients per 1-pound loaf during April-June 1981 is $1.37/160.79=.8 cent.

Bakery Cost of Other Farm Ingredients

The cost at the bakery for lard, soybean oil, HFCS, corn syrup, and soy-whey blend is computed by multiplying the quantities of the ingredients used by their prices, f.o.b. bakery. Prices and values for April-June 1981 follow:

Ingredient	Quantity	Bakery price	Bakery cost
	Pounds	*Cents per pound*	*Dollars*
Lard	.6	19.6	.12
Soybean oil	1.7	27.7	.47
HFCS	6.2	22.6	1.40
Corn syrup	1.2	16.7	.20
Soy-whey blend	2.2	27.1	.60
Total			2.79

The cost per 1-pound loaf during April-June 1981 is 1.7 cents (2.79/160.79=1.7 cents).

Bakery Cost of Nonfarm Ingredients

Nonfarm ingredients and their costs for the April-June 1981 quarter are:

Ingredient	Quantity	Bakery price	Bakery cost[2]
	Pounds	*Cents per pounds*	*Dollars*
Yeast	2.75	36.0	.99
Yeast food	.50	21.0	.10
Salt	2.10	7.9	.16
Mold inhibitor	.20	21.0	.04
Enzymes	.25	57.6	.14
Emulsifier/dough strengtheners	.75	18.4	.14
Miscellaneous dough conditioners	.50	4.3	.02
Total			1.59

The cost per 1-pound loaf for the example period is 1 cent ($1.59/160.79 cent=1 cent).

[2]Bakery cost may not equal bakery price times quantity due to rounding of prices.

Bakery Cost of All Ingredients

The bakeries' cost of all ingredients is simply the sum of the costs of flour, other farm ingredients, and nonfarm ingredients. For April-June, these costs were:

Items	Cost per cwt of flour	Cost per pound of bread
	Dollars	*Cents*
Flour	11.76	7.3
Other farm ingredients	2.79	1.7
Nonfarm ingredients	1.59	1.0
Total	16.14	10.0

The Wholesale Price of Bread

The wholesale price used in the marketing spreads is developed from Bureau of Labor Statistics (BLS) data. This price includes bread sold f.o.b. bakery and bread that is drop-shipped at institutions. Prices for the four census regions—Northeast, North Central, West, and South—are weighted by July 1 regional population estimates to calculate a U.S. wholesale price. For the quarter studied in this article, the wholesale price of white pan bread was 42.3 cents a 1-pound loaf.

The Consumer or Retail Price of Bread

The U.S. retail price of white pan bread is reported monthly by the BLS. The price for the April-June 1981 quarter, an average of the monthly prices, was 52.2 cents a 1-pound loaf.

Tracing the Price of White Pan Bread

Table 1 summarizes price spreads from the farm value of wheat to the retail price of a 1-pound loaf of bread for

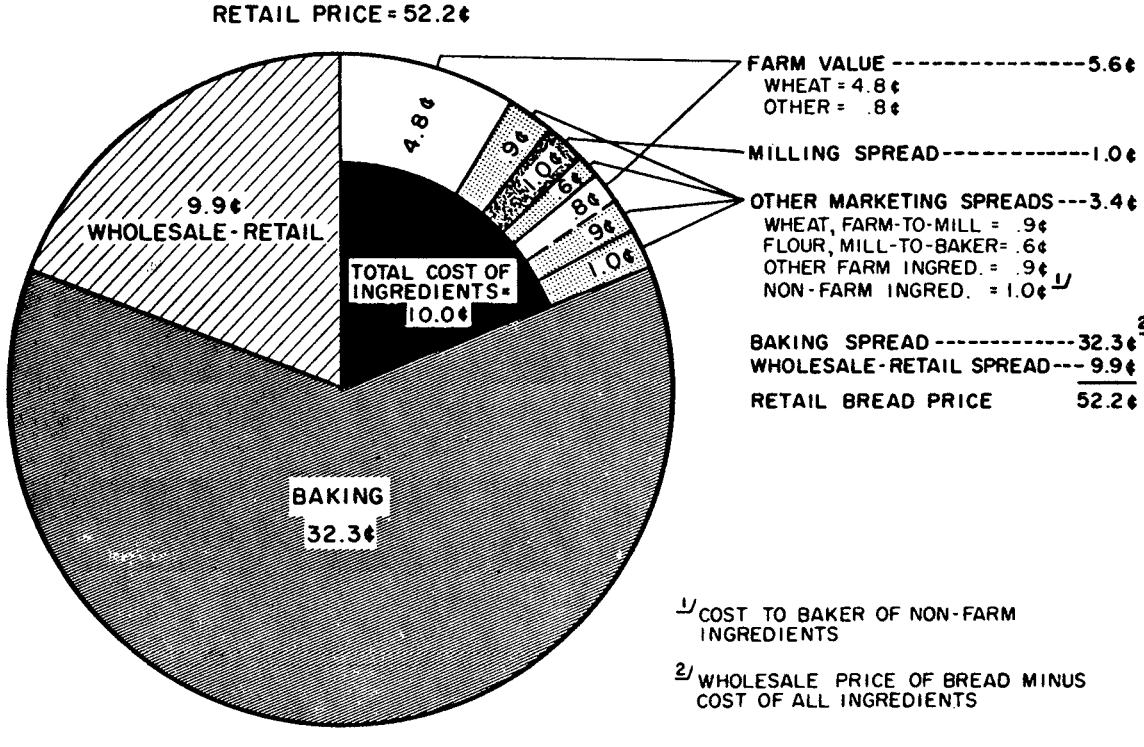
Table 1—White pan bread price trace, April-June 1981

Item	Cents per pound
Farm value of wheat	4.8
Wheat, farm-to-flour mill spread	.9
Mill value of wheat	5.7
Flour-milling price spread	1.0
Mill value of flour	6.7
Flour, mill-to-bakery spread	.6
Bakery value of flour	7.3
Farm value of other farm ingredients	.8
Other farm ingredients price spread	.9
Bakery value of other farm ingredients	1.7
Bakery cost of nonfarm ingredients	1.0
Bakery cost of all ingredients	10.0
Baking spread	32.3
Wholesale price of bread	42.3
Wholesale-to-retail price spread	9.9
Retail price of bread	52.2

the April-June 1981 quarter. Figure 1 breaks down the retail price of bread into five components of value:

1) farm value, 2) the milling spread, 3) other marketing spreads (including wheat handling, transportation, and merchandising; flour transportation; processing and merchandising of other farm ingredients; and the cost of nonfarm ingredients), 4) the baking spread, and 5) the wholesale-to-retail spread from bakery dock to the retail shelf (including costs of labor and other services).

FIG. 1 WHITE PAN BREAD MARKETING SPREADS
¢/POUND APRIL-JUNE, 1981



WHEAT MARKETING PATTERNS IN THE UNITED STATES

By

Mack N. Leath[1]

ABSTRACT: The marketing of U.S. wheat involves many interregional grain movements. This article presents an overview of the results of a survey of grain marketing channels from production to mill or export points during 1977. The impacts of more recent developments on marketing patterns are also discussed.

KEYWORDS: Wheat, wheat marketing, grain transportation, grain flows.

Introduction

Marketing wheat in the United States tends to be complex, involving interregional movements. Moving wheat from the areas of concentrated production to processing and export locations requires a large transportation capacity and alternative transportation modes. Information about the transportation requirements and the origins and destinations of wheat marketed is crucial to policy and investment decisions. Recognition of the importance of such information led to a survey of grain-marketing firms throughout the United States. This article presents some of the research findings. More detail about wheat movements can be found in reference 2.

Factors That Influence Marketing Patterns

The marketing patterns for wheat are more complex than those of other grains and oilseeds because wheat is graded, segregated, priced, and marketed on the basis of five unique classes: Hard Red Winter (HRW), Hard Red Spring (HRS), Soft Red Winter (SRW), White, and Durum. The grading system also recognizes subclasses within each class, and sales contracts usually specify a protein percentage.

Wheat classes are generally grown in concentrated production areas, and the grain must be dispersed throughout the United States. Much of the grading, sorting, and blending required during distribution is performed by terminal elevators. Consequently, the portion of wheat that moves to terminal markets, such as Minneapolis and Kansas City, is much larger than for other grains. The terminal elevators, in turn, become an important source of supply for millers and exporters who purchase particular classes of wheat having quality characteristics that meet their needs.

U.S. flour mills are classified as hard-wheat mills, soft-wheat mills, or Durum mills. In 1968, about 68 percent of total milling capacity was used in processing HRW, HRS, or a blend of these to produce bread flour. About 25 percent of the capacity was used to process soft wheats (SRW and White) into flour for cakes, cookies, pastries, and crackers. About 7 percent of the capacity specialized in processing Durum into semolina for use in various pasta products.

Soft-wheat mills are usually located near soft-wheat production areas. In contrast, about 30 percent of the hard-wheat capacity is located in States east of the Mississippi River, where only soft wheats are grown. West Coast States accounted for another 10 percent of hard-wheat capacity. In the Northeast, Buffalo is a leading milling center for hard and Durum wheats.

Shipments by Region

U.S. grain-marketing firms reported shipping 2.5 billion bushels of wheat in 1977 (table 1), excluding 891 million bushels sent overseas by port elevators. Reshipments of, the same wheat by several firms at different points along the way accounted for a large proportion of total shipments. For example, over 63 million bushels shipped to port elevators at Duluth-Superior were reshipped to other destinations. Terminal markets such as Enid, Kansas City, Minneapolis, Omaha, and Wichita serve as major storage and transshipment points for wheat, and flour millers located outside the major production regions rely on terminal markets to supply their wheat requirements. Because the total volume shipped by all firms exceeded total disappearance by almost 700 million bushels in 1977, it is likely that at least that quantity was received and reshipped by terminal and river elevators. Terminal elevators reportedly handled 606 million bushels during 1977/78 (Reference 1, p. 4).

Intrastate shipments to domestic points were 897 million bushels, or 36 percent of total shipments. The Northern Plains region led all others in terms of intrastate shipments. Firms in Kansas, the region's leading wheat State by far, shipped 225 million bushels. Several other States had notable intrastate volumes in 1977. Shipments between firms in Oklahoma totaled 124 mil-

[1]The author is an agricultural economist with the Economic Research Service, USDA, stationed at the University of Illinois, 305 Mumford Hall, Urbana, Illinois, (217) 333-1355.

lion bushels. Texas and Washington had intrastate movements in excess of 130 million bushels, but a majority were to export regions. Intrastate movements in Minnesota exceeded 125 million bushels, 92 million of which moved to domestic destinations, primarily Minneapolis.

Interstate shipments of wheat to domestic points totaled 562 million bushels in 1977. Kansas and North Dakota were the leading States, and their region, the Northern Plains, accounted for over 46 percent of total flows to interstate domestic destinations. Five other States (Minnesota, Montana, Nebraska, Oklahoma, and South Dakota) each shipped more than 30 million bushels. All of these States are important producers of hard wheats.

Shipments to export regions exceeded 1 billion bushels in 1977 and accounted for 42 percent of total shipments. Again it should be emphasized that a portion of the shipments to Great Lakes ports were reshipped to other ports or to domestic destinations. Washington led in shipments to ports—156 million bushels. North Dakota, Kansas, and Oklahoma each shipped in excess of 100 million bushels. These four accounted for 49 percent of the wheat shipped to port destinations in 1977.

Wheat movements to specific export points are summarized in table 2. Ports located on the Gulf coast were the destinations for 504 million bushels, 47 percent of total shipments to port areas. Firms in the Southern Plains shipped over 176 million bushels of HRW wheat to the Gulf, and most of these movements were destined for Texas ports. Firms in the Northern Plains sent 144 million bushels to the Gulf, with Kansas firms accounting for 86 percent of that total. In the Gulf region, Louisiana ports exported over 90 million bushels of SRW wheat in 1977, mostly from Illinois and Arkansas. Sizable quantities of HRS and Durum wheat were shipped to Louisiana ports from Minnesota, and Missouri was the predominant supplier of HRW wheat.

Pacific ports reported receiving 337 million bushels in 1977, with Oregon and Washington supplying over 60 percent of that total. Idaho, Montana, and North Dakota were also major origins for wheat moving northwest to Pacific ports. Sizable quantities of wheat were trucked from Idaho, Montana, and North Dakota to river elevators in western Idaho for transshipment to Columbia River ports by barge. White wheat was the predominant class exported from Pacific ports; however, sizable quantities of HRW and HRS wheats were exported from those ports.

Receipts at Great Lakes ports totaled 198 million bushels in 1977. Duluth-Superior was the primary port, with receipts of 152 million bushels—60 percent of which was exported and the balance reshipped to other firms. A majority of the wheat reshipped to domestic destinations moved to flour mills in Buffalo, New York. HRS and Durum wheats were the primary classes handled by Duluth-Superior and were mostly shipped from Minnesota and North Dakota. The predominant class handled by other Great Lakes ports was SRW, trucked in from adjacent production regions.

About 96 percent of the wheat exported from Atlantic ports in 1977 was SRW. Indiana, Michigan, and Ohio were the major origins. However, about 50 percent of shipments from Michigan were White wheat.

Table 1—Shipments of wheat to domestic destinations and export regions 1977[1]

Originating region[2]	Domestic		Export regions	Total
	Intrastate	Interstate		
	1,000 bushels			
Northeast	7,085	5,266	246	12,597
Appalachian	13,483	13,116	12,791	39,390
Southeast	5,718	1,200	1,875	8,793
Lake States	105,635	36,025	96,909	238,569
Corn Belt	141,744	59,775	151,628	353,147
Delta States	10,803	2,699	17,747	31,249
Northern Plains	311,326	261,368	294,610	867,304
Southern Plains	185,555	46,932	177,011	409,498
Mountain	48,123	65,353	91,406	204,882
Pacific	64,757	8,037	207,580	280,374
Great Lake Ports	2,006	58,519	11,768	72,293
Atlantic Ports	818	0	0	818
Gulf Ports	0	3,500	0	3,500
Pacific Ports	0	387	1,082	1,469
Total	897,053	562,177	1,064,653	2,523,883

[1]Data exclude export elevator shipments to foreign destinations by water. [2]States included in each region are: Northeast (Del., Md., N.J., N.Y., Penn. and N. Eng. States); Appalachian (Ky., N.C., Tenn., Va., and W. Va.); Southeast (Ala., Fla., Ga., and S.C.); Lake States (Mich., Minn., and Wisc.); Corn Belt (Ill., Ind., Ia., Mo., and Oh.); Delta States (Ark., La., and Miss.); Northern Plains (Kan., Neb., N.D., and S.D.); Southern Plains (Okla. and Tex.); Mountain (Ariz., Col., Ida., Mont., Nev., N.M., Utah, and Wyo.); Pacific (Calif., Oreg., and Wash.).

Receipts by Region and Mode of Transport

In 1977, firms at various domestic destinations received 590 million bushels of wheat from interstate origins (table 3). This total exceeds the reported shipments in table 1 by the amount of wheat purchased from farmers in adjacent States. The Lake States led all regions in interstate receipts. Minnesota alone had receipts totaling almost 116 million bushels. That State's terminals and flour mills received over 100 million bushels from

Table 2—Shipments of wheat to export regions, 1977[1]

Originating Region[2]	Great Lakes	Atlantic Coast	Gulf Coast	Pacific Coast	Total
	1,000 bushels				
Northeast	0	267	0	0	267
Appalachian	0	2,237	10,554	0	12,791
Southeast	0	123	1,770	0	1,893
Lake States	45,843	2,611	49,794	0	98,248
Corn Belt	29,309	27,674	95,594	0	152,577
Delta States	0	0	17,747	0	17,747
Northern Plains	120,136	0	144,404	30,070	294,610
Southern Plains	0	0	176,327	0	176,327
Mountain	2,083	0	1,197	88,126	91,406
Pacific	0	0	0	217,484	217,484
Great Lake Ports	691	4,568	6,509	0	11,768
Pacific Ports	0	0	0	1,082	1,082
Total	198,062	37,480	503,896	336,762	1,076,200

[1]Data include movements excluded from table 1, to port elevators directly from farms. [2]See footnote 2, table 1 for States in each region.

Table 3—Wheat received from interstate origins and transportation share by mode, 1977

Domestic destination region[1]	Quantity received	Modal shares			
		Rail	Truck	Barge	Farm truck
	1,000 bu.	*Percent*			
Northeast	86,607	35.8	11.8	51.1	1.3
Appalachian	51,743	44.7	10.1	36.6	8.6
Southeast	18,661	43.5	5.6	50.5	.4
Lake States	116,294	66.2	33.2	0	.6
Corn Belt	99,088	54.5	19.9	12.8	12.8
Delta States	5,299	41.3	28.1	30.0	.6
Northern Plains	39,340	76.8	18.5	0	4.7
Southern Plains	99,417	73.8	26.2	0	0
Mountain	20,020	32.4	66.3	0	1.3
Pacific	53,125	48.0	49.5	0	2.5
Total	589,594	56.1	25.3	14.8	3.8

[1]See footnote 2, table 1 for States in each region.

Table 4—Wheat received at port areas and transportation share by mode, 1977

Export region and port area	Quantity received	Modal shares			
		Rail	Truck	Barge	Farm truck
	1,000 bu.	*Percent*			
Great Lakes					
Duluth-Superior	152,038	69.6	30.4	0	0
Chicago area	23,090	31.6	60.8	6.5	1.1
Toledo area	20,522	12.0	78.0	0	10.0
Saginaw	2,412	0	100.0	0	0
Subtotal	198,062	58.3	39.7	.8	1.2
Atlantic					
North Atlantic	13,607	100.0	0	0	0
South Atlantic	23,873	89.7	7.8	2.3	.2
Subtotal	37,480	93.5	4.9	1.5	.1
Gulf					
East Gulf	12,673	45.9	4.2	49.9	0
Mississippi River	174,291	9.3	.2	90.5	0
North Texas Gulf	284,543	92.1	7.4	.5	0
South Texas Gulf	32,389	96.9	3.1	0	0
Subtotal	503,896	62.6	4.6	32.8	0
Pacific					
Columbia River	267,851	34.8	10.9	54.3	0
Puget Sound	54,964	98.3	1.4	.3	0
California	13,947	21.7	7.3	0	71.0
Subtotal	336,762	44.6	9.2	43.2	3.0
Total receipts	1,076,200	57.3	12.5	29.1	1.1

North Dakota and South Dakota. New York firms reported receipts of 65 million bushels, a majority of which moved from Minnesota by barge. Texas and Missouri were the next most important, with receipts in each State exceeding 50 million bushels.

Rail was the predominant mode of transportation in moving wheat to interstate markets, accounting for 56 percent of the total receipts. Of the remainder, trucks hauled 25 percent and barges 15 percent. Barge was the predominant mode of receipt for firms in Alabama, Louisiana, New York, and Tennessee, where major flour mills have access to this form of transportation.

More that 1 million bushels moved to ports in 1977 (table 4). The predominant port area was North Texas Gulf, which handled 26 percent of the total. The Columbia River port ranked a close second, and Duluth-Superior was third.

There was great diversity in the mode of transportation used to convey wheat to the various ports. The Texas ports were served primarily by rail, while the other Gulf ports mostly relied on barges. Firms in the Duluth-Superior area depended on rail shipments from the Northern Plains, while other Great Lakes ports satisfied most of their needs with grain trucked in from the nearby Lake States and Corn Belt. The dominance of the Columbia River port in the Pacific region is partly due to the availability of barge transportation. In 1977, 54 percent of the area's wheat receipts came by barge. In contrast to other port locations, 71 percent of California's port receipts moved directly from farms in that State.

Developments in Recent Years

Domestic marketing patterns may not have changed greatly since 1977. Hard wheat millers using both HRW and HRS have the opportunity to change their wheat blend as relative prices change. However, the type of wheat used by millers is more likely to be adjusted on the basis of quality than price, because their goal is a uniform product that meets customer needs. Soft wheat millers have almost no opportunity to substitute one class for another. Consequently, in years when SRW is in short supply, millers will meet that their needs primarily at the expense of foreign buyers. Durum processors can, to a limited extent, blend HRS with Durum when supplies are extremely tight; however, this practice is not common.

In contrast to domestic processors, foreign buyers are very responsive to changes in the relative prices of various classes of U.S. wheat. Compared with 1977, exports of U.S. wheat were about 60 percent higher in 1980/81 (table 5). But all wheat classes have not shared equally in this growth, and there have been shifts in the proportions of each class handled by the export points. Exports of HRS were up 25 percent, and the Great Lakes and Pacific regions shared about equally. Exports of HRW increased about 260 million bushels, and Pacific ports handled 26 percent of the total in 1980/81, up from 15 percent in 1977. Exports of SRW were 84 percent above 1977. Thus, rail movements of SRW wheat to Atlantic ports and barge movements to Gulf ports probably have doubled since 1977. White wheat exports were 60 percent above 1977 and were handled almost exclusively by Columbia River terminals. Durum exports were about the same as in 1977; however, the Gulf and Pacific port regions substantially increased their share of the total.

In summary, the volume of wheat that must be transported is large for two reasons. First, the hard wheats must be shipped from the concentrated areas of production to flour mills dispersed throughout the nation. Secondly, the export demand for wheat is large and growing, causing substantial increases in the demand for transportation equipment to move the grain to ports. Wheat exports are expected to hit a record in 1981/82, pointing to another expansion in wheat marketing and transportation.

Table 5--Wheat inspected for export by region and class, 1977 and 1980/81

Inspection Period	Export Region				
	Great Lakes 1/	Atlantic	Gulf 2/	Pacific	Total
	1,000 bushels				
1977 Calendar Year					
Hard Red Spring	48,405	0	39,148	54,473	142,026
Hard Red Winter	235	0	323,544	58,092	381,871
Soft Red Winter	18,552	35,999	102,119	0	156,670
White	1,308	1,374	0	156,599	159,281
Durum	40,429	0	4,755	3,388	48,572
Mixed	0	0	2,984	0	2,984
Total	108,929	37,373	472,550	272,552	891,404
1980/81 Marketing Year					
Hard Red Spring	64,165	0	41,893	70,788	176,846
Hard Red Winter	0	0	475,436	165,513	640,949
Soft Red Winter	13,173	75,831	198,767	0	287,771
White	2,212	534	0	252,150	254,896
Durum	29,108	0	9,107	13,587	51,802
Mixed	0	0	10,381	26	10,407
Total	108,658	76,365	735,584	502,064	1,422,671

1/Includes shipments of U.S. wheat from Canadian ports. 2/Includes rail shipments to Mexico inspected at interior points.

Reference: (3)

References

(1) Heid, Walter G., *U.S. Wheat Industry*, U.S. Dept. Agr., Econ. Stat. Coop. Serv., AER-432, Aug. 1979.

(2) Leath, Mack N., Lowell D. Hill, and Stephen W. Fuller. Wheat Movements in the United States, Interregional Flow Patterns and Transportation Requirements in 1977, No. Cent. Reg. Res. Pub. No. 274, So. Coop. Ser. Bul. 252, Ill. Bul. 767, Ill. Agr. Exp. Sta., Urbana, Il., January 1981.

(3) U.S. Department of Agriculture. *Grain Market News*, Weekly Summary and Statistics, Agric. Mkt. Serv., Independence, Mo., Selected issues.

Table 2--Wheat classes: Marketing year supply and disappearance, 1/

Year beginning June 1	Supply			Disappearance			Ending stocks May 31
	Beginning stocks	Production	Total 2/	Domestic use	Exports	Total	
				Million bushels			
1978/79:							
Hard Winter	632	830	1,462	429	610	1,039	423
Hard Spring	335	380	715	163	232	395	320
Soft Red	71	189	260	138	95	233	27
White	73	244	317	64	185	249	68
Durum	67	133	201	43	72	115	86
All classes	1,178	1,776	2,955	837	1,194	2,031	924
1979/80:							
Hard Winter	423	1,089	1,512	347	725	1,072	440
Hard Spring	320	363	684	182	217	399	285
Soft Red	27	317	344	150	154	304	40
White	68	259	327	55	196	251	76
Durum	86	106	193	49	83	132	61
All classes	924	2,134	3,060	783	1,375	2,158	902
1980/81:							
Hard Winter	440	1,181	1,621	383	697	1,080	541
Hard Spring	285	312	598	153	188	341	257
Soft Red	40	435	475	138	299	437	38
White	76	338	414	54	267	321	93
Durum	61	108	170	51	59	110	60
All classes	902	2,374	3,278	779	1,510	2,289	989
1981/82: 3/							
Hard Winter	541	1,115	1,656	366	850	1,216	440
Hard Spring	257	468	726	176	215	391	335
Soft Red	38	673	711	216	425	641	70
White	93	351	444	59	280	339	105
Durum	60	186	247	55	80	135	112
All classes	989	2,793	3,784	872	1,850	2,722	1,062

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

Table 3--Wheat: Price support loan status on specified dates, 1976-81 crops

Crop of	Total loans	Put in reserve	Repaid Loans	Repaid Reserve	Delivered to CCC	Outstanding Loans	Outstanding Reserve
			Million bushels				
			As of June 1, 1981				
1976	498.8	216.1	234.7	155.2	48.0	--	60.9
1977	590.8	195.0	393.6	134.3	2.2	--	60.7
1978	255.1	23.8	231.1	4.1	--	0.2	19.7
1979	180.5	39.8	140.4	5.4	--	0.3	34.4
1980	329.0	186.2	88.7	2.4	--	54.1	183.8
Total	***	***	***	***	1/199.7	54.6	359.5
			As of October 1, 1981				
1976	498.8	216.1	234.7	157.4	48.0	--	58.7
1977	590.8	195.0	393.6	138.3	2.2	--	56.7
1978	255.1	24.0	231.1	4.2	--	--	19.8
1979	180.5	39.9	140.5	5.5	--	0.1	34.4
1980	329.4	198.3	113.6	2.6	--	17.5	195.7
1981	254.8	66.1	14.5	0.1	--	174.2	66.0
Total	***	***	***	***	1/191.3	191.8	431.3
			As of January 1, 1982				
1976	498.8	216.1	234.7	157.9	48.0	--	58.2
1977	590.8	195.0	393.6	139.4	2.2	--	55.6
1978	255.1	24.1	231.0	4.3	--	--	19.8
1979	180.5	40.0	140.5	5.6	--	--	34.4
1980	329.4	204.0	121.0	2.9	--	4.4	201.1
1981	344.7	102.6	57.4	0.1	--	184.7	102.5
Total	***	***	***	***	1/188.7	189.1	471.6
			As of April 1, 1981				
1976	498.8	216.1	234.7	148.4	48.0	--	67.7
1977	590.8	195.0	393.6	129.7	2.2	--	65.3
1978	255.1	23.6	231.0	3.9	--	0.5	19.7
1979	180.5	38.9	139.0	4.9	--	2.6	34.0
1980	297.4	145.7	58.0	1.8	--	93.7	143.9
Total	***	***	***	***	1/203.2	96.8	330.6

1/Includes outstanding CCC-owned stocks from loan forfeitures and open market purchases in March, 1980.

Source: Agricultural Stabilization and Conservation Service loan activity reports.

Table 4--Wheat: Marketing year Supply and Disappearance, specified periods, 1977-81*

Year and periods beginning June 1	Supply				Disappearance						Ending Stocks		
					Domestic use								
	Beginning stocks	Production	Imports 1/	Total	Food	Seed	Feed 2/	Total	Exports 1/	Total disappearance	Govt. owned	Privately owned 3/	Total
							Million Bushels						
1977/78													
June-Sept.	1,113.2	2,045.5	0.8	3,159.6	193.3	32.0	148.1	373.4	381.7	755.1	8.2	2,396.3	2,404.5
Oct.-Dec.	2,404.5	--	0.4	2,404.9	153.5	23.0	6.0	182.5	225.4	407.9	31.8	1,965.2	1,997.0
Jan.-Mar.	1,997.0	--	0.4	1,997.4	145.5	1.0	42.4	188.9	278.6	467.5	44.8	1,485.1	1,529.9
Apr.-May	1,529.9	--	0.3	1,530.2	94.2	24.0	-4.0	114.2	238.2	352.4	45.7	1,132.1	1,177.8
Mkt. year	1,113.2	2,045.5	1.9	3,160.7	586.5	80.0	192.5	859.0	1,123.9	1,982.9	45.7	1,132.1	1,177.8
1978/79													
June-Sept.	1,177.8	1,775.5	0.6	2,953.9	191.7	27.0	108.0	326.7	493.3	820.0	48.9	2,085.0	2,133.9
Oct.-Dec.	2,133.9	--	0.5	2,134.4	153.8	34.0	7.0	194.8	308.8	503.6	49.5	1,581.3	1,630.8
Jan.-Mar.	1,630.8	--	0.5	1,631.3	147.8	1.0	28.6	177.4	224.5	401.9	49.5	1,179.9	1,229.4
Apr.-May	1,229.4	--	0.3	1,229.7	99.1	25.0	14.0	138.1	167.5	305.6	50.2	873.9	924.1
Mkt. year	1,177.8	1,775.5	1.9	2,955.2	592.4	87.0	157.6	837.0	1,194.1	2,031.1	50.2	873.9	924.1
1979/80													
June-Sept.	924.1	2,134.1	0.7	3,058.9	198.5	33.0	45.6	277.1	511.0	788.1	49.9	2,220.9	2,270.8
Oct.-Dec.	2,270.8	--	0.5	2,271.3	157.9	37.0	-27.7	167.2	387.9	555.1	49.6	1,666.6	1,716.2
Jan.-Mar.	1,716.2	--	0.5	1,716.7	145.1	1.0	62.8	208.9	282.7	491.6	63.3	1,161.8	1,225.1
Apr.-May	1,225.1	--	0.4	1,225.5	94.6	30.0	5.3	129.9	193.6	323.5	141.7	760.3	902.0
Mkt. year	924.1	2,134.1	2.1	3,060.3	596.1	101.0	86.0	783.1	1,375.2	2,158.3	141.7	760.3	902.0
1980/81													
June-Sept.	902.0	2,374.3	0.8	3,277.1	197.2	38.0	51.2	286.4	518.4	804.8	202.1	2,270.2	2,472.3
Oct.-Dec.	2,472.3	--	0.6	2,472.9	167.0	44.0	-12.7	198.4	371.4	569.7	203.5	1,699.7	1,903.2
Jan.-Mar.	1,903.2	--	0.7	1,903.9	153.7	1.0	20.1	174.8	400.4	575.3	203.2	1,125.4	1,328.6
Apr.-May	1,328.6	--	0.4	1,329.0	96.1	31.0	-6.7	120.3	219.9	340.2	199.7	789.1	988.8
Mkt. year	902.0	2,374.3	2.5	3,278.8	614.0	114.0	51.9	779.9	1,510.1	2,290.0	199.7	789.1	988.8
1981/82 4/													
June-Sept.	988.8	2,793.4	0.7	3,782.9	203.5	37.0	186.7	427.2	621.8	1,049.0	191.3	2,542.6	2,733.9
Oct.-Dec.	2,733.9	--	0.8	2,734.7	158.6	46.0	-71.3	133.3	427.5	560.8	188.7	1,985.2	2,173.9
Jan.-Mar.													
Apr.-May													
Mkt. year													

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/Preliminary. *Totals may not add due to rounding.

Table 5--Wheat, flour and wheat products, United States exports by months, 1976-81*

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Total
							1,000 bushels						
							Wheat (Grain only)						
1976/77	66,814	85,619	113,202	110,376	100,532	54,296	57,024	49,447	57,773	52,650	70,233	66,501	884,467
1977/78	77,073	83,657	93,432	110,634	69,107	57,565	87,368	64,819	94,669	105,468	103,286	120,060	1,067,138
1978/79	108,931	106,108	131,921	119,611	115,518	92,392	90,027	70,400	67,106	75,548	76,961	78,306	1,132,829
1979/80	104,607	133,283	117,787	129,617	149,040	108,882	114,879	82,683	89,526	94,735	98,327	88,579	1,311,945
1980/81	96,193	123,598	141,415	137,325	116,948	112,199	132,048	129,981	124,397	128,770	127,652	78,030	1,448,558
1981/82	124,521	138,168	145,428	194,148	156,993	127,495	137,757						
							Flour (Grain equivalent) 1/						
1976/77	5,605	3,052	5,060	6,028	2,861	1,357	988	3,204	5,871	6,522	8,433	4,893	53,874
1977/78	3,803	3,586	3,411	2,893	2,011	2,204	3,446	1,987	3,820	4,464	6,412	5,844	43,881
1978/79	6,426	4,370	5,124	5,109	4,235	1,399	1,617	1,380	3,050	3,355	2,231	6,589	44,885
1979/80	4,280	4,172	6,370	5,336	3,157	2,587	5,351	2,505	3,649	6,970	2,389	2,529	49,295
1980/81	4,230	2,082	5,057	3,774	2,785	2,165	1,739	2,658	5,217	6,353	7,347	4,803	48,209
1981/82	5,794	2,779	3,455	2,496	868	306	935						
							Wheat products (Grain equivalent) 2/						
1976/77	450	869	1,293	444	1,072	329	1,798	1,426	1,398	540	728	844	11,191
1977/78	788	926	269	1,211	925	952	1,821	1,097	1,164	1,059	942	1,694	12,848
1978/79	1,232	816	1,842	1,829	605	1,480	1,575	1,414	1,457	774	2,305	1,086	16,415
1979/80	772	1,797	1,492	1,483	1,190	1,484	1,334	1,168	378	1,083	836	918	13,935
1980/81	912	1,222	711	1,849	1,284	1,005	1,230	890	1,010	1,114	672	1,406	13,306
1981/82	1,827	1,150	1,009	1,037	1,171	1,406	572						
							Total wheat, flour and products						
1976/77	72,869	89,540	119,555	116,848	104,465	55,982	59,810	54,077	65,042	59,712	79,394	72,238	949,532
1977/78	81,663	88,169	97,113	114,738	72,043	60,722	92,635	67,903	99,653	110,991	110,639	127,598	1,123,867
1978/79	116,588	111,294	138,888	126,550	120,358	95,271	93,219	73,194	71,612	79,677	81,497	85,981	1,194,129
1979/80	109,659	139,252	125,649	136,436	153,387	112,953	121,564	86,356	93,553	102,788	101,552	92,026	1,375,175
1980/81	101,335	126,902	147,183	142,949	121,017	115,369	135,017	133,529	130,624	136,238	135,671	84,239	1,510,073
1981/82	132,142	142,097	149,892	197,681	159,032	129,207	139,264						

1/Includes meal and groats and durum. 2/Includes macaroni, rolled wheat and bulgar. *Totals may not add due to independent rounding.

Source: Bureau of the Census.

Table 6--White pan bread: Estimated price and marketing spreads of ingredients per 1-pound loaf and per cwt of flour, by quarters, 1980-81*

Item	Jul-Sept 1980		Oct-Dec 1980		Jan-Mar 1981		Apr-June 1981		Jul-Sept 1981	
	Value per loaf	Value per cwt of flour	Value per loaf	Value per cwt of flour	Value per loaf	Value per cwt of flour	Value per loaf	Value per cwt of flour	Value per loaf	Value per cwt of flour
	Cents	Dollars	Cents	Dollars	Cents	Dollars	Cents	Dollars	Cents	Dollars
Retail price (BLS)	51.00	82.00	51.73	83.18	53.40	85.86	52.23	83.98	52.13	83.82
Price spreads										
Wholesale-to-retail 1/	11.13	17.90	11.24	18.07	11.63	18.70	9.87	15.87	9.26	14.89
Baking 2/	30.02	48.28	30.21	48.57	31.61	50.83	32.33	51.98	33.08	53.19
Flour milling	.94	1.51	.93	1.50	1.09	1.76	.99	1.59	1.04	1.67
Other spreads										
Wheat, farm-to-flour mill	.92	1.48	.91	1.47	.86	1.38	.90	1.45	.88	1.41
Other farm ingredients 3/	1.08	1.73	1.16	1.87	.96	1.54	.88	1.42	.89	1.43
Flour, flour mill-to-baker	.59	.95	.60	.97	.61	.97	.62	.99	.61	.97
Nonfarm ingredients 4/	.85	1.37	.87	1.40	.89	1.43	.99	1.59	1.01	1.62
Total farm-retail price spread	45.53	73.20	45.92	73.84	47.65	76.61	46.58	74.89	46.75	75.17
Farm value of ingredients										
Wheat	4.64	7.47	4.93	7.93	4.89	7.86	4.80	7.72	4.59	7.37
Other farm ingredients	.83	1.33	.88	1.41	.86	1.38	.85	1.37	.80	1.28
Total farm value	5.47	8.80	5.81	9.34	5.75	9.25	5.65	9.09	5.38	8.65
Cost of farm ingredients										
Flour, f.o.b. bakery	7.09	11.40	7.38	11.86	7.45	11.98	7.31	11.76	7.11	11.43
Flour, f.o.b. mill	6.50	10.45	6.77	10.89	6.85	11.01	6.70	10.77	6.50	10.46
Wheat 5/, f.o.b. flour mill	5.56	8.94	5.84	9.39	5.75	9.24	5.71	9.18	5.46	8.79
Wheat 5/, farm value	4.64	7.47	4.93	7.93	4.89	7.86	4.80	7.72	4.59	7.37
Other farm ingredients:										
F.o.b. bakery	1.91	3.06	2.04	3.28	1.82	2.92	1.73	2.79	1.68	2.70
Farm value	.83	1.33	.88	1.41	.86	1.38	.85	1.37	.80	1.28
					Dollars per cwt					
Prices of flour and millfeeds										
Flour, f.o.b. bakery		11.40		11.86		11.98		11.76		11.43
Flour, f.o.b. mill		10.45		10.89		11.01		10.77		10.46
Millfeeds, f.o.b. mill		5.29		6.51		5.55		5.34		4.47
					Dollars per bushel					
Prices of wheat										
Wheat, f.o.b. flour mill		4.62		4.97		4.78		4.73		4.43
Wheat, farm value		3.86		4.19		4.06		3.98		3.72

1/Difference between retail and wholesale price of bread. 2/Difference between wholesale price and cost of bread ingredients, f.o.b. bakery. 3/Includes processing, transportation, and merchandising for lard, soybean oil, HFCS, corn syrup, and soy-whey blend. It is the difference between estimated cost to baker and estimated farm value. 4/Estimated cost to baker of yeast, yeast food, salt and other non-farm ingredients. 5/Price adjusted for value of millfeeds. *Price spreads may not add because of independent rounding.

Table 7--Wheat and flour: Price relationships at milling centers, annual and by periods, 1977-81

Year and periods	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									
1977/78										
June-Sept.	5.61	5.86	1.19	7.05	1.44	5.97	6.70	1.23	7.93	1.96
Oct.-Dec.	6.34	6.46	1.33	7.79	1.45	6.69	7.24	1.23	8.47	1.78
Jan.-Mar.	6.77	6.88	1.37	8.25	1.48	6.82	7.52	1.25	8.77	1.95
Apr.-May	7.54	7.86	1.14	9.00	1.46	7.45	8.52	1.08	9.60	2.15
Mkt. year	6.56	6.76	1.26	8.02	1.46	6.73	7.49	1.20	8.69	1.96
1978/79										
June-Sept.	7.29	7.49	1.27	8.76	1.47	7.27	8.03	1.16	9.19	1.92
Oct.-Dec.	7.83	7.77	1.67	9.44	1.61	7.78	8.15	1.48	9.63	1.85
Jan.-Mar.	7.98	7.84	1.61	9.45	1.47	7.74	8.05	1.44	9.49	1.75
Apr.-May	8.31	8.46	1.35	9.81	1.50	8.26	8.65	1.29	9.94	1.68
Mkt. year	7.85	7.89	1.47	9.36	1.51	7.76	8.22	1.34	9.56	1.80
1979/80										
June-Sept.	9.87	9.91	1.70	11.61	1.74	9.88	10.22	1.61	11.83	1.95
Oct.-Dec.	10.50	10.39	1.85	12.24	1.74	9.99	10.57	1.63	12.20	2.21
Jan.-Mar.	9.79	10.02	1.77	11.79	2.00	9.46	10.20	1.45	11.65	2.19
Apr.-May	9.24	9.75	1.50	11.25	2.01	9.61	10.04	1.36	11.40	1.79
Mkt. year	9.85	10.02	1.70	11.72	1.87	9.73	10.26	1.51	11.77	2.04
1980/81										
June-Sept.	9.81	10.11	1.81	11.92	2.11	10.46	10.83	1.63	12.46	2.00
Oct.-Dec.	10.80	10.54	2.38	12.92	2.12	11.29	11.04	2.05	13.09	1.80
Jan.-Mar.	10.31	10.44	1.95	12.39	2.08	10.98	11.05	1.67	12.72	1.74
Apr.-May	10.27	10.42	1.81	12.23	1.96	11.08	11.09	1.76	12.85	1.77
Mkt. year	10.30	10.38	1.99	12.37	2.07	10.95	11.00	1.78	12.78	1.83
1981/82 4/										
June-Sept.	9.69	10.33	1.55	11.88	2.19	10.08	10.82	1.49	12.31	2.23
Oct.-Dec.	9.93	10.13	1.79	11.92	1.99	9.84	10.52	1.43	11.95	2.11
Jan.-Mar.										
Apr.-May										
Mkt. year										

1/Based on 73 percent extraction rate, cost of 2.28 bushels: At Kansas City, No. 1 Hd. Winter, 13 percent protein, and at Minneapolis, simple average of No. 1 Dark Northern Spring, 13 and 15 percent protein. 2/Quoted as 95 percent patent at Kansas City and standard patent at Minneapolis, bulk basis. 3/Assumed 50-50 millfeed distribution between bran and shorts or middlings, bulk basis. 4/Preliminary.

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

Table 8--Wheat: Farm price for leading classes and major feed grain in region, 1978-81 1/

Commodity and year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Simple average	Loan rate
							All prices for 60 pounds							
							Central and So. Plains (Hard Winter) 2/							
Wheat:														
1978/79	2.72	2.71	2.74	2.82	2.96	2.98	2.97	2.93	2.96	2.97	3.00	3.12	2.91	2.28
1979/80	3.63	3.81	3.72	3.82	3.86	3.93	3.89	3.81	3.73	3.51	3.36	3.48	3.71	2.43
1980/81	3.49	3.63	3.75	3.86	4.10	4.19	4.01	4.08	3.99	3.83	3.88	3.75	3.88	2.94
1981/82	3.70	3.65	3.62	3.70	3.73	3.87	3.80							3.13
Sorghum:														
1978/79	2.15	2.05	1.97	1.96	2.06	2.11	2.12	2.11	2.11	2.12	2.15	2.17	2.09	2.00
1979/80	2.55	2.68	2.51	2.48	2.45	2.45	2.41	2.43	2.44	2.47	2.40	2.45	2.48	2.12
1980/81	2.58	2.94	3.06	3.18	3.31	3.33	3.34	3.33	3.28	3.14	3.18	3.12	3.15	2.27
1981/82	3.03	2.96	2.65	2.37	2.34	2.36	2.39							2.42
							Cornbelt (Soft Red Winter) 3/							
Wheat:														
1978/79	2.88	2.90	3.02	3.08	3.23	3.34	3.37	3.37	3.50	3.38	3.44	3.58	3.26	2.34
1979/80	3.85	4.01	3.86	3.93	4.00	3.87	3.99	4.03	4.11	3.82	3.59	3.62	3.89	2.48
1980/81	3.58	3.82	4.02	4.19	4.41	4.59	4.50	4.50	4.28	4.03	4.00	3.59	4.13	3.00
1981/82	3.24	3.47	3.39	3.49	3.59	3.74	3.69							3.20
Corn:														
1978/79	2.52	2.39	2.18	2.13	2.12	2.19	2.27	2.31	2.39	2.44	2.51	2.61	2.34	2.18
1979/80	2.78	3.02	2.88	2.81	2.59	2.48	2.71	2.66	2.65	2.63	2.60	2.68	2.71	2.31
1980/81	2.76	3.06	3.28	3.36	3.28	3.46	3.53	3.54	3.58	3.58	3.57	3.56	3.38	2.46
1981/82	3.47	3.44	3.11	2.76	2.64	2.52	2.54							2.62
							Northern Plains (Spring and Durum) 4/							
Wheat:														
1978/79	2.79	2.69	2.71	2.78	2.87	2.93	2.86	2.75	2.83	2.84	2.89	3.14	2.84	2.36
1979/80	3.49	3.69	3.62	3.67	3.83	3.75	3.61	3.54	3.60	3.57	3.66	3.80	3.65	2.51
1980/81	3.89	4.07	3.97	4.02	4.24	4.39	4.28	4.33	4.30	4.21	4.29	4.31	4.19	3.02
1981/82	4.15	3.95	3.69	3.66	3.67	3.74	3.66							3.21
Barley:														
1978/79	2.25	2.00	2.02	2.14	2.22	2.36	2.33	2.27	2.26	2.34	2.46	2.55	2.27	1.92
1979/80	2.65	2.72	2.50	2.65	2.72	2.77	2.68	2.68	2.52	2.60	2.51	2.60	2.64	2.02
1980/81	2.82	2.69	3.14	3.32	3.44	3.69	3.62	3.62	3.72	3.72	3.73	3.69	3.43	2.16
1981/82	3.38	2.72	2.71	2.98	2.81	2.89	2.85							2.28
							Pacific Northwest (White) 5/							
Wheat:														
1978/79	3.23	3.29	3.35	3.36	3.30	3.30	3.34	3.30	3.21	3.22	3.30	3.42	3.30	2.41
1979/80	3.98	3.93	4.12	4.03	3.91	3.89	3.73	3.68	3.80	3.71	3.66	3.56	3.83	2.57
1980/81	3.53	3.71	3.67	3.80	4.03	4.12	4.08	4.05	4.06	4.11	4.02	4.08	3.94	3.08
1981/82	3.99	3.82	3.80	3.81	3.91	3.95	3.86							3.29
Barley:														
1978/79	2.69	2.59	2.54	2.35	2.25	2.32	2.31	2.39	2.36	2.44	2.49	2.58	2.44	2.15
1979/80	2.69	3.08	3.00	3.09	3.07	3.34	3.10	3.10	3.10	3.18	3.21	3.12	3.09	2.26
1980/81	3.16	3.34	3.32	3.35	3.70	3.80	3.99	4.07	4.15	4.07	3.95	3.99	3.74	2.40
1981/82	3.72	3.39	3.19	3.10	3.08	3.34	3.20							2.55
							U.S. Average							
Wheat:														
1978/79	2.81	2.81	2.88	2.92	2.99	3.04	3.01	2.99	2.99	2.97	3.01	3.20	6/2.97	2.35
1979/80	3.72	3.89	3.74	3.87	3.98	3.94	3.81	3.74	3.78	3.64	3.58	3.69	6/3.78	2.50
1980/81	3.69	3.81	3.94	3.99	4.19	4.32	4.22	4.21	4.17	4.09	4.07	3.95	6/3.91	3.00
1981/82	3.70	3.62	3.62	3.65	3.77	3.85	3.80							3.20

1/To adjust price to relative feed value multiply: Corn 1.00; Wheat 1.05; Barley .90; Sorghum .95; reported in Consumption of Feed by Livestock, Report No. 79, ERS, USDA. 2/Kansas, Nebraska, Texas, Oklahoma, and Colorado. 3/Ohio, Indiana, Illinois, and Missouri. 4/North Dakota, South Dakota, and Minnesota. 5/Washington, Oregon, and Idaho. 6/Season average price includes allowance for unredeemed loans and purchases.

Table 9--Wheat: Cash prices for leading classes at major markets, 1978-81

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Simple average
						Dollars per bushel							
					Kansas City, No. 1 Hard Red Winter (ordinary protein)								
1978/79	3.12	3.14	3.14	3.24	3.42	3.48	3.39	3.42	3.50	3.52	3.53	3.64	3.38
1979/80	4.17	4.34	4.12	4.26	4.39	4.53	4.51	4.33	4.32	4.07	3.90	4.10	4.25
1980/81	4.07	4.21	4.31	4.45	4.70	4.89	4.54	4.60	4.47	4.35	4.48	4.36	4.45
1981/82	4.24	4.25	4.14	4.19	4.31	4.46	4.35						
						13% protein							
1978/79	3.20	3.17	3.15	3.26	3.42	3.48	3.40	3.43	3.52	3.55	3.58	3.71	3.41
1979/80	4.22	4.42	4.28	4.39	4.55	4.67	4.60	4.40	4.35	4.14	3.96	4.14	4.34
1980/81	4.12	4.25	4.34	4.49	4.70	4.91	4.60	4.67	4.50	4.40	4.57	4.44	4.50
1981/82	4.36	4.26	4.16	4.22	4.29	4.44	4.33						
						Chicago, No. 2 Soft Red Winter							
1978/79	3.18	3.22	3.32	3.42	3.51	3.68	3.68	3.73	3.88	3.79	3.60	3.86	3.57
1979/80	4.36	4.39	4.23	4.28	4.30	4.13	4.26	4.36	4.39	4.18	3.96	4.04	4.24
1980/81	3.96	4.17	4.21	4.38	4.70	4.92	4.54	4.57	4.34	4.15	4.18	3.80	4.33
1981/82	3.60	3.70	3.70	3.87	3.97	4.08	3.86						
						St. Louis, No. 2 Soft Red Winter							
1978/79	3.05	3.16	3.21	3.23	3.41	3.57	3.50	3.57	3.66	3.51	3.62	3.68	3.43
1979/80	4.08	4.18	4.04	4.08	4.02	4.10	4.28	4.26	4.32	4.11	3.80	3.93	4.10
1980/81	3.73	4.10	4.19	4.42	4.78	4.96	4.78	4.80	4.57	4.32	4.36	3.67	4.39
1981/82	3.41	3.54	3.56	3.67	3.74	4.05	3.90						
						Toledo, No. 2 Soft Red Winter							
1978/79	3.09	3.13	3.21	3.32	3.46	3.73	3.72	3.73	3.69	3.66	3.56	3.71	3.50
1979/80	4.17	4.37	4.22	4.28	4.29	4.21	4.28	4.21	4.32	4.08	3.80	3.90	4.18
1980/81	3.84	4.14	4.16	4.38	4.82	5.02	4.65	4.70	4.47	4.16	4.16	3.76	4.36
1981/82	3.55	3.63	3.71	3.83	3.98	4.08	3.85						
						Toledo, No. 2 Soft White							
1978/79	3.10	3.26	3.45	3.63	3.69	3.87	3.78	3.72	3.63	3.44	3.35	3.53	3.54
1979/80	4.08	4.31	4.15	4.17	4.12	4.20	4.18	4.10	4.14	3.90	3.63	3.74	4.06
1980/81	3.71	4.05	4.15	4.31	--	--	4.44	4.49	4.21	3.87	3.87	3.62	4.07
1981/82	3.43	3.62	3.77	3.91	3.99	4.10	3.82						
						Portland, No. 1 Soft White							
1978/79	3.60	3.74	3.72	3.77	3.76	3.76	3.71	3.70	3.65	3.70	3.70	3.91	3.73
1979/80	4.46	4.67	4.45	4.31	4.13	4.16	4.10	4.10	4.26	4.13	4.02	3.91	4.22
1980/81	3.92	4.15	4.06	4.23	4.48	4.68	4.40	4.52	4.52	4.41	4.51	4.41	4.36
1981/82	4.26	4.27	4.25	4.21	4.38	4.42	4.00						
					Minneapolis, No. 1 Dark No. Spring (ordinary protein)								
1978/79	3.06	2.95	2.96	3.07	3.21	3.32	3.15	3.12	3.12	3.18	3.29	3.62	3.17
1979/80	4.23	4.31	4.10	4.18	4.31	4.27	4.18	4.06	4.13	4.04	3.94	4.21	4.16
1980/81	4.19	4.54	4.22	4.17	4.62	4.78	4.62	4.65	4.53	4.32	4.41	4.44	4.46
1981/82	4.29	4.18	4.03	4.07	4.22	4.29	4.15						
						14% protein							
1978/79	3.21	3.11	3.13	3.26	3.41	3.47	3.32	3.30	3.36	3.42	3.45	3.73	3.35
1979/80	4.32	4.42	4.19	4.29	4.45	4.29	4.17	4.07	4.08	4.02	3.96	4.31	4.21
1980/81	4.33	4.69	4.55	4.56	4.82	4.95	4.77	4.81	4.78	4.67	4.80	4.77	4.71
1981/82	4.56	4.50	4.25	4.23	4.29	4.38	4.22						
						Hard Amber Durum, No. 1 (medium)							
1978/79	3.72	3.56	3.55	3.52	3.69	3.70	3.53	3.60	3.64	3.72	3.71	3.98	3.66
1979/80	4.75	4.99	4.88	5.27	5.80	5.38	4.99	4.93	5.05	4.98	4.89	5.21	5.09
1980/81	5.79	7.12	7.19	7.26	7.34	7.22	6.90	7.07	7.02	6.66	6.10	6.04	6.81
1981/82	4.86	4.91	4.75	4.56	4.60	4.58	4.51						

Source: Grain Market News, Agricultural Marketing Service.

Table 10--Wheat: Export prices by months, at selected ports, 1978-81

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Simple average
						Dollars per metric ton							
						Gulf: No. 1 Hard Red Winter, Ordinary protein							
1978/79	126	127	128	131	137	138	136	138	140	140	140	143	135
1979/80	168	175	169	174	178	178	180	176	173	164	156	161	171
1980/81	158	169	171	180	188	195	182	187	182	175	180	172	178
1981/82	169	168	170	171	169	179	175						
						Gulf: No. 1 Soft Red Winter							
1978/79	123	124	126	130	136	141	137	140	144	144	144	141	136
1979/80	164	169	163	165	163	164	172	170	168	162	153	154	164
1980/81	146	163	165	176	187	193	180	187	176	168	172	143	171
1981/82	133	136	140	147	150	157	151						
						Portland: No. 2 Western White							
1978/79	136	141	139	141	140	141	139	139	137	138	138	148	140
1979/80	171	178	167	163	160	157	155	157	162	157	155	148	161
1980/81	147	158	157	162	172	180	170	174	173	166	166	165	166
1981/82	159	159	161	161	165	166	152						
						Duluth: No. 2 Northern Spring, 14% protein							
1978/79	119	116	117	121	127	129	120	122	123	126	127	138	124
1979/80	163	166	1/	1/	167	158	1/	1/	1/	1/	146	158	159
1980/81	158	174	168	170	177	180	1/	1/	1/	1/	176	175	172
1981/82	170	164	159	156	158	161	1/						

1/No price quotes available.

Source: Grain Market News, Agricultural Marketing Service.

Table 11--Wheat: Rotterdam, c.i.f., quotations by months, 1978-81 1/

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Simple average
						Dollars per metric ton							
						United States No. 2 Hard Winter, 13.5%							
1978/79	150	146	147	148	156	161	157	155	160	165	157	166	156
1979/80	193	204	200	205	209	212	212	200	200	197	NQ	NQ	203
1980/81	198	203	209	214	224	233	235	233	225	212	211	206	217
1981/82	203	204	201	200	200	212	205						
						United States Dark Northern Spring, 14%							
1978/79	142	138	140	144	153	159	150	164	170	164	154	166	154
1979/80	192	202	194	199	205	204	205	206	205	196	188	199	200
1980/81	197	212	212	212	216	226	235	245	240	209	210	207	218
1981/82	197	194	189	190	193	196	204						

1/Hamburg Mercantile Exchange prices for Rotterdam.

Source: World Grain Situation, Foreign Agricultural Service.

Table 12--Wheat and Wheat Flour: World trade, production, stocks and utilization, July-June 1978-81

Country or region	1978/79	1979/80	1980/81	1981/82 as of Jan. 20
		Million metric tons		
Exports:				
Canada	13.5	15.0	17.0	17.5
Australia	6.7	14.9	10.6	12.0
Argentina	3.3	4.7	3.9	3.8
Sub-total	23.5	34.7	31.5	33.3
EC-10	8.8	10.4	13.9	13.5
USSR	1.5	0.5	0.5	0.8
All others	6.0	3.2	6.2	3.5
Total non-U.S.	39.7	48.9	52.2	51.1
USA 1/	32.3	37.2	41.9	50.3
World total	72.0	86.1	94.1	101.4
Imports:				
EC-10	4.6	5.3	4.5	4.7
USSR	5.1	12.1	16.0	19.0
Japan	5.7	5.6	5.8	5.7
E. Europe	4.4	6.0	6.0	5.9
China, (Mainland)	8.0	8.9	13.8	13.0
All others	44.0	48.1	48.0	53.1
World total	72.0	86.1	94.1	101.4
Production: 2/				
Canada	21.1	17.2	19.2	24.5
Australia	18.1	16.2	10.9	16.0
Argentina	8.1	8.1	7.8	7.8
EC-10	50.3	48.8	55.1	53.5
USSR 3/	120.8	90.2	98.2	88.0
E. Europe	35.9	27.6	34.5	31.4
China (Mainland)	54.0	62.7	54.2	57.5
India	31.7	35.5	31.8	36.5
All other foreign	58.2	57.9	62.8	61.0
USA	48.3	58.1	64.6	76.0
World total	446.6	422.3	439.0	452.1
Utilization: 4/				
USA	22.8	21.3	21.2	25.5
USSR 3/	106.5	115.8	115.7	106.2
China, (Mainland)	62.0	71.6	67.9	71.0
All other foreign	238.5	235.2	238.9	246.4
World total	429.8	443.9	443.8	449.1
Stocks, ending: 5/	101.0	79.5	74.6	77.6

1/Includes transhipments through Canadian ports; excludes products other than flour. 2/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 1978 harvests in areas such as India, North Africa, and Southern United States are actually included in "1978/79" accounting period which begins July 1, 1978. 3/"Bunker weight" basis: not discounted for excess moisture and foreign material. 4/Utilization data are based on an aggregate of differing local marketing years. For countries which stocks data are not available, (excluding the USSR) utilization estimates represent "apparent" utilization, i.e., they are inclusive of annual stock level adjustments. 5/Stocks data are based on an aggregate of differing local marketing years and should not be construed as representing world stock levels at a fixed point in time. Stocks data are not available for all countries and exclude those such as China and part of Eastern Europe; the world stock levels have been adjusted for estimated year-to-year changes in USSR grain stocks, but do not purport to include the entire absolute level of USSR stocks.

Source: Foreign Agricultural Service. World Grain Situation.

Table 13--Rye: Supply, disappearance, area and prices, marketing years 1977-81*

Item	1977/78	1978/79	1979/80	1980/81 (prel.)	1981/82 (proj.)
			Million bushels		
Supply					
Beginning stocks, June 1	4.4	4.0	9.0	12.2	4.1
Production	16.5	24.1	22.4	16.5	18.6
Imports	0.1	0.1	1/	1/	1/
Total	21.1	28.2	31.4	28.7	22.8
Domestic disappearance					
Food	3.6	3.7	3.5	3.5	3.5
Alcoholic beverages	1.9	2.4	2.1	2.1	2.1
Seed	4.6	4.6	4.0	4.2	4.2
Feed 2/	7.0	8.1	7.1	7.3	7.0
Total	17.1	18.8	16.7	17.1	16.8
Exports	1/	0.4	2.4	7.5	2.0
Total disappearance	17.1	19.2	19.2	24.6	18.8
Ending stocks, May 31	4.0	9.0	12.2	4.1	4.0
			Million acres		
Area					
Planted	2.6	2.9	2.9	2.5	2.6
Harvested	0.7	0.9	0.9	0.7	0.7
			Bushels per acre		
Yield per harvested acre	24.4	26.0	25.8	24.4	26.7
			Dollars per bushel		
Prices					
Received by farmers	2.06	1.99	2.06	2.64	2.90
Minneapolis No. 2	2.53	2.44	2.47	3.35	
Loan rate	1.70	1.70	1.79	1.91	2.04

1/ Less than 50,000 bushels.

2/ Residual, approximates total feed use.

* Totals may not add due to rounding.

Table 14--Rye: Marketing year Supply and Disappearance, specified periods, 1977-81*

Year and periods beginning June 1	Supply				Disappearance							Ending Stocks		
					Domestic use									
	Beginning stocks	Production	Imports	Total	Food	Alc. Beverages	Seed	Feed 1/	Total	Exports	Total Disappearance	Govt. Owned	Privately owned 2/	Total
	Million Bushels													
1977/78														
June-Sept.	4.4	16.5	0.1	21.0	1.2	0.6	2.3	2.8	6.9	3/	6.9	--	14.1	14.1
Oct.-Dec.	14.1	--	--	14.1	0.9	0.5	2.1	1.8	5.3	3/	5.3	--	8.8	8.8
Jan.-Mar.	8.8	--	--	8.8	0.9	0.5	0.2	1.4	3.0	3/	3.0	--	5.8	5.8
Apr.-May	5.8	--	3/	5.9	0.6	0.3	--	1.0	1.9	3/	1.9	--	4.0	4.0
Mkt. year	4.4	16.5	0.1	21.1	3.6	1.9	4.6	7.0	17.1	3/	17.1	--	4.0	4.0
1978/79														
June-Sept.	4.0	24.1	0.1	28.2	1.1	0.5	2.3	1.8	5.7	3/	5.7	--	22.5	22.5
Oct.-Dec.	22.5	--	--	22.5	1.1	0.6	2.1	3.5	7.3	3/	7.3	--	15.2	15.2
Jan.-Mar.	15.2	--	3/	15.2	1.0	0.7	0.2	1.6	3.5	3/	3.5	--	11.7	11.7
Apr.-May	11.7	--	--	11.7	0.5	0.6	--	1.2	2.3	0.4	2.7	--	9.0	9.0
Mkt. year	4.0	24.1	0.1	28.2	3.7	2.4	4.6	8.1	18.8	0.4	19.2	--	9.0	9.0
1979/80														
June-Sept.	9.0	22.4	3/	31.4	1.2	0.6	2.0	2.2	6.0	0.6	6.6	0.2	24.6	24.8
Oct.-Dec.	24.8	--	--	24.8	0.9	0.4	1.8	2.4	5.5	1.6	7.1	0.2	17.5	17.7
Jan.-Mar.	17.7	--	3/	17.7	0.9	0.6	0.2	1.0	2.7	3/	2.7	0.2	14.8	15.0
Apr.-May	15.0	--	3/	15.0	0.5	0.5	--	1.5	2.6	0.2	2.8	0.2	12.0	12.2
Mkt. year	9.0	22.4	3/	31.4	3.5	2.1	4.0	7.1	16.7	2.4	19.2	0.2	12.0	12.2
1980/81														
June-Sept.	12.2	16.5	3/	28.7	1.1	0.4	2.1	3.4	7.0	3.2	10.2	0.2	18.3	18.5
Oct.-Dec.	18.5	--	3/	18.5	1.0	0.5	1.9	2.7	6.1	3.1	9.2	0.3	9.0	9.3
Jan.-Mar.	9.3	--	3/	9.3	0.8	0.7	0.2	3/	1.7	0.7	2.4	0.3	6.6	6.9
Apr.-May	6.9	--	3/	6.9	0.6	0.5	--	1.2	2.3	0.5	2.8	0.1	4.0	4.1
Mkt. year	12.2	16.5	3/	28.7	3.5	2.1	4.2	7.3	17.1	7.5	24.6	0.1	4.0	4.1
1981/82 4/														
June-Sept.	4.1	18.6	3/	22.8	1.2	0.4	2.1	4.6	8.3	3/	8.3	0.1	14.4	14.5
Oct.-Dec.	14.5	--	3/	14.5	0.9	0.5	1.9	2.0	5.3	1.4	6.7	0.1	7.7	7.8
Jan.-Mar.														
Apr.-May														
Mkt. year														

1/Residual; Approximates total feed use. 2/Includes outstanding loans. 3/Less than 50,000 bushels. 4/Preliminary.
*Totals may not add due to rounding.

INDEX OF TABLES

WHEAT	Page	Table
Supply and Distribution		
United States		
Condensed table, annual 19/8-81.....	2	1
By class, 19/8-81.....	18	2
By specified periods, 1977-81.....	20	4
World trade, production, stocks, and utilization, annual 19/8-81.....	27	12
Price support loan status on specified dates....	19	3
Exports, Including Flour		
United States		
Exports by months, 19/6-81.....	21	5
Prices		
Farm price for leading classes and major feed grain in region, 19/8-81	24	8
Cash prices for leading classes at major markets, 19/8-81	25	9
Export prices by months, at selected ports, 1978-81	26	10
Wheat: Rotterdam, c.i.f. quotations, by months, 19/8-81	26	11
Wheat and flour price relationships, annual and by periods, 1977-81.....	23	7
White pan bread, price and marketing spreads by quarters, 1980-81.....	22	6
RYE:		
Supply and Distrubution		
Condensed table, annual 1977-81.....	28	13
By specified periods, 1977-81.....	29	14

NOTES

☆U.S. GOVERNMENT PRINTING OFFICE: 1982- 360-929:ERS-563

UNITED STATES DEPARTMENT OF AGRICULTURE
WASHINGTON, D.C. 20250

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

To stop mailing ☐ or to change your address ☐ send this sheet with label intact, showing new address, to ERS Publications, Rm. 0054-South, USDA, Washington, D.C. 20250

POSTAGE ND FEES PAID
U.S. DEPARTMENT OF
AGRICULTURE
AGR 101

FIRST CLASS

1981 Handbook of Agricultural Charts

The **1981 Handbook of Agricultural Charts** is now available from the Government Printing Office. The handbook contains 290 graphic illustrations on various agricultural subjects ranging from farm income to consumer costs, and from energy production and use to commodity trends. To get your copy of the handbook, fill out the order form and send $5.00 per copy to Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Mail Order Form To: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

Enclosed find $ _____(check or money order payable to the Superintendent of Documents. Please do not send cash or stamps.) Add 25% for any order to a foreign address.

Please send me _____ copies of the **1981 Handbook of Agricultural Charts,** S/N 001-000-04260-2, $5.00 per copy.

Name _____

Street address _____

City and State _____ Zip Code _____

For Office Use Only

Quantity	Charges
..... Enclosed	.....
..... To be mailed	.....
..... Subscriptions	.....
Postage	.....
Foreign handling	.....
MMOB	.....
OPNR	.....
..... UPNS	
..... Discount	
..... Refund	

VISA

MasterCard

Credit Card Orders Only

Total charges $_____ Fill in the boxes below.

Credit Card No. ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Expiration Date Month/Year ☐☐☐☐

Please charge this order to my Deposit Account No.

☐☐☐☐☐☐☐–☐