HEAT 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 more than 19 percent of the world’s nutritional needs.
- In 2017, the US exported 901 million bushels of wheat to nearly 60 countries.
- Washington, Oregon and Idaho together are called the Pacific Northwest (PNW).
- The PNW produces enough wheat each year to fill a grain train stretching from Seattle to Mexico!

WASHINGTON 2018-2019

2018/19 TOP TEN WHEAT PRODUCING COUNTRIES*

1. EU 137.5 mmt
2. China 128.0 mmt
3. India 99.7 mmt
4. Russia 70.0 mmt
5. US 51.3 mmt
6. Canada 31.5 mmt
7. Ukraine 25.5 mmt
8. Pakistan 26.3 mmt
9. Argentina 19.5 mmt
10. Australia 18.5 mmt

*Projected mmt=million metric tons

WHEAT GROWS JOBS

- Washington wheat farmers support 8,168 jobs in the state, including their own.
- Over 2,170 of those jobs are directly related to the transportation industry.
- The state benefits from 5,998 jobs in businesses and industries directly supporting Washington wheat farmers.
- At least $0.82 of every $1.00 generated by Washington wheat goes to businesses that support farmers.
- Washington’s wheat farmers and their employees contribute to the state’s economy by spending $0.40 of every $1.00 earned for off-farm purchases.
- This results in a total of $1.22 in economic activity, beyond farmers’ own sales.

2018 PNW ALL WHEAT PRODUCTION

- Washington 153.2 million bushels
- Idaho 104.4 million bushels
- Oregon 51.6 million bushels
- Total 309.2 million bushels

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One bushel:

- Weighs 60 pounds
- Yields around 42 pounds of white flour
- Yields around 60 pounds of whole wheat flour
- Fills 53 boxes of cereal
- Rolls into 420 three-ounce cinnamon buns
- Presses into 72 pounds of flour tortillas
- Bakes into 200 sponge cakes
- Earned US farmers an average price of $4.72 in 2017/18

2018 TOP TEN WHEAT PRODUCING STATES

<table>
<thead>
<tr>
<th>State</th>
<th>Production (million bushels)</th>
<th>Avg Yield Acre (bushels)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 North Dakota</td>
<td>363.5</td>
<td>47.6</td>
</tr>
<tr>
<td>2 Kansas</td>
<td>277.4</td>
<td>38.0</td>
</tr>
<tr>
<td>3 Montana</td>
<td>197.6</td>
<td>38.3</td>
</tr>
<tr>
<td>4 Washington</td>
<td>153.2</td>
<td>70.8</td>
</tr>
<tr>
<td>5 Idaho</td>
<td>104.4</td>
<td>91.9</td>
</tr>
<tr>
<td>6 Minnesota</td>
<td>92.9</td>
<td>59.0</td>
</tr>
<tr>
<td>7 South Dakota</td>
<td>72.3</td>
<td>44.4</td>
</tr>
<tr>
<td>8 Colorado</td>
<td>70.5</td>
<td>36.1</td>
</tr>
<tr>
<td>9 Oklahoma</td>
<td>70.0</td>
<td>28.0</td>
</tr>
<tr>
<td>10 Texas</td>
<td>56.0</td>
<td>32.0</td>
</tr>
</tbody>
</table>

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

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.
- Research scientists believe Emmer crossed with a weed called Jointed Goatgrass to produce modern wheat.

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

HEAT has HISTORY

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.
Wheat is divided into six classes based on kernel color, hardness, and planting season.

Western White is a customized blend of 10 percent or more very soft club wheat with common soft white wheat varieties.

Gluten is a protein in wheat that gives dough elasticity.

Gluten, protein, and falling numbers are important industry measures of US wheat quality.

Each class of wheat has specific end-use qualities:

- **Soft white wheat** (winter, spring and club)—Cakes, cookies, crackers, flatbreads, cereals, pastries, pancakes
- **Hard red wheat** (winter and spring)—Breads, hard rolls, bagels, pan bread, flat bread, pizza crust
- **Soft red winter wheat**—Cookies, crackers, pretzels, pastries, flat breads
- **Durum**—Pasta
- **Hard white** is a new class used for Asian noodles, steambreads, and blended flours.

Washington State University has a Variety Testing Program and the 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 in order to prove it can perform for US and world markets.

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

A majority of 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.
**The Washington Grain Commission (WGC) represents farmers who promote research, marketing 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 2018/19 is $6.3 million.**

**In the past five years, the WGC has spent more than $25 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 that teaches Washington’s 4th- and 5th-graders all about wheat.**

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

**Tidewater and Shaver are the two barge companies serving the river system. Together they float an average of 60 percent of Washington’s wheat to export locations.**

**In 2017/18 the US exported 50 percent of its wheat to nearly 60 countries.**

**Shuttle train facilities load 110 grain cars in 15 hours or less—some can load an entire train shuttle in as fast as 8 hours. That’s about four minutes per car!**

**Washington has four grain shuttle train loading facilities, with another scheduled for construction in 2019.**

**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.**

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**2017/18 US WHITE WHEAT TOP MARKETS**

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<thead>
<tr>
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**The 360-mile-long Columbia/Snake River system running through Washington, Idaho and Oregon**

*About 54 percent of all US wheat exports ship through seven ports located in Washington and Oregon.*

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**WASHINGTON HEAT farmers grow KNOWLEDGE**

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*Amounts are miles per gallon carrying one ton of cargo.*

Source: Texas Transportation Institute, Texas A&M University, for the US Maritime Administration