

Robots in plant Factory.

Abstract.

We focus on safety way that can safe all foods of infections so we saw that the vertical farming is the best way as we control everything by some robots which will take care of all plants , there are many companies that make this idea .

1.Iron Ox created a fully autonomous farm in San Carlos, California. The hydroponic indoor farm relies on two robots to plant, care for and harvest produce.

One of the robots is 1,000 pounds and about the size of a car. It picks up the trays of plants and transports them around the greenhouse. A second machine, a robotic arm, is responsible for all the fine manipulation tasks, like seeding and transplanting.

As a tray of plants matures, the mobile robot carries it to the processing area. Here, the robotic arm moves baby plants in densely packed trays to containers with more space. This optimizes space efficiency, because throughout their life cycle, plants are only given the room they need.

Co-founder and CEO Brandon Alexander claimed that Iron Ox is able to do the equivalent of 30 acres of outdoor farming in just a single acre on its robotic farm.

Though Iron Ox grows its produce using LED lights, in the future it hopes to build natural-light greenhouses to take advantage of the sun's free energy. Eventually, the company aims to make its non-GMO and pesticide-free produce as cheap as traditional agriculture.

[30/05, 2:14 p.m.] Badr: 2. Bowery Farming is putting an urban twist on agriculture, raising leafy greens and herbs in a high-tech warehouse a few miles outside of New York City, and celebrity chefs are starting to invest.

Using a mix of software, cameras, lights and robotics, Bowery can control precisely how plants grow. CEO and co-founder Irving Fain says chefs love the company's systems because they allow Bowery to make customized ingredients for them, giving kale a softer leaf or arugula a more peppery taste, for example.

According to Fain, 1 square foot within one of these indoor farms is 100 times more productive than 1 square foot of arable land.

CNBC took a look inside of the company's first farm in New Jersey with investor and celebrity chef Carla Hall, who is the Emmy-winning co-host of "The Chew" on ABC. "I visited the farm and tasted the food," she said. "It moved from a concept and an idea that is sustainable to deliciousness."

Today, the company grows and sells its own brand of baby kale, butterhead lettuce, arugula, mixed kales and basil. Some are available in and around New York including at Whole Foods markets, and

restaurants Craft and Temple. Both are run by Tom Colicchio, also an investor.

Fain thinks of Bowery's food as "post-organic."

"We grow with no pesticides, herbicides or insecticides, no agrochemicals at all," he said. "And we're able to grow 365 days a year, independent of weather."

Examples for Robots used in Agriculture.

The world population is expected to hit a whopping number of **9 billion** by 2050. What is expected to follow is a dramatic rise in agricultural production, doubling to meet the coming demand. This need has caused farmers to turn to robotics as a solution for the coming future.

Now you have probably heard of how people across various industries are using robotics to disrupt their respective industries. Customer service, packaging and shipping, manufacturing, and transportation are all industries soon to be hiring more robot employees.

Nevertheless, the growing population, rise of AI and new developments in robotics has caused the world of agriculture robotics to explode with innovation.

From nursery planting to shepherding and herding, here are some of the robots already in agriculture.

1-Energid Citrus Picking System



Source: [Energid](#)

Perfect for those in the citrus fruit business, the Energid systems are fast and efficient harvesting systems. The systems can pick a fruit every 2 to 3 seconds. Even more so, the robot is cheap to build, making it significantly cheaper than human labor.

2-Naio Technologies



Source: [Naio Technologies](#)

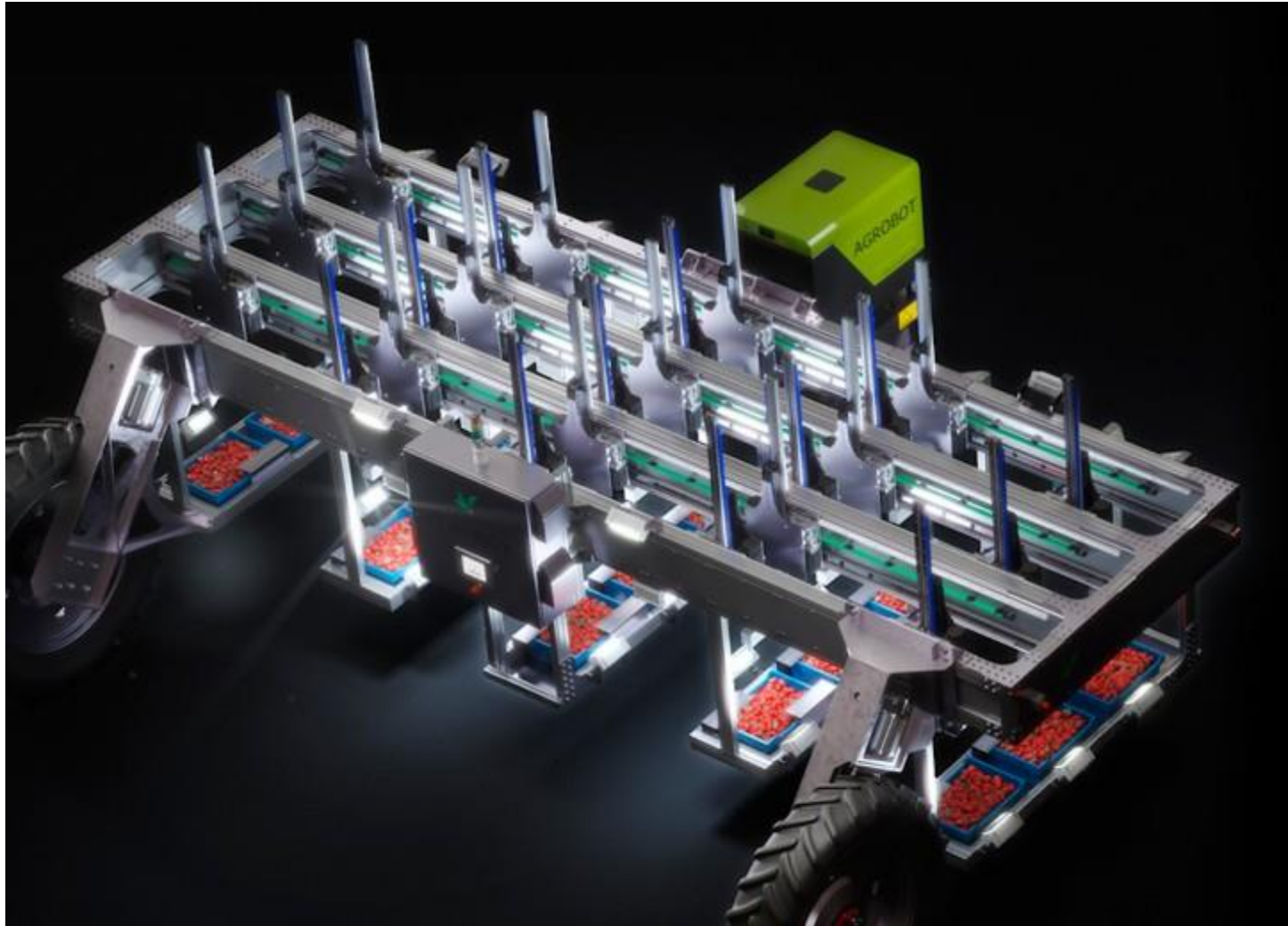
Naio Technologies have a host of robots that not only act as the perfect farm hand using techniques that preserve and protect the local environment.



Source: [Naio Technologies](#)

The robots have the ability to weed, hoe, and assist during harvesting. As [stated](#) by the team, “We want to provide all participants in the agriculture process with access to the latest technology, to help grow healthier, more abundant and environmentally friendly crops.”

3-Agrobot E-Series



Source: *Agrobot*

If you are expecting to have any strawberry fields in the near future, you may want to look into getting an Agrobot E-Series.

With its twenty-four robotic arms working wirelessly and an advanced AI system, the E-series cannot only pick strawberries really fast but it can identify the ripeness of a strawberry in the field.



Source: [Agrobot](#)