

Research Article

# Organic Farming in Ancient Egypt

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## Abstract

Organic farming in ancient Egypt was a system that relied on ecosystem management rather than external agricultural inputs. The ancient Egyptians used natural resources, such as the Nile River, to cultivate their crops using organic methods. They relied on manures for food production and horses and oxen for farm power. The agricultural way of life in ancient Egypt was influenced by religious beliefs and the use of simple farming tools like hoes, pitchforks, sieves, sickles, shadufs, and hand plows. Ancient Egyptian religious beliefs emphasized the role of deities in life and the afterlife, particularly in agriculture. Deities such as Hapy, Osiris, Isis, Nipri, and Min were connected to agriculture and were used to guard and celebrate crops. Hapy, the god of the flood, connected the myth of Osiris' resurrection to the idea of plenty, flooding, and the energy of rivers. Ancient Egyptians used various methods for farming, including plowing, hoeing, sowing, and irrigating the land. They used oxen and cows to plough and break up silt blocks, and used animal dung for organic fertilization. Manure, rich in nutrients and heat, was used to improve the soil's fertility. A special nitrogen fertilizer was also used to increase the land's fertility. Farmers hoed the land with an ax or light hoe if flood waters remained. Sowing involved workers carrying seed pods and releasing them, with sheep trampled and left in the earth's folds. The Nile flood transformed the lands into fertile soil, making agriculture the first resource for Egypt's eternal civilization. The spiritual and religious side of ancient Egyptians involved prayers and protection of deities related to fertility, growth, and protection. Simple farming tools like hoes, pitchforks, sieves, sickles, hand plows, and shaduf were used for these tasks.

## Keywords

Deities, Farming, Fertilization, Livestock, Organic, Tools, Ancient Egypt

## 1. Introduction

Organic farming is a modern term that has been defined by agricultural specialists recently, as it depends on an agricultural system that relies on the use of natural biological materials in agriculture instead of chemical fertilizers, pesticides, and control materials that are harmful to public health. Did the ancient Egyptians know organic farming? How did the an-

cient Egyptians record organic farming methods? What tools did the ancient Egyptians use in organic farming?

The ancient Egyptian culture was significantly impacted by the climate and topography of the region. Agriculture was the fertile resource that earned Egypt its eternal civilization, which has been nurtured since the prehistoric era. <sup>1</sup> The

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purpose of the research is highlighting natural factors and organic methods of farming in ancient Egypt. The scenes that were discovered on tomb walls and temples provided us with a huge heritage related to the agricultural life of Egypt. Many of the tombs contain tools and plants that the ancient Egyptians used in their private or public life and intended to use in the afterlife as well.<sup>2</sup> Egypt has used the Nile water and was following the irrigation system of the basin, which continued from the dawn of history until the nineteenth century. It is a system that was consistent with the conditions of the river and suitable for the country's climate. If the flood had been early or late, this system would not have been easy to implement and would not have been suitable for the cultivation of winter or summer yields.<sup>3</sup> One benefit of basin irrigation was that it supplied the soil with organic matter- and phosphate-rich silt, negating the need for fertilizer.

## 2. Definition of Organic Farming

It's a method that includes raising animals in their native habitats and cultivating plants. One of its modern definitions is authoritative sources attempt to develop integrated, compassionate, environmentally and financially viable production systems that optimize the use of renewable resources derived from farms and the control of ecological and biological processes and interactions in order to provide adequate nutrition for crops, livestock, and people, as well as protection against pests and diseases and a fair return on investment in human and other resources.<sup>4</sup>

## 3. Land Fertility

The fertile land of ancient Egypt was crucial to agriculture and civilization. It connected with the regular flooding of the Nile and the sun.<sup>5</sup> There were three seasons in the ancient Egyptian agricultural year, each lasting four months.<sup>6</sup>  $\text{𓆎} \text{𓆏} \text{𓆐}$ , often referred to as the flooding season, was the initial one of these seasons.<sup>7</sup> There was a silt layer that prevented farmers from having to do any significant soil preparation after the flood subsided. They removed harmful salts from the soil and successfully fertilized it with fresh silts. Then, the season known as  $\text{𓆑} \text{𓆒}$  or planting season (PTT) began when the ground was prepared for planting. At last, the harvest season was referred to  $\text{𓆓} \text{𓆔}$ .<sup>8</sup>

The Nile River supplied the land with silt and water, as it was an artery for transportation and interconnection between the inhabitants of the valley. The ancient Egyptian called their country  $\text{𓆕} \text{𓆖}$  that meaning black land as a reference to the rich black soil.<sup>9</sup>

The complex irrigation system made use of the Nile flood and the resulting deposits of rich black mud to cultivate as much land as possible along the Nile's banks. To split the land into sections of different sizes, they constructed earth dikes. When canals were used to direct the water into those places<sup>10</sup>;

Water was held there until the deposits of black silt were made. Any leftover water in the river was drained away from these compartments. Crops could be sown in the remaining fertile soil by plowing it.<sup>11</sup>

## 4. Deities of Agriculture in Ancient Egypt

The religious beliefs of the ancient Egyptians held that all that occurred in life and the afterlife was the result of the deities.<sup>12</sup> For the ancient Egyptians, one of the most significant activities was agriculture.<sup>13</sup> Several deities who were connected to it had representations of them alongside its sceneries on the walls of their tombs from the New Kingdom in order to aid them in it. The purpose of these deities was to guard and celebrate the crop, and they were particularly significant in agricultural life during harvest season. These are some examples of them:

### 4.1. Hapy Deity of the Flood

He connected the myth of Osiris' resurrection to the idea of plenty, the occurrence of flooding, and the energy of the rivers that revitalized and nourished the land.<sup>14</sup> The annual flood was known as "The arrival of Hapy" because the ancient Egyptians personified the flooding by creating Hapy, who resided in the caves of the Nile cataract and was ruled by Khnum.<sup>15</sup> Egyptian farmers would visit his shrine at Elephantine and Aswan each year in order to offer prayers for a sufficient flood and a new supply of silt.<sup>16</sup>



**Figure 1.** Hapy deity of Upper and Lower Egypt. Temple of Ramesses II at Abu-Simbel. After: Ritner, *the Libyan Anarchy: Inscriptions from Egypt's Third Intermediate Period*, p517.

### 4.2. Osiris (Wsir) Deity of the Vegetation

Osiris was revered as the god of agriculture and vegetation. Subsequently, he evolved into the god of resurrection, symbolic of the inundation of the Nile. As a water deity, Osiris represented the falling Nile during the winter season. Nevertheless, he was the reason for Egypt's fertility, which was symbolized by his wife Isis, who assisted him in passing down

to his people the knowledge of how to make farming tools and manage the Nile's water supply.<sup>17</sup>

### 4.3. Isis (Ast) Deity of the Flood

Every year, Isis, the magnificent lady-mistress of the two Egyptian realms, brought life back to the Nile.<sup>18</sup> The story of Osiris's resurrection most likely originated with the Nile flood, which appeared to be Osiris' death and was reincarnated as living water as a result of Isis's tears.<sup>19</sup> Priests of Isis performed the inundation festival on the banks of the Nile using rituals that date back to prehistoric times.<sup>20</sup>



**Figure 2.** Bronze statue shows Isis suckling her son Horus. Late period, Berlin Museum. After: Posener G., *A Dictionary of Egyptian Civilization*, London, 1962, p 24.<sup>21</sup>

### 4.4. Nipri (Npr) Deity of the Grain

He was considered the god of grain or the god of the harvest.<sup>22</sup> we see him crowned with ears of wheat and carrying two bundles of wheat in his hands. Nipri appears in the form of a plump man with his chest hanging down, with grains drawn on his body, and he resembles the god Hapi, who is mistakenly said to be the god of the Nile. Nipri was connected to two different festivals. One of them took place during the first month of the winter, when the field is being prepared for farming.<sup>23</sup> The other celebration was called "The Harvest Festival" and it took place on Nipri's birthday, the first day of the harvest season.

### 4.5. Min (Mn) Deity of Fertility

One of the first Egyptian deities in ancient Egypt was called Min.<sup>24</sup> According to a myth from the 11th Dynasty describes him as a vegetation deity who makes the earth rich and brings rain to the desert.<sup>25</sup> He was performing the dual roles of vegetation and rain-bearer to the desolate area, as the fertility deity. Min's body was black, which was a symbol of life and fertility and the color of the Nile silt that was used to grow crops.<sup>26</sup> He connected with deities Nipri and Rennutet as deities of harvest in harvest festival.<sup>27</sup>



**Figure 3.** Bronze figurine of Min, Late Period, Egyptian Museum. After: Wilkinson, Ellis-Barrett, L. (2004). *The Complete Gods and Goddesses of Ancient Egypt* 20045 Richard H. Wilkinson. *The Complete Gods and Goddesses of Ancient Egypt*. London: Thames & Hudson 2003. 256 pp.<sup>28</sup>

## 5. Farming Tools

Ancient Egyptians had simple farming tools like hoes, pitchforks, sieves and sickles, made out of wood and stone. They had both hand ploughs and ploughs pulled by oxen.<sup>29</sup>

### 5.1. Hand Plow

A wood-and-bronze plow was the kind utilized. It displays a long wooden handle with two wooden blades at the bottom that are bronze-tipped to aid in turning the dirt.<sup>30</sup>



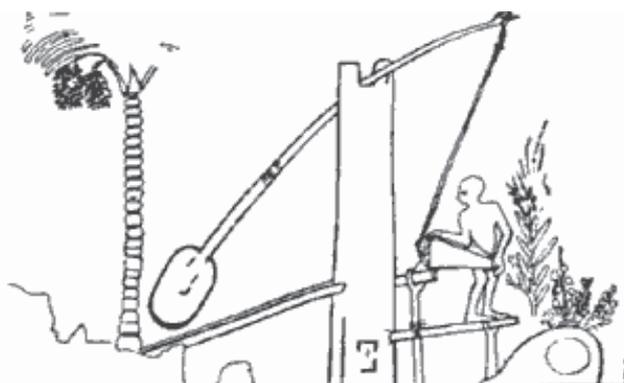
**Figure 4.** Hand plow (hoe), Tomb at Ti at Saqqara, ca. 2400 BCE. After: Singer E., Holmyard E. J., & Hall, A. R., *A History of Technology*, Oxford University Press, London, 1954, p375.<sup>31</sup>

### 5.2. Pitchfork and Sieve

The stalks of cereal crops were bound and transported to a threshing place after harvest. Donkeys had plowed through and trampled this harvest. Using wooden pitchforks, women separated the grain from the chaff. The larger chaff pieces were then separated from the grain using sieves made of reeds and palm leaves.<sup>32</sup>

### 5.3. Shaduf

An irrigation tool called a shaduf was utilized to supply the crops with water from the Nile. It is still in use in India and Egypt today. The shaduf is made up of a long pole with a weight attached to one end and a bucket-like device attached to the other.<sup>33</sup> The pole, which resembles a seesaw, is balanced across two upright wooden poles. Water is brought to the bucket by pulling the rope from its long end. When the bucket is filled, the weight at the other end of the pole lifts it.<sup>34</sup>



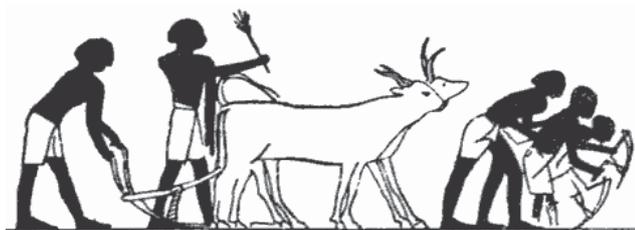
**Figure 5.** A shaduf, From a Tomb at Thebes, ca. 1500 BCE. After: Singer E., Holmyard E. J., & Hall, A. R., 1954.

## 6. Livestock

The ancient Egyptian used domestic animals in the field, in order to help him in work and speed up his achievement, as he was governed by little power for agriculture<sup>35</sup>, and these are the months in which the Nile and its floods are confined, which made the ancient Egyptian think about taming animals and exploiting them in fieldwork.

### 6.1. Bulls and Their Use in Agriculture

Bulls in ancient Egypt were of two types: the African zebu with long horns, and the second type with short horns, and the African type with long horns were not strong enough.<sup>36</sup> The bulls were used to pull the ploughs that prepared the land for cultivation and to aerate and stir it.<sup>37</sup>



**Figure 6.** Bulls in Plowing and hoeing; from a tomb at Beni Hasan, ca. 1900 BCE. After: Singer E., Holmyard E. J., & Hall, A. R., 1954.

### 6.2. Sheep and Goats

It is known that the ancient Egyptian sanctified the sheep, as they represented the god Amun in his animal form, and he also used it in the ancient Egyptian language as an appropriation of the word respect.<sup>38</sup>

As for goats, they have been widespread in Egypt since ancient times, and we see goats on the drawings of tombs climbing mountains and trees.<sup>39</sup>

### 6.3. Pig

The pig was found in Egypt since predynastic period as in Hierakonpolis. His name was attached with the name of king senefru more times.<sup>40</sup>

The Egyptians were reluctant to buy it, and it was soiled by one of the Bedouin tribes on the edge of the desert.

### 6.4. Birds

Because of the long flood season, the ancient Egyptian farmer deliberately stored the crops. Besides, he had to provide the protein that would help him to live in the long flood months. He raised birds, especially domestic birds. Among the most famous of these birds are geese, which decorated Egyptian tombs with their exquisite shapes. Besides ducks, chickens and other birds, which were slaughtered by the Egyptian farmer on holidays and occasions. They also benefited from their eggs.<sup>41</sup>

## 7. Land Preparation

The farmer was plowing the land and breaking up the large silt blocks on it, and he used oxen and cows for this purpose.<sup>42</sup> We see on the walls of the tombs of "Bani Hassan" from the era of the Middle Kingdom, a picture representing the plowing and hoeing of the land, while the workers exchanged conversations with each other while working as their current Egyptian successors. There are other pictures on one of the walls of the tomb of "Nakht" in Thebes.



**Figure 7.** A tomb scene, c. 1400 BC, showing stages in plowing (right) and preparing the ground, followed by the scattering of the seed. A worker (top left) takes a drink from a water skin suspended in a tree. (Courtesy The Manchester Museum, University of Manchester).

## 7.1. Organic Fertilization

The people were using animal dung in the manufacture of municipal fertilizer, which benefits the growth of plants and provides nutrients and helps the abundance of the land crop. Manure is the best type of manure because of its richness, abundance and heat. It benefits the weak land and helps it to grow its fruits. It can be said that the dung of all animals is beneficial to the land. The ancient Egyptians used a special nitrogen fertilizer, which they poured into the land to be fertilized, so that it became more fertile, and that its use was limited to some greenery.

## 7.2. Hoeing in Agriculture

The farmer hoes the land with an ax, and if the flood waters remain for a long time and the land does not dry out completely, he suffices in this case with a light hoe.<sup>43</sup>

## 7.3. Sowing in Agriculture

Then the sowing process begins, and workers carry seed pods in their hands or hang them on their shoulders and spread love. Then they release the sheep, which trample them with their feet, and leave them in the folds of the earth.<sup>44</sup>

## 8. Conclusion

Ancient Egyptian cultivation and stability were aided by the land's natural features. The Nile flood turned lands to fertile soil which qualifying it for organic farming. Agriculture was the first resource that earned Egypt its eternal civilization, which has been nurtured since the prehistoric era. The spiritual and religious side of ancient Egyptians made them praying and asking help, protection of deities who related to fertility, growth and protection as Hapi, Osiris, Isis, Nipri and others. Ancient Egyptians used simple farming tools for preparing the land like hoes, pitchforks, sieves, sickles, hand plow and shaduf for helping them plowing, hoeing, sowing and irrigating the land. They depend on organic fertilization that animal dung is used in the manufacture of municipal fertilizer, which benefits the growth of plants and provides nutrients and helps the abundance of the land crop. They used domestic animals in the field to help them in work and speed up their achievement like bull, sheep, goat. All of these organic and primitive methods which were used by the ancient Egyptians in farming made their life, plants pure and organic.

## Abbreviations

JEA Journal of Egyptian Archeology

## Conflicts of Interest

The authors declare no conflicts of interest.

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