



“Agriculture is the backbone of the livelihood security system of nearly 700 million people in the country and we need to build our food security on the foundation of home-grown food.”
- Dr. M S Swaminathan, Father of the Green Revolution



Organisation behind the practice:
Saguna Rural Foundation

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No tiling, no transplanting, no labour. Just good rice, good soil, good environment. Too good to be true?

Saguna Rural Foundation invents zero till conservation agriculture technique for rice cultivation.

A rice cultivation technique that requires no tilling, no plowing, puddling, or transplanting and yet yields significantly better harvest while making the soil naturally more fertile. The technique eliminates the use of diesel pumps and it does not produce methane either, making the environment a lot cleaner. Too good to be true?

Saguna Rural Foundation of Krishi Ratna Shri Chandrashekhar Haribhau Bhadsavle has invented and proven just such a technique, the Saguna Rice Technique or SRT. The technique has seen farm yields increase by 30 to 50 quintals per hectare. Farm input costs have reduced substantially; labour involved in rice cultivation has more than halved. All of this has resulted in significant increase in farmers' income.

The technique has been good for the soil and the environment as well. Estimates suggest the organic carbon of the fields under SRT increases by about 0.5% per year, fixing about 9 metric tonnes of carbon dioxide into the soil per year per acre. For the first time in the world, implementation of SRT method of agriculture has demonstrated natural presence of earthworms in paddy fields.

It is techniques like SRT that may help lift indian farmers out of distress.

Modern farming drives farmers to suicide every day

During the period of 2014 to 2018, 14,034 farmers ended their lives, that is almost eight farmers per day. The reasons for the same can be attributed to the debt the farmers had incurred because of unsustainable farming practices. According to National Human Rights Commission (NHRC), 6,268 farmer-suicide cases were registered in Maharashtra from January, 2011 to December, 2014. During the subsequent four years (2014 - 2018), the number of suicides almost doubled to 11,995. Unsustainable agriculture practices are not only making the farmers indebted - due to the rising costs of necessary inputs such as labor and other farm related expenditures - but is also decreasing the productivity of the farmer, also causing disastrous damage to our environment.

Unless new methods of agriculture are found that not only increase yields, as commercial seeds do, but also reduce the input costs, something that modern methods are woeful at, farm distress have little hope of fading away.

Prepare soil once, harvest forever

SRT represents a revolution in conservation, zero-till method of agriculture. The method arrests top soil erosion, promotes natural production of earthworms while dramatically increasing organic carbon of the soil, directly increasing the productivity of the land, enabling the farmer to prosper and thrive. Under SRT, the soil is tilled just the very first time. Tractor drawn bed makers create raised beds. These same beds are used when the crops are rotated from paddy to kharif, removing the need for tilling again.

Holes are then carved with SRT iron forma on the raised beds and the seeds are sprinkled on the beds followed by fungicides and beneficial micro organisms.

When the crop is ready to harvest, the plants are harvested leaving roots and 2 to 3 inches stem on the beds. Earthworms eat the decaying roots and plants and in turn they make holes which aerate the soil, making it fertile for the next sowing.

The SRT iron forma facilitates planting of crop in predetermined appropriate, precision spaced gaps, enabling precise plant population per unit area, targeting and resulting in increased crop production. By eliminating puddling and the need to transplant rice, the rice crop doesn't have to depend on consistent rainfall, thus making farming resilient to the vagaries of monsoons.

Incredulous for some, manna from heaven for the practitioners

SRT benefits everyone. Farm yields increase, labour decreases. Incomes multiply while input costs reduce sharply. Water is used more efficiently and no environment warming methane is emitted. Even diesel burning halts. The all good, no negatives system has drawn many experts, including the government agriculturists, and academicians to label the system too good to be true. This despite the proven and mounting evidence to the efficacy of the system.

SRT practitioners do not employ a lot of manual labour, an otherwise significant cost in paddy farming, neither do they use expensive fertilisers a lot. The farm input costs come down by almost 40% while the labour is more than halved.

Soil quality is substantially improved because of the elimination of puddling, preventing the loss of valuable silt. Because SRT farms are not hand hoe, the upper soil does not loosen and erode. Leaves of rice plants on SRT beds seem to be broader and grow substantially higher and upwards to gain more sunlight than their counterparts in conventional method. They are



hence, likely to produce more biomass, resulting in higher yield.

SRT employs general purpose systemic weedicide to trigger and accelerate the decay of the plant remnants after harvest. This results in remarkable earthworm growth, that feeds on decaying plant parts and enriches the soil with natural fertilisers. The earthworms also result in the soil being aerated. Also, the absence of heavy agriculture machinery prevents the hardening of lower strata of soil letting more water seep through. SRT protects the soil, the microbiome, along with the environment.

SRT farmers have realised higher returns of more than INR 5,00,000 per hectare per annum with crop rotation such as Basmati Rice in Kharif, leafy vegetables in Rabbi, and Bold Groundnut in Summer.

More knowledge not capital may be the answer to farm woes.

SRT system needs lesser capital to implement than the conventional paddy farming. With lower

costs and substantially higher yields, SRT makes its practitioners very happy. A scientific survey on farmer happiness conducted on a 10,00,000 square kilometre area revealed SRT farmers to be very happy with a score of 8.58 on a scale of 10.

If the organisation gets better institutional support in propagating its techniques, a lot of farmers may be lifted out of distress without significant infusion of cash or waivers.

It is knowledge that is needed more than the cash ■



"I have 1 acre land. Before using SRT technique I was doing traditional farming. But my income was not sufficient and that's why I had to go to another big farmers' land for employment. After using SRT technique my income doubled. Now I am planting vegetables in my farm. I get daily income from vegetables. This SRT technique is boon for me."

Dehu Palu Wara (Raigad)