

Leaf is the new seed

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Mettupalayam-based farmer S Rajarathnam has come up with a technique to propagate plants using leaves I blink when I see it first: a leaf that has sprouted a root. Is this even remotely possible? At Eden Nursery Gardens, an organic nursery in Mettupalayam near Coimbatore, rows and rows of such leaves stand inside black plant bags, each of which have grown roots like little tails. Taking root Rajarathnam has used materials easily available at his nursery, such as soil and tender coconut water, for leaf culture M Periasamy.

He has also applied for a patent for the same. “There are several ways to propagate plants,” says Rajarathnam. “We can use seeds, shoot tip cuttings, plant tissues... I thought why not try doing so with leaves too, since they are abundant.” It all began in 2010, when Rajarathnam completed a course in Tissue Culture at the Tamil Nadu Agricultural University (TNAU) in Coimbatore. “Since it is proven that plant tissue culture can be used to grow plant cells, I tried the same using leaves,” he adds. With several years of experience with plants he grew several varieties of jasmine on his six-acre farm in the 1990s and is into noni cultivation (*Morinda citrifolia*) at present Rajarathnam spent day and night at his nursery to make the unbelievable possible. The experiment saw him spend more time with plants than people.



“I used materials that were easily available in my nursery,” he explains. This includes the medium that consists of soil, tender coconut water, and a humidity chamber he built over leaves planted in bags, using poly sheets. “Among my initial challenges was making sure the leaves did not dry,” he explains.

His eureka moment came in 2012. “I came to the nursery one morning as usual when I first saw it,” he recalls. A root had actually sprouted from a jasmine leaf he had been working on. The man couldn’t believe his eyes. And so, Rajarathnam became the first man on the planet to have documented proof that leaves can be used to propagate plants. The first thing he did was drive to TNAU with the precious leaf to show it to experts there. Today, Rajarathnam has tried growing to success 10 species, including flowers, guava, and naval fruit (black plum) using leaf culture. “More expert research is necessary into the technique,” he says. So, what exactly are the benefits of leaf culture? For one, it can cut down on costs for farmers a great deal.

They need not depend on anyone else to multiply their crops, as is the case with seeds,” says Rajarathnam. “They will have an assured yield and there will be genetic purity since they can choose leaves that they wish to propagate.” More importantly, they can learn the technique themselves since it is simple. “This is what happens when a farmer innovates, as opposed to a scientist; he will use resources within his reach,” he feels.

Rajaratnam, who recently won the Cavin Kare-MMA Chinnikrishnan Innovation Awards 2019 for his leaf culture concept, has been training farmers, entrepreneurs, self-help groups, and students over the last couple of years. "I am open to teaching this to anyone who approaches me," he says. Imagine how ground-breaking it would be if leaf culture is extended to our major food crops. Farmers simply have to pick the best leaves from their crop to sow. 'Sow the leaves', they would say, instead of 'sow the seeds'

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