

Annexure – 5

NECESSITY OF DE-TOPPING FOR BUD CHIP SEEDLINGS PLANTING

Protocol for SSI seedling Pruning

1. After the establishment of bud chip plants, the mother shoot may be cut to get even tillers. Plant should be cut just one inch above the ground level with a revolving scissor or pencil knife. This will ensure more number of tillers and millable canes per plant (20 to 24). Initially, it is better to try this practice in a smaller area and extend further based on the success rate.
2. The time of cutting the mother shoot may vary from 13 to 30 days after planting, depending on climatic conditions, planting depth of seedling and growth vigour of the plants.
3. Irrigation water has to be given before cutting the mother shoot to prevent fungus infection.
4. The pruning will be carried out after establishment of one or two tillers from the mother shoot.
5. It enhances the seedling vigour and tillering ability through production of starch by increase in invertase enzyme productivity.

Tillering potential of sugarcane

1. Sugarcane is a C4 graminaceous plant endowed with 144 millable canes from one buds
2. It is a highly heterozygous and polyploid in nature and shows $2n+n$ gametic transmission (instead of $n+n$) and en-bloc elimination of chromosomes during cell division.
3. In sugarcane, leaf development is related to tiller initiation, emergence and development of internodes.
4. Tillers initiate when there are at least two open leaves on the mother shoots.
5. Frequency of tiller emergence is maximum when there are 6 -8 leaves on the mother shoots.
6. Grand growth follows the T max, during this period shoots grow and due to intra-plant competition, mortality of the tillers takes place.
7. The ones survive, grow and make the millable canes



Pruning the mother shoot after establishment of one or two side tillers



After pruning 20 to 24 tillers can be produced from single bud chip seedling



High tillers ensured maximum (10 to 15) millable cane from single bud chip seedling



After pruning the mother shoot established more tillers



After pruning the mother shoot, establishment of tillers in the drip irrigated SSI field



After pruning the mother shoot better tiller establishment in the main field under SSI method of planting



Inference:

De-topping of sugarcane seedling with one or two tiller stage is must to achieve maximum productivity