

COMPARATIVE ANALYSIS OF SPINNING PRODUCTIVITY AT PRE AND POST LOCK DOWN STAGE IN JUTE INDUSTRY

Dr. Satya Narayan Bag .

Principal AMS College of Polytechnic.

Rangapur, Barrackpur, 24 Pgs (N) , West Bengal, India.

Abstract: Spinning department is the important area of Jute Industry. Yarn is the main production of this stage .Lower production, performance in spinning department gives impact on next production process of Jute industry. Day wise Coefficient of variation % of productivity of both the fine and coarse side of spinning department were higher in post lock down state compare to pre lock down states of BJCL unit .Spinning productivity in jute industry is highly affected due to impact of covid 19 situation. In post lockdown, CV% of day wise production of observed period was 33.07 % whereas in pre lock down, it was 5.84 %. The reasons were due to variation of number of machines run, uncertainty of labor, machine operators' availability. In post lock down period, lot of workmen were returned to their native state of Bihar, Odisha, and UP. Availability of machine operator is now problem in such industry. The CV% of actual efficiency% of spinning machines, production /winder in kgs . & production /day in kgs in fine side and coarse side of spinning department of BJCL in pre lock down state were much better compare to post lock down state. High variations of such parameters are not desirable in spinning department. High variation in productivity of the study period were due to shortage of machine operator, lower number of machines running, poor performance etc. are responsible. Top Management has taken several measures to overcome such problem.

Key words: Productivity, Efficiency, Spinning, variation, Performance, Yarn

INTRODUCTION:

Jute Industry is a major industry in West Bengal. Jute fabrics, Bags, yarns are the traditional production in Jute mills in West Bengal. The products have a high demand in domestic and international market. Due to Nationwide lockdown, the production of finished goods and international dispatch are now

challenging to the owner of the industry. The industry is now bound to deliver the domestic requirement of various states of India. Jute bags are procured by the government and used for packaging food grains. The supply backlog was 2.5 lakh bales till May. However, the industry is facing a shortage of labour as many workers have returned to their hometowns during the lockdown, causing production to be insufficient to meet the government demand. Though jute bags are costlier than their plastic counterparts, they are preferred because they are environment-friendly and the quality of the food grains remains unaffected over long time periods. The product has high demand in domestic market but the industry is facing problem due to nationwide lock down . The present study helps us to find out the impact of covid 19 on day wise productivity of yarn processing stage. Pre and post lockdown spinning productivity was comparatively analysed.

RESEARCH OBJECTIVES: The research objectives are stated below.

- To study the various spinning productivity parameters before and after lockdown stage.
- To analyses the collected data set of both the period.
- To find out the effect of lockdown, Comparative analysis of both the data sets are to be undertaken.
- Suggestive measure to overcome the situation.

STUDY AREA: To observe the effect of Covid 19 situation in productivity of jute industry, Bally Jute Company Ltd. is now selected. The unit is situated in the bank of river Hooghly(Ganga) in the district of Howrah and very near to Kolkata. The connectivity of Railway, Roadways are well with such unit. More than 3000 employees are directly linked with such unit. Another 5000 people are indirectly linked with such industry for various jobs in day wise pattern. Economy of the locality of Bally, Uttarpara, Belur , i.e., some parts of Howrah and Hooghly districts of West Bengal are dependent on such industry. Various Fine fabrics of Jute, Bags , yarn of various range of count are the main products of this unit . Due to lockdown the unit was closed from March 22 to 2nd week of May 2020. After that the unit was gradually start up to the normal. The day wise productivity of pre and post lockdown stages were studied and analyzed for observing the effect of Covid 19 on the spinning productivity of this unit. This unit is a representative of Jute industry.

RESEARCH METHODOLOGY:

Regarding pre lockdown stage the organization has registered book of production on spinning department. The day wise hardcopy of computer generated productivity report were available at the spinning department office. This data has been collected and tabulated. Post lock down data

of 12 days were studied day to day and recorded in productivity report registered book. So the post lock down data were primary in nature .It was studied in day wise of three shifts in details. The hard copy of computer generated report were then collected and tabulated for analysis and comparative details with the pre lockdown stage. Both the productivity report of spinning department report are then analyzed statistically to observe the impact of lockdown on the spinning production. The Problems of lower productivity after lockdown stage and possible solution to overcome them are then evolved.

LITERATURE REVIEW:

Governments, businesses and communities are facing the brunt of coronavirus pandemic. As COVID-19 impacts more people every day, most sectors of the economy have been reduced to a standstill. Indian Textiles and Apparels (T&A) industry, accounts for approximately 4% of the global T&A market. The T&A industry is one of the largest and the most important sectors for the Indian economy in terms of output, foreign exchange earnings and employment. The industry contributes approximately 7% to industrial output in value terms, 2% to the GDP and 15% to the country's export earnings. T&A provides direct employment to over 45 million people but the nationwide lockdown has led to a temporary closure of factories and lay-offs have already begun among low wage workers [1]. The Covid-19 pandemic is primarily expected to adversely impact exports and with second order impact on the domestic markets with both exports as well as domestic sales falling. Additionally, domestic consumption is also getting impacted due to all India closure. New store openings have stopped and even domestic stores are facing an inventory build-up due to apparel sources for the upcoming summer season, Further, domestic prices could be negatively impacted if exporters dump their inventories in the domestic market leading to even reduced margins. This could lead to short term blips such as reduced employment of casual labour (factory closures and people moving back to their home towns) and reduced consumption.

The demand for textile products abroad and domestic sales have come down to a grinding halt due to the panic situation created by the COVID-19 outbreak. Due to the lockdown, all sorts of textile-related factories are closed and it is tough to hazard a guess when those will be allowed to open. Workers have been running here and there amid all sorts of confusion. The business community is scared on account of cash crunch, supply chain disturbance and manpower-related issues. India has more than 2,000 spinning mills with different spindle capacity. Workers in big units controlled by corporations reside in labour colonies adjacent to the factory premises. The majority of workers are migrants from Bihar, Uttar Pradesh, Orissa and other states. At present they are being taken care of by the employers. Some workers were forced to stay back in the absence of means of transport following the lockdown. Once the lockdown is lifted, there is a possibility that many of them will rush to their hometowns or villages. At present, may be raw material and electricity expenses are not being incurred, but rest all expenses are a direct loss to mill owners. There are other issues like what will happen to goods under processing and whether those may be directed to factory seconds. All

shipments are on hold and expiry of letters of credit may result in renegotiation of prices. It will definitely not be smooth and easy to restart operations after the lockdown [2],

The West Bengal government on Wednesday allowed the operation of jute mills with 15% staff who have been mandated to maintain social distancing norms. The development comes after a number of communications from the Ministry of Textiles including one during the day urging Chief Secretary to issue “necessary instructions to the mills to start operations for production of bags immediately.” Welcoming the decision, president of the Indian Jute Mills Association (IJMA) said this was peak season for orders for bags and in their absence plastics were being used. There are about 74 mills of which about 60 are in West Bengal along both the banks of river Hooghly[3].

RESULTS AND DISCUSSIONS:

Jute is a Bio Degradable Fiber. Products of Jute goods demand are now increasing due to Pollution free products. Jute goods have high demand in National and International Markets. Jute industry are now facing problem due to covid 19 situation .A Large number of people are engaged daily for the day wise productivity of the Jute Mill. Under this circumstance it is a challenging situation to the Management of Jute Industry to run the unit with maintaining of SOP of the WHO. Constant high demand of finished Jute products, either in Jute bags or Jute cloths are now important features of jute industry. .Bally Jute Company Ltd , Bally, Howrah is a pioneer Jute industry in West Bengal. More than three thousands employees are working directly in this unit . Average production of spinning in 100MT/ day . Due to Covid 19, situation, this industry is completely affected in productivity loss. Financial loss is associated with the loss in day wise productivity. Spinning is the heart of this industry. Higher productivity of Jute yarn, the end products of spinning process, yields better productivity of the next process. We have studied the impact of Covid 19 on productivity of this unit. We have selected twelve days on each period of post lock down and pre lock down period for observing the impact of Covid 19 on spinning production. In coarse side of this unit, 18 lbs. to 36 lbs. yarn are generally running.

Table 1 and Table 3, indicates the post and pre lockdown spinning productivity status of BJCL. It is found that day wise variation i.e., CV% of productivity was much higher in post lockdown state in case of fine side compare to the pre lock down state. In post lockdown CV% of day wise production of observed days was 33.07 % whereas in pre lock down, it was 5.84 %. It is due to variation of number of machines run. This is due to uncertainty of labour, machine operators' availability. In post lock down period lot of workmen were returned to their native state of Bihar, Odisha, and UP. Availability of machine operator is now problem in such industry. The mill is now running from external sources of contract labour, which has some uncertainty. These features are observed in three shifts in post lock down state. CV % of productivity of both the fine

and coarse side are high in post lock down state compare to pre lock down states, spinning productivity in jute industry is highly affected due to impact of Covid 19 stage.

Table 1 : Productivity Report of Spinning Department In Post Lock Down Period (From 15.7.20 to 26.7.20)

Date	Production in fine side						Production in coarse side						Total production in kgs	
	A shift		B shift		C shift		A shift		B shift		C shift			
	Kgs	No of mcs	Kgs	No of mcs	Kgs	No of mcs	Kgs	No of mcs	Kgs	No of mcs	Kgs	No of mcs		
15.7.20	23462	73	18708	59	3990	11	9845	12	10374	13	1170	2	33307+29082+5160=	
16.7.20	2274	70	21177	65	3865	11	979	12	9742	12	1184	2	32171+30919+5050=	
17.7.20	24037	75	18992	58	4781	14	11397	14	10319	13	2205	4	35434+29311+6706=	
18.7.20	23832	74	19483	61	4945	14	11975	15	9718	12	2295	4	35807+29201+7240=	
19.7.20	22747	69	15603	48	4960	14	12069	15	8393	10	1185	2	34016+24076+6145=	
20.7.20	24702	75	16846	50	5105	14	12068	15	9823	12	1105	2	36770+2669+6290=	
21.7.20	23442	73	22064	73	4173	13	11023	14	10207	13	1140	2	35565+33151+5313=	
22.7.20	23511	73	22884	72	8760	30.5	10996	14	10803	14	2560	3.5	34507+33687+11320=	
23.7.20	12086	39.5	7870	29			4860	6.5					16745+7870=	
24.7.20	21534	68	23070	74.5	10006	36	9530	13	9216	12.5	2760	5	31064+32286+12766=	
25.7.20	17576	58	7594	28			3945	6	1170	2			21521+8764=	
26.7.20	21542	69	20497	66	3069	10	9396	13	9313	13	1005	2	30930+29010+4074=	
Average	20062.	68.04	17899	56.953	5365.4	16.75	9006.9	12.45	9007.09	11.5	1660.9	2.85		
Maximum	24702	75	23070	74.5	10006	36	12069	15	10803	14	2760	5		
Minimum	2274	39.5	7594	28	3069	10	979	6	1170	2	1005	2		
SD	6634.61	10.123	5256.54	15.69	2227.28	8.91	3688.85	3.08	2681.42	8.30	700.79	1.15		
CV %	33.07%	14.87 %	29.36%	27.54	41.51%	53.19 %	40.95%	24.73%	29.77%	72.17%	42.19%	40.38%		

Source : Productivity Registered book of the mill

Table 2 : Observation of Spinning and winding parameters in post lock down stage(15.7.20 to 26.7.20)

Date	Fine side Spinning reports				Coarse side spinning report			
	Target Efficiency	Actual efficiency	Production /winder/day in kgs	Production/day in kgs in spinning	Target Efficiency	Actual efficiency	Production /winder/day in kgs	Production/day in kgs in spinning
15.7.20	83	73	294	323	79	78	395	792
16.7.20	82	72	286	325	79	78	414	797
17.7.20	82	72	207	325	79	78	420	772
18.7.20	82	73	290	324	79	78	384	774
19.7.20	82	73	275	331	80	79	397	802
20.7.20	82	74	293	336	79	79	401	798
21.7.20	83	73	284	317	79	78	379	774
22.7.20	83	72	280	314	79	78	366	773
23.7.20	85	75	204	291	80	77	347	748
24.7.20	83	70	277	306	79	74	328	705
25.7.20	84	73	290	293	80	77	292	639
26.7.20	83	71	277	311	79	74	352	704
Average	82.83	72.58	271.41	316.33	79.25	77.33	372.91	756.5
Maximum	85	75	294	336	80	77.33333	420	802
Minimum	82	70	204	291	79	74	292	639
SD	0.937	1.311	31.45	14.668	0.452	1.669	37.71	49.63
CV %	1.13%	1.80%	11.58%	4.63%	0.57%	2.19%	10.11%	6.56%

Source : Productivity Registered book of the mill

From table 2 and 4 , it is found that CV% of actual efficiency% , production /winder in kgs. & production /day in kgs in fine side and coarse side in pre lock down state are much better than post lock down state. High variations of such parameters are not desirable in spinning productivity. High variation in productivity were due to shortage of machine operator , lower number of machines running , poor performance etc. It is found

that , per winder production in kgs / day and production in kgs/day in coarse side spinning in post lock down were corporately higher than pre lock down. It is due to heavier yarn count in post lock down state in coarse side.

Table 3 : Productivity Report of Spinning Department In Pre Lock Down Period (15.2.20 TO 26.2.20)

Date	Production in fine side						Production in coarse side						Total production in kgs	
	A shift		B shift		C shift		A shift		B shift		C shift			
	Kgs	No of mcs	Kgs	No of mcs	Kgs	No of mcs	Kgs	No of mcs	Kgs	No of mcs	Kgs	No of mcs		
15.2.20	24908	79	25031	80.5	23295	77	9909	14	9910	14	5340	7	34817+34941+28635=	
16.2.20	23853	74	23683	74	19219	63	10326	14	6600	9	5385	7	34179+30283+24604=	
17.2.20	24374	76	24924	78	21556	71	8256	11	7728	11	4785	6	32630+32652+26341=	
18.2.20	25587	80	25865	81	23627	76	8020	11	5922	8	5880	8	33607+31787+29507=	
19.2.20	26478	83	27190	85	23917	77	6521	9	6019	9	5702	8	32999+3209+29519=	
20.2.20	27315	85	26013	82	23794	79	6170	9	6205	9	5607	8	33485+32218+29401=	
21.2.20	27200	85	21529	67	17741	61	4655	7	4749	7	3725	5	31855+26278+21466=	
22.2.20	28386	89.5	28999	91	25307	83.5	4620	7	5099	7.5	4344	6.5	33006+34098+29651=	
23.2.20	27979	88	28013	88	23295	76	5840	9	5895	9	4870	7	33819+22908+28165=	
24.2.20	28563	87	27085	84	20436	67	6100	9	6093	9	6039	9	34663+33178+26475=	
25.2.20	26550	82	26703	82	23345	77	5996	9	5460	8	5875	9	32546+32163+29220=	
26.2.20	27472	84	27842	86	19885	67	6101	9	6095	9	6039	9	33573+33937	

													+25924=
Average	26555. 42	82.70	26073. 08	81.54	22118.08	72.87	6876.1 6	9.833	6314.58	9.12	5232	8.270	
Maximum	28563	89.5	28999	91	25307	83.5	10326	14	9910	14	6039	9	
Minimum	23853	74	21529	67	17741	61	4620	7	4749	7	3725	5	
SD	1565.5 3	4.740	2065.6 5	6.408	2305.36	6.95	1858.9 3	2.28	1354.86	1.833	726.06	1.26	
CV %	5.84%	5.73%	7.92%	7.85%	10.42%	9.53%	27.03 %	23.18 %	21.45%	20.09%	13.87 %	1.52%	

Source : Productivity Registered book of the mill

Table 4 : Observation of Spinning and winding parameters in pre lock down stage (15.2.20) to 26.2.20)

Date	Fine side Spinning reports				Coarse side spinning report			
	Target Efficiency	Actual efficiency	Production /winder/day in kgs	Production/day in kgs in spinning	Target Efficiency	Actual efficiency	Production /winder/day in kgs	Production/day in kgs in spinning
15.2.20	83	73	275	310	79	76	332	719
16.2.20	83	75	267	316	80	78	341	744
17.2.20	83	75	274	315	80	77	354	742
18.2.20	83	74	286	317	80	78	317	734
19.2.20	82	73	286	316	80	74	323	702
20.2.20	82	73	292	314	80	77	339	692
21.2.20	83	75	295	312	80	78	320	691
22.2.20	82	72	291	313	80	76	313	670
23.2.20	85	74	297	315	80	78	302	664
24.2.20	83	74	298	320	80	80	304	675
25.2.20	83	74	298	318	80	79	301	667
26.2.20	83	75	298	317	80	79	312	675
Average	82.91	73.91	288.08	315.25	79.91	77.5	321.5	697.91
Maximum	85	75	298	320	80	80	354	744
Minimum	82	72	267	310	79	74	301	664
SD	0.729	0.966	10.74	2.73	0.288	1.62	16.91	29.92
CV %	0.87 %	1.30%	3.72%	0.86%	0.36%	2.09%	5.25%	4.28%

Source : Productivity Registered book of the mill

Figure 1 and 2 indicates the variation of production of 3 shifts in pre and post lock down period in fine side. It is found that , high fluctuation of three curve of three shifts are due to high cv% of productivity /day of the study period. It is found that in figure 2, 16th , 23rd and 25th July 20, the productivity were much less , the graph of both A and B shift falls down due to lower number of machines running ,which gives lower productivity., Due to not availability of machine operators, the productivity are lower on those days. It is the main problem of Jute industry during post lock down days. Constant standard productivity maintains is now challenging situation to the Management.

Figure 1 : Production in Fine side pre , covid of A , B and C shift , spinning department

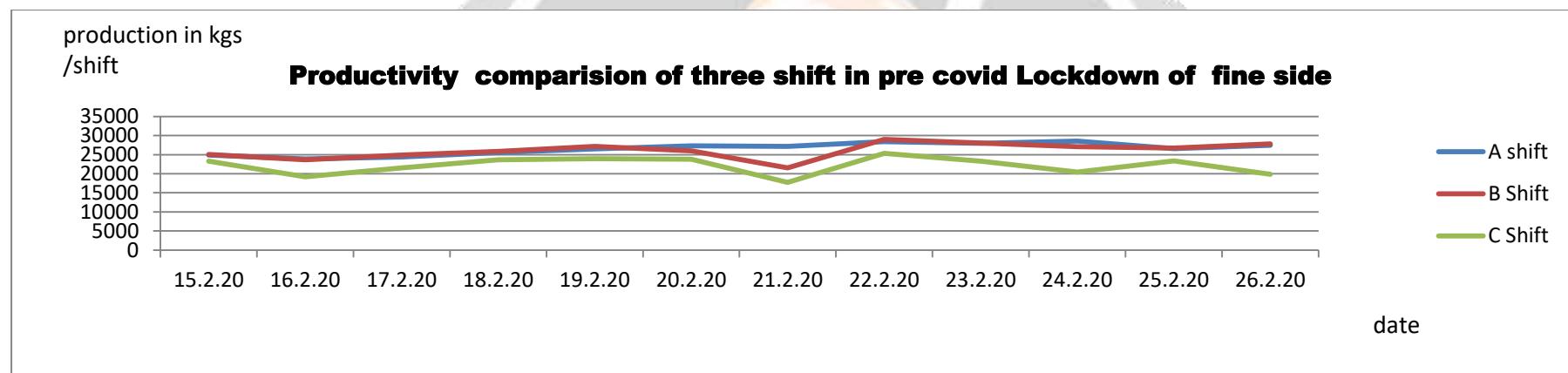


Figure 2 : Production in Fine side ,post covid of A , B and C shift , spinning department

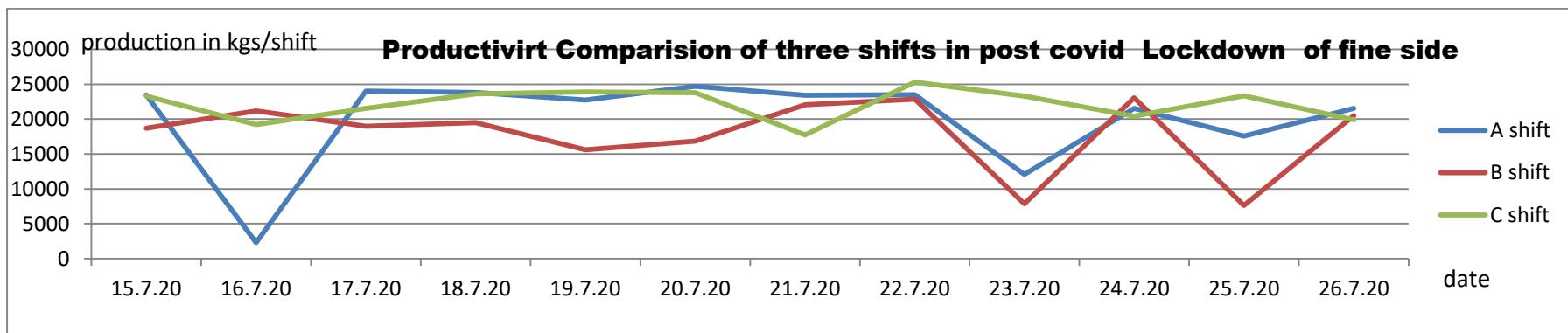


Figure 3 and 4 indicates the pre and post productivity of spinning dept. of three shifts of coarse side. From figure 4, it is found that, high variation of the curve of three shifts. C shift productivity is very low compare to A and B shift .It is due to non-availability of machine operator at C shifts. From figure 3, it is found that ,in pre lock down state three shifts production in kgs/shift are almost same From 15th to 20th the A shift and B shifts production /shift were comparatively higher than C shift. The production /shift in kgs.were gradually decreasing gradually. Figure 4 on the other hand explained that A and B shifts production in kgs/shift were higher than C shift.

Figure 3 : Production in Coarse side pre lockdown of A , B and C shift spinning department

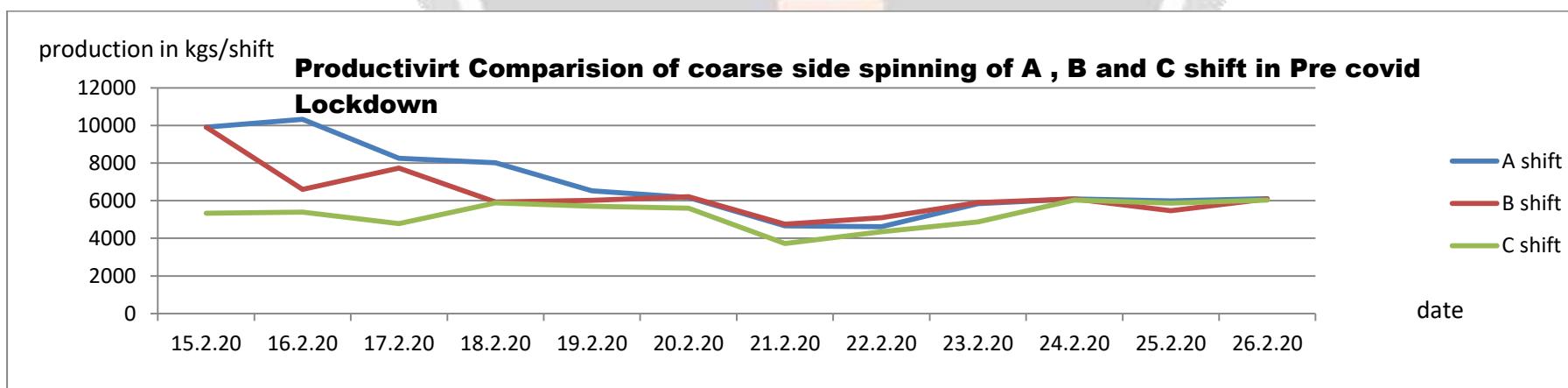
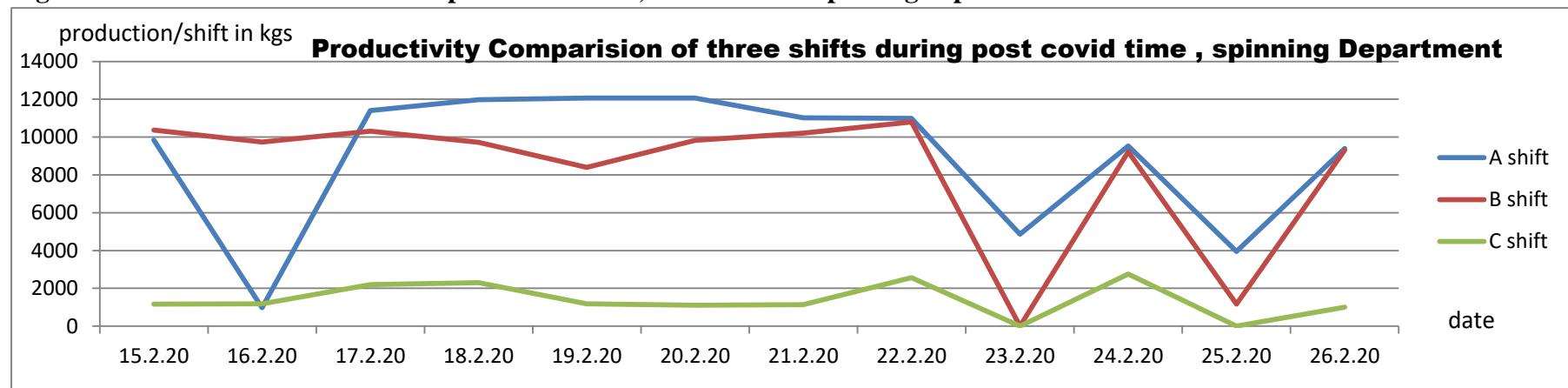


Figure 4 : Production in Coarse side post covid of A , B and C shift spinning department

From figure 5 and 6, it is found that target and actual spinning efficiency % of fine and coarse side in post lock down state are coincide and uniform, less CV% compare to pre lock down state .From figure 5, it is found that wide gap between target and actual machine efficiency % in fine side spinning department, whereas in coarse side the gap between actual and target efficiency % is corporately less compare to fine side spinning. Figure 6 represented the actual and target efficiency % of both fine side and coarse side spinning department in post lockdown state.

Figure 5 : Spinning Frame Average efficiency % /day of three shifts of fine and coarse side pre covid time

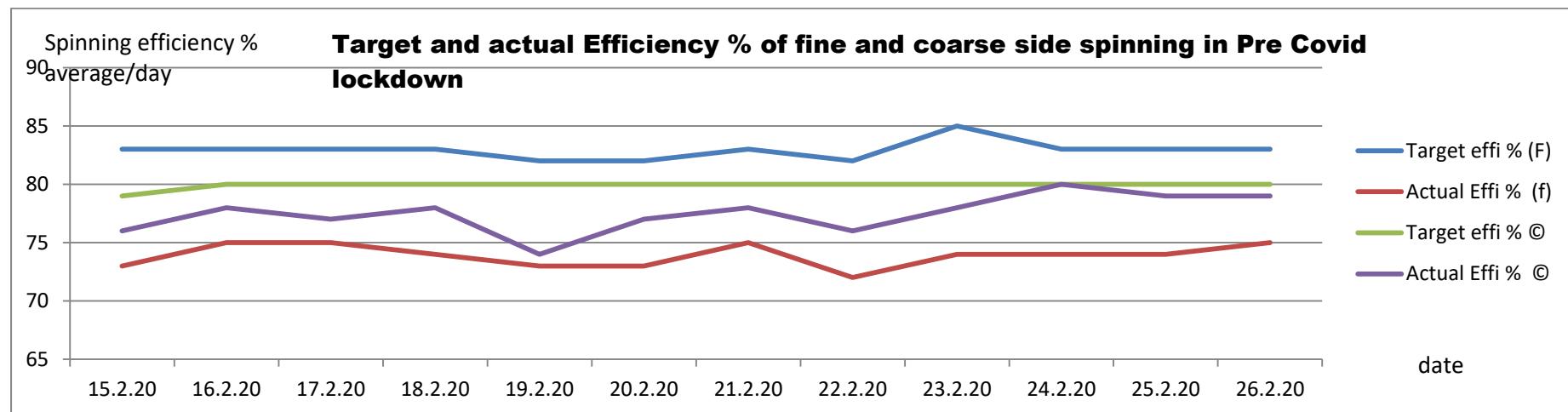


Figure 6 : Spinning Frame Average efficiency % /day of three shifts of fine and coarse side post Covid time

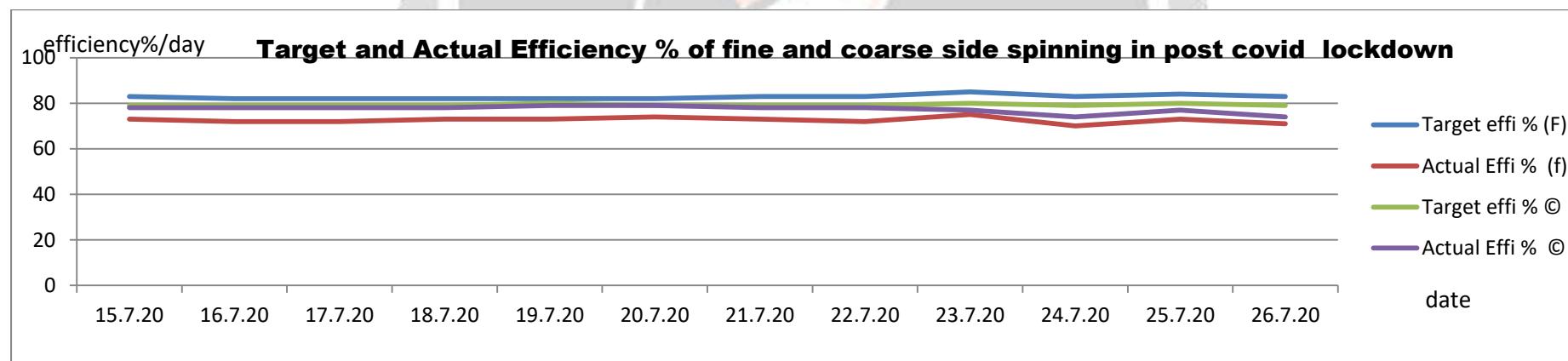


Table 5 : Comparative analysis of Spinning productivity in pre and post lock down state:

Sl No.	No of Days under studied	Subject to be observed	Pre lock down feature	Post Lock down feature	Remarks
1	12 days	Production in fine side, A shift , Average production in kgs/day	26555.42	20062	32.35% lower in productivity in A shift in post lock down state compare to pre lock down period.
2	12 day	CV% of productivity A shift	5.84%	33.07%	High variation in productivity of the study period in post lock down , compare to post lock down state in A shift.
3	12 day	Average No. of Machine run in A shift, fine side	82.7	68.04	21.5 % lower no of spinning machines run in A shift in post lock down state, compare to pre lock down .
4	12 day	CV% of Machines run in A shift, fine side	5.93%	14.87%	High variability of machines running in A shift in post lock down compare to pre lock down .
5	12 day	Production in fine side, B shift , Average production in kgs/day	26073	17899	45.6 % lower in productivity in B shift compare to pre lock down state in B shift in fine side spinning.
6	12 day	CV% of productivity B shift , fine side	7.92%	29.36%	High variability of day wise productivity in Bshift of fine side in post lock down state compare to pre lock down state.
7	12 day	Average No. of Machine run in B shift, fine side	81.54	56.953	43.17 % of lower no of spinning frame running in B shift of fine side in post lock down that pre lock down.
8	12 day	CV% of Machines run in B shift, fine side	7.85%	27.34%	High variation in day wise machine running in B shift within study period , compare to pre lock down stage.
9	12 day	Production in fine side, C shift , Average production in kgs/day,	22118.08	5365.4	312. % less in productivity in C shift in fine side in pre lock down state compare to pre lock down state.
10	12 day	CV% of productivity C shift fine side	10.42%	41.51%	Very high variation of productivity within study period of c shift productivity compare to pre lock down state of c shift in fine side..
11	12 day	Average No. of Machine run in C shift fine side	72.87	16.75	Very less no. of nahine running in C shift of fine side in post lock down state compare to pre lock down state.
12	12 day	CV% of Machines run in C shift fine side	9.53%	35.19%	High variability in running machine in C shift of fine side within study period , compare to pre lock down state.
13	12 day	Actual efficiency of Fine side spinning /day	73.91%	72.58 %	Fine side average efficiency is less compare to pre lock down period average efficiency of spinning

					frame.
14	12 day	Production /winder/shift in kgs of Fine side	288.08	271.41	6.1 % lower in per winder production in fine side of post lock down state compare to pre lock down
15	12 day	Production/day/mc in kgs in spinning of Fine side	315.25	316.33	Slightly higher in spinning machine production /frame /day in post lock down than pre lock down state.
16	12 day	Production in coarse side, A shift , Average production in kgs/day	6876.16	9006.9	Coarse side productivity has been enhanced in post lock down state compare to pre lock down in A shift, due to heavier yarn count.
17	12 day	CV% of productivity A shift coarse side	27.03%	40.95%	Day wise productivity variation of the study period in post lock down is higher compare to pre lock down.
18	12 day	Average No. of Machine run in A shift coarse side	9.83	12.45	Number of machines run in coarse side was comparatively higher compare to pre lock down state in A shift .
19	12 day	CV% of Machines run in A shift coarse side	23.15%	24.73%	Variation of machines running in A shift of the study period is higher in post lock down state of A shift compare to pre lock down state.
20	12 day	Production in coarse side, B shift , Average production in kgs/day	6314.58	9007.09	42.63 % increased in B shift spinning productivity in coarse side compare to pre lock down study period .
21	12 day	CV% of productivity B shift coarse side	21.54%	29.72%	Day wise variation of productivity in B shift is comparatively higher than pre lock down state. This is due to fluctuation of yarn count and non availability of machine operator in post lock down state .
22	12 day	Average No. of Machine run in B shift coarse side	9.12	11.5	Number of machines running in post lock down period in B shift is higher compare to pre lock down state, which given higher productivity.
23	12 day	CV% of Machines run in B shift coarse side	20.09%	72.97%	Day wise no. of machines running was very high in B shift of post lock down period compare to pre lock down state.
24	12 day	Production in coarse side, C shift , Average production in kgs/day	5232	1660.9	C shift production in post lock down period is much less compare to pre lock down state due to non availability of machine operators.
25	12 day	CV% of productivity C shift, coarse side	13.89%	42.19%	Day wise productivity variation in C shift of post lock down stage was much higher compare to pre lock down study period.
26	12 day	Average No. of Machine run in C shift coarse side	8.2	2.85	No. of machines running in C shift was much higher in pre lock down study period compare to post lock

					down state.
27	12 day	CV% of Machines run in C shift coarse side	1.52%	40.38%	Day wise productivity variation in C shift of post lock down period was much higher compare to pre lock down period.
28	12 day	Actual efficiency of coarse side spinning /day	77.5	77.33	Efficiency of coarse side spinning was same in both the period.
29	12 day	Production /winder/day in kgs of coarse side	321.5	372.91	Per winder production in post lock down study period was higher due to heavier count and higher productivity in spinning area.
30	12 day	Production/day /mc in kgs in spinning of coarse side	697.91	756.5	Higher production /frame in post lock down state was observed compare to pre lock down period.

SUGGESTIVE MEASURES:

Top Management has taken several measures for improvement in productivity status in post lock down period. The steps are stated below.

- Arrangement of transportation services of workmen of three shifts for outstation workmen..
- Arrangement of completely safety norms of workers at work place.
- Distribution of Masks to workers.
- Enhancement of daily wages to the contract labor from out station candidate.
- Continuous shift of working time instead of break shift during the lock down period.
- Communicating with labors of closed Jute Mills and given contact service to them at this mill.
- Maintaining the Covid 19 norms and regulations at work place safety.
- Free lodging and flooding facilities to the trainees within mill premises.
- Running of mill during general lockdown days.
- 24*7 hours open of company's own dispensary and ambulance availability.
- Thermal screening of all employees during entry at the main gate.

CONCLUSIONS:

The unit is now coming normal. The Top management has taken so many corrective measures to run the unit with full capacity. The present study helps us to observe the effect of Covid 19 on the productivity of the yarn manufacturing process. Spinning is the heart of Jute Mills. Higher productivity and quality given next process of finished goods manufacturing process under control. As a result the spinning process, i.e., yarn manufacturing processes are studied here. The Top management is trying to unit is trying to run the unit with sufficient manpower to maintain the standard productivity. Top management has given priority to ensure safety of workers at workplace.

REFERENCE:

1. Retail4Growth Team ,(April 17, 2020), Impact of Covid-19 on the Indian Apparel & Textile Industry, <https://www.retail4growth.com/news/impact-of-covid-19>.
2. Juneja A ,(April 2020) , COVID-19 Lockdown: Impact on Textile Industry, <https://www.fibre2fashion.com/industry-article/covid-19-lockdown-impact-on-textile-industry>.
3. Singh S S ,(APRIL 15, 2020), COVID-19 lockdown | Bengal government allows operation of jute mills with 15% staff, :www.thehindu.com/news/national.
4. Thakur J and Bhattacharya S ,(April 22, 2020), Covid-19: 50 jute mills ask for permission to operate, only 5 get it in West Bengal, <https://www.hindustantimes.com/kolkata/covid-19-50-jute-mills-ask-for-permission-to-operate-only-5-get-it-in-west-bengal>.
5. Dutt I A and Acharya N ,(November , 2019), Plastic's loss, jute's gain: Demand for 'golden fibre' boosts jute industry, <https://www.business-standard.com/article/economy-policy/144010101401.html>.
6. Acharya N ,(April 15, 2020), Covid-19: Jute mills seek more relaxation to meet Rabi packaging demand. <https://www.business-standard.com/article/companies/144010101401.html>.
7. PTI, (March 28, 2020), COVID-19: Jute mills seek exemption to operate during lockdown, <https://retail.economictimes.indiatimes.com/news/industry/covid-19-jute-mills-seek-exemption-to-operate-during-lockdown>.
8. PTI, (July 2020), COVID-19 woes: Bi-weekly lockdown in Bengal may affect its jute industry, <https://www.newindianexpress.com/cities/kolkata/2020/july/03/covid-19-woes-bi-weekly-lockdown-in-bengal-may-affect-its-jute-industry-213400.html>.
9. Logesh. M, Paul Mansingh. J and Nisha. A,(July 2020), Effect of COVID-19 Pandemic on the Market Price of Jute in India, <https://www.agriculturejournal.org/volume8number2>.
10. Singh G ,(April 21, 2020) , COVID-19 underlines crisis in jute mills in Kolkata suburbs, <https://citizenmatters.in/kolkata-the-crisis-in-jute-mills-in-kolkata-suburbs>