



Image from: [Some early relatives of modern wheat... in The Encyclopedia of Seeds: Science, Technology and Uses](#)

Summary Article: **milling**  
From *The Columbia Encyclopedia*

mechanical grinding of wheat or other grains to produce flour. Milling separates the fine, mealy parts of grain from the fibrous bran covering. In prehistoric times grain was crushed between two flat stones. Later a stone with a rounded end was used to grind grain in a cup-shaped stone; this led to the development of the mortar and pestle. The more advanced peoples began to use the quern, a primitive mill in which the grain is placed on a flat, circular lower millstone and ground by revolving a similar upper millstone to which a handle is attached. Such a device, operated at first by hand, was adapted to the use of animal, water, or wind power. The Greeks probably used water power c.450 B.C.; the Romans used gears to connect several sets of millstones with one waterwheel. Windmills are said to have become widespread in Europe following the Crusades and were probably introduced from Asia Minor. The Industrial Revolution initiated the use of steam power and of transportation facilities that resulted in the rise of large-scale milling centers. Machinery was improved, with metal replacing wood and steel rollers replacing millstones. The invention of the middlings purifier, by which, after preliminary grinding, the flour is separated from bran particles by strong air currents, improved the quality of flour prepared from hard spring wheat and, in the United States, led to the development of great milling centers in the spring-wheat areas of Minnesota (notably Minneapolis), the Dakotas, and Montana. In Europe modern rolling methods were developed during the 19th cent. in Hungary, and Budapest became one of the chief milling centers. In modern processing, grain is usually blended, cleaned, scrubbed to remove wheat hairs, tempered by heat and moisture (to prevent brittleness in the bran and consequent pulverization resulting in speckled flour), passed through sets of steel rolls with successively finer corrugations, and sifted after each grinding. It is then blown in a middlings purifier, ground between sets of smooth rolls, and bolted through a very fine mesh sieve. The entire, highly automated process takes about an hour and comprises some 180 operations. The term *milling* is applied also to the processing of other materials, e.g., soap, textiles, and metals; processing establishments are often called mills, e.g., lumber mill or sawmill, cotton mill, and sugar mill.

See M.; M. Zimilias, *Early American Mills* (1973).

**APA**

Chicago

Harvard

MLA

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milling. (2018). In P. Lagasse, & Columbia University, *The Columbia encyclopedia* (8th ed.). New York, NY: Columbia University Press. Retrieved from <https://search.credoreference.com/content/topic/milling>

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## APA

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## Harvard

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## MLA

"milling." *The Columbia Encyclopedia*, Paul Lagasse, and Columbia University, Columbia University Press, 8th edition, 2018. *Credo Reference*, <https://search.credoreference.com/content/topic/milling>. Accessed 18 Sep. 2019.