

## Summary of the book by Mr. D. Alwara Swamy on

### “SUGARCANE RENEWED INTENSIFICATION”

Sugarcane cultivation in India dates back to ancient times. Scientists and historians believe that sugarcane originated from India and spread across Asia and Western countries. There was a mention of sugarcane in the *Adharvan Veda* and in Kautilya's *Artha Sastra*. History says that around 350 BC, some of the followers of Greek king Alexander took sugarcane to their country from India.

Today, the average yield of sugarcane in India is 65 tons per ha, whereas in countries like Brazil and Thailand, the yield is around 120 tons per ha.

Increased input costs for producing cane and the low sugar yield from cane are major problems faced by Indian farmers today. There is a need to reduce input costs and to increase yields to make sugarcane cultivation more profitable. Chemical agriculture is spoiling the quality of the soil and increasing input costs. We need to move towards more reliance on organic inputs as regular use of organic inputs can improve the soil health and increase the yields.

Sugarcane is going to be more profitable than any other crop in the future. In addition to direct products like sugar and jaggery (raw sugar), press-mud (the solid waste remaining after taking out the sugarcane juice) is now being used for making paper, power generation, etc. Ethanol produced from molasses is already recognized as a bio-fuel. Sugar factories are going for co-generation of power using press-mud and are finding ethanol-making more profitable. In the future, these factors will give more profits to the factories as well as to farmers.

#### **SRI Method in Sugarcane Cultivation:**

This new method is becoming popular as Sugarcane Renewed Intensification (SRI). For sugarcane cultivation, the cost of seed buds alone is around Rs. 12,000 per ha. When transportation, deep ploughing, making of furrows in the field, and transplantation are included, growing cane on one ha. costs around Rs.30,000.

Earlier, various new methods were tried in seeding and transplantation to increase the yield, but these methods also increased the cost of cultivation. SRI, on the other hand, reduces the cost of seed and transplanting and at the same time increases the yield.

Traditional method requires 10 tons of seed buds per ha which costs around Rs. 12,000. SRI method requires approximately 1 ton of seed buds costing Rs. 1000/-. This cost can be further reduced by Rs.500/- if, after removal of seed buds from the canes, the remaining sugarcane is sold to a factory.

In traditional method, the distance between two rows is 24 to 32 inches. Around 30,000 buds (three pieces together) are planted in the field which can generate 90,000 plants. These plants further generate more plants, and one can see around 300,000 plants in one ha. after 110-120 days. But at the time of harvest, we find only about 75,000 sugarcanes, each weighing around 1 kg. Most of the plants die back due to lack of sunlight, nutrients, etc. This indicates the need for maintaining more distance between rows.

SRI method involves raising plants in a nursery for 30 days, which helps to reduce the mortality rate and increases the weight of each cane. Seed buds are planted separately in plastic trays. Coir pith is used as filling material, and some manure is added for raising the plants.

While still in the nursery, these 1,000 seed buds can generate 16,000 plants that are sufficient to transplant 1 ha of land. Transplanting is done at 30 days with inter-row spacing of 72 inches. The spacing between plants is 24-28 inches.

SRI method increases the yields to 125-235 tons per ha. according to the conditions. Though the number of sugar canes cannot be increased per ha, the weight of each can be increased. When 12,000 plants are transplanted, they can generate around 72,000 plants (each set produces 6 plants). The weight of each cane can be 2.5 to 3 kgs. If on average, each cane weighs 2 kg, the total yield will be 144 tons per ha.

Because of lesser number of plants and more spacing, fertilizers are utilized at an optimum level and pest attacks are avoided. More healthy growth can be observed in these sugar canes. Water is saved with this SRI method. About 40% saving of water is possible because of raising in a nursery and wider row spacing. Weed growth is more if water spreads over more area, so weed growth is more compared to the traditional method. However, this can be dealt with by intercropping with green gram, black gram or beans, which can be harvested within 100 days. These will give more income and also reduce weed growth by 60%. Growing such green-manure crops as intercrops also mobilizes more nutrients for the sugarcane plants.

For every hectare planted, 9 out of 10 tons of sugarcane intended for planting is saved, since SRI requires only 1 ton of sugarcane from which to extract seed buds. Rather than plant cane sets in rows, closely spaced, buds are grown out in plastic trays, and the remaining cane can still be utilized for sugar pressing. In Andhra Pradesh, sugar cane is planted in around 110,000 ha. So at the rate of saving 9 tons per ha, we can save 990,000 tons of sugar cane (equal to Rs. 148.5 millions) simply by adopting this SRI method. This gain is in addition to the higher yield with reduced costs of production and water saving. These benefits far outweigh any costs of additional labor and management needed to grow sugarcane in this more intensive manner.