

## **Fibre Quality Update: 2011 Season**

### **PREFACE**

With the globalization of economy and the need to meet stringent quality norms particularly for export, the cotton trade and spinning industry have come to realize the importance of objective testing of raw material. Accepting the demand from textile industry and trade, CIRCOT decided to publish an "Annual Cotton Quality Update" where information on essential fibre quality attributes for trade varieties collected from different centers would be made available within the cotton season. The first Annual Cotton Quality Update was published in April, 1996. Since then this publication has become an annual event.

**Annual Cotton Quality update 2011:** This booklet, sixteenth in the series, presents data on various fibre quality parameters measured at CIRCOT by using the High Volume Instrumentation System (HVI). The current update contains information about 871 samples collected at random from all the major cotton growing states in the country. In Section A, the data on fibre length, uniformity ratio, micronaire value and bundle tenacity (3.2 mm) are tabulated for 46 varieties of cotton. Section B gives information on the number of samples tested for each variety, the range and the mean values. The frequency distributions for length, Uniformity ratio, Micronaire value and bundle tenacity are given in Section C for each of the 8 cottons for which at least 14 samples were available. Highlights of statistical data are given in sections D and E.

I wish to acknowledge the help received from the staff members attached to the Regional Units of CIRCOT. I would also like to appreciate the initiative taken by Shri Chitranayak and Shri D. N. Moon of the Quality Evaluation and Improvement Division at the Head quarters and more importantly the technical staff of the HVI and Fibre Testing, Test House, Ginning and Technical Information sections without whose active involvement, the generation of data, analysis and preparation of this booklet would not have been possible.

**A.J.Shaikh**

**Director, CIRCOT**

**08.08.2011**

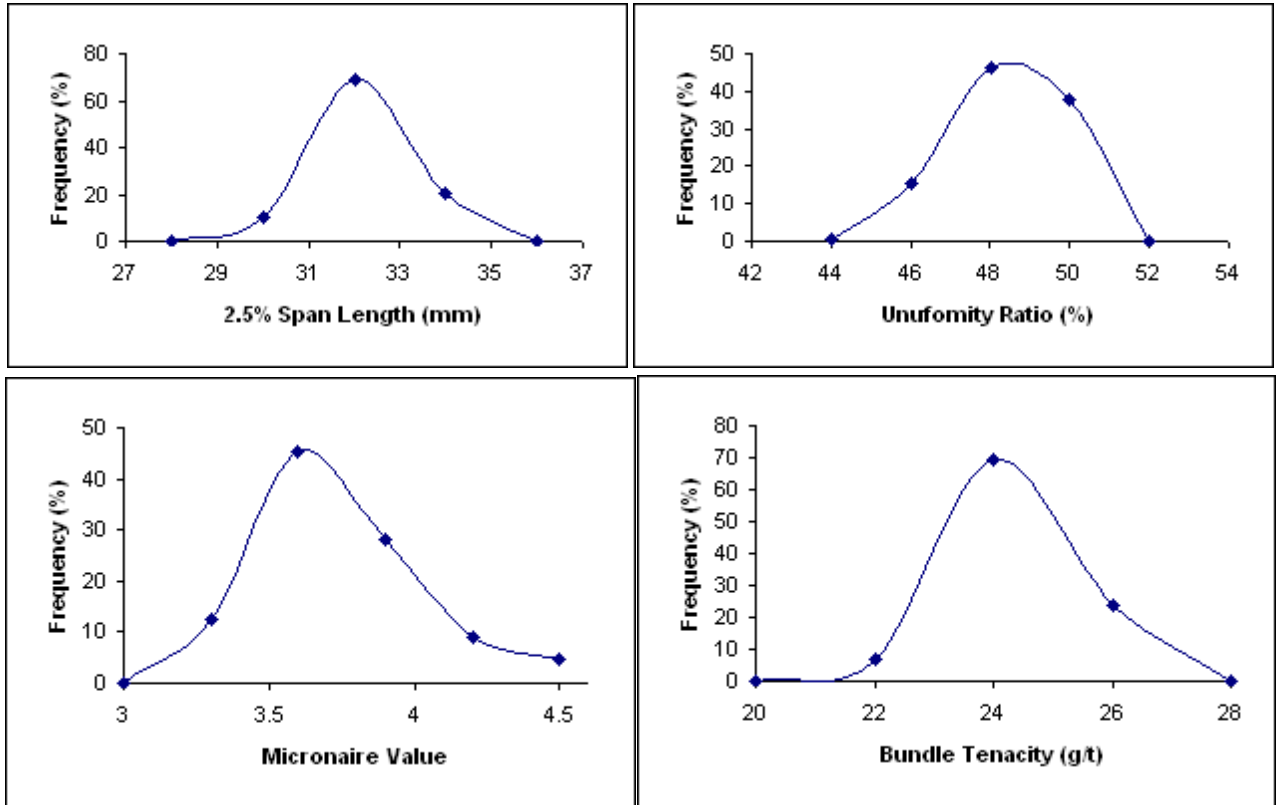
***Abbreviations Used for Various States***

AS : Assam	MP : Madhya Pradesh
AP : Andhra Pradesh	MS : Maharashtra
GS : Gujarat	OS : Orrisa
HS : Haryana	PS : Punjab
KS : Karnataka	RS : Rajasthan
TN : Tamil Nadu	KLS : Kerala

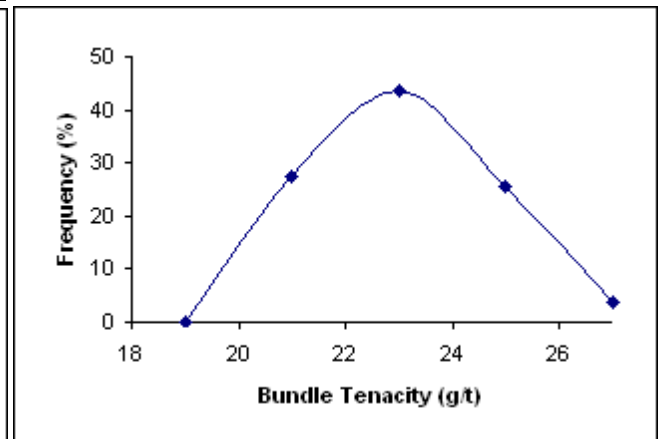
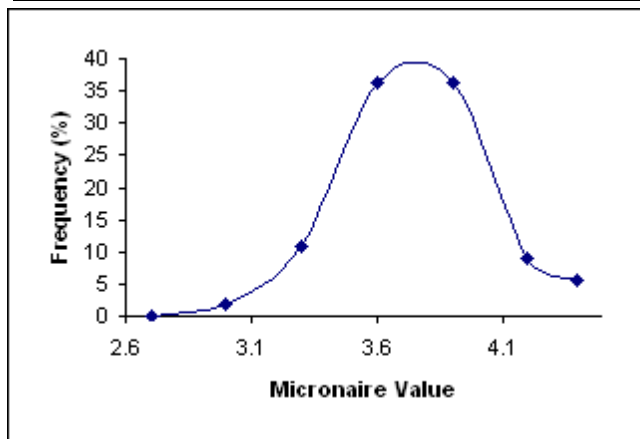
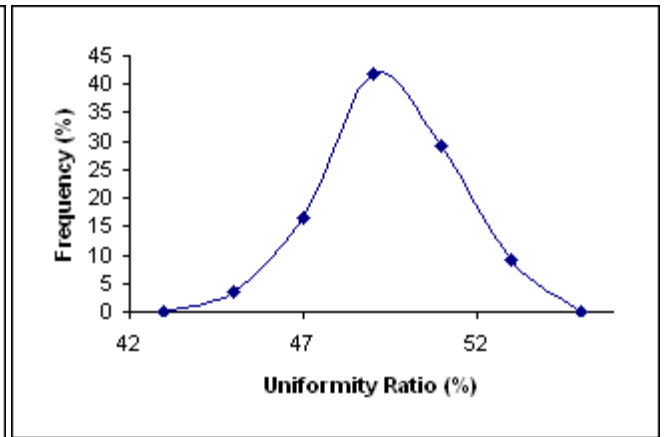
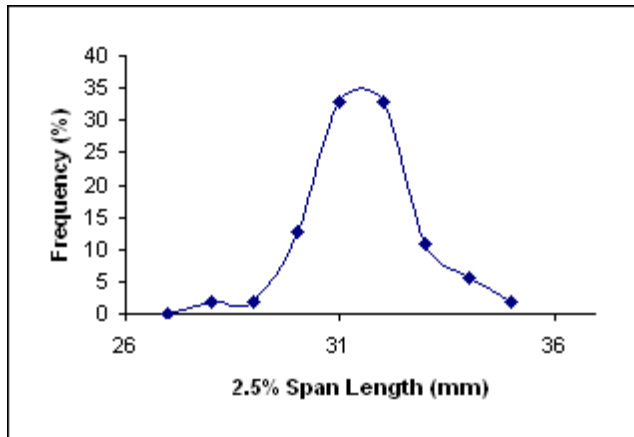
**Compiled by : Shri Chitranayak & Shri D.N.Moon**

## C. FREQUENCY DISTRIBUTION OF FIBRE PROPERTIES

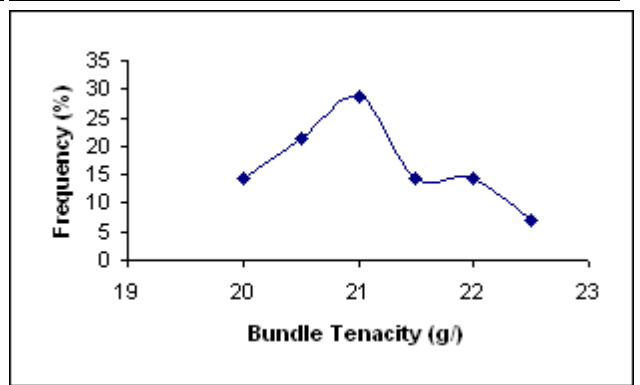
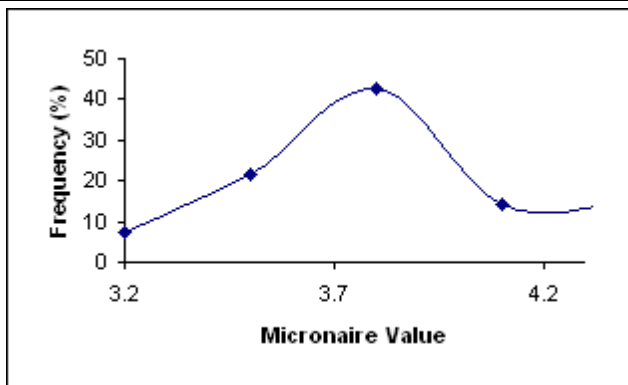
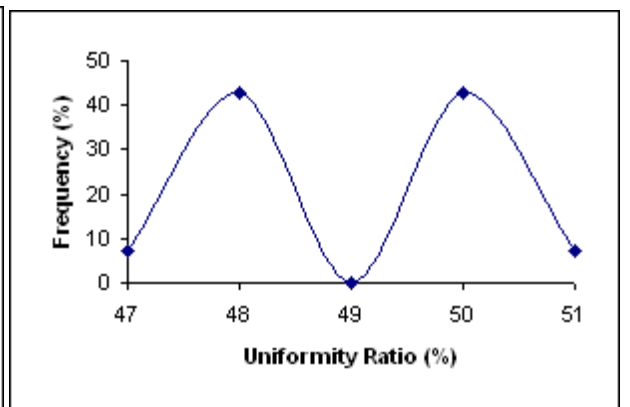
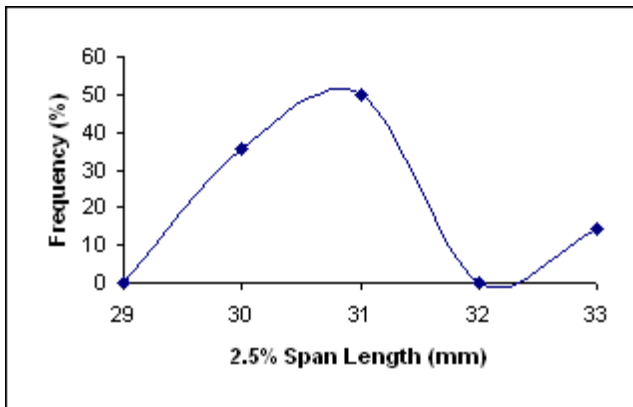
### Bunny Brahma



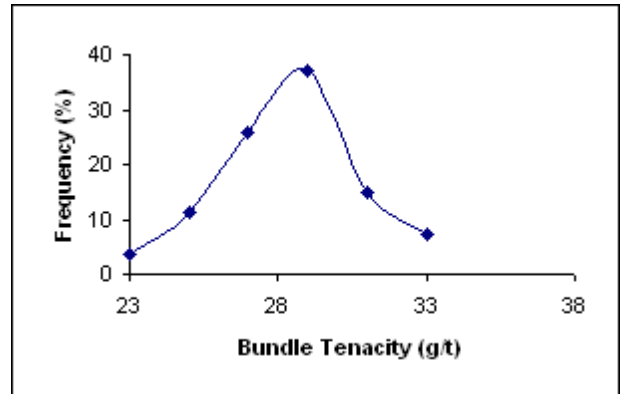
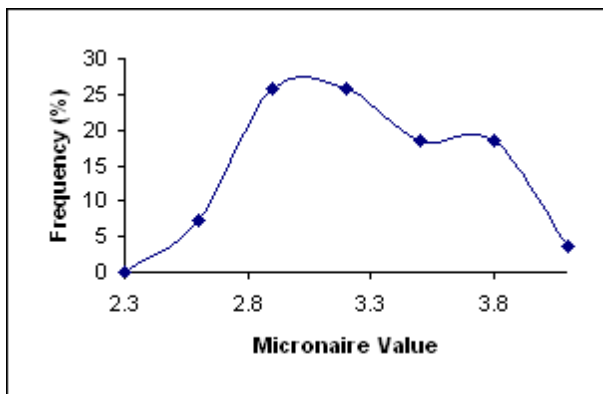
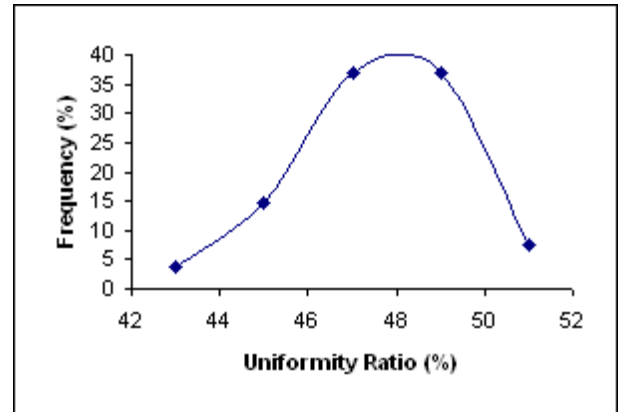
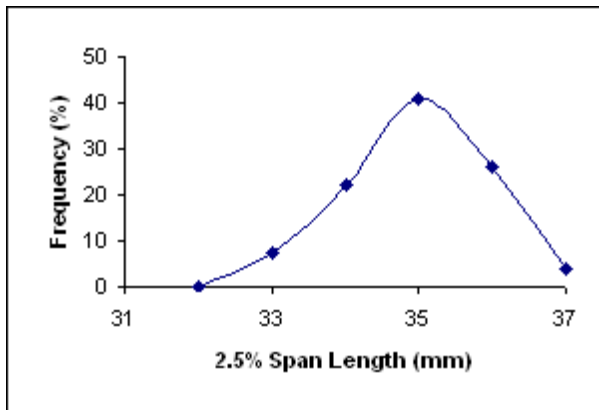
### Bunny Bt.



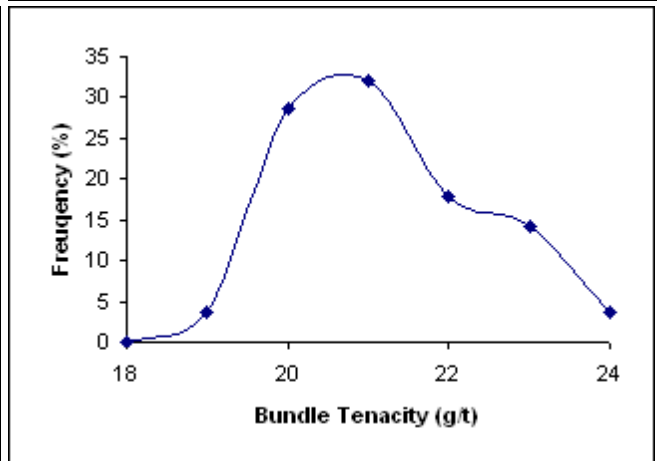
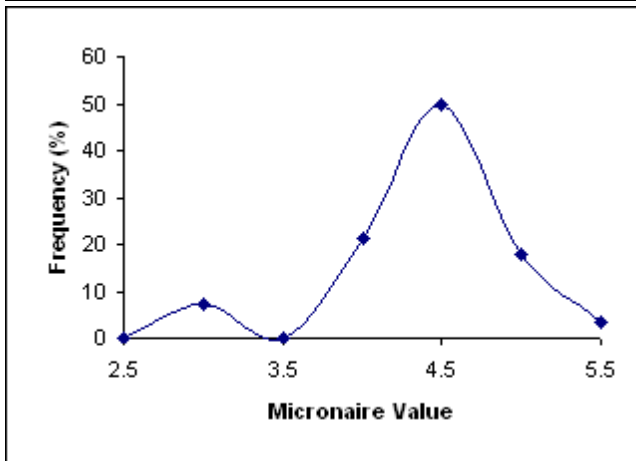
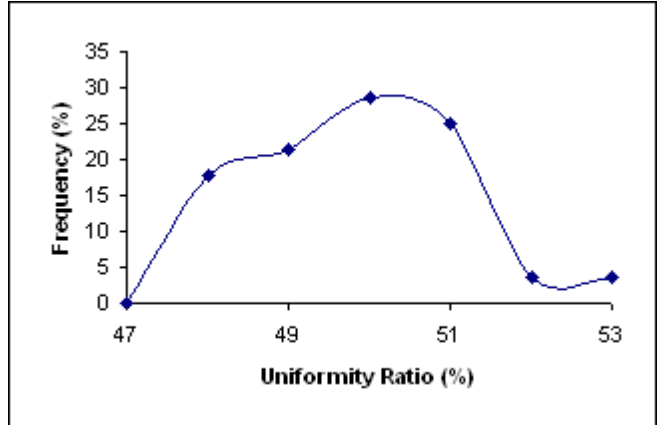
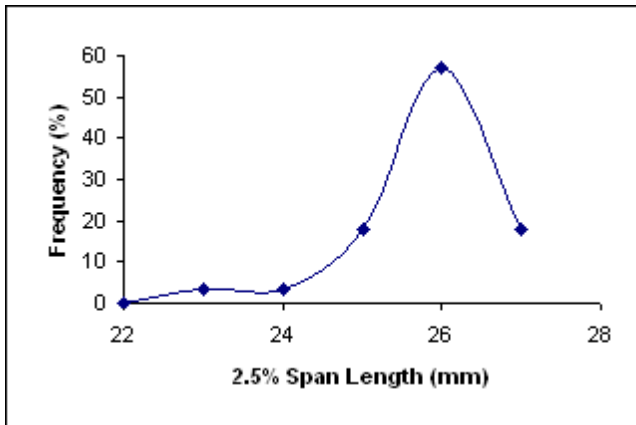
## Bunny 145



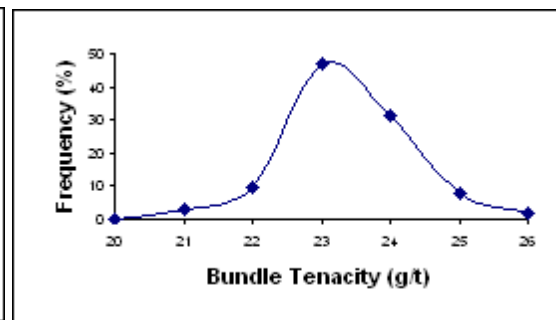
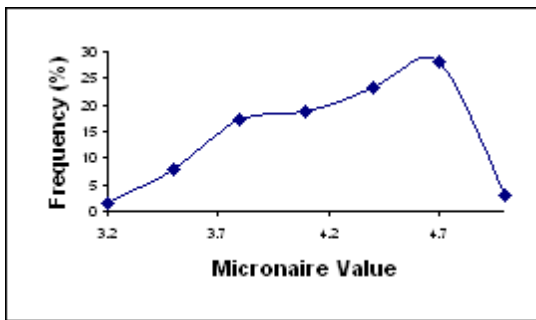
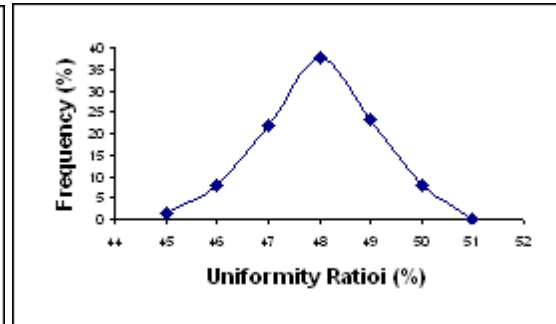
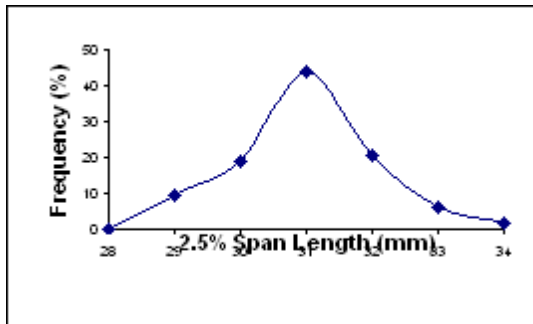
### DCH.32



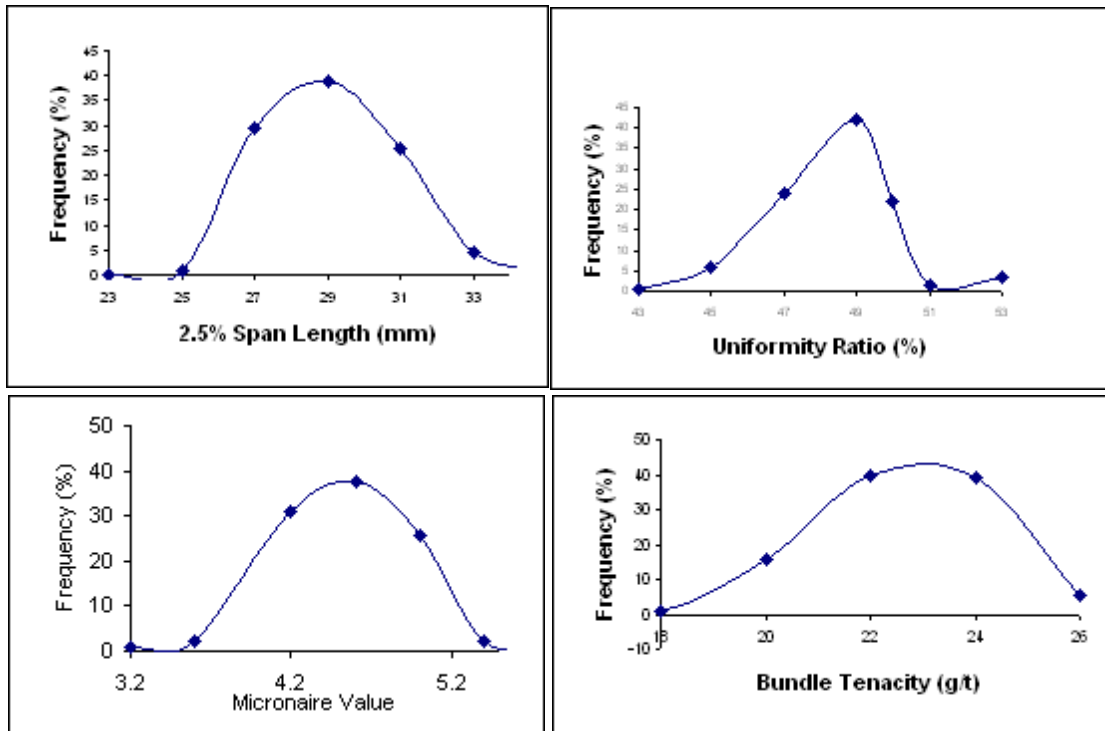
### G.Cot-23



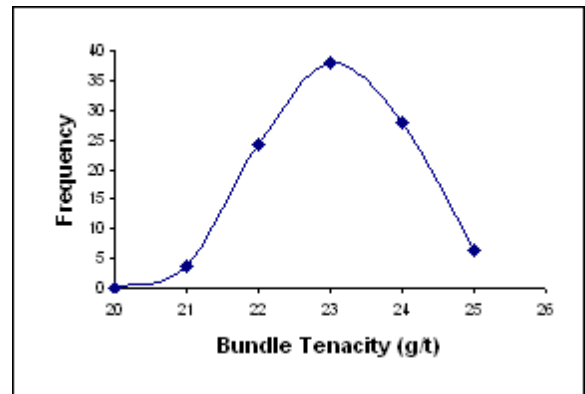
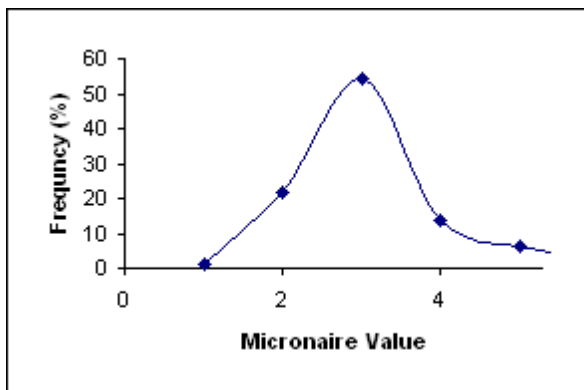
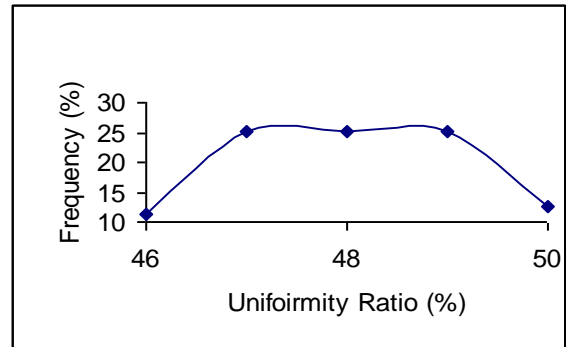
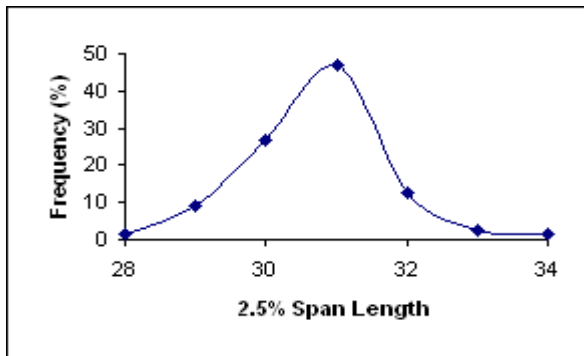
#### H.4



### J.34



## S.6



**B. RANGE AND MEAN VALUES OF FIBRE PROPERTIES**

<b>Sr. No.</b>	<b>Variety</b>	<b>No. of Samples</b>	<b>2.5% SL (mm)</b>	<b>UR %</b>	<b>MIC</b>	<b>Tenacity (3.2 mm g/tex)</b>
1	155 Bt	5	27.1-29.2 (28.1)	50-52 (51)	3.2-4.5 (3.9)	19.1-21.8 (19.8)
2	651 Bt	4	28.3-32.2 (29.9)	47-50 (49)	3.6-4.2 (3.9)	18.3-20.8 (19.7)
3	Ajit 11	9	28.4-32.2 (30.2)	46-52 (48)	3.2-4.1 (3.6)	19.2-22.8 (20.9)
4	Ankur Bt	2	28.2-32.2 (30.2)	50-50 (50)	4.0-4.1 (4.1)	21.6-21.8 (21.7)
5	Ankur 09	1	30.8	49	3.4	21.7
6	Ankur 3018	1	30.4	47	4	22.1
7	Ankur 651	3	29.6-30.7 (30.1)	45-48 (46)	3.3-4.0 (3.8)	22.5-23.4 (22.9)
8	Brahma Bt	4	30.1-33.4 (32.0)	47-50 (49)	3.4-3.5 (3.4)	22.8-24.4 (23.6)
9	Bunny Brahma	350	28.6-34.1 (31.2)	44-50 (48)	3.1-4.5 (3.6)	20.7-26.7 (23.4)
10	Bunny Bt	55	27.7-34.2 (31.1)	44-53 (49)	2.8-4.3 (3.7)	19.2-26.4 (22.2)
11	Bunny 145	14	29.3-32.6 (30.4)	47-51 (49)	3.2-4.3 (3.7)	20.0-22.3 (20.9)
12	DCH.32	27	32.2-36.2 (34.5)	43-50 (47)	2.4-4.0 (3.2)	23.0-32.1 (27.4)
13	Dr. Brand Bt	5	29.4-31.2 (30.1)	46-52 (49)	3.2-4.3 (3.7)	21.0-23.8 (22.1)

14	Dyana	1	28.2	47	4	21.3
15	H.4	64	28.4-33.1 (30.6)	45-50 (48)	3.2-4.8 (4.2)	20.6-25.2 (22.9)
16	J.34	148	23.9-33.2 (28.2)	43-53 (48)	3.2-5.5 (4.4)	18.0-25.4 (21.7)
17	Jai Bt	5	29.3-33.2 (31.4)	47-51 (49)	4.0-4.6 (4.3)	21.2-22.8 (21.8)
18	Jai AKKa	1	30.1	49	4.3	20.8
19	JK-99	1	33.2	50	4	23
20	Mallika	3	29.1-32.0 (30.8)	48-49 (49)	3.4-3.7 (3.5)	21.2-23.2 (22)
21	Maruti Krishdhan	1	31.6	48	3.8	23.7
22	Nanded Bt	2	27.6-32.3 (30.0)	48-50 (49)	3.7 (3.7)	19.8-20.4 (20.1)
23	Pratik	1	29.1	52	4.4	21.5
24	Rasi	1	28.9	48	3.5	22.1
25	Rasi GBT	1	29.5	52	4.1	21.5
26	Rasi.2	1	29.8	47	3.6	23.6
27	S.6	79	28.0-33.3 (30.3)	46-50 (48)	3.7-5.2 (4.2)	20.6-25.0 (22.6)
28	Sujata Bt	1	28.5	51	3.9	22.2
29	Vikram.5	2	30.7-32.2 (31.5)	48-49 (49)	3.7-4.0 (3.9)	21.0-22.5 (21.8)
30	Yashoda Bt	1	27.9	50	3.9	22.5
31	MCU-5	1	33.8	44	3.1	22.2
32	LRA 5166	1	27.4	49	4.3	20.4
33	Suvin	1	39.6	50	3.7	21.7
34	Surbhi	1	23.5	49	3.4	24.9
35	Suraj	1	31	50	3.4	26.5

36	RCH-2	3	29.3-32.2 30.9	41-51 47	2.8-3.4 3.1	21.9-25.7 24
37	Suvin	1	39.6	50	3.7	21.7
38	Surbhi	1	23.5	49	3.4	24.9
39	Suraj	1	31	50	3.4	26.5
40	S.6	79	28.0-33.3 (30.3)	46-50 (48)	3.7-5.2 (4.2)	20.6-25.0 (22.6)
41	Sujata Bt	1	28.5	51	3.9	22.2
42	Tulsi-4	3	28.2-31.4 29.6	42-50 47	2.7-4.5 3.6	21.7-23.9 23.1
43	Tulsi-9	5	28.7-32.4 30.2	42-48 45	2.5-3.6 3	22.6-24.7 23.2
44	Vikram.5	2	30.7-32.2 (31.5)	48-49 (49)	3.7-4.0 (3.9)	21.0-22.5 (21.8)
45	Vijay Pluse	1	33.4	49	2.7	23.7
46	Yashoda Bt	1	27.9	50	3.9	22.5

**D. VARIABILITY IN FIBRE PROPERTIES IN SOME VARIETIES**

<b>Variety</b>	<b>Coefficient of Variation (%)</b>			
	<b>2.5% Span Length</b>	<b>Uniformity Ratio</b>	<b>Micronaire Value</b>	<b>Bundle Tenacity</b>
Bunny Brahma	3	3	7	4
Bunny Bt	4	4	8	7
Bunny 145	3	3	8	3
DCH.32	3	4	12	9
G.Cot-23	4	3	13	6
H.4	4	2	10	4
J.34	6	4	9	7
S.6	3	3	7	4

## E. HIGHLIGHTS OF STATISTICAL ANALYSIS

The following observations are based on cottons for which 14 or more samples have been received for a given variety/hybrid during the crop season 2010-11.

**2.5% Span Length :** Highest variation in length is seen in J.34 with 5% CV followed by Bunny Bt, G.Cot-23 and H.4 with 4% CV. Bunny Brahma, Bunny 145, DCH.32 and S.6 showed a low variability of 3%.

**Uniformity Ratio :** Bunny Bt, DCH.32 and J.34 showed the highest CV of 4% and Bunny Brahma, Bunny 145, G.cot-23 and S.6 displayed a CV of 3%. The lowest CV was indicated by H.4 with the CV of 2%.

**Micronaire :** G.Cot-23 showed the highest CV of 13%, DCH.32 showed a CV of 12%, H.4 displayed a CV of 10%, while J.34 had a CV of 9%. Bunny Bt and Bunny 145 showed a CV of 8% and Bunny Brahma and S.6 with a CV of 7% came next.

**Tenacity :** The highest variation of 9% CV was recorded by DCH.32 followed by Bunny Bt and J.34 with 7% CV and G.Cot-23 with 6% of CV came next. Bunny Brahma, H.4 and S.6 have showed a CV of 4%. The lowest CV of 3% was recorded by Bunny 145.

- ❖ The samples of Bt varieties of cotton such as 155 Bt, 651 Bt, Ankur Bt, Brahma Bt, Bunny Bt, Jai Bt, Nanded Bt, Sujata Bt and Yashoda Bt were mostly received from Maharashtra and Karnataka states. The 2.5% span length of these Bt varieties of cotton were in the range of 27.1 mm to 34.2 mm and their micronaire value remained in the range of 2.8 to 4.6. The fibres of Bt varieties were found to be fine to very fine category and the staple length were medium long to extra long category. The tenacity was found in the range of 18.3 g/tex to 26.4 g/tex.
- ❖ Normal range of tenacity for other Bt varieties was 22 to 24 g/tex, whereas only Bunny Bt showed a high value of 26.4 g/tex. It was found that there were no Bt varieties / hybrids under short staple category.
- ❖ The DCH.32 variety of cotton has very good quality parameters as their 2.5% span length was from 32.2 to 36.2 mm and tenacity value was in the range of 23.0 g/tex to 32.1 g/tex, with micronaire ranging from 2.4 to 4.0.

- ❖ Brahma Bt and Bunny Bt also possessed very good quality fibres. Their 2.5% span lengths were in the category of long to extra long staple category of 27.7 mm to 34.2 mm, very fine to fine category as their micronaire value ranges from 2.8 to 4.3 and tenacity also was found to be good in the range of 19.2 to 26.4 g/tex. Suvin variety in extra long category having value of 39.6 mm length, 3.7 micronaire and 21.7 g/tex remained the longest and one of the best cottons in this whole lot.
  
- ❖ J.34 has 2.5% span length from 23.9 to 33.2 mm. Out of 807 samples except J.34 and Surabhi variety none of the varieties has 2.5% span length less than 27.1 mm. It can be concluded that trade varieties of cotton have very few short staple varieties available in Indian market presently, so there may be a scarcity of shorter length cottons in the near future.