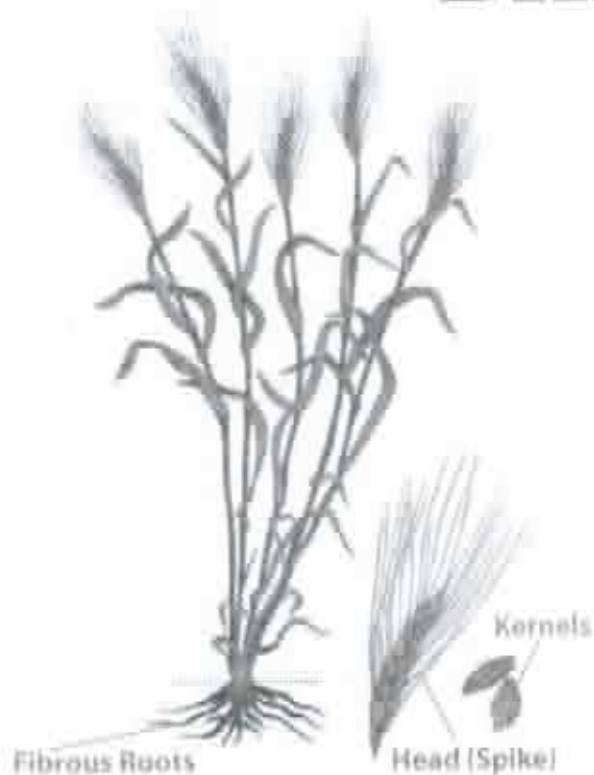


BARLEY

Hordeum

BARLEY



Top Ten Minnesota Counties Producing Barley in 2007:
Marshall, Roseau, Polk, Permeburg, Kittson,
Stearns, Norman, Red Lake, Todd and Otter Tail

On The Front

A. Barley Plant

Barley is an annual grass plant. It can grow to a height of 2 to 3 feet and has long, narrow leaves which are typical of grass plants. These leaves are green and turn brown late in the season as the crop matures.

B. Head (Spike)

The head, or spike, of the barley plant is the portion which contains the kernels (seeds). There are two types of barley that are of economic importance to the United States: two-row barley and six-row barley. The difference between the two is very simple. Two-row barley has two vertical rows of kernels opposite one another. One head typically yields 15 to 30 individual kernels. Whereas six-row barley has six vertical rows of kernels of 4 to 10 kernels in each row and 25 to 60 kernels per head.

C. Kernels (Seed)

Individual kernels of barley are fairly small. There are many different colors of barley: red, purple, black, blue and white. Only blue and white varieties are extensively grown and white varieties dominate in Minnesota. There are 48 pounds of barley in one bushel.

Barley

Barley is grown for three major uses: livestock feed, malting and human consumption. The amount of barley used as human food is small and limited to use in soups and stews and some types of flour. The kernel must be "pearled" to remove the tightly attached hulls. As livestock feed, barley is very comparable to corn. Farmers usually use whichever is cheaper and most readily available to them.

In 2007, Minnesota ranked sixth nationally in barley production. The majority of the barley grown in Minnesota is malting barley. It is used in the processing of beer and other malted beverages. The by-products, or leftover malt grain, is reused as feed for livestock.

Planting

Barley generally grows best in cooler, semi-arid areas of the country. In Minnesota, it is planted in the month of April using a piece of equipment called a grain drill. The machine works by cutting a trench in the soil so the seed may drop in one at a time. The soil is then pressed back over the seed. Seeds are usually planted 1 to 2 inches deep at a rate of approximately 100 pounds per acre. In states south of Iowa, seeds are planted in the fall of the year rather than the spring to take advantage of the cooler spring temperatures.

Growth and Development

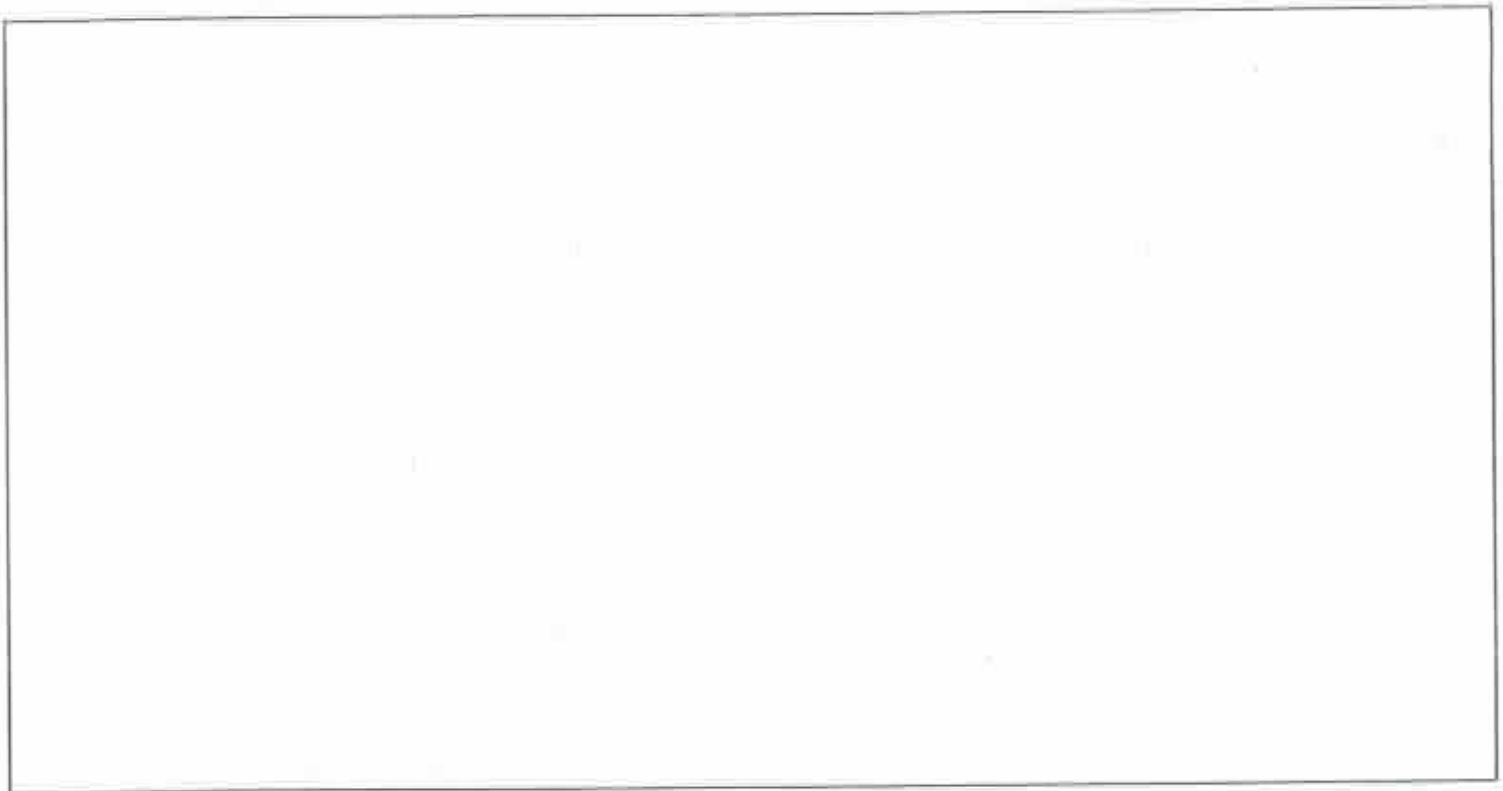
The minimum temperature for germination of barley is 35° F. During germination, the primary root develops moving downward as the first shoot leaf grows in an upward direction. Once the seedling emerges through the topsoil the first leaf appears. When the seedling has about three leaves, tillers (secondary stems) begin to grow from the base of the barley plant. These shoots are an important method of adapting to changing environmental conditions. Pollination occurs in the central part of the head, moving outward to the base and tip. This occurs six to seven weeks after crop emergence. Crop stress (lack of water, high temperatures, disease) will decrease the number of kernels that form and reduce yield. Once pollination has occurred the kernels begin to develop.

Harvest

The barley crop is harvested once the crop is mature and dry. A combine is used to cut, separate and clean the grain where it is then moved from the field to large storage bins or transported to be marketed. An acre of barley typically yields 45 - 60 bushels.

BARLEY

1. In the box provided, draw a barley plant, head, and kernels.



2. What are the three major uses of barley?
3. Where was Minnesota ranked in barley production in 2007?
4. What is the majority of barley grown in Minnesota used for?
5. Where does barley grow best?
6. What happens during germination?
7. When is the barley crop harvested?
8. Using your map of Minnesota counties, create a symbol for barley and mark the top 10 counties that produced barley in 2007.