

## New hybrid tomato yields up to 19 kgs per plant

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After five long years of painstaking research, scientists at the Indian Institute of Horticultural Research (IIHR) have developed a new hybrid tomato variety called 'Arka Rakshak', which has recorded yields of up to 19 kilos of tomatoes per plant.

"Arka Rakshak was cultivated by precision farming practices, which essentially consisted of drip irrigation, fertigation and black-silver polyethylene mulch. Water was supplied through drip irrigation on daily water loss basis. This hybrid is resistant to three different plant diseases including tomato leaf curl virus, bacterial wilt and early blight. It can be grown throughout the year in moderate climate areas. Its cost of cultivation is very low," said Sadashiva A T, principal scientist & head, division of vegetable crops, IIHR.

The drip irrigation method of cultivation consumes only about 50 percent of water compared to normal irrigational practices. The nutrients for these crops is supplied by dissolving the fertilizer in irrigation water (fertigation).

Dr Sadashiva said that, Mr Chandrappa, a farmer from Devasthanadahosalli near Chikkaballapur district had harvested close to 19 kilos of tomatoes per plant. "It took about six months for me to cultivate these tomatoes. I have been able to sell them off in the market without any hassles," said Mr Chandrappa.

Another principal scientist, Dr Shankara Hebbar, division of vegetable crops, IIHR, commented on the factors that led to this hybrid's successful cultivation. He said, "Fertigation ensured the complete solubility of fertilizers, making all the nutrients

completely available for the plant. This prevented the plants from wilting. Thus, the crops were under less stress. The black-silver polythene mulch reduced the growth of weeds, prevented leaching of nutrients during rainfall, and maintained the friable nature of soil. Polyethylene mulch also helped in repelling the insects during early growth stage because of the reflection of sunlight, thus reducing the transmission of viral diseases."

To cultivate this hybrid tomato species, farmers essentially would need to have their own land, assured irrigational facilities and good labor. The seeds will be available at IIHR. Farmers can approach them for seeds and even visit IIHR campus to have a look at its cultivation methods, said Dr Sadashiva.

According to Dr Sadashiva, Arka Rakshak yields seem to be very good. Normally, the plant is claimed to yield up to 6-8 kilos of tomatoes. Dr Sadashiva added that these plants require very less number of fertilizer sprays than that is usually needed. These tomatoes have been accepted in the market in terms of color, size, transportability and storability factors. At room temperature, Arka Rakshak has a shelf life of 15-20 days.

Dr Sadashiva confirmed that the tomato hybrids were bred only by conventional breeding procedures and that no genetic modifications were carried out on it.

Regarding the growth of Arka Rakshak, Dr Sadashiva added, "Arka Rakshak is a new hybrid. We don't know how different the viruses are in various parts of the country. We need to wait and see how the plants respond. In summer, the yields may slightly reduce though it is disease resistant. Farmers need to be cautious of environmental factors. So far we've successfully grown this hybrid variety in Hassan, Mandya, Doddaballapur, and parts of Kolar."

Commenting on the health benefits of Arka Rakshak, Dr Sadashiva added, "These tomatoes have impressive qualities including color, firmness, shape, size and health benefits. Arka Rakshak has a deep red color due to the presence of Lycopene pigment in high quantities, which is much higher compared to normal tomatoes. Lycopene is a good anti-oxidant and anti-cancerous. It is also rich in Vitamin C, which is good for overall human nutrition."

The tomatoes are currently supplied to other cities like Delhi, Mumbai, Kolkata and Chennai.