

Ring Cotton

Drafting Tenacity

Textile Research Journal 71 9

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“Practical Aspects of Drafting Tenacity of Cotton at the Ring Spinning Frames”

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Draft Drafting force

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Drafting force Tenacity(D. T.)

D. T. Setting

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D. T. 가

D. T.

. 가

, 가

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Audivert가 D. T. 가

.

Micronaire

D.T. ,

2)

Spain . ,
 Shirley miniature Spinning Plant
 .
 Tex가 560 Tex , 0.50, 0.83 0.99

3)

가 , 가 . < 1> 5%

< 1>

	오차 (%)
D.T.	< 5
Digital Fibrograph Parameters	< 4
Comb Sorter Parameters	< 2
Stelometer Values	< 2
Projected Mean Length	< 1

. D. T.

1) D. T. , Micronaire

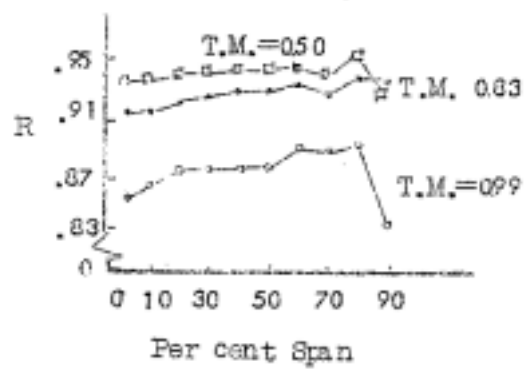
Digital Fibrograph Span-length(Fibrograph %
) Comb Sorter Upper-x mean
 length(Staple Diagram x % , x %
 x)
 . Span-length 2.5, 10, 20, 30, 40, 50, 60, 70, 80 90% Span

, Upper-x mean Length 10, 20, 30, 40, 50, 60, 70, 80, 90 100%-x .

< 1> Span-length Micronair D.T.

%Span 가 가 ,

80% Span .



< 1> DT., Span length Micronaire (R)-% Span

% Span 가 ,

가 가

$$Y = 14.10X - 0.208Z - 2.01 (T.M. = 0.50)$$

$$Y = 17.88X - 0.443Z - 1.78 (T.M. = 0.83)$$

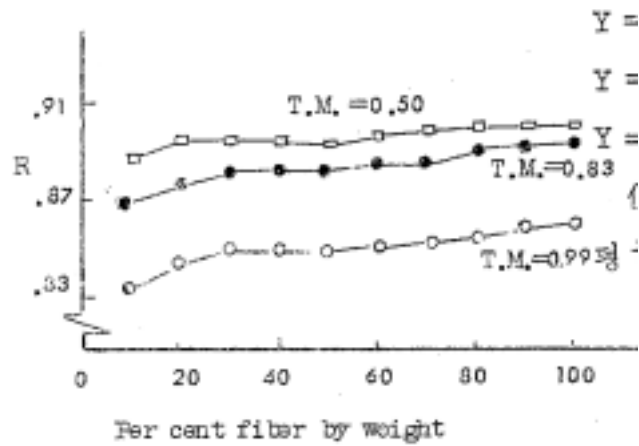
$$Y = 13.34X - 0.279Z - 0.95 (T.M. = 0.99)$$

, Y D. T. (g/tex), x 80% Span-length(h1.), Z Micronaire, TM

< 2> Upper-x mean length %-Fiber가 가

가 , 100%-Fiber

. Span-length 가 T. M. 가 가



< 2> D.T., Upper-x Mean length Micronair (R)-% Fiber by weight

$$Y = 0.059X - 0.153Z + 0.41(T.M. = 0.50)$$

$$Y = 0.075X - 0.382Z + 1.32(T.M. = 0.83)$$

$$Y = 0.057X - 0.232Z + 1.33(T.M. = 0.99)$$

, X 100% Fiber ,

, 2.5%, 50%

Span-length

. , Span-length Upper-x mean length

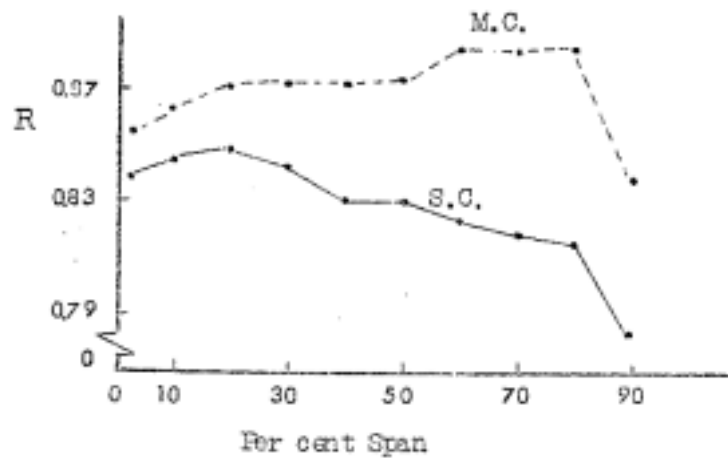
가

2) Micronaire

D. T. , Micronaire

Micronaire D.T.

< 3>



< 3> D.T., Span Length (S.C) D.T., Span length, micronaire

Micronaire

beta-

가

<

2> < 3>

가

< 2> 80% span length Micronaire Beta-

TM of roving	Beta of MFL β_{MFL}	Beta of Micronaire β_M	Beta ratio β_M/β_{MFL}
0.50	0.887	-0.188	-0.21
0.83	0.803	-0.335	-0.42
0.99	0.807	-0.266	-0.33

< 3>

Micronaire Beta-

TM of roving	Beta of MFL β_{MFL}	Beta of Micronaire β_M	Beta ratio β_M/β_{MFL}
0.50	0.887	-0.188	-0.21
0.83	0.803	-0.335	-0.42
0.99	0.807	-0.266	-0.33

D.T.

4>

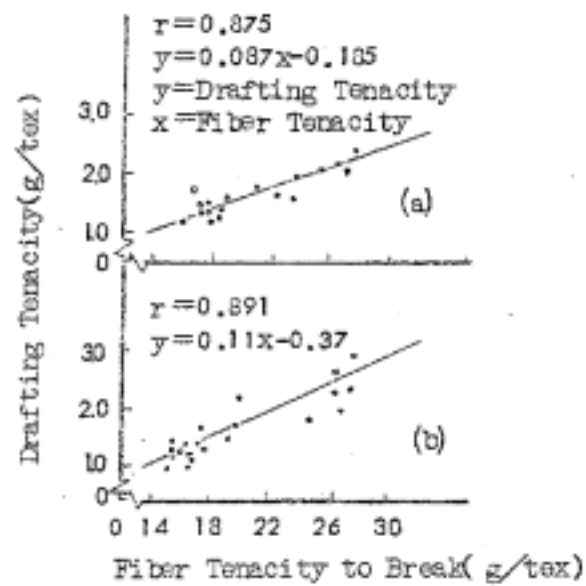
. <

D.T.

Stelometer 1/8 " Gauge

가

D.T.



< 4> D.T. -

(a)

(b) spain

. SRRL fomula 가 D.T.

D.T. , 가

. Top roll 가

.

560Tex SRRL formula[4] 가 D.T.

. < 5> . 가 ,

D.T. 가 .

가 Draft ,

Draft Draft ,

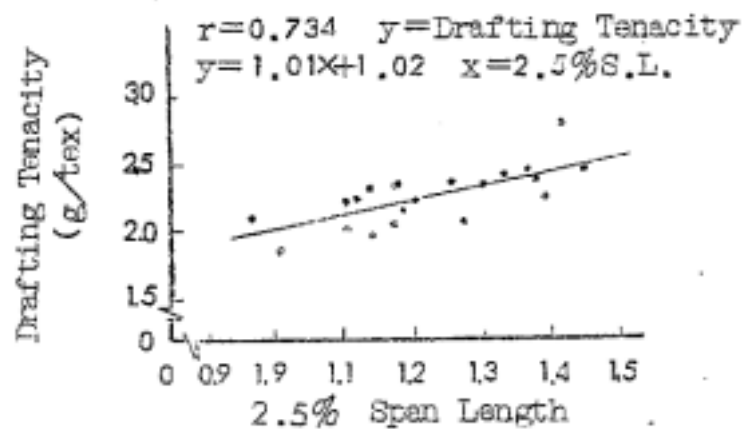
Draft , . , Draft가 D.T. ,

< 5> 가 . ,

SRRL formula 가 D.T.

.

SRRL formula



< 5> D. T. -2.5% Span length

. M.S.T.-D.T.

가 (Minimum Spinning Twist)가 . M.S.T. [1] twist

가

D.T. ,

가 10tex .

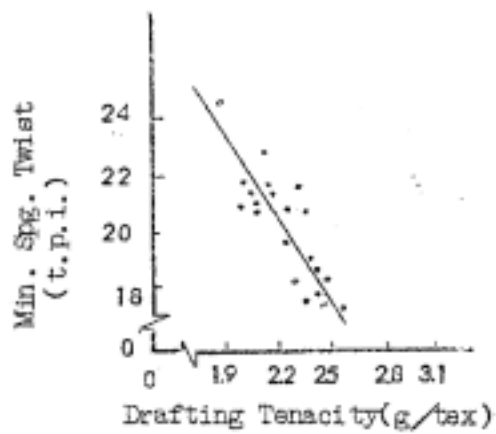
1)

560 Tex SRRL Formula 가 M.S.T. .

D.T. Draft .

< 6> ,

D.T. M.S.T. 가 . < 4>



< 6> M.S.T.-D.T.

< 4> M.S.T. -D.T.

TM of roving	Coefficient of Correlation
0.50	-0.938
0.83	-0.935
0.99	-0.822

2)

210Tex 740Tex Twist D.T.

. < 7> , D.T. M.S.T.

. 740 Tex . D.T.가 가

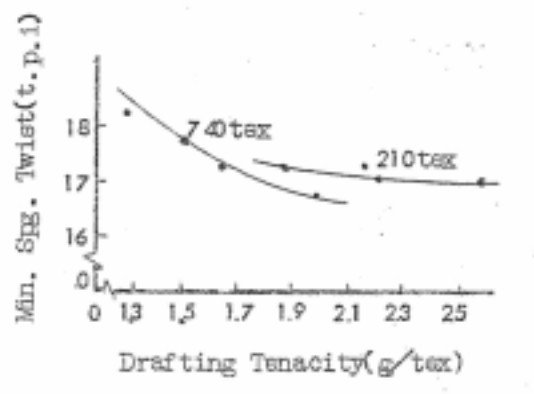
가 , Front Roll Strand

Balloon zone

M.S.T가 . 210Tex M.S.T.

, . , Front Roll

가 가 , D.T.가 가



< 7> M.S.T.-D.T.

D.T.가 M.S.T.

가

.

.

Apron

D.T.

가

(Projected Mean Length)

[6]

< 8>

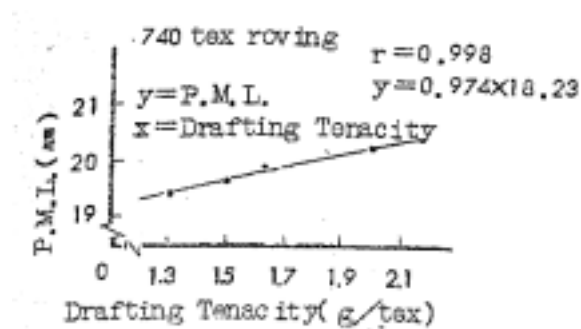
, D.T.가

가

P.M.L

가

210 Tex.



<

8> P.M.L.-D.T.

(Spinning Draft 54)

. Waste

D.T.가

Waste

Fly

가

,

Front roll

.

< 9>

. D.T.가

가

Waste가

,

가

.

가

roll

Strand

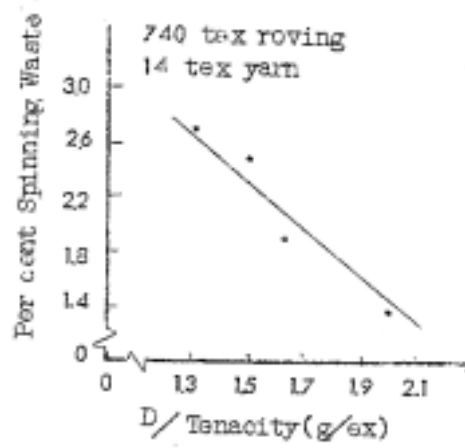
. ,

Waste가 D.T.가

,

가

가 .



< 9> Waste-D.T.

.

D.T.

. < 5>

27Tex

D.T.

.

, 가

.

< 5>

-D.T.

Yarn twist	Coefficient of simple Correlation
Optimum	0.944
Optimum-10 %	0.927
Optimum-20 %	0.904

< 5>

slip

가 ,

D.T. 가

.
, Slip
.

가 .

D.T. . <

6> . < 5>

< 6> D.T.X.

Yarn twist	Coefficient of simple correlation
Optimum	0.973
Optimum-10 %	0.965
Optimum-20 %	0.952

.
1. D.T. Micronaire .

2. Fibrograph 80% Span-length Sorter D.T.

가 .

3. Micronaire D.T. .

4. D.T. 0.86 .

5. D.T. M.S.T. .

6. 가 D.T. M.S.T. .

7. Waste D.T.가 가 가 .

8. D.T.가 가 .

9. D.T. ,

D.T. 積 .

D.T.

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