

Project Title -21	Design and Fabrication of Different Types of Flat Tops for Carding and Use of Vario – comb in Combers for Removal of Smaller Size Neps Towards Producing Yarns Meeting International Quality Standards
Principal Investigator	K.P. Chellamani
Cost	Rs.30.00 lakhs
Date of Commencement	01.09.1999
Duration	24 Months
Date of Completion	Sep 2001
Abstract	Card slivers were produced from two Indian cottons in a 4 th generation card using flat tops of five different wire point density (PPSI). Card sliver neps as well as imperfections in the corresponding yarn samples produced using those slivers were estimated. Trials were also carried out using cylinder wires and flat tops of variable density. In addition, studies were carried out using conventional as well as modified combing segments in comber. Neps in comber slivers and imperfections and classimat faults in the corresponding yarn samples were estimated. In all these trials, Cottons of 2.7 Micronaire values were used and 80s & 100s combed ring yarns spun
Highlights	<ul style="list-style-type: none"> ▪ With the newly designed flat tops and vario comb, super fine yarns meeting international quality standards can be produced from low micronaire Indian cottons ▪ Optimum nep removal efficiency in card is achieved for flats having wire point density (PPSI) of 60% of that in cylinder ▪ With 860 PPSI cylinder wire and 60% PPSI ratio, 65% of smaller size neps (below 650 microns) and 85% larger size neps (above 650 Microns) present in blow room lap are removed during carding. 80s and 100s combed yarns produced using 60% PPSI ratio in card have less imperfections by 30 to 35% ▪ Variable density cylinder wires in card reduce larger size sliver neps by about 45% and smaller size sliver neps by 30% as compared to that of uniform density cylinder wires. Improvement in yarn quality while using variable density cylinder wires is also of the same order ▪ Variable density flat tops in card do not have any impact on card sliver quality ▪ Increasing the number of combing segments from 2 to 4 in comber half lap helps to reduce comber sliver neps by about 25%. Imperfections in yarns, particularly thick places and neps produced from comber sliver also reduce by the same degree. In addition, infrequent yarn faults are lower by 60% in the case of short thick faults and 40% in the case of long thick faults ▪ 80s and 100s Combed yarns produced using card flats with 60% PPSI ratio; variable density cylinder wires and combing segments of 4 partitions are found to have imperfections matching with international 25% statistics level
Area of applicability	Spinners
Target beneficiaries	<ul style="list-style-type: none"> ▪ The study findings were disseminated to SITRA member mills ▪ The findings of the study are used by mills, especially EOUs to produce high quality superfine yarns meeting international quality requirements
Status	Completed