



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

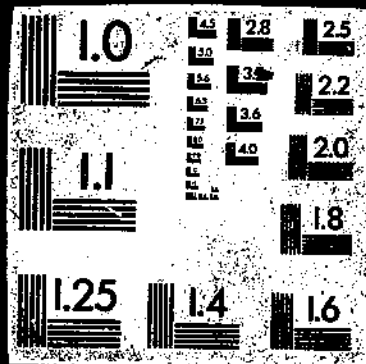
PB92-209535

USDA/SB-836 U.S. RICE DISTRIBUTION PATTERNS, 1988/89.
(STATISTICAL BULLETIN.) / N. W. CHILDS ECONOMIC RESEARCH SERVICE,
WASHINGTON, DC, COMMODITY ECONOMICS DIV. APR 92 43P

1 OF 1

PB 92

209535



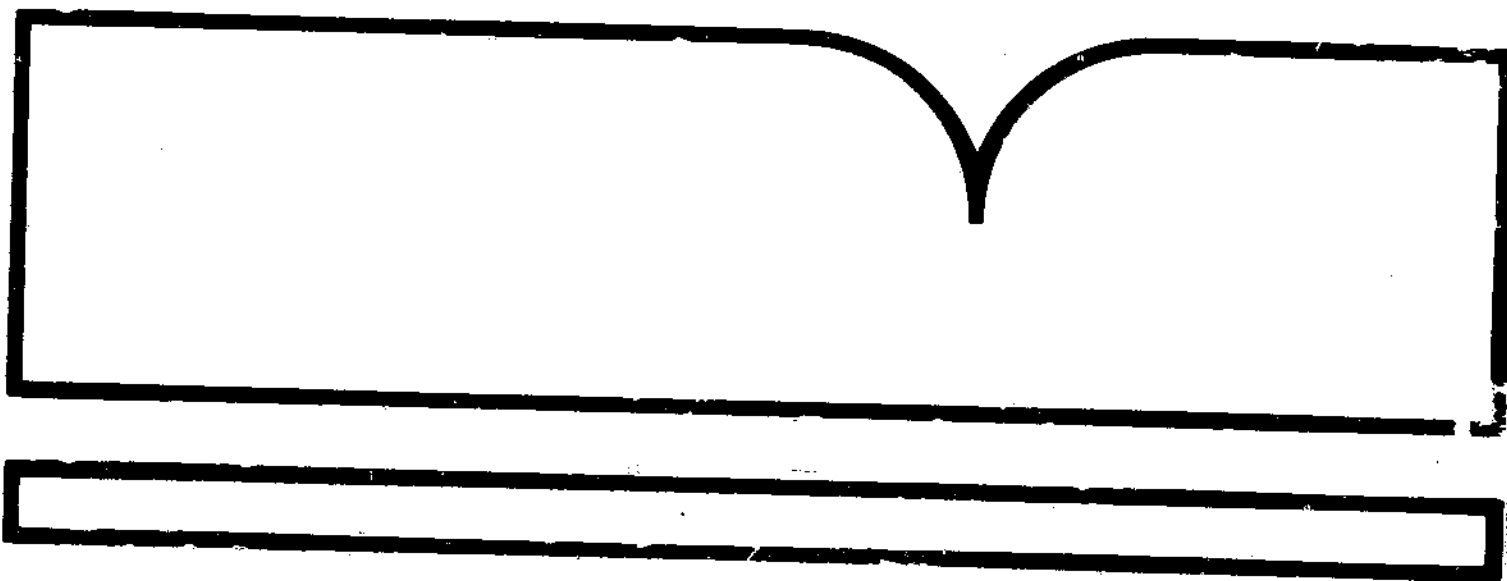


PB92-209535

U.S. Rice Distribution Patterns, 1988/89

(U.S.) Economic Research Service, Washington, DC

Apr 92



U.S. Department of Commerce
National Technical Information Service
NTIS

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Boulevard, Washington, DC 20540, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. REPORT NUMBER P892-209535	2. REPORT DATE April 1992	3. REPORT TYPE AND DATES COVERED Statistical Bulletin 1988-89	
4. TITLE AND SUBTITLE U.S. Rice Distribution Patterns, 1988/89		5. FUNDING NUMBERS	
6. AUTHOR(S) Nathan W. Childs		8. PERFORMING ORGANIZATION REPORT NUMBER SB-836	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U. S. Department of Agriculture Economic Research Service 1301 New York Avenue, NW. Washington, DC 20005-4788		10. SPONSORING/MONITORING AGENCY REPORT NUMBER same as 8.	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Same as 7.		11. SUPPLEMENTARY NOTES	
12a. DISTRIBUTION/AVAILABILITY STATEMENT		12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) According to USDA's biannual milled rice distribution survey, U.S. rice millers and repackagers distributed 42.6 million hundredweight (CWT) of rice in marketing year 1988/89 for three domestic uses: direct food, processed foods, and beer. This figure represents an 11-percent increase above shipments in 1986/87, the previous survey year. Between 49 percent and 57 percent of annual U.S. rice production has been consumed domestically (including seed use and residual) since 1988/89; the remainder has been exported. Rice shipments for direct food use rose by 2.18 million cwt, shipments for processed food use rose by 0.991 million, and reported rice shipments to the beer industry increased by 1.07 million. Since the 1989/90 marketing year, domestic use of rice has exceeded exports, and further expansion in the domestic rice market is expected. This report assesses rice market shares and trends.			
14. SUBJECT TERMS Milled rice, distribution patterns, domestic rice outlets, market shares, package sizes, specialty rices, processed foods.		15. NUMBER OF PAGES	
17. SECURITY CLASSIFICATION OF REPORT Unclassified		16. PRICE CODE	
18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified		19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	
20. LIMITATION OF ABSTRACT		20. LIMITATION OF ABSTRACT	



United States
Department of
Agriculture

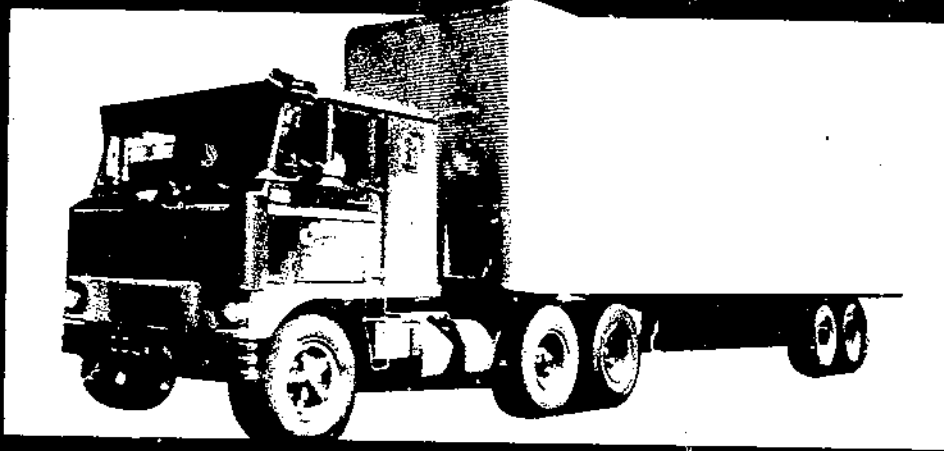
Economic
Research
Service

Statistical
Bulletin
Number 836

PB92-209535

U.S. Rice Distribution Patterns, 1988/89

Nathan Childs



REPRODUCED BY
U.S. DEPARTMENT OF COMMERCE
NATIONAL TECHNICAL INFORMATION SERVICE
SPRINGFIELD, VA 22161

It's Easy to Order Another Copy!

Just dial 1-800-999-6779. Toll free in the United States and Canada.
Other areas, please call 1-301-725-7937.

Ask for *U.S. Rice Distribution Patterns, 1988/89* (SB-836).

The cost is \$8.00 per copy. For non-U.S. addresses (includes Canada), add 25 percent. Charge your purchase to your VISA or MasterCard, or we can bill you. Or send a check or purchase order (made payable to ERS-NASS) to:

ERS-NASS
P.O. Box 1608
Rockville, MD 20849-1608

We'll fill your order by first-class mail.

U.S. Rice Distribution Patterns, 1988/89. By Nathan Childs, Commodity Economics Division, Economic Research Service, U.S. Department of Agriculture. Statistical Bulletin No. 836.

Abstract

According to USDA's biannual milled rice distribution survey, U.S. rice millers and repackagers distributed 42.6 million hundredweight (cwt) of rice in marketing year 1988/89 for three domestic uses: direct food, processed foods, and beer. This figure represents an 11-percent increase above shipments in 1986/87, the previous survey year. Between 49 percent and 57 percent of annual U.S. rice production has been consumed domestically (including seed use and residual) since 1988/89; the remainder has been exported. Rice shipments for direct food use rose by 2.18 million cwt, shipments for processed food use rose by 0.991 million, and reported rice shipments to the beer industry increased by 1.07 million. Since the 1989/90 marketing year, domestic use of rice has exceeded exports, and further expansion in the domestic rice market is expected. This report assesses rice market shares and trends.

Keywords: Milled rice, distribution patterns, domestic rice outlets, market shares, package sizes, specialty rices, processed foods.

Acknowledgments

The author expresses appreciation to the management of the rice milling and repackaging firms whose cooperation made this survey possible, and to their staffs who tabulated the requested data and completed the questionnaires. The assistance of the USA Rice Council and The Rice Millers' Association is also gratefully acknowledged. Philip Friend, Data Services Center, Economic Research Service, prepared the computerized statistical tables and assisted in data entry and verification. Teri Thrash, Economics Management Staff, edited all versions of the text and managed publication of the document.

Contents

	Page
Summary.....	iii
Introduction.....	1
Distribution to Major Domestic Outlets.....	1
Direct Food Use.....	1
Processed Foods.....	5
Beer Brewing.....	7
Per Capita Consumption of Rice.....	7
Distribution of Rice by Region, Package Size, and Type.....	9
Rice Shipments to Territories and for Export.....	12
Mill Origin of Rice Shipments.....	13
Arkansas-Missouri.....	13
Louisiana-Florida.....	14
Texas-Mississippi.....	15
California.....	15
Conclusions.....	16
Related Reports.....	17
Tables.....	18

Summary

According to USDA's biannual milled rice distribution survey, U.S. rice millers and repackagers distributed 42.6 million hundredweight (cwt) of milled rice in marketing year 1988/89 for three major domestic uses: direct food, processed foods, and beer. This figure represents an 11-percent increase above shipments in 1986/87, the previous survey year. Domestic uses (including seed use and residual) have accounted for 49-57 percent of annual U.S. rice production since 1988/89; the remainder has been exported. This survey tracked more than 90 percent of total domestic shipments (excluding imports, seed, and residual), 80 percent of shipments to brewers, and about 95 percent of food shipments.

Rice shipments for direct food use rose by 2.18 million cwt, shipments for processing rose by 991,100 cwt, and reported rice shipments to the beer industry increased by 1.07 million cwt. Shipments to the wholesale, retail, and restaurant trade for direct food use totaled 25 million cwt in 1988/89. Milled white rice accounted for almost 77 percent of these shipments, parboiled rice for more than 17 percent, and brown rice and precooked rice about 3 percent each. The Arkansas-Missouri rice milling area was the major supplier to the domestic direct food use market. The Texas-Mississippi mill area and California virtually tied for second place.

Packages sized 25-100 pounds accounted for 35 percent of total U.S. direct food use distributions, and packages sized under 5 pounds accounted for 23 percent. Long grain's share of direct food use shipments was 72.8 percent, medium grain's was 25.7 percent, and short grain's was 1.5 percent.

Breakfast cereal, the second-largest processed food product made from rice (after beer), accounted for 3.9 million cwt of rice shipped in 1988/89, down from 4.8 million 2 years earlier. The Arkansas-Missouri rice milling area was the principal source of rice for cereal manufacturers, accounting for 51 percent of reported shipments. The amount of rice used in baby foods in 1988/89 decreased from that used in 1986/87, while the amount used in pet foods, rice cakes, candy, frozen dinners, soups, and package mixes increased.

Rice mills cooperating in the 1988/89 rice distribution survey reported shipments to breweries of 8.9 million cwt, compared with 11.2 million reported by the U.S. Treasury Department. While the survey normally accounts for almost 95 percent of domestic food shipments, reported brewers' use of rice is typically 20 percent less than Treasury Department data. The California mill area ranked first in shipments to breweries, accounting for 53 percent of survey reported shipments. The Arkansas-Missouri mill area was responsible for 39 percent of shipments to brewers.

U.S. Rice Distribution Patterns, 1988/89

Nathan Childs

Introduction

The increasing size and share of domestic rice shipments since the late 1980's have focused new attention on the domestic rice market, which has accounted for 49-57 percent (including shipments to U.S. territories) of U.S. rice production since marketing year 1988/89. The detailed data on domestic rice shipments in this study will help in assessing market shares, changes in market outlets, and trends in distribution patterns. Such information is useful for economic analysis of the rice industry and efforts to expand domestic rice consumption. This survey is the only source of data on domestic rice shipments by State of origin and destination. (See fig. 1 for detailed breakdown of States into major rice consuming regions.)

Data in this report are based on information reported by 26 rice milling and 6 repackaging firms, which accounted for an estimated 90 percent of total domestic (excluding U.S. territories) milled rice shipments in 1988/89. In 1986/87, 31 mills and 7 repackagers participated in the survey. The mills and repackagers that participated in 1986/87, but not in 1988/89, were small-sized mills, and thus only slightly affected total shipments. State shipment data are not available on the flow patterns of the 3.8 million hundredweight (cwt) (rough basis) of rice that the United States imported in 1988/89. However, many researchers believe that this rice is consumed most heavily by Asian ethnics on the west coast and in large cities along the upper east coast. Imported rice is primarily aromatic or, to a much lesser extent, glutinous.

Distribution to Major Domestic Outlets

The three principal U.S. outlets for rice are direct food use, processed foods, and beer. U.S. rice millers and repackagers reported 42.6 million cwt of milled rice shipped to these three major domestic outlets in marketing year 1988/89. This is an 11-percent increase over the 38.3 million cwt of milled rice reported shipped to domestic outlets in the 1986/87 milled rice distribution survey.

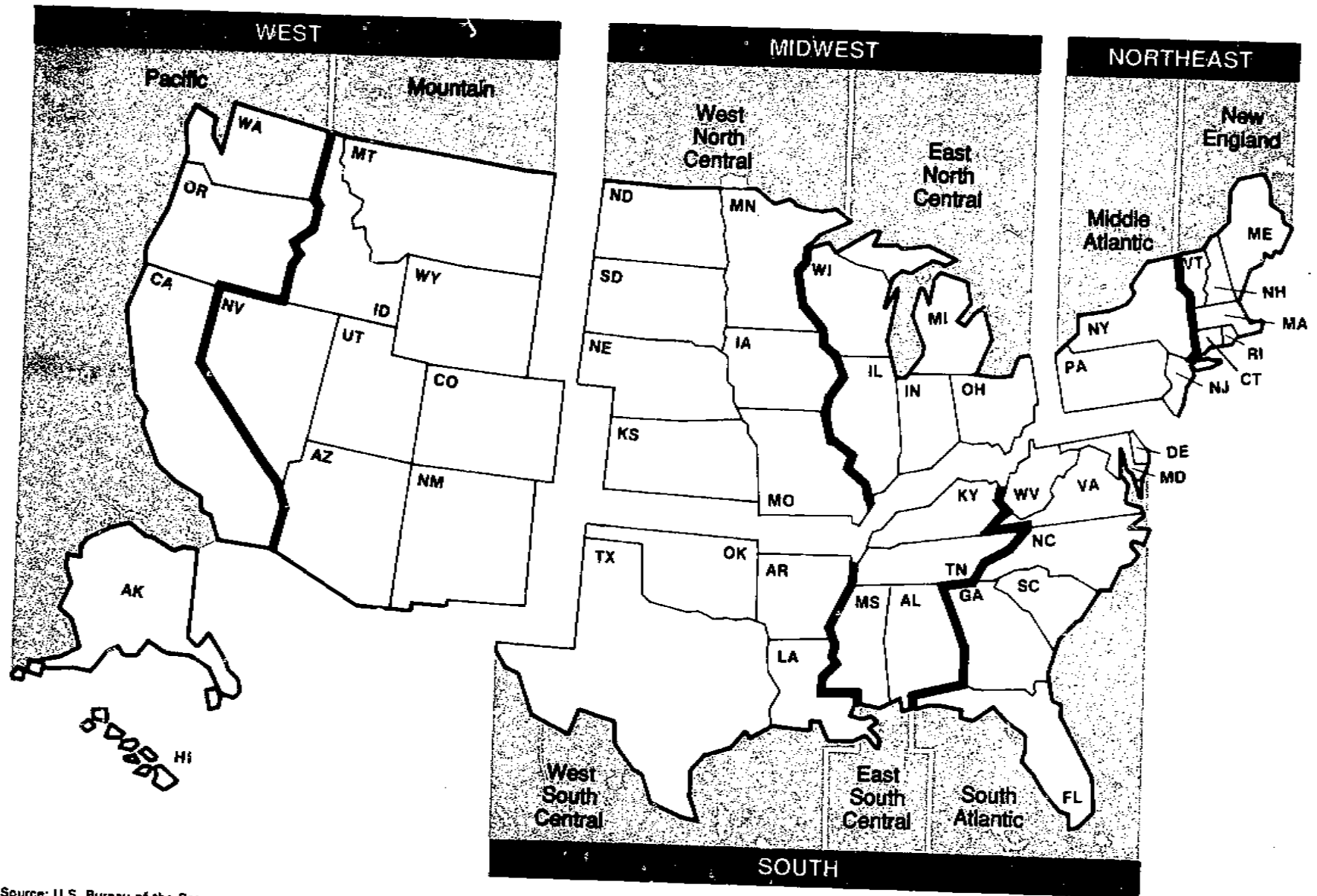
Adding milled rice imports reported by the Department of Commerce (not included in the survey results) and substituting U.S. Department of Treasury brewery data for survey results indicates total domestic shipments of 47.5 million cwt in 1988/89, up more than 10 percent from the comparable figure in 1986/87 (fig. 2). This increase is down from an almost 15-percent rise in domestic shipments in 1986/87, using U.S. Department of Treasury data for brewers' use and including imports.

The Department of Treasury data is viewed as a more accurate estimate of actual brewers use of rice than reported survey data. The biannual milled rice survey has typically underreported shipments to U.S. brewers. Thus, the 47.5 million cwt is likely a closer estimate of actual U.S. rice consumption in 1988/89 than the survey total.

Direct Food Use

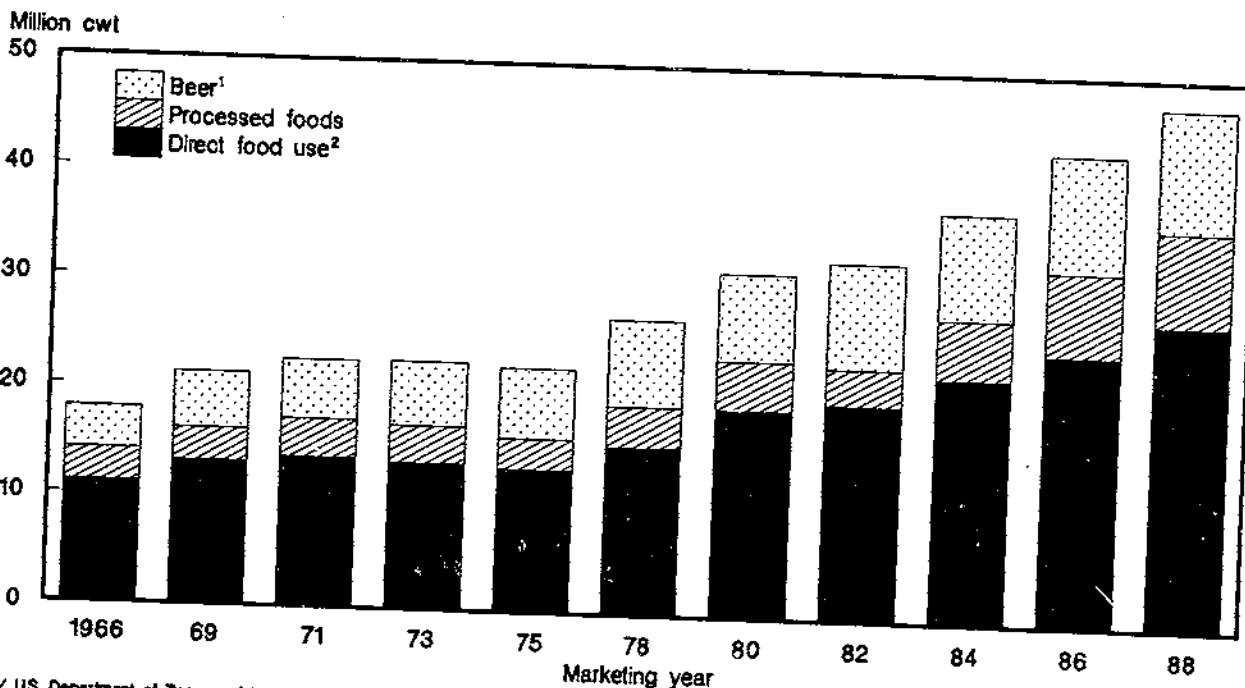
In 1988/89, 25 million cwt of milled rice were shipped to domestic wholesale, retail, and foodservice outlets for direct food use, an increase of 2.18

Figure 1
Major U.S. rice consuming regions



Source: U.S. Bureau of the Census.

Figure 2
U.S. rice consumption



1/ U.S. Department of Treasury data.
 2/ Includes imports.

million cwt from 1986/87 direct food use shipments (table 1; see tables at end of report). This amount does not include the 712,000 cwt of rice shipped directly from mills as package mixes, which are included in processed foods.

The share of total rice shipped directly from rice mills and repackagers to wholesale, retail, and foodservice outlets was 70.6, 21.8, and 7.6 percent in 1988/89, about the same as 2 years earlier. The share of total direct food use rice shipped to consumers by retail and foodservice outlets in 1988/89 was 72 and 28 percent, compared with 68 and 32 percent 2 years earlier. Due to some lack of participation and some survey respondents' estimating the domestic outlet channel, data on sales by outlet may not be accurate enough to indicate stronger growth in the retail market than in the foodservice market.

Long-grain rice accounted for 72.8 percent, medium grain for 25.7 percent, and short grain for 1.5 percent of total domestic direct food use shipments during 1988/89 (table 8). There is substantial variation in the proportions that each State received. In the 1986/87 survey, the share of total domestic direct food use shipments was almost 78.7 percent for long-grain rice, about 20.5 percent for medium grain, and 0.8 percent for short grain.

Milled white rice accounted for 77 percent, or 19.3 million cwt, of domestic direct food use shipments in 1988/89, compared with almost 80 percent, or 18.2 million cwt, in 1986/87 (fig. 3). Parboiled rice accounted for 17 percent, and precooked and brown rice each accounted for almost 3 percent of direct food use shipments. Comparable figures for 1986/87 are 14, 3.2, and 2 percent. Aromatic rice made up most of the remainder in each survey.

Parboiled and brown rice increased in both quantity and share of domestic direct food use shipments, while precooked rice declined in both quantity and share (fig. 4). Although precooked specialty rice's share of domestic direct food shipments dropped only slightly, the reported quantity shipped in 1988/89 declined by almost 9 percent from the amount reported in the 1986/87 survey.

Figure 3
Direct food use of rice¹

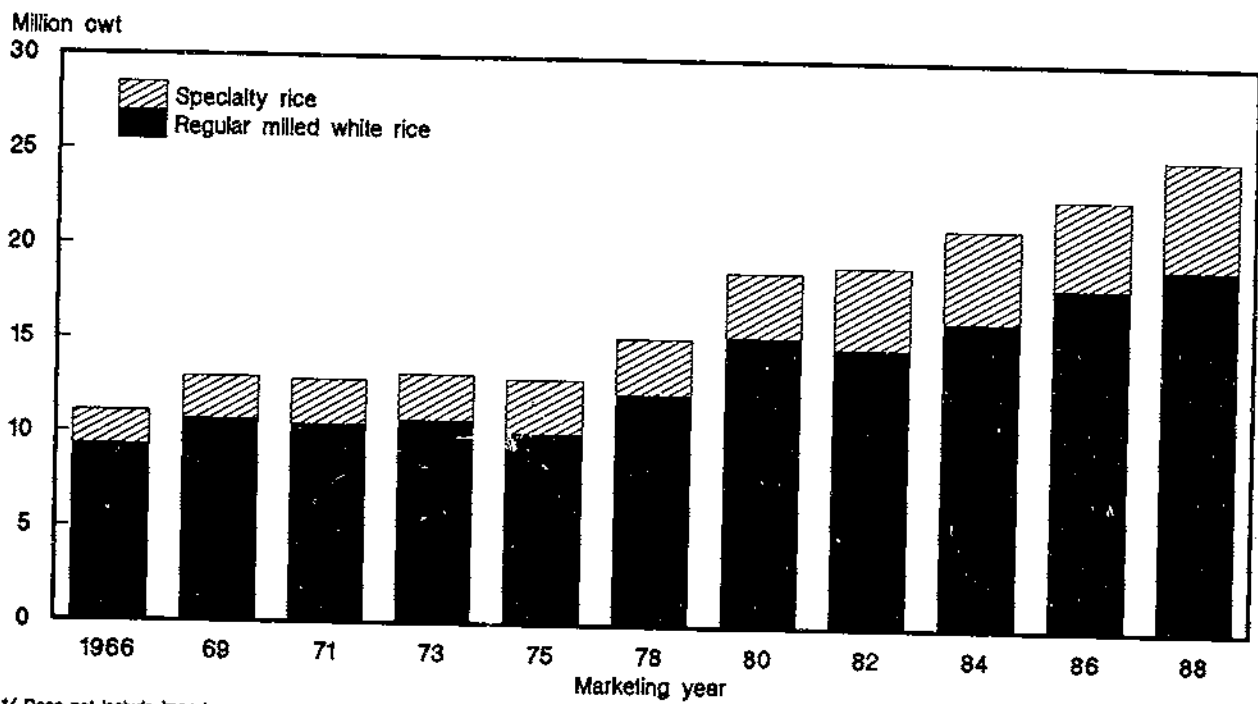
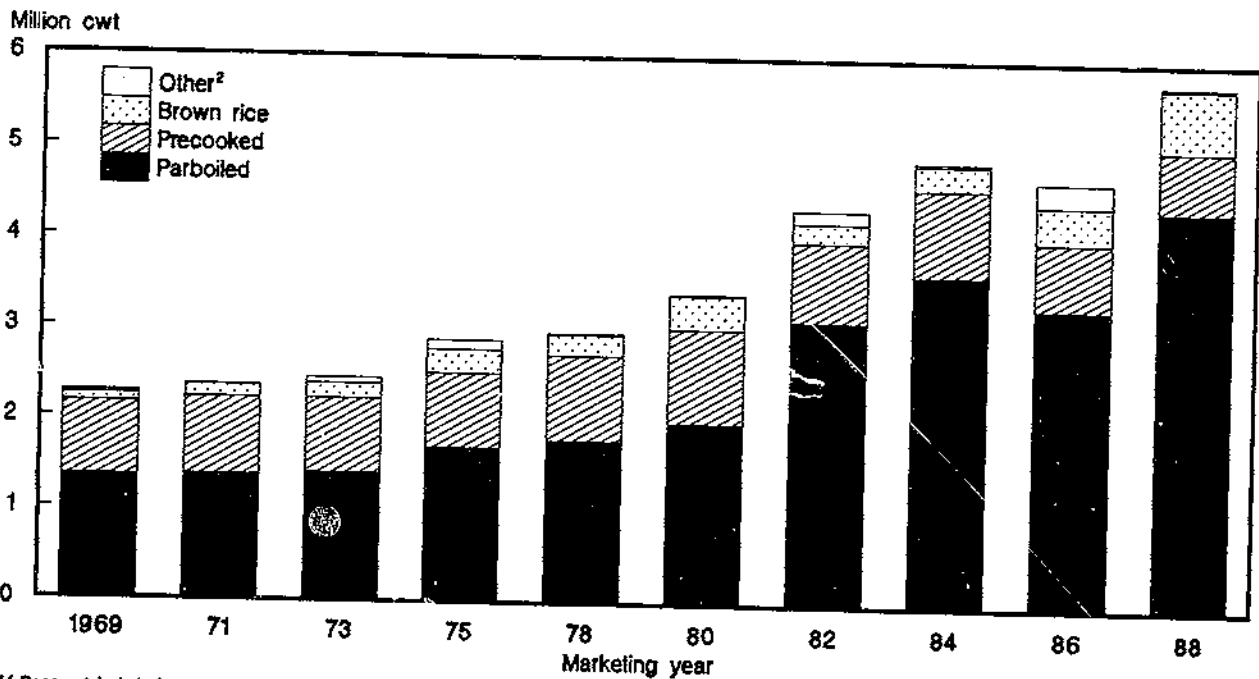


Figure 4
Specialty rice shipments¹



Domestic specialty rice shipments (parboiled, precooked, aromatic, and brown rice) totaled 5.77 million cwt (including 13,600 cwt shipped to U.S. territories) in 1988/89, a substantial increase from the 4.69 million cwt reported in 1986/87. Parboiled rice accounted for 76 percent, and precooked and brown rice each accounted for 12 percent of total domestic and territory specialty rice shipments. Comparable figures from the 1986/87 survey are 70, 16, and 9 percent. Other specialty rice products, such as aromatic rice, accounted for the remaining portion.

Reported brown rice and aromatic shipments of 691,900 and 22,500 cwt for 1988/89 may be low due to the lack of information from some small brown rice and aromatic mill operations. Also, shipments of imported aromatic rice are not included in survey results. Long-grain rice accounted for 95 percent of total domestic specialty shipments, and 99 percent each of domestic parboiled and precooked shipments (table 4).

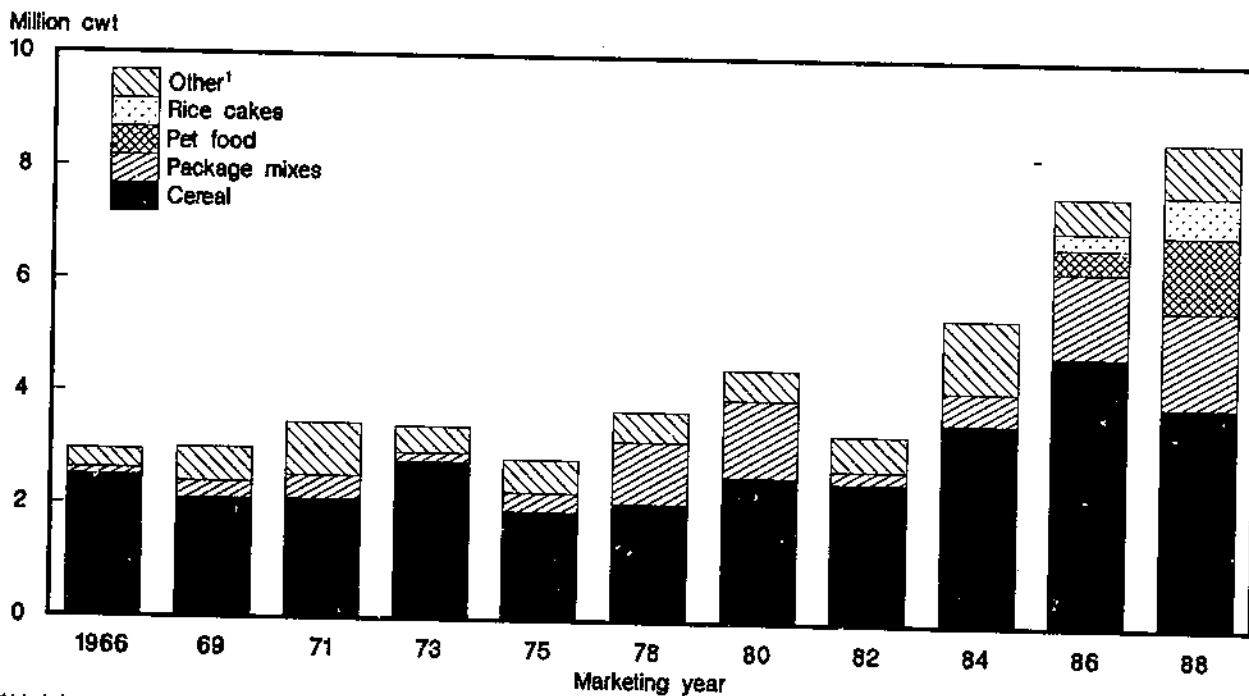
To replace some of the nutritive value lost by removing the bran layer in the milling process, rice millers treated 95.6 percent of the direct food use rice shipments in the domestic market with thiamin, niacin, and iron enrichments (table 5). This is a small increase from the 93.7 percent reported in 1986/87. More than 5 percent of the reported shipments received riboflavin treatment, a slight decrease from the 6 percent reported in 1986/87, but substantially lower than the 19.2 percent reported in 1984/85. Domestic shipments treated with calcium dropped from 10 percent in 1986/87 to 6.3 percent in 1988/89. Domestic rice shipments treated with vitamin D dropped from about 6 percent in 1986/87 to 5.4 percent in 1988/89.

Processed Foods

Although declining 862,900 cwt from 1986/87, processing for breakfast cereals remained the foremost processing use (excluding beer) of rice in the United States, accounting for shipments of 3.9 million cwt in 1988/89 (table 6 and fig. 5). Some of the decrease in rice use in cereals may be due to the price competitiveness of other grain ingredients and the substitution for higher fiber ingredients, including rice bran.

Figure 6

Processed food uses of rice



¹ Includes soup, baby food, candy, and frozen dinners.

Medium-grain rice remains the type of rice most used by breakfast cereal manufacturers, although its share declined from 58 percent in 1984/85 to less than 44 percent in 1988/89. Broken rice made up 18 percent of the rice used in cereal, down from 30 percent 2 years before. Long-grain rice accounted for 35 percent of the rice used in breakfast cereals in 1988/89, up from 21 percent in 1986/87, and rice flour accounted for less than 1 percent of the rice used in cereals in 1988/89, down from 4 percent in the previous survey.

Soup, candy, and frozen dinners each accounted for minor uses of milled rice, but their combined shipments were equivalent to 426,700 cwt in 1988/89 (table 6). Shipments for use in soup increased 42,900 cwt in 1988/89 from 2 years earlier, reaching 118,500 cwt. These shipments remained below the 240,600-cwt level reported in 1984/85. The rice used in soup and frozen dinners was the long-grain type, but more than 40 percent of the 219,600 cwt of rice used in candy in 1988/89 were broken, down from 68 percent in 1986/87. The rice used in candy in 1988/89 was 15 percent long grain and 44 percent medium grain.

Shipments of milled rice to domestic processors for use in package mixes totaled 993,100 cwt in 1988/89. In addition, rice shipped directly by mills as package mixes totaled 712,000 cwt in 1988/89 (table 6). The sum of milled rice used in package mixes in 1988/89 represents a 13-percent increase above the combined total of 1.5 million cwt of such shipments in 1986/87.

Long-grain rice accounted for more than 85 percent of all rice used in package mixes, about the same as 2 years earlier. While medium- and short-grain rice accounted for most of the remainder, 22,600 cwt of rice flour were reported shipped for use in package mixes.

Rice shipments for baby foods continued decreasing, at 172,100 cwt in 1988/89, down from 315,700 cwt in 1984/85 and 232,500 cwt in 1986/87. More than 80 percent of the rice used in baby foods was rice flour, mostly from the Louisiana-Florida mill area, and the remainder was mostly short grain from California. Rice flour accounted for 90 percent of rice used in baby food 2 years earlier.

Two relatively new uses of rice, in pet foods and rice cakes, had by far the strongest growth among all processed food categories. Use of rice in each nearly tripled between 1986/87 and 1988/89. The combined increase in rice use in rice cakes and pet foods was greater than 1.3 million cwt, far exceeding the total growth in processed food use (1.07 million cwt) between 1986/87 and 1988/89. Rice cakes accounted for 706,700 cwt of milled rice in 1988/89, up 419,200 from 2 years earlier. Medium grain accounted for 44 percent of the rice used in rice cakes, long and short grain were each about 20 percent, and the remainder was broken and rice flour. Almost three-fourths of rice used in rice cakes was from California (table 12). Two years earlier, 70 percent of the rice used in rice cakes was long grain from the Arkansas-Missouri mill area, and most of the remainder was short-grain rice from California.

Pet foods are the third-largest processed food use of rice (excluding beer) and totaled 1.34 million cwt in 1988/89, an almost threefold increase from the 426,000 cwt reported in 1986/87. The rice used in pet foods was about 80 percent broken, 13 percent rice flour, and the remainder short grain. Next to beer, pet foods are the largest market for broken rice; all of the rice used in pet foods was broken in 1986/87. The Arkansas-Missouri mill area supplied more than 50 percent of the rice used in pet foods in 1988/89 (table 12), California mills supplied about 29 percent, and the Louisiana-Florida mill area accounted for most of the remainder.

Pet foods were the largest reported use for rice flour, accounting for almost 41 percent of the 422,900 cwt total rice flour shipments in 1988/89. Baby food was second in use of rice flour, at 137,800 cwt or 33 percent, and rice cakes, package mixes, and cereal each accounted for about 20,000 cwt, or 5 percent, of rice flour. An additional 44,600 cwt of rice flour were shipped to domestic processors for use in such products as nonallergenic baking powder, dusting powder for certain fried foods and pizza, and ingredients in various diet snack foods (table 6).

Beer Brewing

Rice millers cooperating in the 1988/89 milled rice distribution survey reported shipments to breweries of 8.89 million cwt that year, up from 7.83 million cwt 2 years earlier. However, data from the U.S. Department of Treasury, Bureau of Alcohol, Tobacco, and Firearms, reported 11.2 million cwt of milled rice used by brewers in 1988/89. The fact that not all rice mills participated in the survey can explain some of the difference. The 1984/85 and 1986/87 milled rice surveys also reported undercounts of similar magnitude for rice shipments to brewers. (In 1986/87, 10.6 million cwt were reported by the U.S. Treasury Department, while survey results indicated 7.8 million cwt shipped to brewers.) An apparent discrepancy has existed between reported shipments and reported use.

Broken rice accounted for almost 64 percent of the rice that brewers used in 1988/89, a big decrease from the 92 percent reported in 1986/87 and the more than 80 percent reported in 1984/85. Medium-grain rice, mostly from California, made up 29 percent of the rice used in beer, and long-grain rice, mostly from the South, accounted for the remainder (table 12). The rise in use of medium- and long-grain rice and the much larger use of broken in pet foods mirrored the decreased use of broken rice in beer processing. Brewers preferred to exhaust the available supply of broken rice before using the higher priced long- and medium-grain rice.

Per Capita Consumption of Rice

Rice distribution data, together with population data from the Bureau of the Census, have helped determine changes in per capita direct food use in the nine major rice consuming regions of the United States. (See table 8 for a complete breakdown of milled rice distribution by State and major consuming region, and fig. 1 for a breakdown of the United States by major rice consuming region.) Per capita consumption data remove the effects of a growing population on shipment data and are thus better indicators of market trends. The regional per capita rice consumption data in table 7 are for direct food use from domestic sources only, and do not show total use. These data are based on distribution of rice for direct food use to States and regions as reported by rice millers and repackagers. Shipments to U.S. territories are excluded, as are Government distributions, imports (for which no State and regional destination data are available), and distribution for use by the military, in processed foods, and in brewing beer. However, 712,000 cwt of milled rice shipped directly by mills as package mixes are included.

National per capita consumption of rice for direct food use rose from 9.7 pounds in 1986/87 to 10.4 pounds in 1988/89. Adding the 3.8 million cwt (rough basis) of imported rice and converting this to a milled basis using U.S. milling rates yields a per capita domestic consumption of 11.2 pounds. If the quantity of rice used in processed foods is included in the per capita calculation, per capita domestic food consumption would equal 14.7 pounds. Finally, adding the 11.2 million cwt of rice that domestic brewers used to the total domestic food use shipments yields a total domestic per capita consumption of 19.2 pounds in 1988/89 (fig. 6). This represents an 8.2-percent increase from 2 years earlier. No attempt was made to account for rice shipped by nonparticipating mills.

The Middle Atlantic, Pacific, and South Atlantic consuming regions reported the highest per capita consumption of rice for direct food use in the United States in 1988/89 (fig. 7). At 16.9 pounds, the Middle Atlantic region had the highest per capita consumption of rice for direct food use in 1988/89 (table 7), a big increase from the 13.6 pounds reported in 1986/87. A 37-percent increase in reported shipments to New York, as well as a 24-percent rise in shipments to New Jersey, caused this region's increase in per capita consumption. The Middle Atlantic region ranked second behind the Pacific region in 1986/87. Some of the increase in per capita consumption in the Middle Atlantic region in 1988/89 may have been due to more accurate reporting by mills and repackagers shipping to that region.

Figure 6
Per capita rice consumption

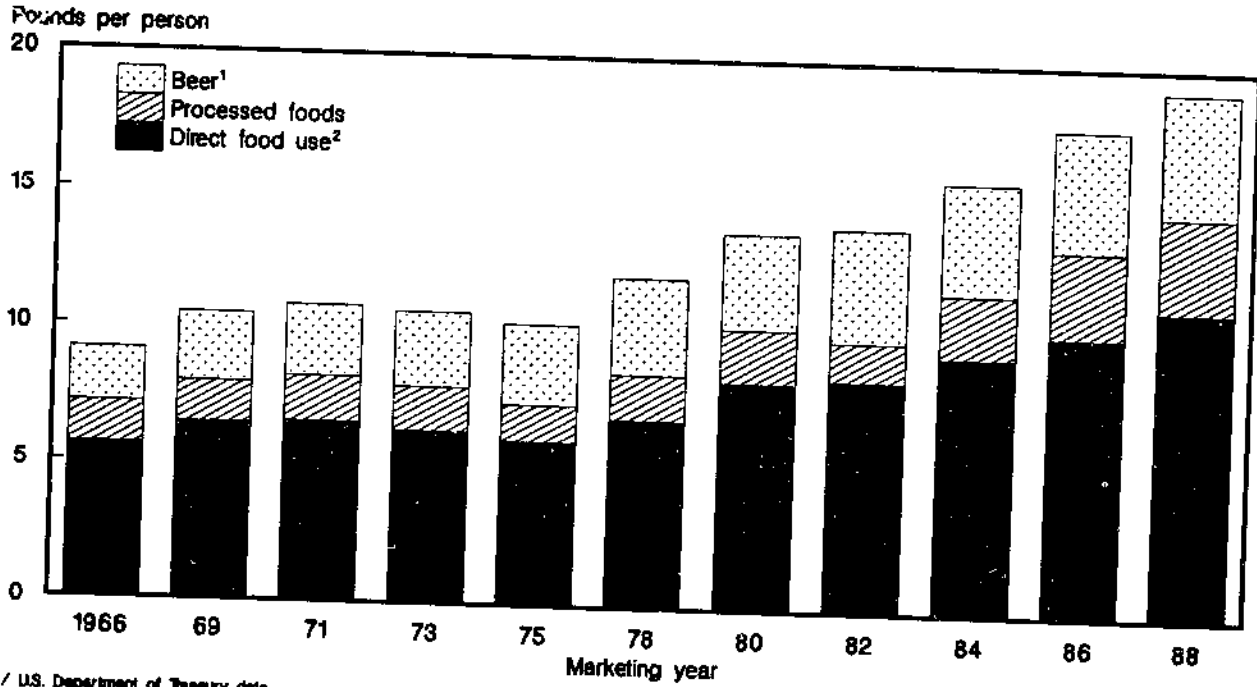
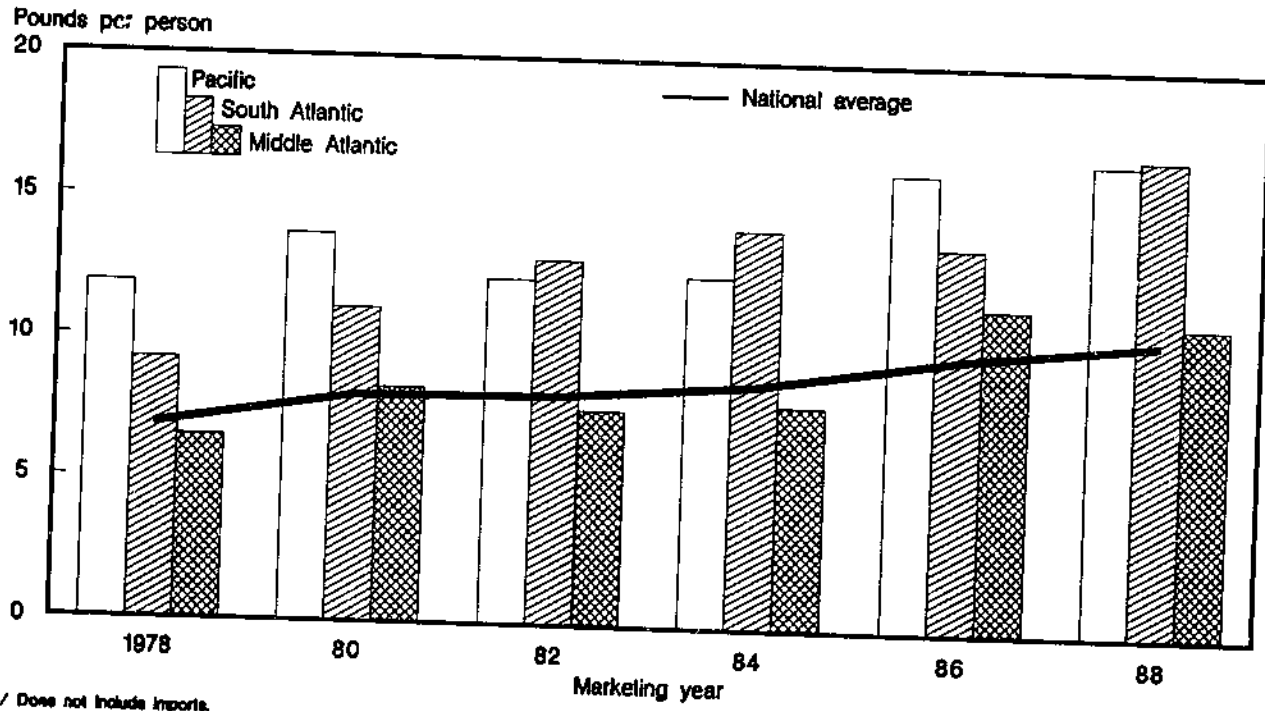


Figure 7
Per capita direct food use of rice, by major consuming region¹



The Pacific region's reported per capita rice consumption was 16.7 pounds, up from 16.2 pounds in 1986/87. This figure does not include consumption of any of the 3.8 million cwt (rough basis) of imported rice, a large portion of which had probably been consumed in this region. Per capita consumption in the West South Central region fell from 12 pounds in 1986/87 to 9.1 pounds in 1988/89. Substantially smaller reported direct food shipments to Arkansas accounted for most of the decrease in per capita consumption in this region.

Per capita consumption in the South Atlantic region dropped from 11.5 pounds to 11 pounds. Almost all of the reported decrease in per capita consumption in the South Atlantic region was due to smaller shipments to Florida. Shipments to almost all other States in the region in 1988/89 were up from those reported in 1986/87. Some of the reported shipments to Florida in 1986/87 are believed to have been unreported exports, further minimizing any real decrease in rice consumption in Florida or the South Atlantic region.

Reported per capita consumption figures do not include rice used in processed foods. Processed food use has increased substantially in recent years. Greater use of rice in processed foods likely compensated for some of the decreases in per capita direct food use in the West South Central and Middle Atlantic regions. No State shipment data on rice used in processed foods are available.

Per capita consumption for direct food use was significantly lower than the national average in all other regions. New England ranked fifth, at 6.3 pounds, up 80 percent from a decade earlier. Massachusetts had a per capita direct food consumption of almost 11 pounds, but per capita consumption in all other States in New England was below 4 pounds. Per capita consumption in all other major consuming regions was below 4 pounds, and none had shown much growth over the last decade.

Distribution of Rice by Region, Package Size, and Type

The Middle Atlantic region received 26.3 percent, or 6.37 million cwt, of total reported domestic direct food use rice shipments in 1988/89, up from 21.6 percent, or 5.07 million cwt, 2 years earlier, ranking first in the regions receiving domestic direct food use rice shipments (table 8 and fig. 8). This was the largest increase in direct food use rice shipments among the nine regions, accounting for more than half of total growth in direct food rice use. New York received more than half of the shipments to the Middle Atlantic region, and New Jersey received about a third. Shipments to New York increased by 1 million cwt in 1988/89 from those in 1986/87, while shipments to New Jersey rose by 400,000 cwt. Shipments to Pennsylvania dropped about 100,000 cwt.

Long-grain rice accounted for 81.4 percent of the shipments to the Middle Atlantic region in 1988/89, and medium grain accounted for 18.3 percent. Long-grain rice accounted for 84.9 percent of the shipments to the Middle Atlantic region in 1986/87. All package size categories were about evenly represented, except bulk shipments, which accounted for only 5 percent of direct food use rice shipments to the Middle Atlantic region.

The Pacific region received 6.31 million cwt of rice for direct food use in 1988/89, up from 5.84 million cwt in 1986/87, making it the second-largest outlet for this class of rice use (table 8). Rice shipments to California totaled 4.76 million cwt in 1988/89, making it the largest State market for direct food use shipments in the Nation. California mills accounted for 75 percent of direct food use rice shipments to the Pacific region in 1988/89, down from 85 percent in 1986/87. California alone received 19.6 percent of total domestic direct food use rice shipments in 1988/89, down from almost 21 percent 2 years earlier.

Shipments to Washington in 1988/89, totaling 519,700 cwt, were more than double those reported 2 years earlier, and Hawaii received more than 900,000 cwt of rice for direct food use in 1988/89, up more than 400,000 cwt from 1986/87. Some of the increase in shipments to Washington and Hawaii may have

been due to differences in reporting accuracy and participation between the 1988/89 and 1986/87 surveys. Reported shipments to California in 1988/89 were 194,000 cwt below those reported in the previous survey. Including imports in shipment data may have totally cancelled any drop in rice consumption in California.

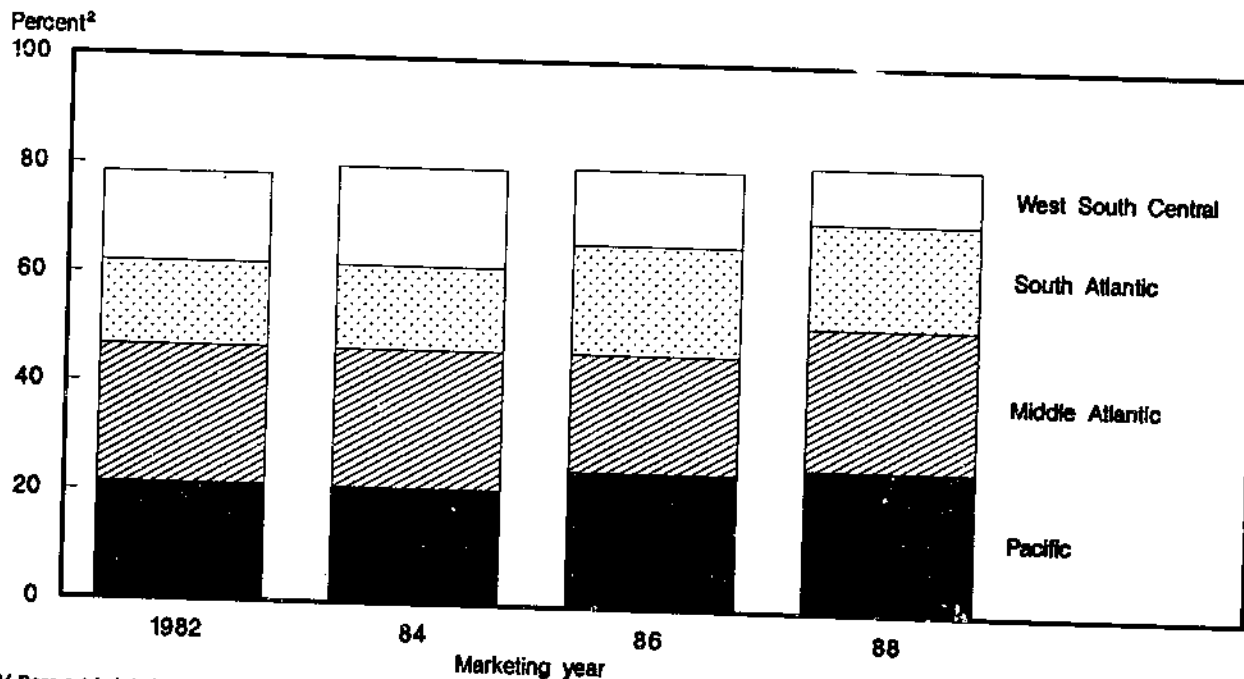
Long-grain rice accounted for 38.3 percent and medium-grain rice for 57.5 percent of direct food use shipments to the Pacific region. Rice shipments to Hawaii were 80-percent medium grain. Almost 56 percent of the rice shipments for direct food use to the Pacific region were shipped in packages of 25-100 pounds. No other geographic region had as high a proportion of its rice for direct food use packaged in this size category. The Pacific region received 814,700 cwt of specialty rice in 1988/89, up from 602,000 cwt in 1986/87 and 393,900 cwt in 1984/85. About half the specialty rice shipments to the Pacific region were from the Texas-Mississippi mill area.

Direct food use shipments to the South Atlantic region totaled 4.69 million cwt in 1988/89, a slight drop from the 4.73 million cwt reported in 1986/87. Shipments to Florida accounted for 51.5 percent of total shipments to the region in 1988/89, down from 60 percent in 1986/87. Shipments to Florida decreased from 2.84 million cwt in 1986/87 to 2.42 million cwt in 1988/89. Florida remained the third-largest State outlet for direct food use rice shipments. Packages sized 25-100 pounds were the most popular in the South Atlantic region, accounting for 36 percent of shipments, a substantial increase from 1986/87. Packages sized under 5 pounds, with 27 percent of shipments, ranked second. Bulk shipments accounted for only 0.3 percent of total shipments to the South Atlantic region.

The West South Central region received 2.46 million cwt of rice for direct food use in 1988/89, down from 3.2 million in 1986/87 and 3.7 million in 1984/85. This region ranked fourth in shipments of rice for direct food use in 1988/89. Texas accounted for 66 percent of these receipts, and Louisiana made up 25 percent. Shipments to Texas rose 472,000 between 1986/87 and

Figure 8

Direct food use rice shipments, by major consuming region¹



^{1/} Does not include imports.

^{2/} Share of total U.S. direct food shipments.

1988/89, while reported shipments to Arkansas dropped substantially. Much of the decrease in reported shipments to Arkansas could have resulted from survey nonparticipation by one or more southern rice mills that shipped to Arkansas.

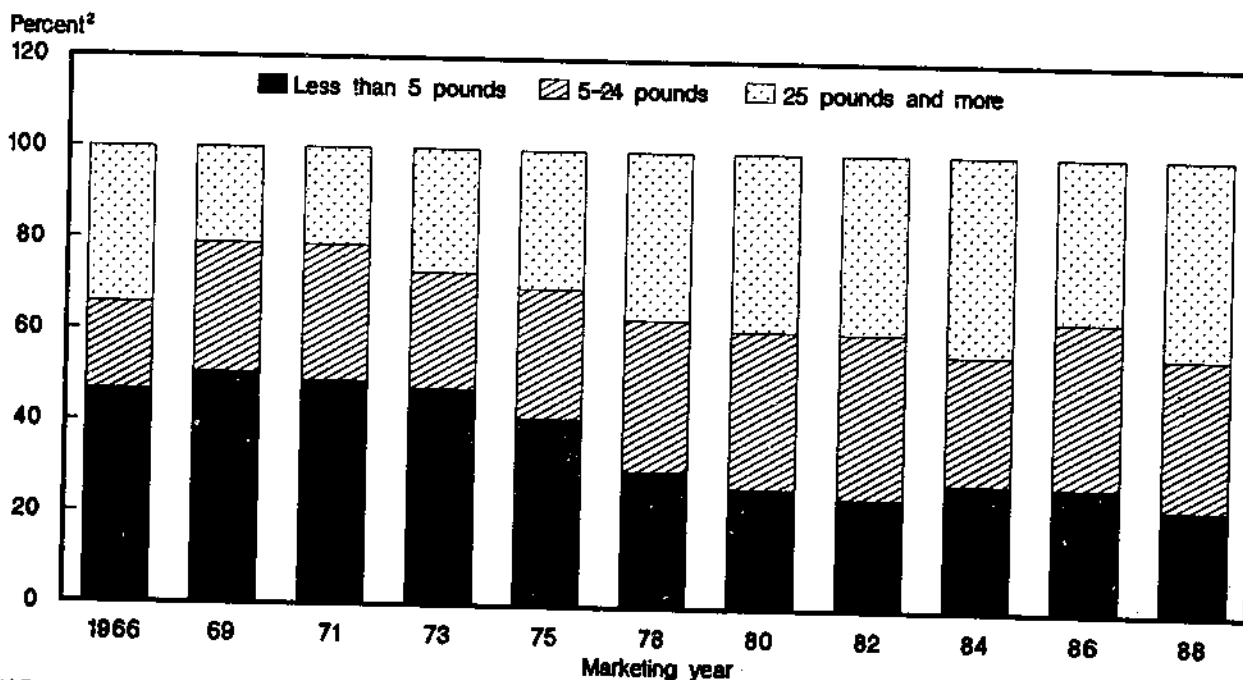
Long-grain rice, with 90 percent of the total receipts, was the most popular rice shipped for direct food use in the West South Central region. Medium-grain rice accounted for virtually all of the remainder. The most popular package sizes were under 5 pounds and 25-100 pounds. Almost 20 percent of shipments to the West South Central region were bulk, compared with 8 percent nationally.

Of the total direct food use shipments reported for 1988/89, packages sized 25-100 pounds accounted for 35 percent (8.55 million cwt) and packages of less than 5 pounds accounted for 23 percent (5.65 million cwt) (table 8). Packages sized 10-24 pounds and 5-9 pounds accounted for 18 percent (4.39 million cwt) and 15 percent (3.62 million cwt) of total direct food use shipments. Bulk shipments accounted for 8 percent of direct food use shipments. Overall, the small package sizes (under 5 pounds and 5-9 pounds) declined in their shares of domestic direct food use rice shipments, while the larger package sizes (25-100 pounds and bulk) increased as a share of these shipments. The 1988/89 share for medium-sized packages (10-24 pounds) remained approximately the same from 2 years earlier. The trend towards larger package sizes has been evident since the late 1960's (fig. 9).

Long-grain rice accounted for 72.8 percent of total reported direct food use rice shipments in 1988/89 (table 8). However, eight of the nine geographic regions had a long-grain use proportional share above the U.S. average, ranging from 81.4 percent in the Middle Atlantic region to 89.9 percent in the West South Central region. Only the Pacific region had a long-grain rice share (38.3 percent) lower than the national average. The Middle Atlantic region ranked first in receipts of long-grain rice shipments, at 5.19 million cwt, followed by the South Atlantic region, at 4.06 million cwt.

Figure 9

Package-size distribution of direct food use rice shipments¹



1/ Does not include imports.
2/ Share of total U.S. direct food use shipments.

Medium-grain rice captured 25.7 percent of the total direct food use rice market, and short-grain rice took 1.5 percent (table 8). The Pacific region received the largest shipment of medium-grain rice for direct food use in 1988/89, about 3.63 million cwt. The Middle Atlantic region ranked a distant second with 1.17 million cwt, up from 749,800 cwt 2 years earlier. Total shipments of short-grain rice for direct food use in 1988/89 totaled 364,000 cwt, almost double the reported shipments in 1986/87. The Pacific region received the largest shipment of short-grain rice in 1988/89, at 258,800 cwt, up from the 169,300 cwt reported in the previous survey. Arizona and Nevada received most of the remainder.

Distribution of specialty rice (parboiled, precooked, aromatic, and brown rice) was highest to the Middle Atlantic, South Atlantic, and Pacific regions (table 8). These three regions accounted for 58 percent of total domestic specialty rice shipments in 1988/89. Shipments of specialty rice to the Middle Atlantic region increased from 1.05 million cwt to 1.39 million cwt between 1986/87 and 1988/89, shipments to the South Atlantic region rose from 817,200 cwt to 994,400 cwt, and shipments to the Pacific region grew from 602,00 cwt to 814,700 cwt.

The West South Central and East North Central regions ranked fourth and fifth in specialty rice shipments. Shipments of specialty rice increased to all regions except the East North Central, where they were essentially flat between 1986/87 and 1988/89. Total domestic specialty rice shipments, excluding U.S. territories, increased from 4.6 million cwt in 1986/87 to 5.7 million cwt in 1988/89.

Rice Shipments to Territories and for Export

Direct food use shipments of rice to U.S. territories totaled 3.32 million cwt in 1988/89 (table 9), a decrease from the 3.8 million cwt reported 2 years earlier. Puerto Rico received 90 percent of these shipments, with medium-grain rice accounting for 52 percent of the total. Reported 1988/89 rice shipments to Puerto Rico declined 311,300 cwt from those reported in 1986/87, which showed a 53,700-cwt drop from 2 years earlier. The only other U.S. territories to receive milled rice shipments were Guam, the Virgin Islands, and the Trust Territories, with shipments totaling 250,500 cwt, 11,700 cwt, and 76,700 cwt. Shipments to Guam and the Trust Territories were primarily medium-grain rice, but shipments to the Virgin Islands were 100-percent long grain.

For all shipments to territories, long-, medium-, and short-grain rice shares were 10, 47, and 43 percent (table 9). Packages of less than 5 pounds were the most popular, accounting for 64 percent of total shipments to the territories. Bulk shipments, primarily to Puerto Rico, accounted for almost a fourth of the shipments. The United States shipped 13,600 cwt of specialty rice to U.S. territories in 1988/89, down from 89,300 cwt in 1986/87. All specialty rice shipments to U.S. territories came from the South, with Puerto Rico receiving 8,500 cwt, and the Virgin Islands receiving the remainder.

Reported exports of milled rice for direct food consumption in 1988/89 totaled 52.6 million cwt (table 10). This is a substantial increase above the 45.31 million cwt reported in 1986/87 and the 37.39 million cwt reported in 1984/85. The reported export figure underestimates total U.S. rice exports for two reasons. First, a few mills that export did not participate in the survey, and second, rough rice exports in 1988/89 were excluded.

The Arkansas-Missouri mill area and the Texas-Mississippi mill area each accounted for more than a third of all direct food use rice exports. California and the Louisiana-Florida mill area about evenly split the remainder. Bulk shipments accounted for more than half of all exports, and rice in 25-100 pound bags accounted for most of the remainder. Two years earlier, bulk shipments made up just a third of shipments. Long- and medium-grain rice accounted for about 80 percent and 20 percent of the market, about

the same as 2 years earlier. Short-grain rice exports accounted for only 0.3 percent of reported shipments in 1988/89. Exports of specialty rice totaled 12.9 million cwt in 1988/89, a 1.4-million cwt decrease from the quantity reported shipped in 1986/87. More than 60 percent of the specialty rice exported came from the Arkansas-Missouri mill area, and the Texas-Mississippi mill area shipped most of the remainder.

Mill Origin of Rice Shipments

Rice distribution data from firms with rice milling facilities in more than one State were tabulated as if the rice originated in the State where the major volume was processed. Although only a few firms operated mills in more than one State, results of the origin data may be slightly biased because firms with multimill operations did not supply separate data for each facility. Because of the small number of rice mills in Mississippi, survey data from Texas and Mississippi are combined to prevent disclosure of specific mill operations. In a similar manner, survey data from Louisiana and Florida rice mills are combined, as are data from Arkansas and Missouri. For reporting purposes, shipments by repackagers are assumed to originate from the State in which the rice was milled.

Arkansas-Missouri

The Arkansas-Missouri mill area reported production of 37.6 million cwt, or 40 percent, of U.S. output of milled rice in 1988/89, down slightly from 39.3 million cwt in 1986/87. Rice milling firms in the Arkansas-Missouri mill area reported distributions of 10.1 million cwt of rice for domestic direct food use in 1988/89 (table 11), up from 9.28 million cwt reported in 1986/87. The Middle Atlantic region was the largest market, accounting for about 44 percent of direct food use rice shipments from the Arkansas-Missouri mill area in 1988/89, up from 31 percent 2 years earlier. About 25 percent of all direct food use shipments from the Arkansas-Missouri mill area went to New York, and 17 percent were shipped to New Jersey. The South Atlantic (primarily Florida) region ranked second, accounting for 21 percent of direct food use shipments.

More than 89 percent of Arkansas-Missouri's shipments for direct food use were long-grain rice, and 10 percent were medium-grain rice. Short-grain shipments accounted for 0.5 percent of total rice shipments. Packages sized 25-100 pounds accounted for 30 percent of direct food use shipments, and other sized packages about evenly divided the remaining direct food use rice shipments. The Arkansas-Missouri mill area supplied 1.61 million cwt of specialty rice for domestic use in 1988/89, up from the 1.15 million reported in 1986/87. U.S. territories are not an important market for this mill area (table 9). Only 197,500 cwt of rice were reported shipped to U.S. territories in 1989/89, of which 74 percent were medium grain. The shipments were mostly packages of less than 5 pounds, and all shipments were to Puerto Rico. The Arkansas-Missouri mill area shipped 6,600 cwt of specialty rice to Puerto Rico.

The Arkansas-Missouri mill area was the second-largest exporter of milled rice for direct food use, exporting 18.3 million cwt in 1988/89 (table 10). This amount reflects a decrease of 3.47 million cwt from exports reported in 1986/87. The Arkansas-Missouri mill area accounted for 35 percent of total exports from mills cooperating in the 1988/89 survey, and nearly 93 percent of the shipments were long-grain rice. Almost two-thirds of the exports from Arkansas-Missouri mills were shipped in bulk, and most of the remainder were shipped in large-sized packages of 25-100 pounds. The Arkansas-Missouri mill area was again the largest exporter of specialty rice products in 1988/89, shipping 7.74 million cwt or 60 percent of total specialty rice exports.

The Arkansas-Missouri mill area was the largest supplier of rice to cereal manufacturers in 1988/89, with 2.02 million cwt (51 percent of the total reported shipments) (table 12), down 165,300 cwt from 2 years earlier. The Arkansas-Missouri mill area was the largest supplier of rice for use in pet foods, shipping 695,200 cwt (brokens and rice flour) in 1988/89, a huge increase from 75,300 cwt in 1986/87. This mill area was also the largest supplier of rice for package mixes (including rice shipped directly by mills),

just barely ahead of the Texas-Mississippi mill area, at 641,000 cwt, and accounting for almost 38 percent of the rice used in package mixes.

The Arkansas-Missouri mill area shipped 39 percent of the total reported rice shipped to brewers and was the second-largest supplier of rice for brewing. The Arkansas-Missouri mill area supplied 163,900 cwt, or 23 percent, of the milled rice used in rice cakes. Two years earlier, the Arkansas-Missouri mill area shipped 202,900 cwt, or 77 percent, of the rice used in rice cakes.

Louisiana-Florida

Louisiana-Florida area rice mills reported output of 11.7 million cwt in 1988/89 (table 3), or 12.5 percent of the Nation's production, roughly the same as 2 years earlier. Rice-milling firms in the Louisiana-Florida area shipped 3 million cwt of that rice for direct food use in 1988/89 (table 13), a 17-percent decrease below direct food use shipments in 1986/87. The South Atlantic region accounted for 27 percent of these shipments and was the principal market for direct food use shipments from the Louisiana-Florida rice milling area. Florida was the most important outlet in the South Atlantic region, accounting for 53 percent of the shipments to the region. The Middle Atlantic region ranked second in importance as a direct food use rice market for the Louisiana-Florida mill area in 1988/89. New York was the most important outlet in the Middle Atlantic region. Long-grain rice shipments to California in smaller sized packages (less than 10 pounds) also constituted an important market for the Louisiana-Florida mill area.

Rice shipments from the Louisiana-Florida mill area were 81.1 percent long grain, 18.3 percent medium grain, and 0.1 percent short grain. Packages sized under 5 pounds accounted for 52 percent of domestic shipments and packages sized 5-9 pounds accounted for 30 percent, both almost identical to 2 years earlier. The Louisiana-Florida mill area shipped more than twice the share (83 percent) of direct food use rice in smaller sized packages, under 10 pounds, than the Nation as a whole (38 percent). The Louisiana-Florida mill area shipped 400,700 cwt of specialty rice for domestic consumption in 1988/89, down from 473,100 cwt in 1986/87.

The Louisiana-Florida rice milling area reported rice shipments of 1 million cwt to U.S. territories in 1988/89 (table 9), up from 862,500 cwt 2 years earlier. This amount was 69 percent of the 1.46 million cwt shipped to territories by all mills in the southern rice-growing States in 1988/89. The Louisiana-Florida mill area ranked second behind California in total shipments to U.S. territories. Almost all rice shipments from the Louisiana-Florida mill area were to Puerto Rico, were medium-grain rice, and were in packages of less than 5 pounds. An additional 7,700 cwt of long-grain rice were shipped to the Virgin Islands. This mill area shipped 2,200 cwt of specialty rice to U.S. territories in 1988/89, down from 84,500 cwt in 1986/87.

About 15 percent, or 8.1 million cwt, of the exports by rice mills cooperating in the 1988/89 rice distribution survey originated from the Louisiana-Florida mill area (table 10). The export share in 1986/87 was also about 15 percent, but the volume in 1988/89 was 1 million cwt greater 2 years earlier. Seventy-two percent of the Louisiana-Florida mill area shipments were long grain, and almost all of the remainder were medium grain. More than 97 percent of the exports were shipped in large-sized packages (25-100 pounds). The Louisiana-Florida mill area ranked last in exports of specialty rice, reporting shipments of 160,600 cwt, almost identical to that reported in 1986/87.

Louisiana-Florida mills shipped 1.82 million cwt rice to domestic processors in 1988/89, down from 1.92 million cwt in 1986/87 (table 12). Excluding reported distributions to brewers of 572,800 cwt in 1988/89, 390,000 cwt (31 percent) of shipments from Louisiana-Florida rice mills to processors were to cereal manufacturers, down from 616,400 in 1986/87. About 83 percent of rice shipments from Louisiana-Florida mills for cereal were medium-grain, and most of the balance was rice flour. Louisiana-Florida mills were the third-largest supplier of rice used in package mixes in 1988/89, shipping 351,900 cwt (including 277,200 cwt of rice shipped directly by mills as package mixes), down from 513,800 cwt 2 years earlier. Most of this rice was long grain.

The Louisiana-Florida mill area was the largest supplier of rice for baby food, shipping 122,300 cwt of rice flour for this use in 1988/89, up from 87,000 cwt 2 years earlier. The Louisiana-Florida mill area also supplied 223,700 cwt of brokens for use in pet foods, making pet foods the third-largest processed food use for rice from this mill area (excluding beer).

Texas-Mississippi

Rice mills in the Texas-Mississippi area produced 23.7 million cwt, or 25 percent of U.S. milled rice in 1988/89 (table 3). This is a substantial increase from the 14.1 million cwt and 16 percent reported in 1986/87. The Texas-Mississippi mill area reported distributions of 5.24 million cwt of rice for domestic direct food use in 1988/89 (table 14), a 75,000-cwt decrease from 2 years earlier. The South Atlantic region received the most direct food use shipments from the Texas-Mississippi mill area in 1988/89, accounting for 26 percent of total direct food use rice shipments from Texas-Mississippi. Florida and South Carolina were the largest markets in the South Atlantic region. The West South Central (primarily Texas) and Pacific (primarily California) regions ranked second and third. These three regions together accounted for almost 64 percent of total domestic direct food use rice shipments from the Texas-Mississippi area. Long-grain rice accounted for 99 percent of the shipments from this region, and the most popular package sizes were under 5 pounds (about 39 percent) and 25-100 pounds (about 34 percent).

The Texas-Mississippi mill area was not a major supplier of rice to U.S. territories, at less than 8 percent of total rice shipments in 1988/89 (table 9). Texas-Mississippi rice shipments to U.S. territories were 252,400 cwt in 1988/89, up from the 156,200 cwt reported in 1986/87. Puerto Rico was the only significant U.S. territory market for the Texas-Mississippi mill area, and most of these shipments were small packages (under 10 pounds) of long-grain rice. Four thousand cwt were also shipped to the Virgin Islands.

Exports from the Texas-Mississippi mill area jumped from 8.33 million cwt in 1986/87 to 18.76 million cwt in 1988/89, making this mill area the largest supplier of milled rice to the export market (table 10). Virtually all of the Texas-Mississippi mill area exports were long-grain rice. Shipments sized 25-100 pounds and bulk about evenly divided 94 percent of Texas-Mississippi exports. Texas-Mississippi area mills accounted for 36 percent (4.59 million cwt) of the 12.9 million cwt of specialty rice exported in 1988/89, down from 39 percent and 5.64 million cwt 2 years earlier.

Texas-Mississippi supplied the least rice to domestic food processors and brewers in 1988/89 (table 12), with total shipments of only 1.13 million cwt (including 636,700 cwt shipped directly from mills as package mixes), down from 1.92 million cwt in 1986/87. The Texas-Mississippi mill area almost tied with the Arkansas-Missouri mill area as the largest supplier of rice for package mixes, all long grain. Rice used in package mixes, at 636,700 cwt, rose 66 percent in 1988/89 from 384,600 cwt in 1986/87. The Texas-Mississippi mill area was the second-largest supplier of rice for use in soup, accounting for 42 percent (50,000 cwt).

California

Rice mills in California produced 20.9 million cwt, or 22 percent of the Nation's rice in 1988/89 (table 3), down from 21.2 million and 25 percent 2 years earlier. California mills reported rice shipments of 5.94 million cwt for direct food use in 1988/89 (table 15). This was a substantial increase above the 4.54 million cwt reported in 1986/87. The principal direct food use rice market for the California area was the Pacific region, which accounted for 80 percent of the 1988/89 shipments. Of the shipments to the Pacific region, California was foremost, receiving almost 71 percent of the California mill area's Pacific-region rice shipments for domestic direct food use, down from 81 percent 2 years earlier. Most of California's shipments were in 25- to 100-pound bags (60 percent) and 10- to 24-pound bags (26 percent).

Although California mills reported direct food use shipments to all geographic regions, the Middle Atlantic and South Atlantic regions were the only other

major domestic markets for rice from California mills. No other single geographic region accounted for more than 2 percent of domestic rice shipments from the California mill area.

Long-grain rice accounted for 17.1 percent of the California mill area's total direct food use shipments in 1988/89, and medium grain accounted for 77.8 percent (table 15). Comparable figures for 1986/87 are 19.7 percent and 76.6 percent. Most short-grain rice shipments were to California, Arizona, and Nevada. The most popular package sizes were 25- to 100-pound bags (60 percent) and 10- to 24-pound bags (26 percent); the California mill area ships few packages under 10 pounds. The California mill area was the smallest supplier of specialty rice, shipping 276,200 cwt in 1988/89. However, this was a substantial increase above the 116,000 cwt reported in 1986/87.

The California mill area was the largest supplier of milled rice to U.S. territories, shipping 1.86 million cwt or 56 percent of total shipments in 1988/89 (table 9). This amount is a big drop from 2.66 million cwt reported shipped 2 years earlier. California mills were the major supplier of rice to Puerto Rico, with 51 percent of that market. Eighty-two percent of the California mill area's total shipments to U.S. territories went to Puerto Rico. Seventy-two percent of California's shipments to Puerto Rico were short-grain rice, and the remainder was medium grain. About 49 percent of California's shipments to Puerto Rico were in packages of less than 5 pounds, and the remainder were mostly bulk. The California mill area was the only supplier of rice to Guam and the Trust Territories, shipping 250,500 cwt and 76,700 cwt. While shipments to Guam were up 22,400 cwt in 1988/89 from those in 1986/87, total shipments to the Trust Territories in 1988/89 were less than a third of those 2 years earlier.

California mills exported 7.46 million cwt of milled rice for direct food use in 1988/89 (table 10), a 65,000-cwt decrease from reported shipments in 1986/87. The area ranked first in export shipments of medium-grain rice in 1988/89. Almost 90 percent of reported exports were medium-grain rice, and 8 percent were long grain. The California mill area exported 156,500 cwt of short-grain rice, about 99 percent of all U.S. short-grain exports. Bulk shipments accounted for 80 percent of California's rice exports, and packages sized 25-100 pounds made up most of the remainder. California mills accounted for only 3 percent (388,600 cwt) of total specialty rice exports in 1988/89, but reported 718,800 cwt of specialty rice exports in 1986/87.

The California mill area was the largest supplier of milled rice to domestic processors (including brewers) in 1988/89, shipping 7.3 million cwt, up 1.5 million cwt from 2 years earlier (table 12). These shipments totaled 42 percent of all rice used by domestic processors, including shipments to beer brewers. California ranked first in rice shipments to brewers, accounting for 53 percent, and ranked second behind the Arkansas-Missouri mill area in shipments to cereal manufacturers, accounting for 39 percent. Nearly 47 percent of California shipments to brewers in 1988/89 were brokens, down from 96 percent in 1986/87. The remainder was mostly medium grain.

California mills shipped 389,900 cwt of rice for use in pet foods. About 61 percent of this rice was brokens, 25 percent was short grain, and the remainder was rice flour. The California mill area supplied 73 percent, or 518,700 cwt, of rice shipped to domestic processors for use in rice cakes, and 44 percent of rice used in rice cakes was medium grain. Long grain and short grain each accounted for about a fifth of the rice California shipped for use in rice cakes, and brokens made up the remainder. More than 40 percent of rice, all brokens, used in candy came from the California mill area.

Conclusions

Results of USDA's 1988/89 milled rice distribution survey indicate continued growth in both total and per capita domestic rice consumption. Both have expanded steadily since the late 1970's, after little growth during the previous decade. Total domestic shipments have more than doubled since the mid-1970's, as did per capita consumption from 1966/67 to 1988/89. In the

1980's, use of rice expanded most in processed foods, followed by direct food use. Brewers' use expanded somewhat more slowly than the food uses. Among processed food uses, two relatively new uses, pet foods and rice cakes, accounted for most of the growth between 1986/87 and 1988/89. Within the direct food use category, use of certain specialty rices (parboiled and brown rice) grew faster than demand for regular milled white rice.

Direct food use grew the most in regions with the highest per capita consumption during the 1980's: the Pacific, Middle Atlantic, and South Atlantic. The 10-year growing share of shipments that these regions accounted for exceeded 80 percent in 1988/89. Since the late 1960's, the share of direct food use rice shipments in larger package sizes has grown substantially, while the share of smaller package sizes has declined.

Related Reports

Here is a list of reports concerning rice distribution patterns. The reports are market-year specific and are in chronological order.

- Doty, Harry O., Jr. Patterns of Rice Distribution in the United States and Territories. AMS-305. U.S. Dept. Agr., Agr. Mktg. Serv. May 1959.
- Mcgrath, Edward J. Domestic Distribution Patterns for Rice. ERS-126. U.S. Dept. Agr., Econ. Res. Serv. May 1963.
- Eiland, J.C. Distribution of Rice in the United States, 1966/67. ERS-408. U.S. Dept. Agr., Econ. Res. Serv. Apr. 1969.
- Eiland, J.C., and Theo. F. Moriak. Distribution Patterns for U.S. Rice, 1969/70. ERS-484. U.S. Dept. Agr., Econ. Res. Serv. May 1972.
- _____. Market Patterns for U.S. Rice, 1971/72. ERS-528. U.S. Dept. Agr., Econ. Res. Serv. Aug. 1973.
- Eiland, J.C. U.S. Rice Distribution Patterns, 1972/73. ERS-567. U.S. Dept. Agr., Econ. Res. Serv. Nov. 1974.
- Holder, Shelby H., Alberta Smith, and J.C. Eiland. Distribution Patterns for U.S. Rice, 1973/74. ERS-624. U.S. Dept. Agr., Econ. Res. Serv. Mar. 1976.
- Holder, Shelby H., and Alberta Smith. An Analysis of Rice Distribution Patterns. AER-413. U.S. Dept. Agr., Econ. Res. Serv. Nov. 1978.
- Holder, Shelby H., and David Martella. U.S. Rice Distribution Update. SB-640. U.S. Dept. Agr., Econ. Res. Serv. July 1980.
- Holder, Shelby H., and Douglas Dorland. U.S. Rice Distribution Patterns, 1980/81. SB-693. U.S. Dept. Agr., Econ. Res. Serv. Oct. 1982.
- Holder, Shelby H. U.S. Rice Distribution Patterns, 1982/83. SB-723. U.S. Dept. Agr., Econ. Res. Serv. Mar. 1985.
- _____. U.S. Rice Distribution Patterns, 1984/85. SB-748. U.S. Dept. Agr., Econ. Res. Serv. Dec. 1986.
- Childs, Nathan W. U.S. Rice Distribution Patterns, 1986/87. SB-776. U.S. Dept. Agr., Econ. Res. Serv. Mar. 1989.
- U.S. Department of Treasury, Bureau of Alcohol, Tobacco, and Firearms. Statistical Release, Monthly Statistical Report: Beer. Various issues.

Table 1--Distribution of milled rice to principal domestic outlets 1/

Year <u>2/</u>	Unit	Direct food use <u>3/</u>	Processed foods	Beer	Total <u>4/</u>
1960/61	1,000 cwt	10,286.3	2,170.5	2,764.6	15,221.4
	Percent	67.6	14.2	18.2	100.0
1961/62	1,000 cwt	11,294.8	2,270.1	2,982.4	16,547.7
	Percent	68.3	13.7	18.0	100.0
1966/67	1,000 cwt	11,087.0	2,961.1	3,147.5	17,195.6
	Percent	64.5	17.2	18.3	100.0
1969/70	1,000 cwt	13,012.8	2,994.9	4,631.2	20,638.9
	Percent	63.1	14.5	22.4	100.0
1971/72	1,000 cwt	12,835.8	3,455.3	4,082.0	20,373.1
	Percent	63.0	17.0	20.0	100.0
1973/74	1,000 cwt	13,181.5	3,413.8	5,193.8	21,789.1
	Percent	60.5	15.7	23.8	100.0
1975/76	1,000 cwt	12,958.1	2,849.3	4,642.1	20,449.5
	Percent	63.4	13.9	22.7	100.0
1978/79	1,000 cwt	15,221.0	3,717.1	8,158.7	27,096.8
	Percent	56.2	13.7	30.1	100.0
1980/81	1,000 cwt	18,789.9	4,490.9	7,667.0	30,947.8
	Percent	60.6	14.5	24.8	100.0
1982/83	1,000 cwt	19,173.3	3,342.0	9,095.0	31,610.3
	Percent	60.6	10.6	28.8	100.0
1984/85	1,000 cwt	21,197.9	<u>5/</u> 5,437.5	7,038.0	33,673.4
	Percent	63.0	16.1	20.9	100.0
1986/87	1,000 cwt	22,873.7	<u>6/</u> 7,630.0	7,825.4	38,329.1
	Percent	59.7	19.9	20.4	100.0
1988/89	1,000 cwt	25,048.7	<u>7/</u> 8,621.1	8,894.8	42,564.6
	Percent	58.8	20.3	20.9	100.0

1/ Excludes shipments to U.S. territories.

2/ Marketing year beginning August 1.

3/ Includes Federal Government distribution to schools, institutions, and welfare agencies, and for purchases for U.S. military mess halls and overseas commissary resales.

4/ Does not include rice imports.

5/ Includes 466,550 cwt of rice shipped directly by mills as package mixes.

6/ Includes 555,200 cwt of rice shipped directly by mills as package mixes.

7/ Includes 712,000 cwt of rice shipped directly by mills as package mixes.

Table 2--Domestic marketing channels for U.S. rice mills by origin, 1988/89 1/

Origin	Direct food use shipments from mills <u>2/</u>						Package mixes
	Wholesale			Retail	Food service	Total direct food use <u>5/</u>	
	Retail <u>3/</u>	Food service <u>4/</u>	Total <u>5/</u>				
	<u>1,000 cwt</u>						
Arkansas-Missouri	4,911.8	2,652.2	8,851.1	955.5	228.5	10,035.1	0.6
Louisiana-Florida	1,373.5	164.7	1,538.3	1,263.6	201.6	3,003.5	74.7
Texas-Mississippi	2,579.9	1,155.3	3,735.2	1,510.3	1,292.0	6,537.5	635.7
Total South	8,865.2	3,972.3	14,124.5	3,729.4	1,722.0	19,584.3	712.0
California	3,088.3	962.5	4,050.7	1,890.8	234.7	6,176.3	0
U.S. total	11,953.5	4,934.8	18,175.3	5,620.3	1,956.7	25,760.6	712.0

1/ Marketing year beginning August 1.

2/ Shipments to wholesale, retail, and foodservice outlets directly from mills, includes rice shipped directly from mills for use in package mixes.

3/ Shipments to retail outlets from wholesale distributors.

4/ Shipments to foodservice outlets from wholesale distributors.

5/ Components may not total due to incomplete reporting of final outlet by some mills.

Table 3--Milled rice supply and ending stocks, 1988/89 ^{1/}

Origin	Beginning stocks	Purchases from other mills	Production from mills	Total supply	Ending stocks	Reporting mills and repackers
	----- 1,000 cwt -----					<u>Number</u>
Arkansas-Missouri	1,656.2	332.4	37,622.8	39,611.3	1,403.6	9
Louisiana-Florida	626.5	2,449.9	11,712.3	14,788.7	769.1	6
Texas-Mississippi	1,518.3	3,200.9	23,743.2	28,462.4	2,552.0	6
Total South	3,801.0	5,983.2	73,078.3	82,862.4	4,724.7	21
California	1,438.9	1,153.7	20,948.8	23,541.4	1,203.9	6
U.S. total	5,239.8	7,136.9	94,027.1	106,403.8	5,928.6	27

^{1/} Marketing year beginning August 1.

20

Table 4--Domestic shipments of specialty rice by rice millers and repackagers, 1988/89 ^{1/}

Type	Long grain	Medium grain	Short grain	Total ^{2/}
	----- 1,000 cwt -----			
Parboiled	4,336.0	46.8	0	4,382.8
Precooked	319.5	1.8	1.8	323.1
Brown rice	442.7	59.4	189.3	691.4
Precooked, parboiled	347.3	0	0	347.3
Precooked, brown rice	.5	0	0	.5
Aromatic	22.5	0	0	22.5
Total	5,468.5	108.0	191.1	5,767.6

^{1/} Marketing year beginning August 1.

^{2/} Includes specialty rice shipped to U.S. territories and specialty rice shipments from mills that omitted State data.

Table 5--Domestic milled rice shipments treated with enrichments and additives, 1988/89 1/

Item	Quantity treated	Proportion of shipments treated
	<u>1,000 cwt</u>	<u>Percent</u>
Vitamin enriched: <u>2/</u>		
Powder	20,301.0	78.8
Rinse-resistant premix	4,335.4	16.8
Total	24,636.4	95.6
Other vitamins added: <u>3/</u>		
Riboflavin	1,390.6	5.4
Vitamin D	1,390.6	5.4
Calcium	1,630.9	6.3
Total shipments <u>4/</u>	25,760.6	--

-- = Not applicable.

1/ Marketing year beginning August 1.

2/ Enriched rice has thiamin, niacin, and iron added.

3/ Rice receiving other vitamins might also have been enriched; therefore, total percentage is greater than 100.

4/ Total domestic milled rice shipments for direct food use, excluding U.S. territories, including rice shipped directly by mills for use in package mixes.

Table 6--Milled rice distributed to domestic processors by rice milling firms and repackagers, by type and product use, 1988/89 ^{1/}

Type and class of rice	Product use ^{2/}										Total ^{4/}	Share of total
	Cereal	Soup	Baby food	Beer	Rice cakes	Package mixes ^{3/}	Frozen dinners	Candy	Pet food	Other		
	----- 1,000 cwt -----											
Long grain	1,396.4	118.5	0	679.3	148.0	1,460.6	88.6	31.9	0	35.0	3,958.2	22.6
Medium grain	1,714.0	0	3.1	2,562.4	310.0	154.5	0	96.6	0	0	4,840.6	27.6
Short grain	99.1	0	31.2	0	138.5	67.4	0	0	97.7	0	438.5	2.5
Total head rice	3,209.5	118.5	34.3	3,241.7	596.5	1,682.4	88.6	128.5	97.7	4.6	9,237.4	52.7
Brokens	702.9	0	0	5,653.0	91.1	0	0	0	91.0	1,066.4	7,814.5	44.6
Rice flour	24.3	0	137.8	.1	19.1	22.6	0	0	0	174.2	422.9	2.4
Brewers	0	0	0	0	0	0	0	0	0	0	41.1	.2
Total ^{4/}	3,936.8	118.5	172.1	8,894.8	706.7	1,705.1	88.6	219.6	1,338.2	335.4	17,515.8	100.0
Share of total	22.5	.7	1.0	50.8	4.0	9.7	.5	1.3	7.6	1.9	100.0	--

-- = Not applicable.

^{1/} Marketing year beginning August 1.

^{2/} Based on main product produced.

^{3/} Includes 712,000 cwt of milled rice shipped directly from mills as package rice mixes. See table 2 for breakdown by State of origin.

^{4/} Totals do not include purchases from the Commodity Credit Corporation or imports, but do include shipments by repackagers. Totals may not add due to rounding.

Table 7--Total and per capita direct food use rice distributed to major U.S. consuming regions, by rank, 1988/89 ^{1/}

Major rice consuming region ^{2/}	Share of total		Amount per capita	
	<u>Percent</u>	<u>Rank</u>	<u>Pounds</u>	<u>Rank</u>
Middle Atlantic	26.3	1	16.9	1
Pacific	26.0	2	16.7	2
South Atlantic	19.3	3	11.0	3
West South Central	10.1	4	9.1	4
East North Central	6.4	5	3.7	8
East South Central	3.9	6	6.2	6
New England	3.4	7	6.3	5
West North Central	2.8	8	3.8	7
Mountain	1.8	9	3.3	9
United States	100.0 ^{3/}	--	10.4 ^{4/}	--

-- = Not applicable.

^{1/} Marketing year beginning August 1.

^{2/} Includes only distribution for direct food use. Excludes Federal Government distributions, military use, shipments to food processors and brewers, and imports, because State destinations are not available.

^{3/} Totals may not add due to rounding.

^{4/} National average.

Table 8--Distribution of milled rice for direct food use, by destination State and region, package size, and grain type, 1988/89 1/

Destination State and region	Package size					Total 2/	Share of U.S. total	Grain type			Specialty rice 3/
	Less than 5 pounds	5-9 pounds	10-24 pounds	25-100 pounds	Bulk			Long	Medium	Short	
	1,000 cwt							Percent			
Maine	9.9	1.4	2.8	0.8	0	14.9	0.1	93.4	6.6	0	11.4
New Hampshire	3.1	1.4	1.0	2.1	11.6	19.2	.1	95.7	4.3	0	5.3
Vermont	13.6	4.1	1.5	.6	0	19.8	.1	93.0	7.0	0	11.3
Massachusetts	110.8	111.9	49.2	243.4	122.4	637.8	2.6	87.8	12.2	0	265.9
Rhode Island	9.1	4.1	2.3	10.8	0	26.3	.1	90.9	9.1	0	9.1
Connecticut	60.0	17.5	12.9	7.0	0	97.4	.4	94.3	5.4	.3	69.9
New England	206.5	140.4	69.6	264.8	134.0	815.4	3.4	89.1	10.9	.1	372.9
New York	935.0	923.2	756.1	1,046.8	43.2	3,704.3	15.3	81.4	18.3	.3	625.6
New Jersey	567.0	515.1	584.6	174.3	249.3	2,090.3	8.6	85.9	14.1	.1	516.5
Pennsylvania	200.0	88.0	140.2	112.5	38.4	579.1	2.4	65.6	34.2	.2	249.4
Middle Atlantic	1,702.1	1,526.2	1,480.9	1,333.5	331.0	6,373.7	26.3	81.4	18.3	.2	1,391.5
Ohio	100.3	15.3	21.5	86.7	37.3	261.0	1.1	98.1	2.1	0	134.8
Indiana	32.4	5.1	7.9	16.4	.5	62.3	.3	93.1	6.9	0	39.5
Illinois	234.0	84.3	172.1	308.5	22.3	821.1	3.4	80.5	18.0	1.5	191.8
Michigan	127.6	21.3	36.5	107.1	5.9	298.4	1.2	90.4	8.8	.8	122.7
Wisconsin	70.8	14.6	8.9	17.0	0	111.3	.5	89.0	11.0	0	56.8
East North Central	565.1	140.5	246.9	535.6	65.9	1,554.1	6.4	86.5	12.6	.8	545.7
Minnesota	41.8	8.0	26.6	71.9	1.0	149.2	.6	79.7	14.6	5.7	55.3
Iowa	27.5	5.1	3.7	10.7	0	47.0	.2	92.5	7.3	0	25.8
Missouri	91.9	14.4	9.4	144.0	85.9	345.6	1.4	81.6	18.3	.1	54.8
North Dakota	4.2	.4	1.1	4.7	0	10.4	0	96.2	3.8	0	7.6
South Dakota	1.1	.2	.6	.1	0	2.0	0	86.5	13.5	0	1.5
Nebraska	10.4	2.2	3.4	10.9	5.7	32.7	.1	96.7	3.3	0	18.2
Kansas	24.0	3.9	4.2	19.1	38.1	89.2	.4	92.1	7.6	.3	24.8
West North Central	200.8	34.1	49.0	261.5	130.7	676.1	2.8	84.3	14.3	1.3	188.0
Delaware	.9	.5	.3	.6	66.3	68.6	.3	89.4	.2	.4	1.3
Maryland	91.9	69.3	51.4	370.7	0	583.4	2.4	40.4	58.6	0	145.3
District of Columbia	7.1	1.8	17.8	73.4	0	100.1	.4	99.4	.6	0	20.1
Virginia	79.7	25.9	40.1	56.7	33.4	235.9	1.0	81.0	18.9	.1	81.2
West Virginia	3.8	.7	.8	.1	0	5.4	0	91.9	8.1	0	4.1
North Carolina	280.0	48.1	39.4	52.0	0	339.4	1.4	96.5	3.4	.1	122.7
South Carolina	251.3	127.7	91.1	137.8	0	607.9	2.5	90.7	9.3	0	139.8
Georgia	136.8	64.2	43.8	86.8	0	331.5	1.4	88.6	11.3	.1	116.8
Florida	501.9	432.3	510.6	907.0	64.0	2,415.8	9.9	94.6	4.9	.5	363.1
South Atlantic	1,273.5	770.5	795.2	1,685.2	163.7	4,688.0	19.3	86.5	13.2	.3	994.4

See footnotes at end of table.

Continued--

Table 8--Distribution of milled rice for direct food use, by destination State and region, package size, and grain type, 1988/89 1/--Continued

Destination State and region	Package size					Total 2/	Share of U.S. total	Grain type			Specialty rice 3/
	Less than 5 pounds	5-9 pounds	10-24 pounds	25-100 pounds	Bulk			Long	Medium	Short	
	----- 1,000 cwt -----							----- Percent -----			1,000 cwt
Kentucky	26.5	13.3	30.5	4.1	46.8	121.2	0.5	59.9	40.1	0	67.3
Tennessee	82.9	18.3	11.3	10.7	510.7	634.0	2.6	84.1	15.9	0	54.7
Alabama	71.1	18.1	9.4	9.7	3.4	111.6	.5	91.1	8.7	.2	52.1
Mississippi	54.8	13.3	7.4	11.4	0	87.0	.4	87.6	12.0	.3	23.0
East South Central	235.4	63.0	58.6	35.9	560.9	953.9	3.9	82.1	17.8	.1	197.1
Arkansas	79.7	25.7	3.4	25.6	30.2	164.6	.7	79.7	20.1	.2	39.6
Louisiana	170.4	181.3	64.0	137.5	58.5	611.7	2.5	76.6	23.3	.3	101.8
Oklahoma	25.7	4.4	3.1	34.2	0	67.4	.3	95.6	4.4	0	29.0
Texas	415.9	130.3	160.0	510.9	399.9	1,616.9	6.6	95.7	4.1	.2	610.2
West South Central	691.6	341.7	230.5	708.2	488.6	2,460.6	10.1	89.9	10.0	.2	780.6
Montana	4.5	.3	1.5	3.2	0	9.5	0	93.9	4.3	1.8	5.3
Idaho	3.3	.5	2.0	19.4	15.1	40.3	.2	82.9	15.0	2.1	5.7
Wyoming	1.1	.1	.1	1.4	0	2.7	0	90.9	3.0	6.1	.4
Colorado	45.7	5.8	13.4	48.4	.9	114.3	.5	93.7	5.6	.7	51.4
New Mexico	7.8	2.4	3.8	9.9	0	23.9	.1	92.4	7.6	0	10.2
Arizona	38.1	28.8	17.8	43.6	0	128.4	.5	68.9	9.2	21.9	38.4
Utah	23.6	2.3	6.4	48.9	0	81.3	.3	96.2	3.5	.3	65.6
Nevada	4.0	2.6	5.0	25.6	0	37.1	.2	66.7	6.6	26.7	12.1
Mountain	128.2	42.8	50.0	200.5	16.0	437.5	1.8	83.5	7.3	9.2	189.2
Washington	46.9	27.0	79.2	363.4	3.2	519.7	2.1	29.3	69.5	1.4	64.5
Oregon	39.9	10.9	18.3	45.3	0	114.4	.5	76.4	16.6	7.0	42.1
California	552.3	457.7	839.6	2,744.8	169.0	4,763.4	19.6	42.1	53.0	4.8	661.0
Alaska	3.9	1.3	2.9	2.3	0	10.4	0	57.6	39.0	3.4	3.6
Hawaii	5.5	61.4	471.1	367.4	0	905.5	3.7	18.6	80.1	1.3	43.4
Pacific	648.6	558.2	1,411.2	3,523.2	172.1	6,313.3	26.0	38.3	57.5	4.1	814.7
U.S. total 4/, 5/	5,651.8	3,617.4	4,392.0	8,548.4	2,063.0	24,272.6	100.0	72.8 6/	25.7 6/	1.5 6/	5,473.9 7/

1/ Marketing year beginning August 1.

2/ Excludes Federal Government distribution for State and military use, because State shipment data are not available. Also excludes shipments to territories, but includes repackagers. May include rice reported by a mill that has a facility in another State.

3/ Includes parboiled, precooked, aromatic, and brown rice. Specialty rice is included in calculations of package size and grain type.

4/ Totals may not add due to rounding.

5/ Total direct food use shipments reported in table 1 and table 5 (25,760,600 cwt) are greater than the quantity reported in table 8 (24,272,600 cwt) because some rice mills were unable to provide shipment data by State of destination, grain type, or package size. These mills were able to report only total domestic direct food use shipments.

6/ National average.

7/ Total domestic specialty rice shipments reported in table 8 (5,473,900 cwt) are less than specialty rice shipments reported in table 5 (5,767,600 cwt) because table 8 excludes shipments to U.S. territories and some mills were unable to report shipment data by State of destination.

Table 9--Milled rice distribution to U.S. territories, by mill origin, package size, and grain type, 1988/89 ^{1/}

Origin and destination	Package size					Total ^{2/}	Share of U.S. total	Grain type			Specialty rice ^{3/}
	Less than 5 pounds	5-9 pounds	10-24 pounds	25-100 pounds	Bulk			Long	Medium	Short	
	----- 1,000 cwt -----							----- Percent -----			1,000 cwt
Arkansas-Missouri to:											
Puerto Rico	150.8	1.6	37.9	7.2	0	197.5	6.0	25.6	74.4	0	6.6
Louisiana-Florida to:											
Puerto Rico	997.2	1.7	0	.9	0	999.8	30.1	1.7	98.3	0	1.0
Virgin Islands	3.3	3.0	1.4	0	0	7.7	.2	100.0	0	0	1.1
Total territory	1,000.5	4.7	1.4	.9	0	1,007.5	30.4	2.6	97.4	0	2.2
Texas-Mississippi to:											
Puerto Rico	207.1	40.5	.7	0	0	248.4	7.5	100.0	0	0	.9
Virgin Islands	1.6	1.6	.7	0	0	4.0	.1	100.0	0	0	4.0
Total territory	208.7	42.2	1.5	0	0	252.4	7.6	100.0	0	0	4.9
Total South to:											
Puerto Rico	1,355.1	43.9	38.6	8.1	0	1,445.7	43.6	21.9	78.1	0	8.5
Virgin Islands	5.0	4.6	2.1	0	0	11.7	.4	100.0	0	0	5.1
Total territory	1,360.1	48.5	40.7	8.1	0	1,457.4	43.9	22.6	77.4	0	13.6
California to:											
Guam	0	8.0	56.9	165.8	19.8	250.5	7.5	5.0	90.3	4.7	0
Puerto Rico	747.0	0	4.7	50.0	732.1	1,533.9	46.2	0	27.6	72.4	0
Trust Territory	.5	6.3	32.7	27.1	10.1	76.7	2.3	6.5	89.1	4.3	0
Total territory	747.5	14.3	94.3	242.9	762.0	1,861.1	56.1	.7	23.3	76.0	0
U.S. total to:											
Guam	0	8.0	56.9	165.8	19.8	250.5	7.5	5.0	90.3	4.7	0
Puerto Rico	2,102.1	43.9	43.4	58.1	732.1	2,979.6	89.8	10.6	52.1	37.3	8.5
Virgin Islands	5.0	4.6	2.1	0	0	11.7	.4	100.0	0	0	5.1
Trust Territory	.5	6.3	32.7	27.1	10.1	76.7	2.3	6.5	89.1	4.3	0
Total territory ^{4/}	2,107.6	62.8	135.1	251.0	762.0	3,318.5	100.0	10.3 ^{5/}	47.0 ^{5/}	42.6 ^{5/}	13.6

^{1/} Marketing year beginning August 1.

^{2/} Excludes Federal Government shipments, but includes repackagers.

^{3/} Includes parboiled, precooked, aromatic, and brown rice. Specialty rice is included in calculations of package size and grain type.

^{4/} Totals may not add due to rounding. Rice was not shipped to American Samoa or Wake Island.

^{5/} National average.

Table 10--U.S. exports of milled rice for direct food use by mill origin, package size, and grain type, 1988/89 ^{1/}

Mill origin	Package size					Total ^{2/}	Share of U.S. total	Grain type			Specialty rice ^{3/}
	Less than 5 pounds	5-9 pounds	10-24 pounds	25-100 pounds	Bulk			Long	Medium	Short	
	----- 1,000 cwt -----							----- Percent -----			1,000 cwt
Arkansas-Missouri	62.9	21.1	155.6	6,113.2	11,940.7	18,293.4	34.8	92.7	7.3	0	7,743.6
Louisiana-Florida	59.6	63.8	52.5	7,878.7	16.7	8,071.3	15.3	71.8	28.0	.3	160.6
Texas-Mississippi	554.7	229.2	409.4	8,750.0	8,810.2	18,763.5	35.7	99.8	.2	0	4,596.7
Total South	687.2	314.1	617.5	22,741.9	20,767.6	45,128.2	85.8	91.9	8.0	0	12,500.9
California	86.2	3.0	7.5	1,383.4	5,975.0	7,455.0	14.2	8.0	89.9	2.1	388.6
U. S. total ^{4/}	773.3	317.1	625.0	24,125.3	26,742.6	52,583.3	100.0	80.0 ^{5/}	19.6 ^{5/}	.3 ^{5/}	12,889.4

^{1/} Marketing year beginning August 1.

^{2/} Excludes Federal Government shipments, but includes repackagers.

^{3/} Includes parboiled, precooked, aromatic, and brown rice. Specialty rice is included in calculations of package size and grain type.

^{4/} Totals may not add due to rounding.

^{5/} National average.

Table 11--Distribution of milled rice by Arkansas-Missouri mills for direct food use, by destination State and region, package size, and grain type, 1988/89 1/

Destination State and region	Package size					Total 2/	Share of U.S. total	Grain type			Specialty rice 3/
	Less than 5 pounds	5-9 pounds	10-24 pounds	25-100 pounds	Bulk			Long	Medium	Short	
	1,000 cwt							Percent			1,000 cwt
Maine	0	0	0.1	0.2	0	0.4	0	75.0	25.0	0	0.1
New Hampshire	0	0	0	.4	11.6	12.0	.1	100.0	0	0	.3
Vermont	.6	.5	0	.4	0	1.5	0	100.0	0	0	.2
Massachusetts	12.5	71.9	11.9	211.5	90.1	397.8	3.9	82.9	17.0	.1	150.8
Rhode Island	.1	.2	.2	6.7	0	7.2	.1	95.0	5.0	0	.2
Connecticut	.2	.2	0	4.8	0	5.2	.1	93.8	1.0	5.1	4.8
New England	13.4	72.8	12.3	223.9	101.5	424.0	4.2	83.8	16.1	.1	156.6
New York	646.2	621.7	539.3	690.0	43.2	2,540.4	25.2	88.4	11.6	0	183.8
New Jersey	400.7	441.7	508.3	126.8	238.5	1,716.0	17.0	85.8	14.2	0	309.4
Pennsylvania	22.5	18.3	13.5	77.1	6.0	137.5	1.4	92.8	7.0	.2	73.8
Middle Atlantic	1,069.4	1,061.7	1,061.0	893.9	287.8	4,393.9	43.6	87.5	12.5	0	567.0
Ohio	12.8	1.1	1.6	62.0	37.3	114.6	1.1	100.0	0	0	13.4
Indiana	7.8	2.5	.7	12.6	.5	24.1	.2	88.0	12.0	0	6.8
Illinois	151.2	65.9	86.9	250.4	22.3	576.7	5.7	85.3	14.6	0	73.6
Michigan	30.4	1.5	2.0	86.4	0	120.2	1.2	99.7	0	.2	17.9
Wisconsin	24.4	9.7	1.8	15.7	0	51.7	.5	85.4	14.6	0	7.0
East North Central	226.4	80.7	93.0	427.1	60.0	887.2	8.8	89.3	10.7	.1	118.8
Minnesota	3.4	1.6	.2	59.3	1.0	65.6	.7	98.5	1.1	.4	8.0
Iowa	3.7	0	.1	8.9	0	12.7	.1	95.0	5.0	0	6.2
Missouri	32.1	2.7	.5	141.0	85.9	262.1	2.6	78.6	21.3	.1	8.4
North Dakota	.1	.1	.2	4.5	0	5.0	0	97.0	3.0	0	2.8
South Dakota	0	0	0	.1	0	.2	0	31.0	69.0	0	0
Nebraska	0	.1	.6	5.1	5.7	11.5	.1	99.0	1.0	0	1.0
Kansas	5.3	1.1	0	13.3	38.1	57.7	.6	90.6	8.9	.4	6.0
West North Central	44.7	5.6	1.6	232.2	130.7	414.8	4.1	84.7	15.1	.2	32.3
Delaware	.2	.2	0	.2	66.3	66.9	.7	99.5	.1	.4	.5
Maryland	1.2	.2	.2	60.9	0	62.4	.6	99.5	.1	.4	5.7
District of Columbia	.2	0	.2	70.9	0	71.3	.7	100.0	0	0	2.9
Virginia	3.4	.2	1.3	41.9	33.4	80.3	.8	86.2	13.5	.3	5.9
West Virginia	0	0	0	0	0	.1	0	91.0	9.0	0	0
North Carolina	22.5	18.5	23.4	28.5	0	92.9	.9	88.4	1.4	.3	8.7
South Carolina	42.5	42.4	41.0	42.9	0	168.8	1.7	91.9	8.0	.2	34.6
Georgia	10.7	21.6	21.4	74.8	0	128.6	1.3	99.2	.6	.2	36.7
Florida	178.4	305.1	387.5	515.6	31.1	1,417.7	14.1	95.2	4.8	0	80.4
South Atlantic	259.2	388.2	475.1	835.9	130.8	2,089.0	20.7	95.4	4.5	.1	175.4

See footnotes at end of table.

Continued--

Table 11--Distribution of milled rice by Arkansas-Missouri mills for direct food use, by destination State and region, package size, and grain type, 1988/89 1/--Continued

Destination State and region	Package size					Total 2/	Share of U.S. total	Grain type			Specialty rice 3/
	Less than 5 pounds	5-9 pounds	10-24 pounds	25-100 pounds	Bulk			Long	Medium	Short	
	1,000 cwt						Percent			1,000 cwt	
Kentucky	10.0	11.5	27.2	3.3	46.8	98.8	1.0	51.5	48.5	0	48.6
Tennessee	14.2	.7	1.7	6.2	510.7	533.6	5.3	82.9	17.0	0	6.5
Alabama	3.6	.4	.6	7.6	3.4	15.6	.2	97.0	1.3	1.7	3.2
Mississippi	28.9	4.3	0	9.3	0	40.5	.4	87.5	11.8	.7	5.0
East South Central	54.7	16.9	29.4	26.5	560.9	680.4	6.8	79.0	20.9	.1	63.2
Arkansas	17.3	4.2	.3	25.4	30.2	77.3	.8	73.5	26.1	.3	18.9
Louisiana	14.6	25.2	25.3	35.6	44.0	144.6	1.4	93.0	6.8	.2	8.4
Oklahoma	2.5	.5	.1	32.5	0	35.6	.4	97.8	2.2	0	3.3
Texas	56.2	13.1	.3	104.8	399.9	574.3	5.7	99.9	0	0	319.4
West South Central	90.6	43.0	25.9	198.2	474.1	831.9	8.2	96.2	3.7	.1	350.1
Montana	1.1	0	0	2.9	0	4.0	0	95.8	0	4.2	1.1
Idaho	2.0	0	0	16.9	0	18.9	.2	86.6	10.6	2.8	3.0
Wyoming	1.0	0	0	1.4	0	2.4	0	90.4	2.7	6.8	.2
Colorado	12.5	2.2	.5	28.7	0	43.9	.4	92.6	5.5	1.8	4.8
New Mexico	0	0	0	3.5	0	3.6	0	100.0	0	0	1.1
Arizona	1.5	1.0	.1	8.1	0	10.6	.1	98.5	.2	1.3	.5
Utah	1.5	0	0	33.8	0	35.3	.4	99.3	0	.7	30.1
Nevada	1.4	0	0	.2	0	1.6	0	90.0	0	10.0	.2
Mountain	21.1	3.2	.6	95.4	0	120.3	1.2	94.4	3.8	1.8	40.8
Washington	13.5	0	0	4.6	9	18.1	.2	85.0	1.0	14.0	3.2
Oregon	22.0	0	0	10.4	9	32.4	.3	75.3	0	24.7	16.4
California	79.6	.2	0	66.1	36.0	182.0	1.8	80.3	1.1	18.6	83.0
Alaska	2.4	0	0	0	0	2.4	0	85.0	0	15.0	.3
Hawaii	1.6	0	0	0	0	1.6	0	80.0	0	20.0	.3
Pacific	119.1	.2	0	81.0	36.0	236.4	2.3	80.1	.9	19.1	103.2
U.S. total 4/	1,896.6	1,692.4	1,699.0	3,014.1	1,781.9	10,086.0	100.0	89.1 5/	10.4 5/	.5 5/	1,607.4

1/ Marketing year beginning August 1.

2/ Excludes Federal Government distribution for State and military use, because State shipment data are not available. Also excludes shipments to territories, but includes repackagers. May include rice reported by a mill that has a facility in another State.

3/ Includes parboiled, precooked, aromatic, and brown rice. Specialty rice is included in calculations by package size and by grain type.

4/ Totals may not add due to rounding.

5/ National average.

Table 12--Uses of milled rice distributed to domestic processors from specified mill areas, by type of rice and product, 1988/89 1/

Type of rice and origin	Product use 2/										Total 4/	Share of total
	Cereal	Soup	Baby food	Beer	Rice cakes	Package mixes 3/	Frozen dinners	Candy	Pet food	Other		
----- 1,000 cwt -----												Percent
Long grain:												
Arkansas-Missouri	1,333.4	63.5	0	325.8	48.0	480.6	86.6	31.9	0	2.2	2,372.1	13.5
Louisiana-Florida	35.5	5.0	0	0	0	343.3	2.0	0	0	30.2	416.0	2.4
Texas-Mississippi	7.8	50.0	0	193.7	0	635.7	0	0	0	0	888.3	5.1
Total South	1,376.7	118.5	0	519.5	48.0	1,460.6	88.6	31.9	0	32.5	3,676.4	21.0
California	19.6	0	0	159.8	100.0	0	0	0	0	2.5	281.9	1.6
U.S. total	1,396.4	118.5	0	679.3	148.0	1,460.6	88.6	31.9	0	35.0	3,958.3	22.6
Medium grain:												
Arkansas-Missouri	685.4	0	0	244.0	75.0	87.9	0	96.6	0	0	1,189.0	6.8
Louisiana-Florida	325.5	0	0	0	5.0	8.6	0	0	0	0	339.2	1.9
Texas-Mississippi	0	0	0	0	0	0	0	0	0	0	0	0
Total South	1,010.9	0	0	244.0	80.0	96.6	0	96.6	0	0	1,528.1	8.7
California	703.1	0	3.1	2,318.4	230.0	57.9	0	0	0	0	3,312.5	18.9
U.S. total	1,714.0	0	3.1	2,562.4	310.0	154.5	0	96.6	0	0	4,840.6	27.6
Short grain:												
Arkansas-Missouri	0	0	0	0	20.1	49.8	0	0	0	0	69.9	.4
Louisiana-Florida	0	0	0	0	0	0	0	0	0	0	0	0
Texas-Mississippi	0	0	0	0	0	0	0	0	0	0	0	0
Total South	0	0	0	0	20.1	49.8	0	0	0	0	69.9	0.4
California	99.1	0	31.2	0	118.4	17.6	0	0	97.7	4.5	368.6	2.1
U.S. total	99.1	0	31.2	0	138.5	67.4	0	0	97.7	4.6	438.5	2.5
Total head rice:												
Arkansas-Missouri	2,018.8	63.5	0	569.8	143.1	618.3	86.6	128.5	0	2.2	3,631.0	20.7
Louisiana-Florida	361.0	5.0	0	0	5.0	351.9	2.0	0	0	30.0	755.2	4.3
Texas-Mississippi	7.8	50.0	0	193.7	0	636.7	0	0	0	0	888.3	5.0
Total South	2,387.6	118.5	0	763.5	148.1	1,606.9	88.6	128.5	0	32.5	5,274.5	30.1
California	821.9	0	34.3	2,476.2	448.4	75.5	0	0	97.7	7.0	3,963.0	22.6
U.S. total	3,209.5	118.5	34.3	3,241.7	596.5	1,682.4	88.6	128.5	97.7	39.6	9,237.5	52.7

See footnotes at end of table.

Continued--

Table 12--Uses of milled rice distributed to domestic processors from specified mill areas, by type of rice and product, 1988/89 ^{1/}--Continued

Type of rice and origin	Product use ^{2/}										Total ^{4/}	Share of total
	Cereal	Soup	Baby food	Beer	Rice cakes	Package mixes ^{3/}	Frozen dinners	Candy	Pet food	Other		
	----- 1,000 cwt -----											Percent
Broken:												
Arkansas-Missouri	0	0	0	2,883.4	20.8	0	0	0	576.5	0	3,480.6	19.9
Louisiana-Florida	4.7	0	0	572.6	0	0	0	0	223.7	10.2	811.3	4.6
Texas-Mississippi	0	0	0	0	0	0	0	0	29.2	198.7	227.9	1.3
Total South	4.7	0	0	3,456.0	20.8	0	0	0	829.4	209.0	4,519.9	25.8
California	698.2	0	0	2,196.9	70.3	0	0	91.0	237.0	1.1	3,294.6	18.8
U.S. total	702.9	0	0	5,653.0	91.1	0	0	91.0	1,066.4	210.1	7,814.5	44.6
Rice flour:												
Arkansas-Missouri	0	0	4.9	0	0	22.6	0	0	118.9	0	146.4	.8
Louisiana-Florida	24.3	0	122.3	.1	19.1	0	0	0	.1	44.6	210.6	1.2
Texas-Mississippi	0	0	10.6	0	0	0	0	0	0	0	10.6	.1
Total South	24.3	0	137.8	.1	19.1	22.6	0	0	119.0	44.6	367.7	2.1
California	0	0	0	0	0	0	0	0	55.3	0	55.3	.3
U.S. total	24.3	0	137.8	.1	19.1	22.6	0	0	174.2	44.6	422.9	2.4
Brewers rice:												
Arkansas-Missouri	0	0	0	0	0	0	0	0	0	0	0	0
Louisiana-Florida	0	0	0	0	0	0	0	0	0	41.1	41.1	.2
Texas-Mississippi	0	0	0	0	0	0	0	0	0	0	0	0
Total South	0	0	0	0	0	0	0	0	0	41.1	41.1	.2
California	0	0	0	0	0	0	0	0	0	0	0	0
U.S. total	0	0	0	0	0	0	0	0	0	41.1	41.1	.2
Total all types:												
Arkansas-Missouri	2,018.8	63.5	4.9	3,453.2	163.9	641.0	86.6	128.5	695.2	2.2	7,257.9	41.4
Louisiana-Florida	390.0	5.0	122.3	572.8	24.1	351.9	2.0	0	223.8	126.3	1,818.2	10.4
Texas-Mississippi	7.8	50.0	10.6	193.7	0	636.7	0	0	29.2	198.7	1,126.8	6.4
Total South	2,416.7	118.5	137.8	4,219.7	188.0	1,629.6	88.6	128.5	948.2	327.2	10,202.9	58.3
California	1,520.1	0	34.3	4,675.1	518.7	75.5	0	91.0	389.9	8.2	7,312.8	41.7
U.S. total	3,936.8	118.5	172.1	8,894.8	706.7	1,705.1	88.6	219.5	1,338.2	335.4	17,515.7	100.0

^{1/} Marketing year beginning August 1.

^{2/} Based on main product produced.

^{3/} Includes 712,000 cwt shipped directly by mills as package rice mixes. See table 2 for breakdown by State of origin.

^{4/} Totals may not add due to rounding.

Table 13--Distribution of milled rice by Louisiana-Florida mills for direct food use, by destination State and region, package size, and grain type, 1988/89 ^{1/}

Destination State and region	Package size					Total ^{2/}	Share of U.S. total	Grain type			Specialty rice ^{3/}
	Less than 5 pounds	5-9 pounds	10-24 pounds	25-100 pounds	Bulk			Long	Medium	Short	
	----- 1,000 cwt -----							----- Percent -----			1,000 cwt
Maine	2.5	0.9	0.1	0	0	3.5	0.1	84.0	15.0	0	0.6
New Hampshire	1.4	.5	0	0	0	1.9	.1	84.0	16.0	0	.3
Vermont	6.1	2.3	.2	0	0	8.6	.3	84.0	16.0	0	1.4
Massachusetts	46.5	17.7	1.3	10.9	32.4	108.8	3.6	55.1	44.9	0	10.5
Rhode Island	4.0	1.5	.1	0	0	5.7	.2	84.0	16.0	0	.9
Connecticut	22.7	8.6	.6	0	0	31.9	1.0	84.0	16.0	0	5.1
New England	83.2	31.6	2.3	10.9	32.4	160.4	5.3	64.4	35.6	0	18.8
New York	131.9	171.1	64.4	17.4	0	384.8	12.8	97.5	2.5	0	55.8
New Jersey	83.0	45.8	26.4	3.6	10.8	169.5	5.6	78.1	21.9	0	18.5
Pennsylvania	83.2	31.6	2.3	10.9	32.4	160.4	5.3	53.1	46.9	0	18.8
Middle Atlantic	298.0	248.5	93.1	31.8	43.2	714.7	23.8	83.0	17.0	0	93.1
Ohio	22.5	8.6	.6	0	0	31.8	1.0	84.0	16.0	0	5.1
Indiana	3.3	1.2	.1	0	0	4.6	.2	84.0	16.0	0	.7
Illinois	14.4	5.4	.4	0	0	20.2	.7	84.0	16.0	0	3.3
Michigan	41.9	15.9	1.2	0	0	59.0	1.9	70.0	30.0	0	9.5
Wisconsin	5.3	2.0	.1	0	0	7.4	.2	84.0	16.0	0	1.2
East North Central	87.4	33.2	2.5	0	0	123.0	4.1	77.3	22.7	0	19.8
Minnesota	4.3	3.6	0	.8	0	8.7	.3	97.4	2.6	0	.2
Iowa	12.5	4.7	.4	0	0	17.6	.6	84.0	16.0	0	2.8
Missouri	29.4	11.2	.8	0	0	41.4	1.4	84.0	16.0	0	6.7
North Dakota	.3	.1	0	0	0	.4	0	84.0	16.0	0	.1
South Dakota	.2	.1	0	0	0	.2	0	84.0	16.0	0	0
Nebraska	4.0	1.5	.1	0	0	5.6	.2	84.0	16.0	0	.9
Kansas	6.5	2.5	.2	0	0	9.1	.3	84.0	16.0	0	1.5
West North Central	57.1	23.6	1.5	.8	0	83.0	2.8	85.4	14.6	0	12.2
Delaware	.5	.2	0	0	0	.6	0	84.0	16.0	0	.1
Maryland	35.4	13.4	1.0	0	0	49.8	1.7	84.0	15.0	0	8.0
District of Columbia	0	0	0	0	0	0	0	0	0	0	0
Virginia	23.8	9.0	0.7	0	0	33.5	1.1	84.0	16.0	0	5.4
West Virginia	.8	.3	0	0	0	1.2	0	84.0	16.0	0	.2
North Carolina	44.0	16.7	1.2	0	0	62.0	2.1	91.0	9.0	0	10.0
South Carolina	81.8	33.6	2.2	4.7	0	122.3	4.1	65.5	34.5	0	17.9
Georgia	77.8	29.6	2.2	0	0	109.6	3.7	85.0	15.0	0	17.6
Florida	205.9	82.3	5.8	110.0	32.4	436.4	14.5	90.7	8.6	.7	46.7
South Atlantic	470.0	185.3	13.2	114.7	32.4	815.5	27.2	85.5	14.2	.4	105.8

See footnotes at end of table

Continued--

Table 13--Distribution of milled rice by Louisiana-Florida mills for direct food use, by destination State and region, package size, and grain type, 1988/89 1/--Continued

Destination State and region	Package size					Total <u>2/</u>	Share of U.S. total	Grain type			Specialty rice <u>3/</u>
	Less than 5 pounds	5-9 pounds	10-24 pounds	25-100 pounds	Bulk			Long	Medium	Short	
	----- 1,000 cwt -----							----- Percent -----			1,000 cwt
Kentucky	3.2	1.2	.1	0	0	4.5	0.1	84.0	16.0	0	0.7
Tennessee	38.7	14.7	1.1	0	0	54.6	1.8	84.0	16.0	0	8.8
Alabama	40.4	15.4	1.1	0	0	56.9	1.9	84.0	16.0	0	9.2
Mississippi	22.6	8.6	.6	0	0	31.8	1.1	84.0	16.0	0	5.1
East South Central	104.9	39.9	3.0	0	0	147.8	4.9	84.0	16.0	0	23.8
Arkansas	55.8	21.2	1.6	0	0	78.6	2.6	84.0	16.0	0	12.6
Louisiana	132.5	144.2	29.5	21.0	0	327.1	10.9	61.0	39.0	0	45.6
Oklahoma	4.2	1.6	.1	0	0	5.9	.2	84.0	16.0	0	.9
Texas	58.8	26.2	1.9	0	0	86.9	3.2	84.0	16.0	0	15.6
West South Central	261.3	193.2	33.1	21.0	0	508.6	16.9	69.2	30.8	0	75.0
Montana	.6	.2	0	0	0	.8	0	84.0	16.0	0	.1
Idaho	.4	.2	0	0	0	.6	0	84.1	16.0	0	.1
Wyoming	.1	0	0	0	0	.1	0	84.0	16.0	0	0
Colorado	5.0	1.9	.1	0	0	7.1	.2	100.0	0	0	1.1
New Mexico	4.6	1.8	.1	0	0	6.5	.2	83.9	16.0	0	1.0
Arizona	15.1	5.7	.4	1.3	0	22.5	.7	84.9	15.1	0	3.4
Utah	1.6	.6	0	0	0	2.2	.1	84.0	16.0	0	.4
Nevada	1.0	.4	0	0	0	1.5	0	84.9	16.0	0	.2
Mountain	28.4	10.8	.8	1.3	0	41.3	1.4	87.2	12.7	0	6.4
Washington	9.6	3.7	.3	0	0	13.6	.4	84.0	16.0	0	2.2
Oregon	8.0	3.0	.2	0	0	11.2	.4	84.0	16.0	0	1.8
California	148.5	137.9	31.2	33.9	27.3	378.8	12.6	89.2	10.8	0	41.2
Alaska	.5	.2	0	0	0	.7	0	91.7	13.3	0	.1
Hawaii	1.7	.6	0	0	0	2.4	.1	84.0	16.0	0	.4
Pacific	168.3	145.4	31.8	33.9	27.3	406.7	13.6	88.8	11.2	0	45.7
U.S. total <u>4/</u>	1,558.5	911.5	181.3	214.4	135.2	3,001.0	100.0	81.1 <u>5/</u>	18.8 <u>5/</u>	.1 <u>5/</u>	400.7

1/ Marketing year beginning August 1.

2/ Excludes Federal Government distribution for State and military use, because State shipment data are not available. Also excludes shipments to territories, but includes repackagers. May include rice reported by a mill that has a facility in another State.

3/ Includes parboiled, precooked, aromatic, and brown rice. Specialty rice is included in calculations by package size and grain type.

4/ Totals may not add due to rounding.

5/ National average.

Table 14--Distribution of milled rice by Texas-Mississippi mills for direct food use, by destination State and region, package size, and grain type, 1988/89 1/

Destination State and region	Package size					Total 2/ U.S. total	Grain type			Specialty rice 3/ cwt	
	Less than 5 pounds	5-9 pounds	10-24 pounds	25-100 pounds	Bulk		Long	Medium	Short		
											Percent
	1,000 cwt						Percent			1,000 cwt	
Maine	7.4	0.3	2.5	0.6	0	10.9	.2	98.2	1.8	0	10.7
New Hampshire	1.7	.6	.9	1.6	0	4.8	.1	100.0	0	0	4.7
Vermont	6.9	1.3	1.3	.2	0	9.7	.2	100.0	0	0	9.7
Massachusetts	51.8	22.3	35.0	21.0	0	130.1	2.5	91.5	8.5	0	104.5
Rhode Island	5.0	1.9	1.3	4.1	0	12.3	.2	100.0	0	0	7.9
Connecticut	37.1	8.7	12.2	2.3	0	60.3	1.1	99.8	.2	0	59.9
New England	109.9	35.2	53.2	29.8	0	228.1	4.4	95.0	5.0	0	197.5
New York	149.8	76.1	120.2	68.4	0	414.5	7.9	95.6	4.4	0	371.0
New Jersey	83.1	25.2	49.7	31.1	0	169.1	3.6	98.0	2.0	0	188.6
Pennsylvania	93.7	19.9	27.2	23.8	0	164.5	3.1	99.5	.5	0	156.8
Middle Atlantic	326.5	121.2	197.1	123.2	0	768.1	14.6	97.1	2.9	0	716.3
Ohio	65.0	5.4	18.9	24.7	0	114.1	2.2	99.7	.2	0	116.3
Indiana	21.4	1.3	7.0	3.7	0	33.4	.6	98.3	1.6	0	32.0
Illinois	65.4	3.9	35.9	53.8	0	159.0	3.0	94.8	5.2	0	115.0
Michigan	55.4	3.9	33.4	18.4	0	111.0	2.1	97.7	2.3	0	95.3
Wisconsin	38.2	2.7	6.6	1.2	0	48.8	.9	98.6	.4	0	48.5
East North Central	245.4	17.3	101.8	101.9	0	466.4	8.9	97.4	2.5	0	407.1
Minnesota	30.9	.5	6.7	7.2	0	45.3	.9	99.6	.4	0	47.1
Iowa	11.3	.3	3.3	1.8	0	16.8	.3	100.0	0	0	16.7
Missouri	30.5	.5	8.0	3.1	0	42.1	.8	98.4	1.6	0	39.8
North Dakota	3.8	.2	.7	.2	0	4.8	.1	100.0	0	0	4.8
South Dakota	.9	.1	.4	0	0	1.4	0	100.0	0	0	1.5
Nebraska	6.3	.6	2.8	5.9	0	15.6	.3	99.5	.5	0	16.3
Kansas	12.2	.3	4.0	5.8	0	22.3	.4	99.3	.7	0	17.3
West North Central	95.9	2.6	25.9	23.9	0	148.2	2.8	99.3	.7	0	143.6
Delaware	.2	.1	.3	.4	0	1.1	0	100.0	0	0	.6
Maryland	53.7	36.9	30.3	9.8	0	130.6	2.5	100.0	0	0	131.6
District of Columbia	6.8	1.8	17.0	2.5	0	28.1	.5	100.0	0	0	17.3
Virginia	52.0	11.5	14.7	14.8	0	93.0	1.8	100.0	0	0	69.9
West Virginia	2.9	.3	.6	0	0	3.8	.1	100.0	0	0	3.9
North Carolina	133.5	11.7	12.8	21.7	0	179.6	3.4	100.0	0	0	104.0
South Carolina	127.0	51.5	47.4	90.1	0	316.1	6.0	100.0	0	0	87.4
Georgia	48.2	4.4	9.9	10.5	0	73.0	1.4	100.0	0	0	62.5
Florida	117.5	35.6	110.0	276.4	0	540.1	10.3	100.0	0	0	236.0
South Atlantic	541.9	153.8	242.9	426.3	0	1,365.5	26.0	100.0	0	0	713.1

See footnotes at end of table.

Continued--

Table 14--Distribution of milled rice by Texas-Mississippi mills for direct food use, by destination State and region, package size, and grain type, 1988/89 ^{1/}--Continued

Destination State and region	Package size					Total ^{2/}	Share of U.S. total	Grain type			Specialty rice ^{3/}
	Less than 5 pounds	5-9 pounds	10-24 pounds	25-100 pounds	Bulk			Long	Medium	Short	
	1,000 cwt						Percent			1,000 cwt	
Kentucky	13.4	0.5	3.2	0.8	0	17.9	0.3	100.0	0	0	17.9
Tennessee	30.0	2.8	8.5	4.5	0	45.8	.9	97.7	2.3	0	39.4
Alabama	27.0	2.2	7.5	2.1	0	38.8	.7	99.9	.1	0	39.8
Mississippi	5.3	.2	6.4	2.1	0	14.0	.3	100.0	0	0	12.9
East South Central	75.6	5.7	25.6	9.4	0	116.4	2.2	99.1	.9	0	110.1
Arkansas	6.6	.2	1.3	.2	0	8.2	.2	100.0	0	0	8.1
Louisiana	23.3	11.9	9.0	81.0	10.1	135.3	2.6	97.9	2.1	0	47.5
Oklahoma	18.9	2.1	2.4	1.8	0	25.1	.5	97.2	2.8	0	24.7
Texas	287.4	62.2	142.5	401.8	0	893.9	17.0	99.4	.6	0	275.2
West South Central	336.1	76.4	155.2	484.8	10.1	1,062.5	20.3	99.2	.8	0	355.5
Montana	2.8	.1	1.2	0	0	4.1	.1	100.0	0	0	4.1
Idaho	.8	0	1.2	.9	0.4	3.4	.1	100.0	0	0	2.6
Wyoming	.1	0	.1	0	0	.2	0	100.0	0	0	.2
Colorado	28.1	.7	10.3	17.4	0	56.5	1.1	100.0	0	0	45.5
New Mexico	3.1	.2	3.2	6.4	0	12.8	.2	100.0	0	0	8.1
Arizona	20.7	2.8	8.4	14.7	0	46.6	.9	100.0	0	0	34.6
Utah	20.0	1.6	5.1	12.8	0	39.5	.8	98.6	1.4	0	35.2
Nevada	1.4	1.1	2.7	9.5	0	14.6	.3	100.0	0	0	11.7
Mountain	76.9	6.5	32.2	61.7	.4	177.8	3.4	99.7	.3	0	141.9
Washington	22.7	.7	14.2	18.9	0	56.5	1.1	100.0	0	0	49.4
Oregon	9.7	.4	7.2	11.3	0	28.6	.5	100.0	0	0	20.7
California	177.6	33.2	129.0	475.6	0	815.4	15.6	100.0	0	0	324.9
Alaska	1.0	.4	1.7	.1	0	3.2	.1	100.0	0	0	3.2
Hawaii	1.1	1.7	0	3.5	0	6.3	.1	100.0	0	0	6.3
Pacific	212.0	36.6	152.1	509.4	0	910.1	17.4	100.0	0	0	404.6
U.S. total ^{4/}	2,020.3	455.3	986.0	1,770.4	11.1	5,243.1	100.0	98.9 ^{5/}	1.1 ^{5/}	0 ^{5/}	3,189.7

^{1/} Marketing year beginning August 1.

^{2/} Excludes Federal Government distribution for State and military use, because State shipment data are not available. Also excludes shipments to territories, but includes repackagers. May include rice reported by a mill that has a facility in another State.

^{3/} Includes parboiled, precooked, aromatic, and brown rice. Specialty rice is included in calculations by package size and grain type.

^{4/} Totals may not add due to rounding.

^{5/} National average.

Table 15--Distribution of milled rice by California mills for direct food use, by destination State and region, package size, and grain type, 1988/89 1/

Destination State and region	Package size					Share of U.S. total	Grain type			Specialty rice 3/
	Less than 5 pounds	5-9 pounds	10-24 pounds	25-100 pounds	Bulk		Long	Medium	Short	
	----- 1,000 cwt -----						----- Percent -----			
Maine	0	0.1	0.1	0	0	0.2	19.0	81.0	0	0
New Hampshire	.1	.2	.1	.2	0	.6	5.5	94.5	0	0
Vermont	0	0	0	0	0	0	0	0	0	0
Massachusetts	0	.1	1.0	0	0	0	0	0	0	0
Rhode Island	0	.4	.7	0	0	1.1	2.3	95.4	2.3	0
Connecticut	0	0	0	0	0	1.1	0	100.0	0	0
New England	.1	.8	1.8	.2	0	2.9	0	0	0	0
New York	7.1	54.3	32.1	271.1	0	364.6	3.0	96.2	.9	0
New Jersey	.3	2.3	.3	12.8	0	15.7	6.1	0	96.9	3.1
Pennsylvania	.7	18.1	97.2	.7	0	116.8	.3	29.9	63.2	6.9
Middle Atlantic	8.1	74.7	129.7	284.6	0	497.1	2.0	3.0	96.4	.6
Ohio	.1	.1	.3	0	0	.5	8.4	1.6	95.7	2.6
Indiana	0	0	.1	0	0	.2	0	30.0	70.0	0
Illinois	2.9	9.1	48.9	4.3	0	65.2	0	17.0	83.0	0
Michigan	0	0	0	2.2	5.9	8.1	1.1	1.1	80.3	18.6
Wisconsin	2.9	.1	.3	.1	0	3.4	.1	.2	74.9	25.0
East North Central	6.0	9.4	49.6	6.6	5.9	77.4	1.3	1.3	98.7	0
Minnesota	3.2	2.1	19.7	4.6	0	29.6	1.2	1.2	80.5	18.3
Iowa	0	0	0	0	0	0	.5	2.3	69.7	28.0
Missouri	0	0	0	0	0	0	0	0	0	0
North Dakota	0	.1	.2	0	0	.1	0	29.0	71.0	0
South Dakota	0	0	.1	0	0	.3	0	29.0	71.0	0
Nebraska	0	0	0	0	0	.1	0	23.0	77.0	0
Kansas	0	0	0	0	0	0	0	0	0	0
West North Central	3.2	2.3	20.0	4.6	0	30.1	0	60.0	40.0	0
Delaware	0	0	0	0	0	0	.5	2.8	69.7	27.5
Maryland	1.7	18.8	20.0	300.1	0	0	0	0	0	0
District of Columbia	0	0	.6	0	0	340.5	5.7	.3	99.7	0
Virginia	.5	5.2	23.4	0	0	.6	0	0	100.0	0
West Virginia	0	.1	.2	0	0	29.1	.5	2.0	98.0	0
North Carolina	0	1.1	2.0	1.8	0	.4	0	30.0	70.0	0
South Carolina	.1	.2	.4	0	0	4.9	.1	1.3	98.7	0
Georgia	0	8.5	10.3	1.5	0	.7	0	18.0	82.0	0
Florida	.1	9.2	7.3	5.0	0	20.5	.3	0	100.0	0
South Atlantic	2.4	43.2	64.1	308.4	0	21.6	.4	3.1	57.0	39.8
						418.0	7.0	.6	97.3	2.1

See footnotes at end of table

Continued--

Table 15--Distribution of milled rice by California mills for direct food use, by destination State and region, package size, and grain type, 1988/89 1--Continued

Destination State and region	Package size					Total <u>2</u>	Share of U.S. total	Grain type			Specialty rice <u>3</u>
	Less than 5 pounds	5-9 pounds	10-24 pounds	25-100 pounds	Bulk			Long	Medium	Short	
	----- 1,000 cwt -----							----- Percent -----			1,000 cwt
Kentucky	0	0	0	0	0	0	0	0	0	0	0
Tennessee	0	0	0	0	0	0	0	0	0	0	0
Alabama	.1	.1	.2	0	0	.1	0	0	100.0	0	0
Mississippi	.1	.3	.4	0	0	.4	0	10.0	90.0	0	0
East South Central	.1	.4	.6	0	0	.7	0	18.0	82.0	0	0
Arkansas	0	.1	.3	0	0	1.2	0	14.3	85.7	0	0
Louisiana	0	0	.1	0	0	.4	0	7.0	93.0	0	0
Oklahoma	.1	.2	.6	0	4.5	4.7	.1	.2	61.5	38.3	0
Texas	3.5	28.8	15.2	4.3	0	.9	0	32.4	67.6	0	0
West South Central	3.6	29.1	16.2	4.3	4.5	51.7	.9	6.1	89.2	4.7	0
						57.7	1.0	6.0	86.7	7.3	0
Montana	0	.1	.3	.3	0	.6	0	52.0	48.0	0	0
Idaho	0	.3	.7	1.6	14.7	17.3	.3	75.5	22.8	1.7	0
Wyoming	0	0	0	0	0	0	0	0	0	0	0
Colorado	.1	.9	2.5	2.4	.9	6.8	.1	42.4	57.6	0	0
North Mexico	.1	.5	.5	0	0	1.0	0	26.0	74.0	0	0
Arizona	.9	19.3	8.9	19.5	0	48.6	.8	25.2	17.2	57.6	0
Utah	.5	.1	1.2	2.3	0	4.3	.1	54.0	46.0	0	0
Nevada	.2	1.1	2.3	16.0	0	19.5	.3	38.4	11.5	50.2	0
Mountain	1.8	22.3	16.4	42.0	15.6	98.1	1.7	39.3	21.9	38.8	0
Washington	1.1	22.6	64.8	339.9	3.2	431.6	7.3	15.5	83.3	1.0	9.7
Oregon	.2	7.4	10.9	23.6	0	42.2	.7	59.3	40.7	0	3.2
California	146.6	286.4	679.4	2,169.2	105.7	3,387.2	57.0	21.0	73.2	5.8	211.9
Alaska	0	.6	1.2	2.3	0	4.0	.1	.7	98.0	1.3	0
Hawaii	1.2	59.0	471.1	363.8	0	895.1	15.1	17.7	81.0	1.3	36.3
Pacific	149.1	376.0	1,227.3	2,898.8	108.9	4,760.1	80.1	20.2	75.3	4.5	261.2
U.S. total <u>4</u>	174.5	558.2	1,525.7	3,549.5	134.8	5,942.6	100.0	17.1 <u>5</u>	77.8 <u>5</u>	5.0 <u>5</u>	276.2

1/ Marketing year beginning August 1.

2/ Excludes Federal Government distribution for State and military use, because State shipment data are not available. Also excludes shipments to territories, but includes repackagers. May include rice reported by a mill that has a facility in another State.

3/ Includes parboiled, precooked, aromatic, and brown rice. Specialty rice is included in calculations by package size and grain type.

4/ Totals may not add due to rounding.

5/ National average.

ERS-NASS Video Tapes

ERS: Economic Research for American Agriculture

An historical account of the role of economic research in the success of American agriculture.

16 1/2 minutes Order No. VT001 \$15.00

Today and Tomorrow

The U.S. Department of Agriculture's Outlook program analyzes the current situation for U.S. and world crops, and provides a forecast of future supplies and prices. "Today and Tomorrow" is an overview of the USDA Outlook program from its beginning in the 1920's, to the current comprehensive program of research and analysis.

23 minutes Order No. VT002 \$15.00

The Need To Know

Begins with a futuristic "what if?" opening, and then proceeds to outline the history, significance, and contributions of agricultural statistics and USDA's National Agricultural Statistics Service.

23 minutes Order No. VT003 \$15.00

Your Hometown

"Your Hometown" is an informative and entertaining look at small town rural America. Originally seen on public television stations nationwide, and narrated by James Whitmore, the program focuses on three rural communities

where citizens use innovative thinking and teamwork to revitalize their own towns.

1 hour Order No. VT004 \$15.00

Alternative Agriculture: Growing Concerns

Can U.S. farmers produce at a profit while practicing low-input, sustainable agriculture (LISA)? "Growing Concerns" investigates the benefits and drawbacks of LISA. An excellent overview, this documentary was originally seen as a five-part series on national television.

19 minutes Order No. VT005 \$15.00

Ethanol: Economic and Policy Tradeoffs

Ethanol can contribute to the national goals of energy security, a clean environment, and a healthy economy, but there are tradeoffs.

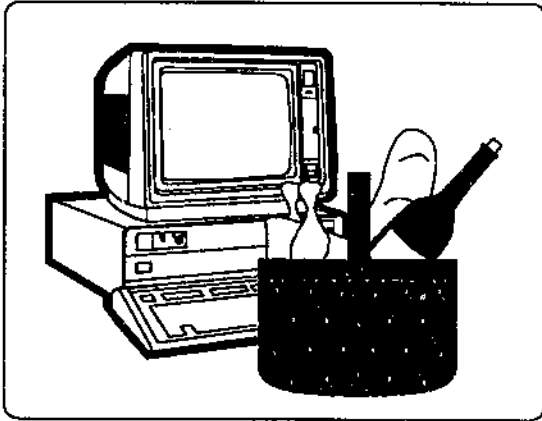
25 minutes Order No. VT006 \$15.00

American Harvest

Farming in America is not what you think it is. That's the theme of this program which investigates farms, farming and rural America, and farm families. Visit a "lifestyle" farm in Virginia, a soybean/hog operation in Illinois, and a large California farm that grows just about everything.

30 minutes Order No. VT007 \$15.00

To order, call our order desk toll free,
1-800-999-6779 (8:30-5:00 ET in the U.S.
and Canada) or write : ERS-NASS, P.O.
Box 1608, Rockville, MD 20849-1608



Test your knowledge of . . .

Americans and Food

Do you know America's #1 food import or how many new food and grocery products were introduced in 1989? What food showed the largest percentage gain in consumption over the past 20 years? These are just a few of the challenging questions you will find in a new computer quiz developed by USDA's Economic Research Service.

The quiz is available on a 5.25-inch disk and requires MS/PC-DOS Version 3.2 or 3.3 and 640 KB of memory. The program contains 54 questions and answers with important details on a wide variety of topics, ranging from fish consumption and trade to the fast food market. The easy-to-understand questions and answers make the quiz an excellent teaching tool and presentation aid. *Single copies are \$25 (Order #91002A), but bulk orders to one address allow a quantity discount: 10 copies for \$40 (order #91002B) or 50 copies for \$75 (order #91002C)!*

Call 1-800-999-6779 (in the U.S. and Canada; other areas call 301-725-7937) to order your copy today.

Now, here's your chance to test your knowledge of "Americans and Food" with a sample of questions from the quiz. The answers are below.

1. How many new food and grocery products were introduced in 1989?

- | | |
|-----------|------------|
| (a) 989 | (c) 8,971 |
| (b) 3,787 | (d) 12,055 |

2. Which group dines out most often?

- | | |
|---------------------|----------------------------|
| (a) 14-24 year olds | (c) 45-64 year olds |
| (b) 25-44 year olds | (d) 65 years old and older |

3. Do you know the largest market for U.S. exports of processed food?

- | | |
|------------|---------------------|
| (a) Canada | (c) The Netherlands |
| (b) Japan | (d) Mexico |

4. Let's check your knowledge of the many "new" foods available these days. Do you know what *surimi* is?

- | | |
|-----------------------|-----------------------------|
| (a) A type of cabbage | (c) A fat substitute |
| (b) A fish product | (d) An artificial sweetener |

Ready to tally your score?

1. The correct answer is (d) 12,055, but an estimated 90 to 99 percent of new food products fail.
2. The correct answer is (b) 25-44 year olds.
3. Exports of processed food to (b) Japan totaled \$5.4 billion in 1989, followed by \$1.5 billion to Canada.
4. *Surimi* is a minced (b) fish product used in products that simulate crab, shrimp, and other popular seafoods.

END
DATE
FILMED
9-2-92
NTIS