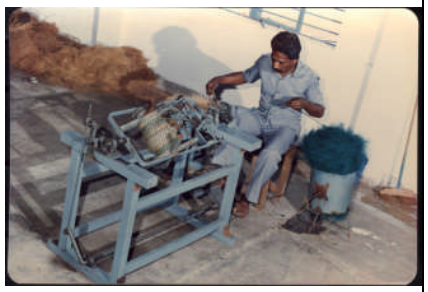
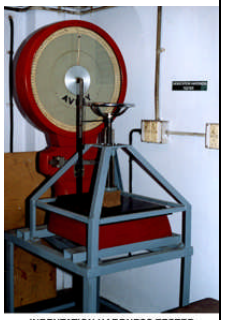
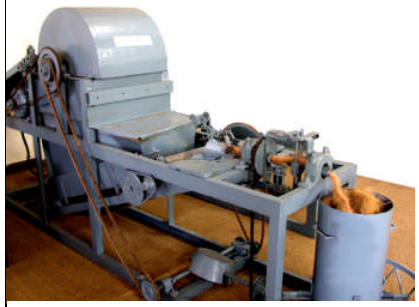
DEVELOPMENT OF MACHINERY

YEAR	ACTIVITIES	ACHIEVEMENTS
1960-61	Intensive performance trials were conducted on spinning of coir on pedal operated spinning machine for three months at Paravoor and CCRI and it was noticed that the output obtained was much less than that obtained on traditional spinning wheels. Arrangements were made with the Small Industries Service Institute at Ollur to fabricate a prototype machine incorporating some improvements in the design to increase the output and lessen the strain on the spinner operating the pedal.  Treadle ratt	
1961-62	Pedal operated spinning machine was put into trials on a piece rate system of wages for studying the effect of wage incentive to the spinners on the production capacity of the machine. The production capacity was observed to increase though there was a tendency to produce a somewhat coarser yarn. Certain modifications were attempted to improve the performance of the machine but the performance of the modified machine was not very satisfactory.	
1962-63	Fabricated two modified treadle operated spinning machines at the Govt. of India Production Centre, Ettumanoor in Kerala and put into intensive performance run at CCRI. The machine gave an average output of 9.0 lb per day with a maximum output of 13.0 lb of coir yarn from 8 hour day. Trial spinning was carried out in May 1962 and it was possible to attain a maximum production per working day of 8 hours to about 17 lb. and the average production per day for the trial period came to 14.26 lb. The scorage of the yarn was 11 to 14. The runnage was less on comparison with traditional ratt spun yarn. Fabricated a motorised treadle operated spinning machine at the Govt. of India Production Centre, Ettumanoor in Kerala as the pedaling of the treadle machine was strenuous.	

YEAR	ACTIVITIES	ACHIEVEMENTS
1964-65	An improved coir spinning machine was fabricated by incorporating a friction gear wheel device in association with the Alleppey Cycle Assembly Worker' Industrial Co-Operative Society but the trials proved to be un-satisfactory. Spinning trial on motorised spinning machine using pre-cleaned fibre on willowing machine resulted in a better output of 1.5kg per hour of hard twist yarn and 2 to 2.5 kg per hour for medium twist yarn compared to 1 kg and 1.5kg respectively for un-cleaned fibers. The feeding was easier for pre-cleaned fibres. 4 persons were trained on the motorized spinning machine.  Mechanised Fibre Extraction A new design for fabrication of a prototype fibre extraction machine was pursued in collaboration with Small Industries Service Institute, Alleppey.	
1965-66	Use of a conical nose of modified design could reduce the unevenness in the doubling twist at intervals along the length of the yarn spun on motorised coir spinning machine. On reduction of the single twist, the machine was observed to produce yarn of improved appearance and increased runnage, but did not increase the rate of production. Experiments revealed that bristle and mattress fibres subjected to a cleaning process for the removal of the pith by passing over a willowing machine could be spun on the motorised coir-spinning machine without any difficulty.	

YEAR	ACTIVITIES	ACHIEVEMENTS
1966-67	Spinners were provided with protective coverings of rubber for the fingers to overcome the set-back resulting from the abrasion of the skin due to contact with the fast moving slivers of coir yarn in motorised coir spinning machine for increasing the production capacity and obtained a maximum output of 11 Kg of yarn of 12/14 scorage with a runnage of about 200 m/kg in 8 hour work. Running of the machine at higher speeds necessitates faster feeding of the fibre also and hand feeding has limitations. The design and fabrication of instruments for testing the rubberized coir were made in association with the Extension Centre for General Engineering, Alleppey.  INDENTATION HARDNESS TESTER	
1967-68	A system for mechanised feeding for parallelised strands of fibre was incorporated in the motorized coir-spinning machine by which it was possible for one operative to attend more than one machine at a time, thereby increasing the per capita production. Draft sketch of sliver forming machine was made. A set of gear wheels with necessary fittings was incorporated in the beaming device for winding warp sheet under uniform tension. Preliminary sketches for rod and creel mat looms were made as a prelude to standardise the loom structure.	

YEAR	ACTIVITIES	ACHIEVEMENTS
1968-69	Designed and fabricated a prototype slivering machine in collaboration with the Govt of India Production Centre, Ettumanur, Kerala to obtain slivers of uniform density of 25 to 30 gm per metre ensuring a higher per capita production. The performance of the slivering machine revealed that it could produce 48 kg of slivers per hour work. Single strand coir yarn was spun out of this material on the ratt, ensuring production of uniformly thin single strand yarn. Specifications on the general requirements of indigenous machinery for mechanical extraction of coir from coconut husks was finalised by the Technical committee for Defibering machines. Prepared machine drawings of the imported cops winding machine and cone winding machine in collaboration with the Govt.of India Production Center, Ettumanoor in Kerala.  Slivering Machine	
1969-70	The prototype slivering machine was put in to intensive performance run and modified the slivering machine with steel spikes for avoiding bending of the spikes on the combing drum and a new endless rubber impregnated canvas belt was fitted to the machine for overcoming difficulties in maintaining uniform tension for fibre layers.	