



The World's Wheat Supply

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Wheat is the "bread of life" and nearly every country in the world grows wheat. The only places where wheat is not grown are Antarctica, inside the Arctic Circle, and a few small countries in South America and Africa (Figure 1). For the wheat marketing-years (June 1 through May 31) 2004/05 through 2008/09, average world wheat production was 23.05 billion bushels.

Major world wheat producing countries (production is based on a 5-year average) include the 27 countries of the European Union (EU-27) which produce 4.9 billion bushels; China, 3.8 billion bushels; India, 2.7 billion bushels; the United States, 2.1 billion bushels; and Russia, 1.85 billion bushels. Another tier of wheat producers includes Canada with an average production of 922 million bushels (mb); Australia, 690 mb; Pakistan, 583 mb; Ukraine, 490 mb; North Africa, 432 mb; and Kazakhstan, 368 mb.

The World Agricultural Outlook Board and the USDA report wheat production and use categories that include World, U.S., Total Foreign, Major Exporters, Major Importers, and Selected Others (Figure 2). Major Exporters, Major Importers, and Selected Others produce about 93 percent of the world's wheat.

Major Exporters include Argentina, Australia, Canada, the EU-27, and the U.S. Major Importers include Brazil, China, Selected Middle East countries, Northwestern Africa, Pakistan and Southeast Asia. Selected others include India, the Former Soviet Union (FSU-12), Russia, Kazakhstan, and the Ukraine.

Major Exporters produce 40 percent; Major Importers produce 26 percent, and Selected Others produce about 27 percent of the world's wheat. The final 7 percent of the world's wheat is produced by the remaining countries.

Data

The Foreign Agriculture Service, USDA, maintains a data set for agricultural commodities, by world, region, and country (<http://www.fas.usda.gov/psdonline/psdHome.aspx>). Annual production, imports, total use, exports, feed use, food use and total use by country and region are from this web site. Other data are from the World Agriculture Supply and Demand Reports (USDA, World Agricultural Outlook Board).

Oklahoma Cooperative Extension Fact Sheets
are also available on our website at:
<http://osufacts.okstate.edu>

Harvest dates are from the USDA World Agricultural Outlook Board and the Joint Agricultural Weather Facility (Agricultural Handbook No. 564, September 1964).

United States Department of Agriculture (USDA) marketing-year wheat production and use is reported based on a June through May marketing year. The USDA includes wheat harvested during the March through May period in India, Pakistan, and North Africa as part of the following June through May marketing-year's production. Since very little wheat is harvested in January and February, world wheat production is essentially reported on a calendar year basis. Annual use is reported for June through May.

Timing of World Wheat Harvest

Marketing-year production begins in India in March. India completes harvest in mid-May. Pakistan harvests wheat between April and mid-June. By June 15, India, Pakistan, Northwestern Africa, and over half of China's winter wheat have been harvested.

Both the EU-27 and the United States harvests last from late-May through mid-September. Wheat is harvested in the FSU-12 countries between mid-July and October 1. As of October 1, of the major wheat producing countries, only Argentina, Australia, and Brazil have not harvested their wheat. About 82 percent of the world's wheat is harvested in the Northern Hemisphere and 18 percent in the Southern. Argentina, Australia, and Brazil harvest about six percent of world production (Figure 2).

Wheat Production

Estimated world wheat production and average use by month are shown in Figure 3. The five-year average (2004/05 through 2008/09) world wheat production is 23.05 billion bushels. About 24 percent of marketing-year production is harvested by June 1. By August 31, 82 percent of the world's harvest is complete. Ninety-two percent of the world's wheat harvest is complete by October 1. When Argentina starts harvesting in November, about 96 percent of the world's wheat has been harvested. Argentina produces about 2.2 percent of the world's wheat production, and Australia produces about 3.5 percent of the world's wheat production.

World wheat production peaks in August (5.3 billion bushels) when winter wheat harvests are completed in the U.S.,

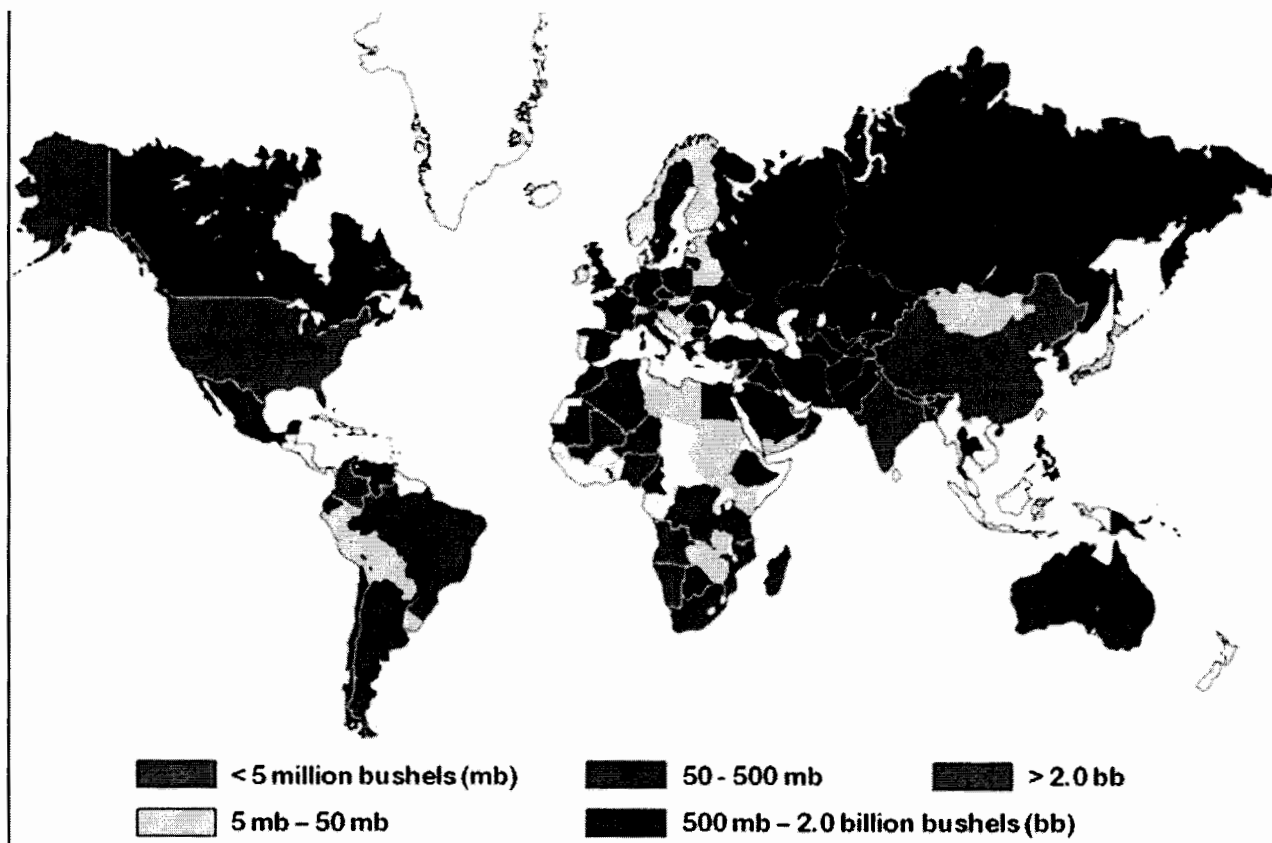


Figure 1. World Wheat Production Map.

Source: USDA PS&D Data Series

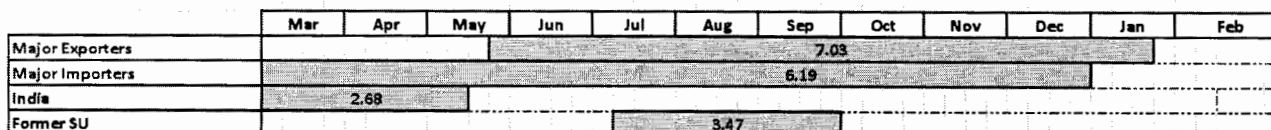
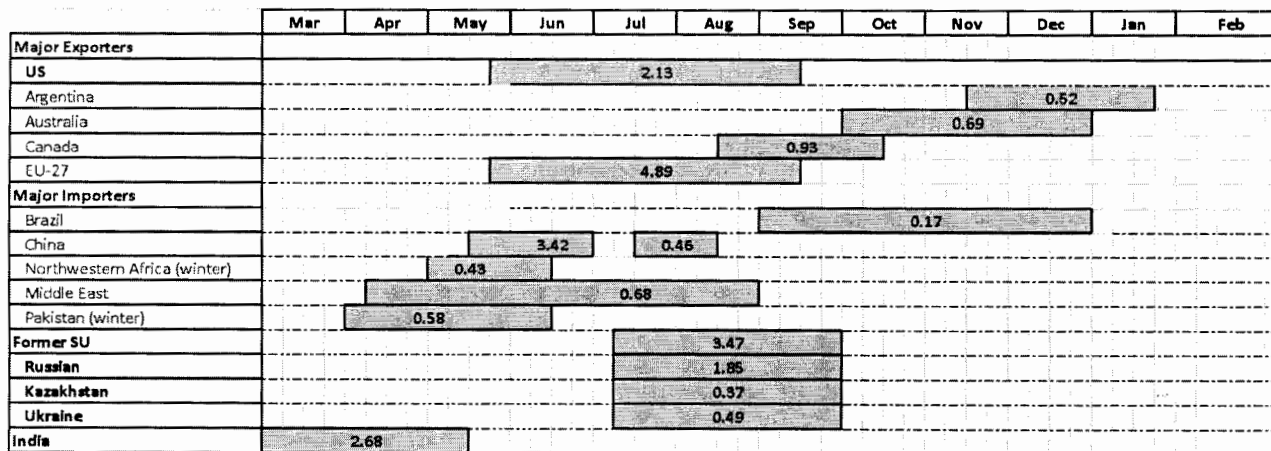


Figure 2. Five-Year Average Annual Production for selected countries and harvest periods: 2004/05 through 2008/09.

Source: WASDE Major World Crop Area and Climatic profiles

the EU-27, and the FSU-12 countries. China is completing its spring wheat harvest in August when Canada and U.S. spring wheat harvests begin (Figure 2).

By September 30, about 92 percent of the marketing-year wheat has been harvested. Production in October is less than total monthly use. During October through April, Beginning Stocks decline. Beginning Stocks increase between May and August. September production is about the same as monthly use.

Wheat Use

The five-year average annual world wheat use is 22.8 billion bushels. Figure 3 shows that world wheat use was allocated equally over the 12-month marketing-year. Average monthly consumption was 1.9 billion bushels ($22.8 \div 12$).

Note that for this five-year period, average wheat use was lower than production, and world wheat stocks increased. Between the 2004/05 and 2008/09 wheat marketing years, the minimum annual wheat use was 22.4 billion bushels (2004/05), and the maximum was 23.3 billion bushels (2008/09).

Wheat exports averaged 4.34 billion bushels per year, or about 19 percent of the world's wheat production was traded. Of the 4.34 billion bushel average exports, three billion bushels (~69%) were exported by the Major Exporters. The remaining 31 percent was exported by other countries.

The U.S. exports about 23 percent of world wheat exports, followed by Canada with 14.4 percent, 13.6 percent by the EU-27, 10.2 percent by Australia, and 7 percent by Argentina. The FSU-12 countries account for 11.6 percent of the world's wheat exports. Kazakhstan exports about 5.3 percent, and the Ukraine exports 3.4 percent of the world's exports. Trade (exports) between countries within the EU and FSU countries are not accounted for in the export percentages.

Of the 22.8 billion bushel average annual use, about 3.9 billion bushels are used for feed. The remaining is used for food and industrial use.

Beginning Stocks

Beginning stocks for each month are the stocks on the first day of each month (Figure 3). Production includes all wheat produced during the month and thus, represents the last day of each month. Beginning stocks are calculated by

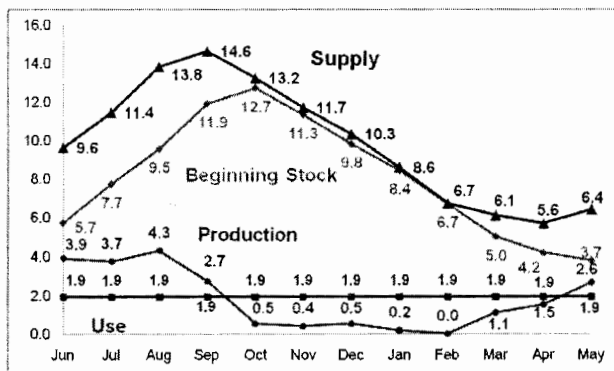


Figure 3. World Average Monthly Wheat Production, Use, Supply, and Beginning Stocks: 2004/05-2008/09 Wheat Marketing Years.

Source: USDA PS&D Data Series

adding monthly production to the prior month's beginning stocks and then subtracting monthly use.

Using the five-year average, wheat-beginning stocks are lowest in May with 3.8 billion bushels and highest in October with 12.7 billion bushels. World wheat beginning stocks increase from June through October, and decline from November through May.

Supply

Supply is the total wheat available during a month. Beginning stocks and supply are equal on the first day of each month. The supply shown is the beginning stocks plus all wheat produced during the month. If monthly production is greater than use, supply increases. If monthly production is less than monthly use, supply decreases. Supply peaks in the August/September time period and is the lowest in the March/April time period.

Price

During the 2007/08 wheat marketing year, U.S. monthly wheat prices averaged from 25 to 121 percent higher than the 2006/07 marketing year average monthly prices. The 2006/07 marketing-year average annual price was 24 percent higher than the average of the previous four years. Prices during the 2007/08 and 2008/09 were abnormally high. Thus, the 2002/03 through 2006/07 average monthly wheat prices were used to represent the normal U.S. wheat marketing-year price trend.

When U.S. monthly wheat prices are averaged for the 20, 15, and 10 year averages ending with the 2006/07 marketing-year prices, the trend peaks in December and declines about 10 cents between December and May.

Using the 2002/03 through 2006/07 marketing-year monthly average prices, wheat prices are the lowest in June and July (\$3.35 and \$3.33), increase about 55 cents into November (\$3.88), and remain in the \$3.80 to \$3.88 range through May.

World wheat supply (Figure 3) is the lowest in April and world wheat monthly beginning stocks (Figure 3 and 4) is the

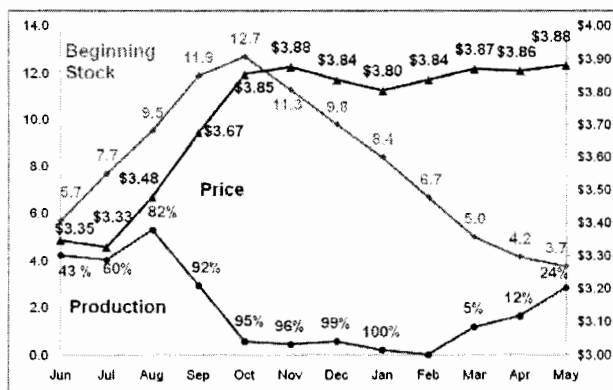


Figure 4. World Average Monthly Wheat Production, Beginning Stocks, Prices and Percentage of Total World Wheat Production: Production and Stocks 2004/05-2008/09; Price 2002/03-2006/07.

Source: USDA PS&D Data Series

Percentages are the percentage of total marketing year production

lowest in May. During August through September, U.S. wheat prices are increasing at the same time world wheat supply and stocks are increasing. This is contrary to economic logic and theory. Economic theory suggests that prices should decline as supply increases.

Note that wheat stocks peak in October; that on September 30, 92 percent of the world's wheat has been harvested; and that prices peak in November. By November, the only wheat to be harvested is in Argentina, Australia (both Major Exporters) and a very small percentage in South Africa and South America. By November, wheat importers essentially know the exportable wheat supply. All the market has to do is allocate the wheat between November and June when the next export harvest begins.

Conclusion

Nearly 70 percent of the world's wheat is harvested during the May through August time period. Most of the remaining 30

percent is harvested in April, October, November, and December. No wheat is harvested in February, and an insignificant amount of wheat is harvested in January and March.

By the end of September, 92 percent of the world's wheat marketing-year supply is known. By the end of September, marketing-year wheat use is also mostly known. All that remains is for the market to distribute the wheat in storage during the time period October through May when the U.S. harvest begins.

The market requires that some wheat be maintained in storage and in the pipeline. Thus when stocks are relatively low, prices may react to expected production.

U.S. wheat prices tend to be the lowest in June and July (harvest) and peak in October through November. Most years, the market price offers a profit for carry (storage and interest) between June and October. After October, most of the world's marketing-year wheat is in storage. Thus, the market only has to offer a price to entice owners to sell a storable commodity.

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