Montana producers do indeed help to feed a hungry world, and most uniquely, Montana is a one-stop wheat shopping center for foreign buyers. Montana is the only place that has commercial production of five of the six major classes of wheat grown in the U.S. – Hard Red Winter (HRW), Hard Red Spring (HRS), Hard White (HW), Durum, and Soft White (SW). The one we do not grow is Soft Red Winter (SRW). In the U.S. wheat varieties are classified either as “winter” or “spring” wheat, depending on the season each is planted. Winter varieties are sown in the fall and are usually established before the cold weather arrives. Winter wheat goes dormant over the winter and then re-emerges in the spring, turning the fields green early on! Spring varieties are sown in the spring. Both winter and spring wheat are harvested in the fall.

IN THIS ISSUE......

*A Year’s Journey with Wheat  *Wheat Processing  *Milling History  *Safety  *Careers  *Nutrition  *Know your Farmer
With the wheat out of the fields, farmers are busy marketing and selling the wheat that they have left, and are also seeking contracts for selling next year’s wheat crops. The wheat kernels are now in milling plants being made into foods that we can eat such as bran, flour, and germ.

The bales of wheat straw that were left over after threshing have many purposes including animal food and bedding, cat litter, birdseed and bismark, paper and packaging, house construction, and straw hats!

Straw that was not baled is left in the field to add organic matter to the soil.

Grains begin to ripen during the hot months of July and August. Farmers check their wheat often for development and maturity. Harvest begins as soon as the grains open, and the moisture content is 13.5%. It is all hands on deck when the grain is ripe, farmers try to harvest their grain at exact times, when the grain is all its prime. Long dry summer days are perfect for harvesting wheat in Montana because the grains stay dry. If it rains harvest is postponed until the wheat dries again. The shafts are cut and threshed. This process knocks the wheat seeds, called wheat berries, into a bin on the combine. The long seedless shafts are left lying on the ground. Many farmers then have to cut the tails off shafts called wheat straw. Examples of wheat straw uses are at left. The harvested grain is taken to the elevator. Elevators buy local grain from farmers and sell the wheat globally. At the elevator, grain is loaded into rail cars by a shuttle loader for shipment to processing centers and often times to sea ports for shipping to other countries. A full grain train has 110 rail cars full of wheat. It takes the shuttle loader 24 hours to fill 110 cars. Ships transport the grain to other countries. Montana grain is highly desirable in the Pacific Rim countries. A full ship load of grain is 3 train loads of grain, or 330 cars full! Not all grain is shipped and sold at harvest, marketing wheat occurs all year long. If the rainy weather continues at harvest time, wheat berries can sprout on the shaft, essentially ruining the whole crop.

Bread is the outer layer of the wheat kernel, often used for animal food. It also makes a nutritious addition to baked goods, because it is a good source of fiber and is high in B vitamins, protein, and iron.

Shorts consist of the fine bran particles, germ and a small portion of floury endosperm particles as separated in the usual processes of commercial flour milling.

Clear flour is the by-product of straight flour that remains after patent flour is removed. Clear flour is a by-product of straight flour. The extraction rate is the amount of flour obtained from wheat after milling, when the bran and germ are removed, leaving the endosperm, which contains most of the protein and carbohydrates. For example, based on 100 pounds of wheat, approximately 73 pounds of flour remains after extraction, the other 28 pounds is used for feed. Firm milling removes 2 percent of the remaining flour is straight flour. Straight flour is used to make patent, clear, and low-grade flours.

Patent Flour is the purest and highest-quality commercial wheat flour available. Patent flour is made from the center portion of the endosperm. Patent flour contains 60 to 70 percent straight flour. Patent flour is not short. Patent flour is made from the center portion of the endosperm. Patent flour contains 60 to 70 percent straight flour.

How Flour is Milled

Flour is milled from the grain. The grain is cleaned, washed, and sized. The grain is then ground into flour. The flour is then sifted and milled again. The flour is then packaged and shipped. The flour is then used in the bakery. The flour is then used in the kitchen. The flour is then used in the home. The flour is then used in the restaurant. The flour is then used in the store. The flour is then used in the bakery. The flour is then used in the kitchen. The flour is then used in the home. The flour is then used in the restaurant. The flour is then used in the store. The flour is then used in the bakery. The flour is then used in the kitchen. The flour is then used in the home. The flour is then used in the restaurant. The flour is then used in the store.
SAFETY!

Grain, which is usually stored in a silo, is often an underestimated danger. Anyone can become trapped and suffocate under the shifting surface of stored grain or in flowing grain that is being sucked out of the silo, truck, or pile! Grain dust is also highly explosive! An average of 10.6 agricultural grain dust explosions are reported per year in the U.S. resulting in 1.6 deaths, 12.6 injuries and millions of dollars in damages (Schoeff, 2006).

To prevent injuries from grain entrapment, never enter a grain storage container, rail car, or silo and do not ride in grain wagons. In addition, if someone is trapped in a silo, never enter to help — instead call 911 or your local emergency number immediately.

CAREERS!

Dustin was raised on a cow/calf ranch in remote eastern Oregon, driving 40 miles each way to attend high school. After high school he attended college at the University of Idaho, Moscow, studying ag business and animal sciences. Dustin is extremely happy with his education, noting that the University of Idaho’s focus on trading, commodities and the chance to work with the Chicago Board of Trade during college were instrumental in his success after college. Dustin began his internships in his sophomore year of college with Gavilon in Omaha, Nebraska. Gavilon is a commodity management firm. Dustin received an internship the next year with Columbia Grain at their office in Lewiston, Idaho. After graduating with a degree in ag business Dustin was employed with Columbia Grain, a company he is very proud to work for. His job with Columbia Grain began with marketing wheat, which took him to Minneapolis where he met with large companies such as General Mills, ConAgra, Vitera, and other flour milling associations. Dustin has since moved into marketing pulse crops like peas and lentils. Pulse crops are also marketed all over the world, taking Dustin to a nutrition conference in Chicago and to a meeting with buyers in Dubai! Dustin’s excellent advice to students is, “Fit everything you possibly can into your college schedule, from sports to service. The more you do, the brighter your future!”

Dustin Kreger is a Grain Merchant for Columbia Grain in Great Falls, Montana. Columbia Grain is owned by the Marubeni Company, which has offices all over the world. Columbia Grain functions as a commodity marketing and export company in the northern tier of the U.S., serving Montana, North Dakota, Washington, Oregon, and Idaho. Their shipping facility is in Portland, Oregon and can be seen inside this publication, July - October section.

INTERNET RESOURCES


Montana Education Standards for this publication can be found by visiting: agr.mt.gov

Want to learn more about Montana wheat and wheat nutrition? Visit: http://agr.mt.gov/agr/Programs/AgClassroom

Photo Credits

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Montana Department of Agriculture

NUTRITION

Once it is consumed, wheat energizes the body, delivering essential nutrients to its cells. Grain products, whole or enriched, are a premier source of energy providing carbohydrates and a good source of fiber, the major B vitamins (thiamin, niacin and folic acid) and iron.

MyPlate Dietary Guidelines recommend Americans consume six ounces of grain foods such as bread, cereal, rice and pasta each day (depending on age, gender and activity level), with at least half of them coming from whole grain foods.

WHOLE GRAINS AND REFINED GRAINS

Whole grains contain the entire grain kernel: bran, germ, and endosperm. Examples of whole grains are: whole wheat flour, oatmeal, bulgur, and brown rice. At least half of your daily grain servings should be whole grains.

Refined grains have been milled, a process that removes the bran and germ. This is done to give grains a finer texture and improve their shelf life, but it also removes dietary fiber, iron, and many B vitamins. Examples of refined grains are white flour, white bread, and white rice. Source: MyPlate.gov

KNOW YOUR WHEAT FARMER

Matson Farms is located in the Northern Tier of the Golden Triangle in Montana. This area is renowned for its ability to produce high quality, whole wheat grains that have remarkably high protein content.

Since 1911 our farm has been 100% family owned and operated. Our vision is to remain a family farm of sufficient size and scope for inter-generational transfer that provides a comfortable living and working atmosphere for owners and employees.

We also recognize and accept our responsibility both socially and morally to our neighbors, our community, and our environment.