

One Gramme Sufficient To Cover 1 Acre Of Farmland

Biofertilizer that's like pocket-sized dynamite

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Pic: C Suresh Kumar

What if a bag of fertilizer could be replaced by something that fits in the palm of your hand? Thanks to an innovation by Chennai startup Fibsol Life Technologies, 25 grams of the new biofertilizer N-FIB 20 is equivalent to 25 kilograms of conventional fertilizer. N-FIB 20 provides adequate nitrogen requirements for growth of paddy, sugarcane and vegetables, say its creators.

**CULTIVATING
A NEW IDEA:**
Kavitha
& Anant



TECH-ENABLED AGRICULTURE

CAN BE USED WITH CONVENTIONAL COMPOST

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|---|---|----------------------------------|
| Name Fibsol Life Technologies | funding from IIT & grants from | BIRAC and others |
| Founders Kavitha Sairam and Anant Raheja | INITIAL CAPITAL ₹1 LAKH | Presence Farms in India |
| Funding Seed | | Incorporated 2013 |
| | | Team size 6 |

At the IIT Madras bioincubator, PhD scholar-turned-entrepreneurs Kavitha Sairam and Anant Raheja are using nanotechnology and biotechnology to develop lightweight biofertilizers. "Kavitha was my senior in college. We were completing our PhDs from IIT Madras — I was pursuing a thesis in nanotechnology and she was studying biotechnology — when we decided to work together on a product that had applications from both fields," said Pune-based Raheja.

With their effort, Fibsol Life Technologies was set up in December 2013. With an initial capital of ₹1 lakh, the company had its share of struggles. The founders add that they had to survive for over a year with the preliminary authorised state capital. "We had to stop taking salaries and Anant had to work part time," said CEO Kavitha Sairam.

Having taken baby steps since then, the company has four others in the team with expertise in biotechnology, chemistry and bioprocesses. In October 2014, the startup was incubated at the IIT-M research park and in March 2015, the team moved on to the bioincubator, becoming one of the four companies within the space.

With the progress made, the fledgling company went on to bag grants from the Biotechnology Industry Research Assistance Council, department of biotechnology, ministry of MSME and the Muthaiah Research Foundation. "We recently won in the social innovation category of the India Innovation Growth Programme and bagged ₹25 lakh," Sairam said. With greater shelf life and easy storage, the biofertilizer is made of nitrogen fixing bacteria cultured on fibres and biodegradable polymer. The fertilizer can also be mixed with conventional organic inputs such as *panchakavyam*, *amritakarasal* and vermicompost for enhancement of crop-yield and soil quality.

A small but power-packed, package is available at ₹500 for 4g. "The farmer pays the same price for 1g of our product as he pays for 1kg of conventional fertilizer. The effectiveness, however, is the same," Raheja said. "But with the new product the logistics expenses are

saved. The fertilizer is two times more stable and a mere 1g can cover 1 acre of farmland. All one has to do is dissolve the paper in water. And since nano fibres are more stable, storage is easier too, thereby cutting warehousing costs," he said Raheja. The startup is slowly becoming popular, and counts Rajashri Bio solutions as one of their corporate clients.

Successful farm trials were conducted by Parry Agrovet, Tata, and Coromandel Farms in Chengalpet. "Conventionally, biofertilizers are solid or liquid based. This is based on a tissue which makes it easy for transportation. We found that in our tea plantations the soil quality has gone up," said S Marimuthu from Parry Agro Industries. With a patent application for the technology and having conducted successful farm trials, the company aspires to cover 50,000 acres of farm land in 2 years.

(This series captures the startup ecosystem in the state)