

Robo Plant

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In News: The scientists from Singapore have developed a technology to interact with Plant named “Robo Plant”.

About Robo Plant Technology

- Remote-controlled Venus flytrap “robo-plants” and crops that tell farmers when they are hit by disease could become reality after scientists developed a high-tech system for communicating with vegetation.
- Researchers in Singapore linked up plants to electrodes capable of monitoring the weak electrical pulses naturally emitted by the greenery.
- The scientists used the technology to trigger a Venus flytrap to snap its jaws shut at the push of a button on a smartphone app.
- They then attached one of its jaws to a robotic arm and got the contraption to pick up a piece of wire half a millimetre thick, and catch a small falling object.
- The technology is in its early stages, but researchers believe it could eventually be used to build advanced “plant-based robots” that can pick up a host of fragile objects which are too delicate for rigid, robotic arms.

Challenge

- Technology is in its early stages.
- Scientists can stimulate the fly trap’s jaws to slam shut but can’t yet reopen them—a process that takes 10 or more hours to happen naturally.

Significance

- By monitoring the plants’ electrical signals, we may be able to detect possible distress signals and abnormalities.

- Farmers may find out when a disease is in progress, even before full-blown symptoms appear on the crops.
- Technology could be particularly useful as crops face increasing threats from climate change.

Latest research to conduct communicating with plants

- In 2016, a Massachusetts Institute of Technology team turned spinach leaves into sensors that can send an email alert to scientists when they detect explosive materials in groundwater.
- The team embedded carbon nanotubes that emit a signal when plant roots detect nitroaromatics – compounds often found in explosives.
- The signal is then read by an infrared camera that sends out a message to the scientists.