Wheat is the World's Number One Crop

- More land is planted to wheat in the world than any other crop.
- Wheat is a staple food for more than 35 percent of the human population.
- Wheat provides 20 percent of the world's nutritional needs.
- In 2021, the U.S. exported 992 million bushels of wheat to nearly 50 countries.
- Washington, Oregon and Idaho together are called the Pacific Northwest (PNW).
- The PNW produces enough wheat each year to fill the Seahawks' Stadium!

Wheat Grows Jobs

- Washington wheat farmers support 9,466 jobs in the state, including their own.
- The state benefits from 6,276 jobs in businesses and industries directly supporting Washington wheat farmers.
- An additional 3,190 jobs are supported from personal purchases of both farmers and their employees.
- At least $0.58 of every $1.00 generated by Washington wheat exports goes to businesses that support farmers.
- Washington’s wheat farmers and their employees contribute to the state’s economy by spending $0.69 of every $1.00 earned from wheat exports for off-farm purchases.
- This results in a total of $2.27 in economic activity, for every dollar of sales from wheat.

Source: WSU IMPACT Center, 2020

Wheat Has Class

Wheat is divided into six classes based on kernel color, hardness, and planting season. Each class of wheat has specific end-use qualities:

- **Soft white**
  - Winter, spring, and club
  - Cakes, cookies, cereals, pastries, pancakes

- **Soft red winter**
  - Cookies, crackers, pastries, pretzels, flatbreads

- **Hard red winter & hard red spring**
  - Breads, hard rolls, bagels, croissants, pizza crusts

- **Hard white**
  - Winter and spring
  - Asian noodles, steamed breads, and blended flours

- **Durum**
  - Pasta, couscous

- **Western White**
  - Is a customized blend of 10 percent or more of very soft club wheat with common soft white wheat varieties, ideal for cakes, pastries, and other confectionery products.
WASHINGTON WHEAT COMPETES

WASHINGTON'S 2021 TOP FIVE FARM PRODUCTS

1. Apples $2.185 billion
2. Milk $1.209 billion
3. Cattle $801.5 million
4. Wheat $756.8 million
5. Potatoes $712.4 million

Source: WSDA

2022 TOP TEN WHEAT PRODUCING STATES

<table>
<thead>
<tr>
<th>State</th>
<th>Production (bushels)</th>
<th>Yield/Acre (bushels)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. North Dakota</td>
<td>299.9</td>
<td>48.9</td>
</tr>
<tr>
<td>2. Kansas</td>
<td>244.2</td>
<td>37.0</td>
</tr>
<tr>
<td>3. Washington</td>
<td>144.0</td>
<td>63.4</td>
</tr>
<tr>
<td>4. Montana</td>
<td>139.3</td>
<td>28.3</td>
</tr>
<tr>
<td>5. Idaho</td>
<td>93.5</td>
<td>86.8</td>
</tr>
<tr>
<td>6. Minnesota</td>
<td>73.8</td>
<td>61.0</td>
</tr>
<tr>
<td>7. South Dakota</td>
<td>71.6</td>
<td>50.0</td>
</tr>
<tr>
<td>8. Oklahoma</td>
<td>68.6</td>
<td>28.0</td>
</tr>
<tr>
<td>9. Oregon</td>
<td>48.9</td>
<td>68.0</td>
</tr>
<tr>
<td>10. Illinois</td>
<td>44.2</td>
<td>79.0</td>
</tr>
</tbody>
</table>

Source: USDA, National Agricultural Statistics Service

2022 PNW ALL WHEAT PRODUCTION

<table>
<thead>
<tr>
<th>State</th>
<th>Production (bushels)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washington</td>
<td>144.0 million bushels</td>
</tr>
<tr>
<td>Idaho</td>
<td>93.5 million bushels</td>
</tr>
<tr>
<td>Oregon</td>
<td>49.0 million bushels</td>
</tr>
<tr>
<td>Total</td>
<td>286.5 million bushels</td>
</tr>
</tbody>
</table>

Source: USDA, National Agricultural Statistics Service

WHEAT TAKES TESTS

• Washington State University has a Variety Testing Program, and the United States Department of Agriculture (USDA) has its Western Wheat Quality Lab to help wheat breeders meet market challenges.

• The Agricultural Research Service (ARS) is the USDA's research division.

It can take more than ten years for a wheat variety to go from breeding to production, to prove its performance and quality for U.S. and world markets.

2022/23 TOP TEN WHEAT PRODUCING COUNTRIES*

<table>
<thead>
<tr>
<th>Country</th>
<th>Production (mmt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. China</td>
<td>138 mmt</td>
</tr>
<tr>
<td>2. European Union</td>
<td>134 mmt</td>
</tr>
<tr>
<td>3. India</td>
<td>103 mmt</td>
</tr>
<tr>
<td>4. Russia</td>
<td>91.0 mmt</td>
</tr>
<tr>
<td>5. U.S.</td>
<td>44.9 mmt</td>
</tr>
<tr>
<td>6. Australia</td>
<td>36.6 mmt</td>
</tr>
<tr>
<td>7. Canada</td>
<td>33.8 mmt</td>
</tr>
<tr>
<td>8. Pakistan</td>
<td>26.4 mmt</td>
</tr>
<tr>
<td>9. Ukraine</td>
<td>20.5 mmt</td>
</tr>
<tr>
<td>10. Turkey</td>
<td>17.3 mmt</td>
</tr>
</tbody>
</table>

mmt=million metric tons
Source: USDA, World Agricultural Supply and Demand Estimates
*Projected

Gluten is a protein in wheat that gives dough elasticity. Gluten strength, protein content, and falling numbers are important industry measures of U.S. wheat quality. Flour with low protein, low ash, and weak gluten makes good quality cakes, cookies, and pastries.

Most Washington wheat is grown in the eastern part of the state.

Most wheat classes love Washington’s cool nights and warm days, diverse geographic climates, and varied precipitation—from 8 inches to 25 inches annually.

Most wheat farms in Washington are dryland farms, which depend entirely on precipitation and often utilize summer fallow, where fields are left unplanted to gather moisture and nutrients.

Lodging occurs when heavy wheat crops fall over from too much rain, wind, or root disease.

Eastern Washington’s highly fertile soils are ideal for growing wheat but can erode easily. To prevent soil erosion, farmers use best management practices such as no-till or direct seeding, field stripcropping, and terrace farming.

ONE WHEAT BUSHEL

Weighs 60 pounds
Makes 53 boxes of cereal
Bakes into 200 sponge cakes
Earned U.S. farmers an average price of $9.20 in 2022/23
Rolls into 420 three-ounce cinnamon buns
Presses into 72 pounds of flour tortillas
Yields around 60 pounds of whole wheat flour
Yields around 42 pounds of white flour
WASHINGTON WHEAT FARMERS GROW KNOWLEDGE

• The Washington Grain Commission (WGC) represents farmers who promote research, market development and education in Washington state, the nation and throughout the world.

• The WGC was formed in 1958 by farmers who voted to tax themselves on each bushel of grain sold.

• The WGC budget for 2022/23 is $7.8 million.

• In the past five years, the WGC has spent over $26 million on wheat research, marketing, and education.

• Wheat research is the WGC’s top priority. See www.wagrains.org for more information.

• The WGC is proud to sponsor Wheat Week—a fun, hands-on program conducted through the Franklin Conservation District that teaches Washington’s 4th- and 5th-graders all about wheat.

WHEAT HAS HISTORY

The oldest direct evidence of bread found to date was flatbread baked by hunter-gatherers more than 14,000 years ago.

• Wheat is a type of grass.

• Einkorn and Emmer are the earliest cultivated forms of wheat.

• Einkorn has 14 chromosomes, and Emmer has 28 chromosomes.

Agricultural scientist and humanitarian Norman Borlaug won the 1970 Nobel Peace Prize for his contributions to the Green Revolution. His work helped foster world peace by increasing the food supply and prevented billions of human deaths from starvation.

CROSSWORD PUZZLE

ACROSS
4 Earliest known wheat (14 chromosomes).
6 When wheat plants fall down before harvest, it is called ________.
8 This U.S. state ranks third in wheat production.
11 Second-largest market for U.S. white wheat.
12 Top WGC priority.
14 Super soft wheat variety.
15 Wheat class used in bread.
16 ________ train loading facilities process 110 cars at a time.
19 Part of a wheat kernel used in refined flour.
21 A wheat plant wears a ________ just above its roots.
22 Number of pounds in an average bushel of wheat.

DOWN
1 Borlaug won the Nobel ________ Prize.
2 Can transport 2.4 million bushels of wheat.
3 Summer ________ is when fields are left unplanted to gather moisture and nutrients.
7 Five days of wheat fun for fourth and fifth graders!
9 USDA’s agricultural research division. (abbr.)
10 Comes in at No. 4 on Washington’s list of top farm products.
13 Wheat protein that helps dough hold together and rise.
14 ________ shippers are farmers who have only one transportation alternative.
17 The process from breeding to commercial production of a wheat variety takes about ________ years.
18 Father of the Green Revolution.
20 Wheat class used in cookies and cakes.
22 Number of wheat classes.
WHEAT MOVES

The Columbia/Snake River system running through Washington, Idaho and Oregon is the cleanest and most efficient way to transport wheat to the world.

Wheat from 11 states export through our rivers, which adds up to about 60 percent of all U.S. wheat exports shipping through the Columbia/Snake River system.

The Port of Lewiston, Idaho, is 465 miles upriver from the Pacific Ocean, which makes it the most inland port in the nation.

Tidewater and Shaver are the primary barging companies serving the Columbia/Snake River system. Together they float an average of 60 percent of Washington’s wheat to port elevator locations.

Cargo ships called bulk freighters, and container ships transport wheat to hungry customers in Asia, Latin America, and the Middle East.

Washington has five grain shuttle train loading facilities. Shuttle train facilities load 110 grain cars in 15 hours or less—some can load an entire shuttle train in as fast as 8 hours. That’s about four minutes per car! BNSF and Union Pacific are Class I railroads that serve Washington’s shuttle train loading complexes. Captive shippers are wheat farmers in areas of the country where there is only one transportation alternative.