Details of Technology Inventory

1. Name of the institution: Malda Krishi Vigyan Kendra

2. Name of the technology: Use of different plant growth regulators and micro nutrients for increase the productivity and better fruit quality of litchi.

3. Scientist associated: Miss Samima Sultana (Subject Matter Specialist- Horticulture)

4. Problem statement- Huge economic loss of litchi was identified as a problem in Malda district of West Bengal. The loss of litchi is due to mainly litchi flower and fruit drops as well as litchi fruit cracking and scorching also. This problem occurs due to lack of plant growth regulators or absence of micronutrients which are responsible for flowering and fruiting such as naphthalene acetic acid, (NAA), triacontanol. Fruit cracking and scorching occurred is due to lack of different micro nutrients like zinc, and boron. So keeping all the point in mind, the technology was carried out for increase the productivity of litchi by using various plant growth regulators and micro nutrients also.

5. Description of technology-

The litchi orchard management by different cultural practices like tilling, watering, fertilization and plant protection should be started just after harvesting of litchi fruit. It must be kept in mind that 3 to 4 months before initiation of flowering should not be disturbed the litchi orchard by any cultural practices because this practices hamper flower panicle initiation. Different plant growth regulators like Triacontanol @ 0.30 ppm or Naphthalene acetic acid (NAA) @ 20 ppm use for spraying of litchi plant to increase the production by enhancing the female flower in the panicle and reducing the fruit drop. PGRs were sprayed 3 times between October and December at monthly interval because this is the critical time for flower bud initiation. The spraying was done in early in the morning within at 7-9 am by thoroughly wetting upper and lower surface of leaves and whole plant. After fruit setting use of boron in the form of boric powder containing 20% of boron @ 1g/lit + zinc ethylene di amine tetra acetic acid (zinc EDTA containing 12% zinc) at 1.5 g/L of water reduce fruit cracking and scorching. Sspraying of micro nutrients was done after fruit setting at 15 days interval upto 15 days before harvesting of litchi fruits. The spraying of micro nutrients also improved the quality of fruits.

6. Applicability/ Situations: The technology was conducted by Malda Krishi Vigyan Kendra at farmers' field of different block in Malda district, West Bengal, India.. The site was located in sub-tropical humid climate with gangetic old alluvial soil, sandy clay loam texture, good water holding capacity, well drained, and with acidic to neutral reaction and moderate fertility status. This technology can be replicated for other district or other area also.

7. Economics/ Cost involved:

Area	Cost of cultivation(Rs/ha)	Gross return (Rs/ha)	Net return (Rs/ha)	BC ratio
Farmers who followed the technology	93300	171000	77700	1.83
Farmers practice	75000	110000	35000	1.46

The economic assessment for the technology was done on the basis of cost of cultivation, gross and net return, considering the cost of inputs and market price of the produce during the period of experimentation.

8. Impact and up scaling: The performance of growth regulators play a positive role in the production of litchi at Malda district. It further revealed that use of improved technology recorded the highest yield of 121.0 q/ha and BC ratio was 1.83. There were tremendous scope and potential of PGRs in litchi to increase the production by enhancing the female flower in the panicle and use of micro nutrients reduce the fruit drops as well as fruit cracking.

Presently most of the farmers of Malda district are use the PGRs for increase the productivity of Litchi.