In Egypt, boosting agricultural yields is vital to ensuring food security and economic stability. However, there are many challenges facing the progress of agriculture, such as water scarcity in some places, the inability of farmers to cultivate and care for large areas of land at the same time, and also the lack of experience of most farmers in using modern irrigation methods.

The use of traditional farming methods hinders agricultural progress. However, through innovations such as

With precision agriculture, biotechnology and the use of modern irrigation methods such as drip irrigation, Egypt aims to overcome these obstacles, paving the way for a more resilient and productive agricultural sector.

Therefore, there are many previous solutions to solve this problem, such as:

The first robot we will talk about is manufactured by Farm bot, and it is a robot capable of cultivating land with an area of 18 square meters. This robot can work completely autonomously, performing various tasks such as planting seeds, irrigation, eliminating harmful weeds, and controlling the appropriate amount of water for each plant.

But it has some disadvantages, such as the high cost, the maximum area it can cover is 18 metres, and it irrigate from the top of the plant, so it only grows ground plants and cannot plant trees or even water them.

The second robot is Avo, produced by Eco Robotics. One of the features of the robot is that it is self-driving, can be controlled by phone, charges itself using solar energy, and manages energy consumption independently. The best use of the robot is in agricultural lands of large areas, and its main ability lies in spraying pesticides with high efficiency to obtain healthy fruits that are less affected by chemicals. The robot runs on solar energy for 7 hours. The robot has the ability to survey 10 hectares of land within 24 hours. It weighs 750 kilograms.

But it also faces disadvantages, such as its very heavy weight and requires constant maintenance. It is also relatively slow and unable to send soil data and fruit quality. Rather, it only uses irrigation and sprays pesticides.

The third robot is Ropion, manufactured by Octinion. The robot has the ability to

Identify and pick fresh fruits. Its most important uses are in picking strawberries. The robot has the ability to distinguish images and take new photos of fruits. It can be controlled by a phone application and also distinguishes the quality of the plant using artificial intelligence.

It has defects, such as that it cannot determine the quality of the fruits of any plant except strawberries, and also that its harvesting method is not suitable for any plant except strawberries.