



Contents lists available at [Egyptian Knowledge Bank](http://Egyptian Knowledge Bank)

Microbial Biosystems

Journal homepage: <http://mb.journals.ekb.eg/>



## The ancient Egyptian bread and fermentation

Mohamed EA

Botany Department, Faculty of Science, Suez Canal University, Ismailia 41522, Egypt.



Published by Arab Society for Fungal Conservation

Ancient Egyptians depended chiefly on bread in their diet and it was consumed by poor and wealthy people at all meals. Ancient Egyptian bread was variable in texture and structure as Egyptians used many cereal grains especially, wheat grains in bread production, wheat grains containing vitamins, proteins, minerals and starch and it had an important role in all sides of ancient Egyptians life.

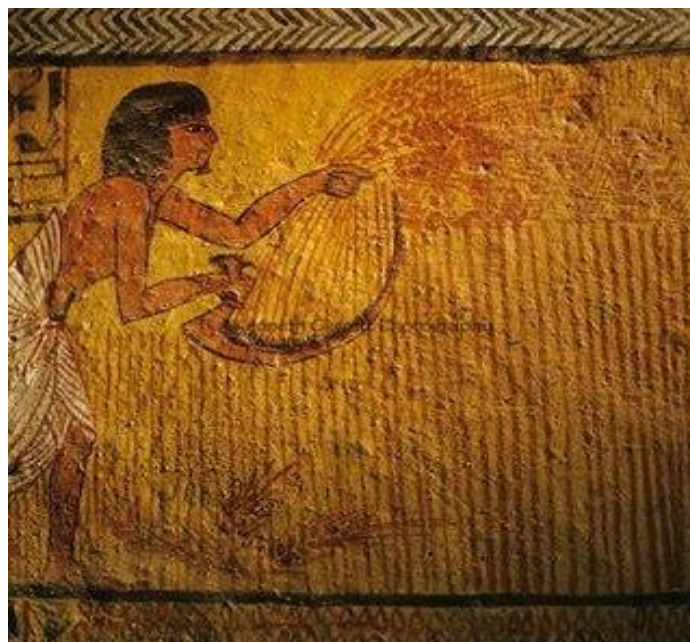


Above figure showing flat circular basketry dish of woven palm leaf with two loaves of unleavened bread. One piece of bread has hand imprints on both sides of the loaf, probably left by the baker. Found in a New Kingdom site in Thebes. ©TRUSTEES OF THE BRITISH MUSEUM

Bread production process had many stages, first farmers gathered the grain stalks, packed them in heaps, used cattle to separate grains from husks, then kernels were treading out of husks, followed by removing straw away from grains by throwing into the air and then farmers used sieves to remove the remain chaffs from grains.



Above figure showing the large figure of the king, at the left, and the smaller figure of a young woman offering bread loaves appear to be participating in two different scenes in the Metropolitan Museum of Art.



Ancient Egyptian gathered grains stalk © Kenneth Garrett

\* Corresponding author

E-mail address: [esraahmed11880@gmail.com](mailto:esraahmed11880@gmail.com) (Esraa Ahmed Mohamed)



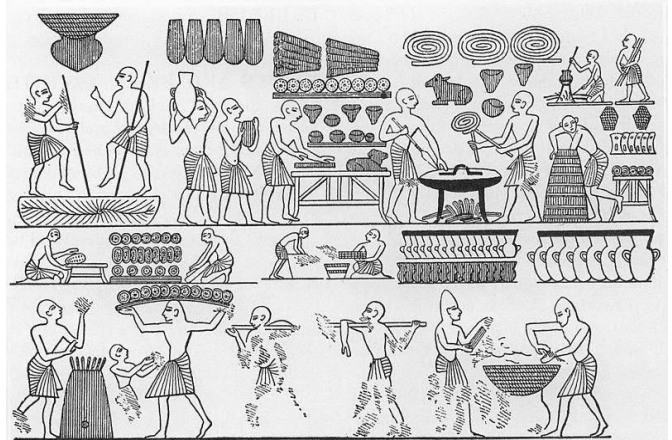


A painting detail in the tomb of Senet showing bread making.

As seen in the scenes in the tomb of Senet and similar drawings, the most depicted part of the recipe was the process of processing the grain. With a heavier husk, the process of removing it without breaking the grain was long and challenging. In emmer, the chaff does not come off through threshing, but comes in spikelets, which need to be removed by moistening and pounding with a pestle to avoid crushing the grains inside. It was then dried in the sun, winnowed and sieved, and finally milled on a saddle quern. Once that was done, the milling of the grain presented also some difficulties. Egypt's Middle Kingdom didn't have mills, and flour was mostly produced by hand by the women. The result was coarse flour, which had ash, pieces of husk, and even sand. It was sifted several times, but the result wasn't optimal.

Secondly, ancient Egyptians turned obtained grains into flour by putting grains in bowls attached with pestle producing coarse flour and to make it finer, grains were

put between two heavy stones. To make bread, there are some ingredients added to form dough that baked later by fire or by slapping them on clay oven wall into bread and the most common type of bread was made only from water and flour.



A depiction of the royal bakery from an engraving in the tomb of Ramesses III in the Valley of the Kings. There are many types of loaves, including ones that are shaped like animals (20<sup>th</sup> dynasty).

The use of yeast to leaven bread by the production of carbon dioxide was developed in Egypt. The ancient Egyptians extended their bread-making technology to the production of an acidic beer called boza or boozah from a lightly baked "loaf" of germinated grain. Fermentation was a procedure of bread making as water and flour mixture was left in a warm day for long time to be fermented because of natural yeasts that found in flour and milk that was added as a flavor.

### Further readings

- Abdel-Azeem AM (2014) A good candidate for International Fungus Day. *Fung Conserv* 1(4): 19-20.  
 Abdel-Azeem AM (2017) Egypt's national fungus day. *Micro Biosys* 2 (1): 21-25.  
 Cavalier D, Patric EM, Daniel LH (2003) Evidence for *Saccharomyces cerevisiae* fermentation in ancient wine. *J Mol Evol* 57:226-S232.  
 Erman A (1971) *Life in Ancient Egypt*. New York: 166.  
 Leek FF (1972) Further studies concerning ancient Egyptian bread. *J Egypt Archaeol* 1972(59):199-204.

### ARTICLE INFO

#### Article history

Received 12 June 2020

Received revised 26 June 2020

Accepted 29 June 2020

Available online 30 June 2020

© Mohamed 2020

Corresponding Editor:

Abdel-Azeem MA, Balbool BA