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Sensor and Sensibility

Soil health is probably the most underrated factor for farmland. NeerX, an agri deep tech startup, wishes to focus on just this via its portable sensor Shool. “The sensor can be carried by a farmer or any agri-business owner into the field; it takes close to two seconds to analyse farm conditions, which shows up on the mobile application,” says Harsh Agrawal, founder and director. Currently, the smart sensor helps a farmer to prevent pest infestation, improve water and fertiliser retention, and improve productivity.

Along with Nikita Tiwari, Agrawal started working on the prototype for Shool as part of a college project. Later, in 2019, they finally incorporated the company and started working on an industrial design. What makes the technology the need of the hour, says Tiwari, “is that the weather is constantly changing, which means the farmer needs real-time updates that can be done through our innovation within a couple of seconds.”

Santosh Parmar, a farmer living in Balrampur, Chhattisgarh, has been using the sensor in his paddy field for the last four months. He says, “My field was facing challenges due to improper fertiliser usage. But Shool helped in narrowing down problem areas and reduced fertiliser usage by 25 percent.”

The alternative for a farmer would be soil testing in a laboratory, which takes close to two to three weeks, and by the time some of the changes can be implemented, it's already too late. Along with soil data, the application also provides

Nikita Tiwari, 26

co-founder and director

Harsh Agrawal, 27

founder and director

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HARSH AGRAWAL

details on crop foliage and crop health through satellite data. One Shool device is enough to analyse 2.5 acres. Another innovation that stands out is the fact that “a majority of our technology can be used without any internet”, says Tiwari.

The startup is currently incubated and mentored by CrAdLE, the business incubator of the Ahmedabad-based Entrepreneurship Development Institute of India. “We sell or rent the sensor, along with the application, which works on SaaS model. The cost of a sensor is close to ₹12,000 and the rent would be between ₹1,000 to ₹2,000,” says

Tiwari. The company is directly working with close to 450 farmers across Chhattisgarh, Gujarat, Maharashtra and Rajasthan. Additionally, NeerX works with 60 organisations—FPOs, state governments, research institutes—that have about 15,000 to 20,000 farmers using Shool. In the last fiscal year, the company clocked a turnover of ₹75 lakh and, in the coming year, they are targeting a revenue of ₹1.5 crore.

One major challenge the duo faced was getting people to adopt the product. Second, adds Agrawal, “The agritech sector has always been about platform businesses supplying agri inputs or creating a supply chain. It is only now, after all these years, that investors are open to looking at deep tech solutions.”

Though the startup doesn't have any external funding yet, they have received grants from the government of Gujarat, the ministry of agriculture and farmers welfare, BIRAC and CII. “Right now, we are focussing on using this grant money to make the device more affordable for farmers, by reducing its manufacturing cost,” explains Agrawal. The duo claims the sensor has been thoroughly tested and validated by Isro and the Indian Agriculture Research Institute with a reported accuracy of more than 97 percent. Says Agrawal, “We hope to continue growing, and just being in the right time and right place for agri deep tech to happen.”

—Naini Thaker

CATEGORY COORDINATORS: Naini Thaker & Samidha Jain | **JURY:** Hemendra Mathur, venture partner, Bharat Innovation Fund; Mark Kahn, managing partner, Omnivore

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