

(2)

1: SACO LOWELL

RIETER R20

HVI

4가

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< 1>.

WF 10

WF 20

HVI

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4가

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< 3> 4가

	Ring spinning								Rotor spinning							
	Aph10		Aph20		WF10		WF20		Aph10		Aph20		WF10		WF20	
CV%	24.4	b [‡]	23.8	a	24.9	c	25.3	d	14.14	b	14.07	a	14.13	b	14.47	c
Thin places/km	1197	b	1074	a	1328	c	1403	d	9	a	9	a	8	a	11	b
Thick places/km	1688	b	1517	a	1945	c	2080	d	48	b	39	a	52	c	61	d
Neps 140%/km	1653	b	1174	a	2198	c	2516	d	654	c	464	a	599	b	799	d
Neps 200%/km	390	b	216	a	619	c	746	d	44	b	20	a	52	c	66	d
Neps 280%/km	88	b	35	a	186	c	228	d	6	b	2	a	12	c	13	c
Hairiness	6.03	a	5.99	a	6.15	b	6.20	c	4.1	b	4.0	a	4.2	c	4.3	d
Elongation (%)	5.6	b	5.9	a	5.3	c	5.2	d	6.7	b	6.8	a	6.4	c	6.3	d
Tenacity (cN/tex)	12.1	a	12.1	a	12.1	a	12.0	a	12.1	a	11.9	b	11.8	b	11.3	c

H2SD

가

< 1>.

가

(Aph 10, Aph 20)

H2SD

4.3

2.4 가 . 가 가 (WF 10, WF 20) 9.4 11.2

가 .

가 가 . 가

가 .

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< 3> . Aph 20

Aph 10 .

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Aph 10 Aph 20 HVI

. Aph 20(

) WF 20(가)

. Aph 20 WF 20

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< 4> ()

4가 . (1) Aph 10 WF 10

. Aph 20 WF 20 .

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. (2) CV% 가 ,

. (가 ,

,) CV%

가 1/100 . (3)

가 .

가 .

가
가 1/100 . (4)
가 .

< 4>

Parameter	Mix ID	r	Slope	+95% Cnf. Lmt.	-95% Cnf. Lmt.
CV%	Aph10	0.433	0.007	0.001	0.014
	Aph20	0.531	0.012	0.004	0.019
	WF10	0.154			
	WF20	0.490	0.012	0.003	0.020
Thin places/km	Aph10	0.554	3.5	1.3	5.7
	Aph20	0.527	3.1	1.0	5.1
	WF10	0.240			
	WF20	0.606	4.6	2.0	7.1
Thick places/km	Aph10	0.464	2.2	0.4	3.9
	Aph20	0.699	3.9	2.2	5.6
	WF10	0.264			
	WF20	0.575	3.3	1.3	5.3
Neps 140%/km	Aph10	0.480	3.1	0.7	5.5
	Aph20	0.704	5.8	3.3	8.3
	WF10	0.345			
	WF20	0.700	6.4	3.7	9.2
Neps 200%/km	Aph10	0.377			
	Aph20	0.611	1.1	0.5	1.7
	WF10	0.264			
	WF20	0.579	1.8	0.7	2.9
Neps 280%/km	Aph10	0.078			
	Aph20	0.445	0.2	0.0	0.4
	WF10	0.190			
	WF20	0.209			
Hairiness	Aph10	0.446	0.004	0.001	0.008
	Aph20	0.745	0.009	0.006	0.012
	WF10	0.510	0.009	0.006	0.012
	WF20	0.668	0.007	0.004	0.011
Elongation (%)	Aph10	-0.212			
	Aph20	-0.443	-0.007	-0.013	-0.001
	WF10	-0.041			
	WF20	0.013			
Tenacity (cN/tex)	Aph10	0.207			
	Aph20	-0.228			
	WF10	0.173			
	WF20	0.354			

* r > 0.388 5%

< 5>

Parameter	Mix ID	r	Slope	+95% Cnf. Lmt.	-95% Cnf. Lmt.
CV%	Aph10	0.281			
	Aph20	0.569	0.006	0.002	0.010
	WF10	0.477	0.005	0.001	0.010
	WF20	0.856	0.018	0.013	0.023
Thin places/km	Aph10	-0.370			
	Aph20	0.039			
	WF10	-0.301			
	WF20	0.425			
Thick places/km	Aph10	0.032			
	Aph20	0.013			
	WF10	0.255			
	WF20	0.481	0.4	0.1	0.8
Neps 140%/km	Aph10	0.328			
	Aph20	0.371			
	WF10	0.601	2.3	0.8	3.9
	WF20	0.808	8.8	5.6	11.09
Neps 200%/km	Aph10	0.045			
	Aph20	0.032			
	WF10	0.196			
	WF20	0.455	0.5	0.1	0.9
Neps 280%/km	Aph10	-0.280			
	Aph20	-0.254			
	WF10	-0.002			
	WF20	-0.191			
Hairiness	Aph10	0.018			
	Aph20	0.664	0.002	0.001	0.003
	WF10	0.761	0.002	0.001	0.003
	WF20	0.913	0.006	0.005	0.007
Elongation (%)	Aph10	-0.265			
	Aph20	0.171			
	WF10	0.040			
	WF20	-0.772	-0.010	-0.014	-0.006
Tenacity (cN/tex)	Aph10	-0.006			
	Aph20	-0.098			
	WF10	-0.243			
	WF20	-0.686	-0.022	-0.034	-0.011

* r > 0.444 5%

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(

) 4가 . (1) Aph 10

. (2) Aph 20, WF 10, WF 20

CV% Aph 20 WF 10 (140%)

가, WF 20 가 가 . WF 20

WF 10 CV% 가

가 . (3) Aph 20, WF 10, WF 20

가 . CV% WF

20 WF 10 가 . (4) WF 20

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Saco Lowell

. 가

가 1000

114 가 183 . R 20

Aph 10

, Aph 20 CV%가

. WF 10 가 . WF 20 가

. 가

1000 264

가 638 . H2SD 가

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3> Aph 20 WF 20

가

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가 . 가

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가 가

. (1) 가

. (2) H2SD 가

가 .

가 Saco Lowell

Saco Lowell

Sussen Fiomax 1000

Sussen EliTe() . 2

, 가 가

가 가 .

Yarn nep from the mix Aph20



Yarn nep from the mix WF20



< 3>

(SEM)

2: SUESSEN FIOMAX 1000 SUESSEN ELITE

4가 , , , ,

HVI . 가

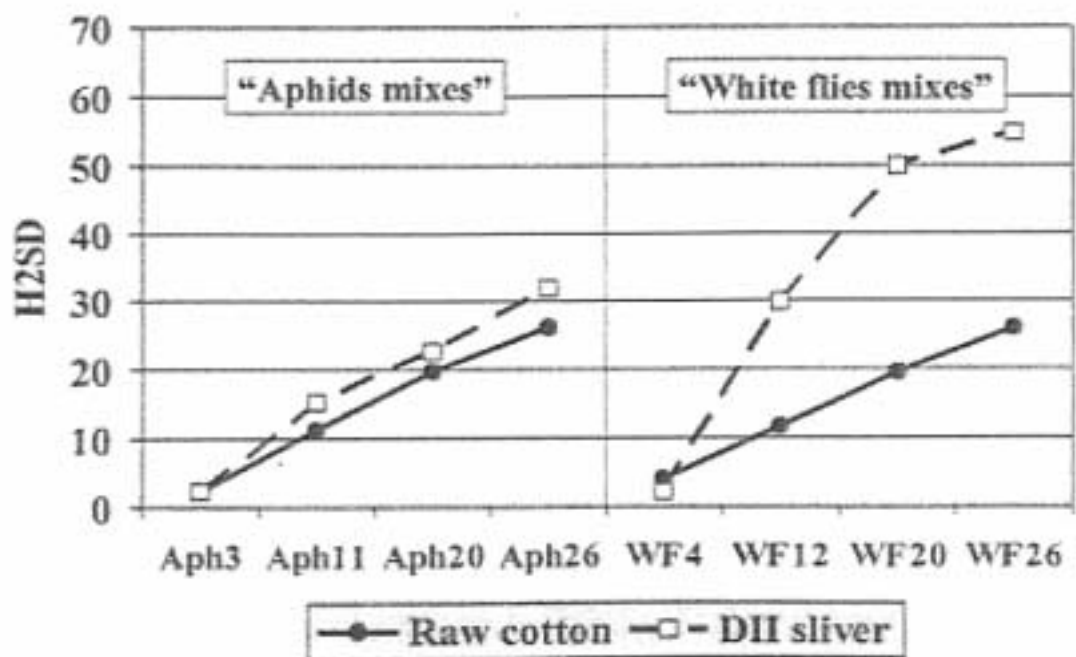
가 < 2>. HVI

< 6> H2SD

Mix ID	H2SD readings					Ratio DII/Raw
	Raw cotton	Chute	Card sliver	DI sliver	DII sliver	
Aph3	2.5	2.1	1.4	1.92	2.4	
Aph11	11.2	18.5	16.0	15.1	15.3	1.37
Aph20	19.8	24.8	20.2	21.4	22.8	1.15
Aph26	26.3	31.8	31.2	31.9	32	1.22
WF4	4	1.8	9.6	2.1	2.1	
WF12	11.7	23.7	28.4	28.5	29.9	2.56
WF20	19.5	31	54	44	50	2.56
WF26	26.1	47.4	56.2	55.1	54.7	2.10

< 7> HPLC (%)

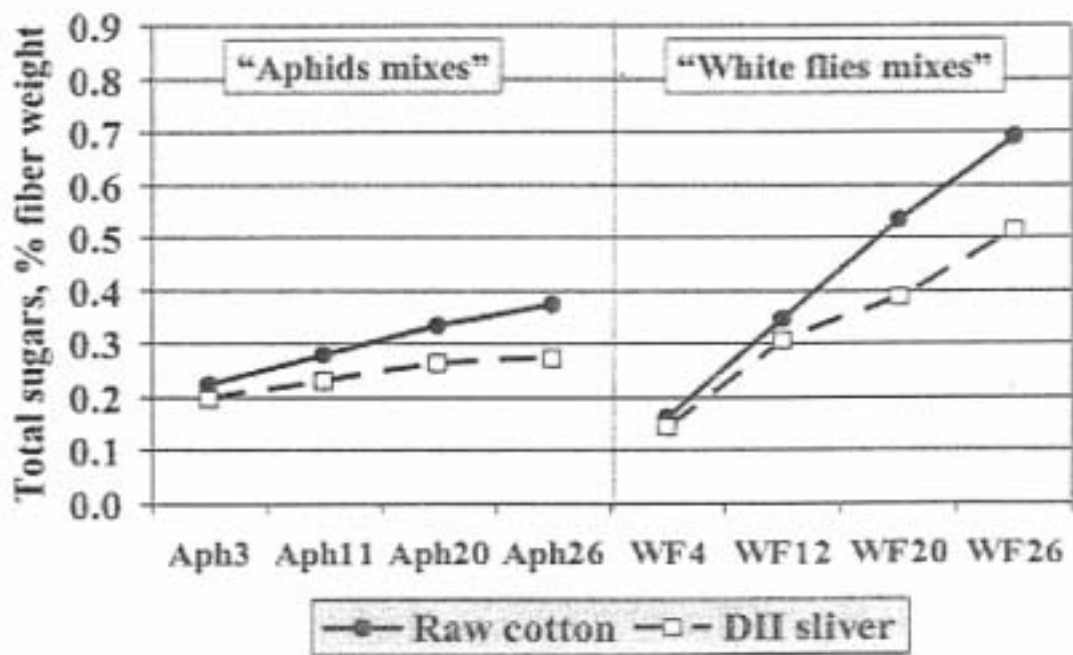
Mix ID	HPLC total sugars content (% of the fiber weight)					Ratio DII/Raw
	Raw cotton	Chute	Card sliver	DI sliver	DII sliver	
Aph3	0.224	0.180	0.195	0.193	0.196	0.875
Aph11	0.279	0.287	0.235	0.226	0.231	0.828
Aph20	0.334	0.262	0.254	0.261	0.264	0.790
Aph26	0.376	0.315	0.270	0.271	0.274	0.728
WF4	0.164	0.144	0.202	0.154	0.145	0.884
WF12	0.348	0.304	0.307	0.305	0.307	0.882
WF20	0.533	0.386	0.480	0.391	0.387	0.726
WF26	0.691	0.627	0.490	0.472	0.512	0.740



< 4> 가

2P

H2SD



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(

%, HPLC

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	Suessen Fiomax 1000													
	Aph3		Aph11		Aph20		Aph26		WF4		WF12		WF20	WF26
CV%	17.7	b ⁺	17.9	c	17.8	b	17.6	a	18.6	a	21.0	b	Would not spin	Would not spin
Thin places/km	34	b	40	c	35	b	29	a	74	a	214	b		
Thick places/km	586	a	621	b	662	c	620	b	668	a	1188	b		
Neps 140%/km	2705	a	2826	b	3000	c	3037	c	3298	a	4756	b		
Neps 200%/km	931	a	993	b	1147	c	1181	d	993	a	1525	b		
Neps 280%/km	373	a	396	b	483	c	501	d	313	a	461	b		
Hairiness	3.9	b	4.4	c	3.8	a	3.8	a	4.5	a	4.8	b		
Elongation (%)	6.0	a	5.7	c	5.9	b	5.9	b	5.7	a	5.1	b		
Tenacity (cN/tex)	18.9	a	18.9	a	18.5	c	18.7	b	16.3	a	14.5	b		
Ends down	14.5		16.4		12.6		3.9		6.8		133.3			

	Suessen EliTe															
	Aph3		Aph11		Aph20		Aph26		WF4		WF12		WF20		WF26	
CV%	17.7	b ⁺	17.5	a	18.2	c	17.7	b	18.6	a	20.5	b	22.7	c	Would not spin	
Thin places/km	40	b	30	a	50	c	31	a	71	a	164	b	374	c		
Thick places/km	586	a	589	a	708	c	654	b	658	a	1106	b	1696	c		
Neps 140%/km	2590	a	2688	b	2877	c	2970	d	3151	a	4595	b	5902	c		
Neps 200%/km	925	a	1017	b	1099	c	1199	d	982	a	1500	b	2089	c		
Neps 280%/km	395	a	439	b	473	c	534	d	333	a	488	b	671	c		
Hairiness	3.6	b	3.5	a	3.8	c	3.5	a	3.9	a	4.0	b	4.1	c		
Elongation (%)	6.3	a	6.3	a	5.9	c	6.2	b	6.0	a	5.6	b	5.3	c		
Tenacity (cN/tex)	19.6	a	19.6	a	19.5	a	19.3	b	17.2	a	15.8	b	14.3	c		
Ends down	16.4		13.5		23.2		7.7		25.1		31.9		125.6			

, , , 1P, 2P H2SD
 . < 6> H2SD 가
 . H2SD
 가 가 < 4>
 가 2 . %
 (HPLC)
 < 7>. 가 25%가
 < 5>. 가
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 가
 가 . 가
 가 가
 . 가
 .
 < 8, 9> . 4가
 . Suessen Fiomax 1000
 , Suessen EliTe , 가
 Suessen Fiomax 1000 , Suessen EliTe .
 Suessen Fiomax 1000
 가 (+200%)
 . 가 가
 가(Aph 3 Aph 26 27%) . 가
 . WF 20 WF 26 ,

WF 12 1000 가 . WF 12

WF 4 . 가 189%,

78%, (+200%) 53% 가 , 11%

. 가 H2SD 12

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Suessen EliTe Suessen Fiomax

1000 가가

. (+200%) 가 가(Aph 3

Aph 26 30%) . 가

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WF 26 가 가 , WF 20 1000

. WF 12 WF 20 WF 4 가

. WF 12 WF 4 가 96%, 68%,

(+200%)가 53% 가 , 17% .

가

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가 CV%

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H2SD 26

. 가

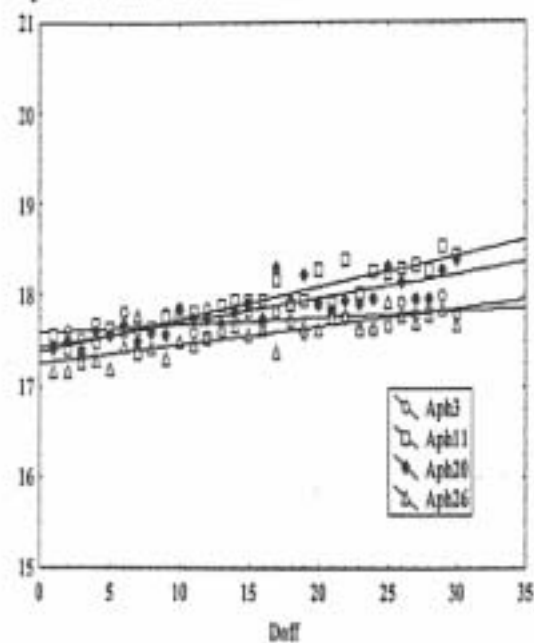
H2SD 12

. 가

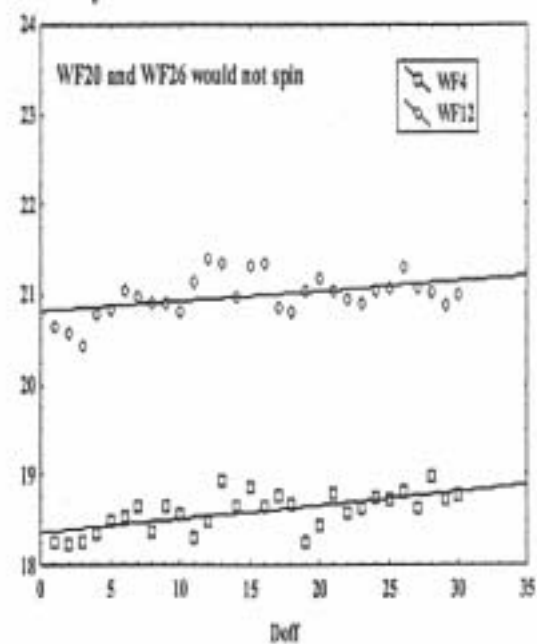
H2SD 가 12

가 .

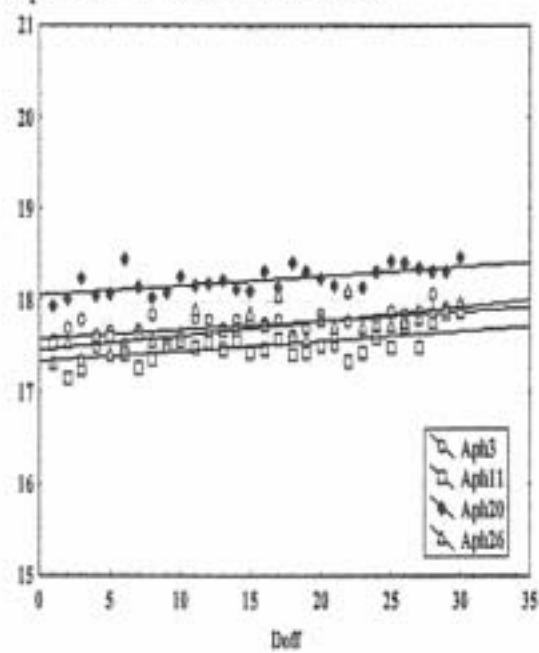
Aphid-contaminated mixes on Fiomax 1000



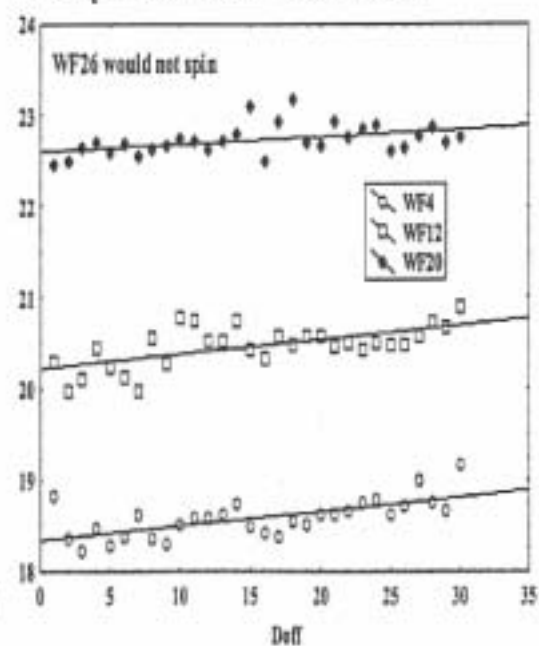
Whitefly-contaminated mixes on Fiomax 1000



Aphid-contaminated mixes on ELiTe



Whitefly-contaminated mixes on ELiTe



< 6>

8

CV%

가

Saco

Lowell

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H2SD

가

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Rieter R 20

H2SD

10

가

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H2SD

20

CV%가

가

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H2SD

10

가

. H2SD

20

가

가

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Suessen Fiomax 1000

Suessen EliTe

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가

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H2SD

26

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H2SD

12

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가

H2SD

가

12

가

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