Institut de Recherches du Coton et des Textiles exotiques
February, 1992

Centre de Recherches
CIRAD de Montpellier

COMPARATIVE STUDY

BETWEEN ICTRD AND IRCT

ON TEXAS CROP OF 1990

- FIBER PARAMETERS

- SPINNING

TECHNOLOGY DIVISION - I.R.C.T. MONTPELLIER - FRANCE

Avenue du Val de Montferrand - BP 5035 - 34032 Montpellier cedex (France) - Tél. : 67.61.58.00 - Télex : 480762 F - Télécopie : 67.52.06.25
Département du Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD)
E.P.I.C. - Siret 331 596 270 999 92 - R.C.S. Paris B 331 596 270

FIBER PARAMETERS

COMPARAISON BETWEEN TEXAS TECH AND IRCT RESULTS FOR 15 US COTTONS

Comments :

- We do not know the number of breaks or measurements which were done by Texas Tech laboratory to give the different technological values for the 15 cottons.

- We do not know what are the methods used to correct the levels of results in ICTRD laboratory with ICCS standards.

IRCT used, per sample :

- 5 combs on Fibrograph 530 ;

- 2 readings :
  - on Fibronaire ;
  - on FMT 1 ;
  - on FMT 3 ;

- 6 breaks :
  - on Stelometer ;
  - on Pressley 0 ;
  - on Pressley 1/8 ;

- 10 combs on HVI, on each calibration mode : ICCS or HVICC USDA.

All classic results were corrected by ICCS standards G 15, I 26, C 35 except maturity-fineness values because there is no standard cotton.

Our FMT 3 hardware calibration procedure use ICCS H 3 as standard cotton.

Color was measured on hand opened samples picked in the great mass we received.

- Each correlation matrix give explanations of variables in 3 lines :

  - name of the laboratory ;
  - machine :

    - CLAS : classic measurement ;
    - MCI : Motion Control HVI ;
    - SPIN : Spinlab HVI ;
    - ICCS : Spinlab HVI IRCT with calibration with ICCS cottons,
    - USDA : Spinlab HVI IRCT with calibration with HVICC USDA cottons,

  - SYSTEM : method to analyse results :
    - SL : interpretation of length with Span Length method ;
    - ML : interpretation of length with Mean Length method ;
    - P0 : tenacity with Pressley 0 level in g / tex ;
    - P8 : tenacity with Pressley 1/8 level in g / tex ;
    - ST : tenacity with Stelometer 1/8 level in g / tex ;

The variables are expressed by the following codification in 5 positions :

- The first position may be :

  C : classic
  S : Spinlab HVI
  M : Motion Control HVI
  F : Fineness Maturity Tester

- Second position :

  T : Texas Tech results
  I : IRCT results

- The third and fourth letters give informations about technological characteristic analysed :

  - 50 : SL 50 %
  - 25 : SL 2.5 %
  - UR or UI or T1 or E1 or P0 or P8 or IM or MR or PM or H. or HS
  - L1 or L2 which are SL or ML depending on the calibration cottons
  - ST and EL for tenacity and elongation on HVI machines
  - SF : Short Fiber Content

- Fifth letter :

  - 1 : FMT 1
  - 3 : FMT 3
  - I : calibration with ICCS D 4 and G 15 cottons
  - U : calibration with HVICC of USDA SHORT and LONG cottons

SL 2.5 %, UHML, SFC :

				TEXAS			IRCT			TEXAS
			MACHINE	CLAS	MCI	SPIN	CLAS	ICCS	USDA	
			SYSTEM	SL	ML	ML	SL	SL	ML	AL101
			VARIABLE	CT25	MTL2	STL2	CI25	SIL2I	SIL2U	CTSF
TEXA	CLAS	SL	CT25	1.000						
	MCI	ML	MTL2	0.940	1.000					
	SPIN	ML	STL2	0.887	0.898	1.000				
IRCT	CLAS	SL	CI25	0.922	0.938	0.885	1.000			
	ICCS	SL	SIL2I	0.928	0.940	0.867	0.997	1.000		
	USDA	ML	SIL2U	0.896	0.933	0.849	0.991	0.987	1.000	
			CTSF	-.228	-.146	-.332	-.379	-.363	-.344	1.000

SL 50 %, ML, SFC :

				TEXAS			IRCT			TEXAS
			MACHINE	CLAS	MCI	SPIN	CLAS	ICCS	USDA	
			SYSTEM	SL	ML	ML	SL	SL	ML	AL101
			VARIABLE	CT50	MTL1	STL1	CI50	SIL1I	SIL1U	CTSF
TEXA	CLAS	SL	CT50	1.000						
	MCI	ML	MTL1	0.833	1.000					
	SPIN	ML	STL1	0.829	0.871	1.000				
IRCT	CLAS	SL	CI50	0.735	0.795	0.810	1.000			
	ICCS	SL	SIL1I	0.795	0.860	0.839	0.977	1.000		
	USDA	ML	SIL1U	0.861	0.937	0.817	0.886	0.942	1.000	
			CTSF	-.617	-.241	-.412	-.508	-.476	-.390	1.000

Uniformity (+ Short Fiber content) :

				TEXAS			IRCT			TEXAS
			MACHINE	CLAS	MCI	SPIN	CLAS	ICCS	USDA	
			SYSTEM	SL	ML	ML	SL	SL	ML	AL101
			VARIABLE	CTUR	MTUI	STUI	CIUR	SIURI	SIUIU	CTSF
TEXA	CLAS	SL	CTUR	1.000						
	MCI	ML	MTUI	0.314	1.000					
	SPIN	ML	STUI	0.423	0.754	1.000				
IRCT	CLAS	SL	CIUR	0.427	0.354	0.426	1.000			
	ICCS	SL	SIURI	0.435	0.584	0.593	0.919	1.000		
	USDA	ML	SIUIU	0.299	0.903	0.734	0.495	0.749	1.000	
			CTSF	-.888	-.470	-.462	-.204	-.306	-.440	1.000

Tenacity :

				TEXAS				IRCT				
			MACHINE	CLASSIQUE		MCI	SPIN	CLASSIQUE			ICCS	USDA
			LEVEL	P8	P0	P8	P8	ST	P0	P8	ST	P8
			VARIABLE	CTT1	CTP0	MTST	STST	CIT1	CIP0	CIP8	SISTI	SISTU
T E X A S	CLA	P8	CTT1	1.000								
	CLA	P0	CTP0	0.664	1.000							
	MCI	P8	MTST	0.740	0.612	1.000						
	SPI	P8	STST	0.696	0.561	0.826	1.000					
I R C T	CLA	ST	CIT1	0.878	0.784	0.795	0.788	1.000				
	CLA	P0	CIP0	0.662	0.710	0.334	0.356	0.702	1.000			
	CLA	P8	CIP8	0.914	0.741	0.811	0.756	0.957	0.688	1.000		
	SPI	ST	SISTI	0.542	0.627	0.804	0.836	0.804	0.396	0.718	1.000	
	SPI	P8	SISTU	0.649	0.710	0.815	0.847	0.845	0.493	0.757	0.954	1.000

Elongation :

			TEXAS			IRCT		
		MACHINE	CLAS	MCI	SPIN	CLAS	ICCS	USDA
		VARIABLE	CTE1	MTEL	STEL	CIE1	SIELI	SIELU
TEXA	CLAS	CTE1	1.000					
	MCI	MTEL	0.665	1.000				
	SPIN	STEL	0.783	0.445	1.000			
IRCT	CLAS	CIE1	0.830	0.718	0.714	1.000		
	ICCS	SIELI	0.907	0.629	0.690	0.890	1.000	
	USDA	SIELU	0.924	0.632	0.859	0.873	0.926	1.000

Mike values :

			TEXAS				IRCT		
		MACHINE	CLAS	FMT3	MCI	SPIN	CLAS	FMT1	FMT3
		VARIABLE	CTIM	FTIM3	MTIM	STIM	CIIM	FIIM1	FIIM3
TEXA	CLAS	CTIM	1.000						
	FMT3	FTIM3	0.958	1.000					
	MCIN	MTIM	0.951	0.894	1.000				
	SPIN	STIM	0.705	0.727	0.701	1.000			
IRCT	CLAS	CIIM	0.971	0.981	0.929	0.712	1.000		
	FMT1	FIIM1	0.980	0.984	0.935	0.701	0.996	1.000	
	FMT3	FIIM3	0.943	0.974	0.912	0.696	0.985	0.984	1.000

Maturity Ratios

			TEXAS	IRCT	
		MACHINE	FMT3	FMT1	FMT3
		VARIABLE	FTMR3	FIMR1	FIMR3
TEXAS	FMT3	FTMR3	1.000		
IRCT	FMT1	FIMR1	0.601	1.000	
	FMT3	FIMR3	0.569	0.944	1.000

Fineness H :

			TEXAS	IRCT	
		MACHINE	FMT3	FMT1	FMT3
		VARIABLE	FTH3	FIH1	FIH3
TEXAS	FMT3	FTH3	1.000		
IRCT	FMT1	FIH1	0.908	1.000	
	FMT3	FIH3	0.850	0.895	1.000

Standard Fineness HS:

			TEXAS	IRCT	
		MACHINE	FMT3	FMT1	FMT3
		VARIABLE	FTHS3	FIHS1	FIHS3
TEXAS	FMT3	FTHS3	1.000		
IRCT	FMT1	FIHS1	0.753	1.000	
	FMT3	FIHS3	0.606	0.744	1.000

Rd :

			TEXAS		IRCT
		MACHINE	MCI	SPIN	SPIN
		VARIABLE	MTRD	STRD	SIRD
TEXAS	MCI	MTRD	1.000		
	SPIN	STRD	0.460	1.000	
IRCT	SPIN	SIRD	0.501	0.932	1.000

+b :

			TEXAS		IRCT
		MACHINE	MCI	SPIN	SPIN
		VARIABLE	MTB	STB	SIB
TEXAS	MCI	MTB	1.000		
	SPIN	STB	0.481	1.000	
IRCT	SPIN	SIB	0.580	0.969	1.000

CONCLUSIONS :

With 15 values, significance for 5 % risk is : 0.584.

1 - Lengths measurements :

1.1 - SL 2.5 %, UHML, SCF :

Results are well correlated between labs and machines.

But correlations are better between our HVI and our Fibrograph than your HVI and your Fibrograph 530 (r = 0.997 and r = 0.991 against r = 0.940 and r = 0.887). Maybe, it depends on the way to select samples and on the numbers of individual measurements.

MCI HVI seems to be better than SPINLAB line.

If we suppose that our Fibrograph 530 give the rigth values, MCI seems to be better than Spinlab (r = 0.938 against r = 0.885). It is the same conclusion if we suppose our HVI right (r = 0.940 and r = 0.933 against r = 0.867 and r = 0.849).

Nothing concerning Short Fiber Content.

Levels of the readings :

- Texas's Fibrograph reads shorter lengths than our apparatus ;
- The 2 HVI give similar results as our 530.

1.2 - SL 50 %, ML, SFC :

Correlations values are lower than Stapple length ;

Correlations classic vs HVI in IRCT are better than correlations classic versus HVI in Texas (r = 0.977 and r = 0.886 against r = 0.833 and r = 0.829).

Correlation of SFC with this length is better than with stapple length.

Concerning levels :

- Texas Fibrograph reads lower values than our ;

- MCI and Spinlab Texas underevaluate this length compared to our HVI (calibration with HVICC cottons).

1.3 - Uniformity :

Just a few correlations are significant.

Bad information : correlation classic IRCT / Texas = 0.427 NS.

Between Spinlab Texas and our HVI (calibration with HVICC cottons), correlation is not very good : r = 0.734.

SFC gives good correlation with UR % of Texas's Fibrograph (r = 0.888), but bad value with our (r = 0.204), and equivalent results with all HVI (r = 0.45).

Concerning the levels :

- Fibrograph of Texas underestimates this characteristic in comparison with our ; our HVI calibrated with ICCS cottons gives similar results.

- In the comparaison of our HVI (ICCS) with your Fibrograph, levels are similar for great values, but worse with lower values.

2 - Tenacity measurements :

2.1 - Tenacity :

2.1.1 - *Classic* :

Between Stelometers, r = 0.878.
Texas's Stelometer / IRCT's Pressley 1/8 : r = 0.914.

Correlations between Pressley "0" and Stelometer have comparable values for the 2 laboratories (r = 0.664 and r = 0.702), and have a relation of r = 0.71 between Pressleys "0".

2.1.2 - *HVI* :

In IRCT, with the 2 calibrations, Spinlab seems to have a better correlation with Stelometer than with Pressley 1/8 (r =0.804 and r = 0.845 against r= 0.718 and r = 0.757).

In Texas Tech, MCI has a better correspondance with your Stelometer than your Spinlab (r = 0.740 compared to r = 0.696). The choice of Pressley 1/8 scale may have an influence.

Correspondance between our HVI results are very good : r = 0.954 ; only levels are different. This level of correlation must be similar between all the machines but we read r = 0.826 in Texas and r = 0.815 with our HVI.

2.1.3 - *Concerning the levels* :

Comparaison with our Stelometer shows that HVI and Stelometer of Texas work in a different level than we do, because they calibrate all the instruments at the level of Pressley 1/8°.

MCI gives upper results than us, and Spinlab gives the same level as us in the HVICC calibration mode.

Levels on Pressley 0 are equivalent.

2.2 - Elongation :

ICTRD 's Stelometer / IRCT's Stelometer : r = 0.830

Correlations between our HVI and Stelometer are better than correlations between ICTRD's HVI and ICTRD's Stelometer (r = 0.665 and r = 0.783 against r = 0.890 and r = 0.873), but our HVI is better correlated to your Stelometer than with our (r = 0.907 and r = 0.924 against r = 0.890 and r = 0.873).

Your HVIs and our Stelometer : r = 0.718 and r = 0.714.

Concerning the reading levels :

- Same readings for the 2 Stelometers ;
- MCI results are upper than our Stelometer ;
- Ranges of readings on Stelometers and HVI are different ;
- The 2 Spinlab machines give parallele results with Stelometer, but levels are different between HVI.
- MCI obtains the same range than Stelometers.

3 - Colorimetry :

Singular results are observed :

Correlation between Texas machines concerning reflectance is only r = 0.460. But between Spinlab and Spinlab is r = 0.932.

Same result with yellowness : r = 0.481. r = 0.969 between ICTRD's Spinlab and IRCT's Spinlab.

Results in colorimetry are very different and classing offices would give very different prices or discounts to cottons.

Perhaps errors are due to the analysis on Trashmeter and colorimeter with none opened samples in Texas which are compared to hand opened samples in IRCT.

Concerning the reading levels :

- Reflectance : near the same levels.
- Yellowness : Texas lower than IRCT

All our results were given and controlled by analysing colour on a serie of tile (these wich are used to calibrate our colorimeter).

4 - Fineness and maturity complex :

4.1 - Mike :

Good correlations between classic machines (r = 0.971).

Measurement of mike by Spinlab is worse than MCI (r = 0.951 against r = 0.705 with classic ICTRD's IM, and r = 0.929 against r = 0.712 with our IRCT's Fibronaire).

All comparaison with FMT are good except for Spinlab results. FMT 1 seem to be better than FMT 3 (does an increasing of the speed induce a lost of precision ?)

MCI and Spinlab give overestimate results compared to our Fibronaire.
FMT 3 of the 2 labs give comparable levels.

4.2 - Maturity :

Correlation between our FMT 3 and FMT 1 is pretty good (r = 0.944).
But, FMT3 of Texas only correlates at a level of r = 0.6 with our FMTs.
The 2 FMT 3 read upper maturity than our reference FMT 1.

4.3 - Fineness H :

Good correlations in general (r = 0.9).
Correlation between FMT 3 is r = 0.850.
Underestimations of the FMT 3 compared to FMT 1.
FMT 3 of Texas give a better evaluation of fineness for great values than for lower compared to FMT 1.

4.4 - Standard Fineness Hs :

Correlation between FMT 3 is not very good : r = 0.606.
FMT 3 of Texas gives a better evaluation of fineness for great values than for lower compared to FMT 1.

CONCLUSION :

To give better informations concerning evaluations between labortories, it would be interesting to work with the same methods. For this reason, Texas Tech may give us more informations.

Generally speaking, there are good correspondances for all analysis for these 15 samples. But, it exists differences in the readings, particularly with HVI measurements.

Colorimetry gives the worst correspondances between machines and labs.

EXPLANATIONS OF HVI TENACITY RESULTS BY CLASSICS DETERMINATIONS

1 - 1° part :

We tried to explain HVI tenacity by classic technological informations for the 2 labs. At each time, we forced T1, E1, SL50, and one after the other we forced MR and H in multiple regressions.

TABLE DES EXPLANATIONS R^2 OF HVI TENACITY = f(classic technology TEXAS)

	f(T1, E1, SL50%)	f(T1, E1, SL50% , MR)	f(T1, E1, SL50%, MR, H)
MTST	77.33	81.53	81.54
STST	77.18	77.27	79.28
SISTU	71.68	71.68	72.35

MTST : MCI TEXAS calibration with USDA HVICC cottons
STST : SPINLAB TEXAS calibration with USDA HVICC cottons
SISTU : SPINLAB IRCT calibration with USDA HVICC cottons
MR, H : maturity on FMT3

TABLE of EXPLANATIONS R^2 OF HVI TENACITY = f (classic technology IRCT)

	f(T1, E1, SL50%)	f(T1, E1, SL50%, MR1)	f(T1, E1, SL50%, MR1 H1)
MTST	79.23	79.81	81.15
STST	66.58	77.20	82.71
SISTU	76.03	82.40	90.81

MTST : MCI TEXAS calibration with USDA HVICC cottons
STST : SPINLAB TEXAS calibration with USDA HVICC cottons
SISTU : SPINLAB IRCT calibration with USDA HVICC cottons
MR1, H1 : maturity on FMT1

- Explanations are identical except for SISTU (better explained by IRCT data).
- Maturity is more used in IRCT explanations. (use of FMT1 datas).

2 - 2° part :

The 5 earlier variables have been proposed to explain HVI tenacity by multiple stepwise regression.

TENACITE HVI = f (T1, E1, SL 50%, MR, H by choice) : table of R^2

	TEXAS		IRCT	
MTST	f(T1, E1)	77.33	f(T1, E1)	76.84
STST	f(T1, E1)	76.36	f(T1)	62.17
SISTU	f(T1, SL50)	67.12	f(T1, MR1, H1)	90.07

MR1, H1 : maturity on FMT1

Very great influence of the lab is given to these explanations.
It is not the same variables in each case, but R^2 are similar as earlier.
Explanation of SISTU is very different between Texas and IRCT.

3 - 3° cas :

All disponible data was proposed to explain HVI tenacity.

TENACITY HVI = f (techno) : TABLE of R^2

	data from TEXAS	data from IRCT
MTST	f(T1, E1) ; 77.33	f(E1, P1/8) ; 80.92
STST	f(T1, E1) ; 76.36	f(T1) ; 62.17
SISTU	f(P0, E1) ; 69.41	f(T1, FIM1, FHS1) ; 90.12

MTST : MCI TEXAS calibration with USDA HVICC cottons
STST : SPINLAB TEXAS calibration with USDA HVICC cottons
SISTU : SPINLAB IRCT calibration with USDA HVICC cottons
MR1, H1 : maturity on FMT1
P 1/8 : Tenacity with Pressley 1/8"

Pressley 1/8° works well with MCI and not with SPINLAB.
No great variation between the 2 last tables.

EXPLANATIONS OF YARN TENACITY BY FIBER TECHNOLOGICAL ANALYSIS

SIGNIFICATIVE CORRELATIONS BETWEEN YARN TENACITIES AND HVI TEXAS

	MCI						SPINLAB						FMT3			
	MTST	MTEL	MTL2	MTL1	MTUI	MTIM	STST	STEL	STL2	STL1	STUI	STIM	CTIM3	CTMR3	CTH3	CTHS3
GT10R	0.711						0.639							0.573		-0.557
GT22R	0.644						0.601									-0.547
GT30R	0.595				0.547		0.546			0.532						
GT10S	0.704				0.526		0.649							0.529		
GT22S	0.701						0.621							0.518		-0.542
GT30S	0.772						0.638							0.638		-0.573
GT16L	0.675						0.590							0.549		-0.535
GT22L	0.620				0.540					0.536						-0.539
GT30L	0.609			0.520	0.554		0.573		0.564	0.590						

GT : g/tex ; 10, 16, 22, 30 : Ne ; R : RIETER ; S : SCHLAFORST ; L : SACO LOWEL for all tables.

SIGNIFICATIVE CORRELATIONS BETWEEN YARN TENACITIES AND CLASSIC TEXAS

	CTT1	CTEL	CTPSI	CT25	CT50	CTUR	CTIM
GT10R	0.914		0.785				
GT22R	0.921		0.760				
GT30R	0.888		0.694				
GT10S	0.960		0.744				
GT22S	0.920		0.812				
GT30S	0.920		0.773				
GT16L	0.912		0.744				
GT22L	0.858		0.703		0.518		
GT30L	0.848		0.632				

SIGNIFICATIVE CORRELATIONS BETWEEN YARN TENACITIES AND SPINLAB IRCT using USDA CALIBRATION COTTONS ICCS CALIBRATION COTTONS

	USDA COTTONS					ICCS COTTONS			
	SISTU	SIELU	SIL1U	SIL2U	SIUIU	SISTI	SIELI	SIL1I	SIL2I	SIUII
GT10R	0.622		0.536		0.563	0.530		0.602		
GT22R	0.616		0.536		0.533			0.598		
GT30R	0.555		0.541		0.593			0.629	0.528	
GT10S	0.642				0.646	0.565		0.611		
GT22S	0.631				0.540	0.537		0.576		
GT30S	0.674				0.535	0.600		0.586		
GT16L	0.582		0.627	0.578	0.610			0.686	0.574	
GT22L	0.531		0.643	0.602	0.588			0.697	0.601	
GT30L	0.568		0.666	0.614	0.648			0.740	0.618	

SIGNIFICATIVE CORRELATIONS BETWEEN YARN TENACITIES AND CLASSIC IRCT

	CIT1	CIE1	CT50	CT25	CTUR	CTP0	CTP8	CIIM	FIIM1	FIMR1	FIH1	FIHS1	FIIM3	FIMR3	FIH3	FIHS3
GT10R	0.869		0.634	0.519		0.663	0.899					-0.595				-0.529
GT22R	0.846		0.641	0.523		0.665	0.876					-0.602				
GT30R	0.827		0.640	0.534		0.646	0.871					-0.665				-0.575
GT10S	0.923		0.662			0.697	0.955					-0.550				
GT22S	0.876		0.613			0.654	0.902					-0.588				
GT30S	0.910		0.619			0.693	0.936					-0.568				-0.562
GT16L	0.832		0.730	0.596		0.598	0.859					-0.586				
GT22L	0.788		0.730	0.621			0.803					-0.631				
GT30L	0.779		0.770	0.638			0.790					-0.582				

These tables show that yarn tenacity is very dependant on fiber tenacity.

Pressley 0 results give good correlations with yarn tenacity. It was the same in the study of J. GUTKNECHT, "Prédiction de la résistance du fil en fonction de la longueur de la fibre", but with short staple cottons only (SL 2.5 % between 25.4 and 26.9 mm ; correlations were 0.622).

Readings on FMT 3 IRCT are less correlated than FMT 1 results to the yarn.

In IRCT, fiber lengths have a better relation than Texas length in the formulas.

Visual comparaison between 1989 and 1990 crop show that it may be differences in the checking of the spinning machines by seing graphs of Yarn Mean Strength relations with Ne. Rieter and Schlaforst machines have different positions in the 2 crops.

Multiple regression is used to explain tenacities of the yarns :

- Results show same conclusions as last year with different slopes and offsets between spinning machines.

- Explanations are better, in mean, with IRCT technological datas ($R^2 = 85.7$ against $R^2 = 60.21$).

- Explanations of Schlaforst yarns are better than the other machines.

- With all the sizes of yarn, it exists great difference of explanations if we use MCI data or Spinlab data.

- Explanations by classic determination are equivalent in the 2 labs.

TABLE of EXPLANATIONS R^2 OF YARN TENACITY

		TEXAS			IRCT					
Ne	mach CALIB with	MCI USDA FMT3	SPIN USDA FMT3	CLAS FMT3	SPIN ICCS FMT1	SPIN ICCS FMT3	SPIN USDA FMT1	SPIN USDA FMT3	CLAS FMT1	CLAS FMT3
10	RIET	50.59	61.40	83.55	74.74	77.98	77.83	80.88	87.39	86.63
	SCHL	49.51	64.55	92.06	89.78	78.92	87.57	81.12	94.58	91.23
16	SACO	45.58	55.62	83.23	83.52	80.10	82.64	82.37	85.15	85.15
22	RIET	41.41	58.03	91.91	73.44	80.27	77.39	80.71	84.30	76.74
	SCHL	49.18	60.64	89.47	74.68	75.06	77.53	77.47	87.51	81.36
	SACO	38.42	59.23	73.67	48.56	48.56	81.81	69.01	79.06	79.06
30	RIET	35.44	58.01	78.79	86.70	89.40	87.74	90.64	87.82	75.89
	SCHL	59.55	59.94	84.57	86.92	87.03	80.91	87.71	92.14	91.86
	SACO	37.08	56.60	71.90	85.72	85.72	84.64	84.64	78.77	78.77

TEXAS COTTON QUALITY EVALUATION

crop of 1990

COMPLETE TECHNOLOGICAL DATA from

INTERNATIONAL CENTER FOR TEXTILE RESEARCH and DEVELOPMENT LABORATORY

and

INSTITUT DE RECHERCHE DU COTON ET DES TEXTILES LABORATORY

TECHNO FIBRES TEXAS TECH 1991/09
TEXAS1.CMP le 26/09/91

QUI		TEXAS	TEXAS	TEXAS	TEXAS	TEXAS	TEXAS	TEXAS	TEXAS	TEXAS	TEXAS	TEXAS
COMMENT		CLASS	CLASS	CLASS	CLASS	CLASS	CLASS	CLASS	CLASS	CLASS	CLASS	CLASS
CODE		CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT
1	2	3	4	5	6	7	8	9	10	11	12	13
LOT	colot	CTT1	CTE1	CT25	CT50	CTUR	CTSF	CTIM	CTP0	FTIM3	FTMR3	FTH.3
2139	1	26.60	5.58	25.07	11.83	47.20	5.70	4.47	90.80	4.40	0.93	181.0
2140	2	23.91	6.42	28.24	12.48	44.20	8.00	4.70	78.60	4.70	0.95	193.0
2141	3	25.59	6.08	25.96	11.40	43.90	8.60	4.43	92.00	4.50	0.91	190.0
2148	4	24.29	5.17	26.75	11.71	43.80	7.70	3.73	92.20	3.60	0.89	147.0
2188	5	24.69	6.50	27.43	12.10	44.10	7.30	3.97	80.90	4.00	0.98	154.0
2189	6	28.97	5.50	30.35	14.08	46.40	2.60	3.90	96.10	4.00	0.96	156.0
2190	7	25.79	7.00	26.42	11.39	43.10	10.10	3.60	96.80	3.80	0.99	143.0
2191	8	24.11	6.42	25.07	11.56	46.10	5.50	4.10	86.90	4.20	0.82	191.0
2192	9	25.32	6.33	24.82	11.81	47.60	3.10	4.23	97.50	4.20	0.93	171.0
2193	10	28.04	7.17	24.84	11.25	45.30	6.80	4.37	93.30	4.60	0.94	189.0
2194	11	26.06	5.42	25.32	11.27	44.50	8.20	3.70	90.30	3.80	0.84	165.0
2195	12	24.41	7.58	24.89	11.52	46.30	4.60	4.10	84.20	4.20	0.85	185.0
2196	13	24.94	7.50	24.69	11.13	45.10	8.00	3.77	85.10	3.90	0.84	171.0
2197	14	25.69	6.50	24.43	10.75	44.00	9.40	4.33	95.70	4.40	0.99	172.0
2198	15	20.34	6.92	25.02	11.08	44.30	8.00	3.87	80.60	3.90	0.80	177.0

(2138)
(2188.1442)

TEXAS COTTON QUALITY EVALUATION

crop of 1990

COMPLETE TECHNOLOGICAL DATA from

INTERNATIONAL CENTER FOR TEXTILE RESEARCH and DEVELOPMENT LABORATORY

and

INSTITUT DE RECHERCHE DU COTON ET DES TEXTILES LABORATORY

TECHNO FIBRES TEXAS TECH 1991/09
TEXAS1.CMP le 26/09/91

QUI	TEXAS	TEXAS	TEXAS	TEXAS	TEXAS	TEXAS	TEXAS	TEXAS	TEXAS	TEXAS	TEXAS	TEXAS
COMMENT	CLASS	CLASS	MCI	MCI	MCI	MCI	MCI	MCI	MCI	MCI	SPINLA	SPINLAB
CODE	CT	CT	MT	MT	MT	MT	MT	MT	MT	MT	ST	ST
1	14	15	16	17	18	19	20	21	22	23	24	25
LOT	FTPM3	FTHS3	MTST	MTEL	MTL2	MTL1	MTUI	MTIM	MTRD	MTB	STST	STEL
2139	82.7	194.5	26.00	6.80	24.89	20.16	81.00	4.30	76.00	8.00	24.00	8.30
2140	85.0	203.0	26.00	7.20	28.45	23.04	81.00	4.60	75.00	8.60	24.00	8.20
2141	81.3	209.0	28.00	7.20	26.16	21.19	81.00	4.50	76.00	8.00	25.00	8.20
2148	78.0	165.8	24.00	7.60	27.43	21.95	80.00	3.90	71.70	8.90	24.00	7.60
2188	85.0	157.7	27.00	7.60	28.45	22.76	80.00	3.90	78.00	8.80	24.00	8.80
2189	84.0	162.1	30.00	6.60	30.99	26.03	84.00	4.00	78.00	8.80	29.00	9.00
2190	86.0	144.7	31.00	7.40	27.43	21.95	80.00	3.60	79.00	8.40	29.00	8.80
2191	71.0	233.3	28.00	7.00	25.91	20.99	81.00	4.00	77.00	8.80	26.00	8.80
2192	81.0	184.1	30.00	7.20	24.89	19.66	79.00	4.40	78.00	8.80	26.00	8.80
2193	83.0	200.2	32.00	7.40	26.92	22.08	82.00	4.40	72.00	8.80	30.00	8.90
2194	73.0	196.7	25.00	6.00	25.91	20.47	79.00	3.80	72.00	8.80	26.00	8.20
2195	75.0	217.9	27.00	8.00	25.65	20.78	81.00	4.10	73.00	9.00	29.00	10.00
2196	72.0	204.6	28.00	8.00	26.16	21.19	81.00	3.80	76.00	9.00	27.00	10.00
2197	85.0	174.4	29.00	6.60	25.15	19.87	79.00	4.30	74.00	9.20	29.00	8.90
2198	72.0	220.3	21.00	7.60	26.16	20.67	79.00	4.00	70.00	8.40	21.00	8.70

(2138)
(2188.1442)

TEXAS COTTON QUALITY EVALUATION

crop of 1990

COMPLETE TECHNOLOGICAL DATA from

INTERNATIONAL CENTER FOR TEXTILE RESEARCH and DEVELOPMENT LABORATORY

and

INSTITUT DE RECHERCHE DU COTON ET DES TEXTILES LABORATORY

TECHNO FIBRES TEXAS TECH 1991/09
TEXAS1.CMP le 26/09/91

QUI	TEXAS	TEXAS	TEXAS	TEXAS	TEXAS	TEXAS	IRCT	IRCT	IRCT	IRCT	IRCT	IRCT
COMMENT	SPINLAS	PINLAS	PINLAS	PINLS	PINLAS	PINLC	LASS	CLASS	CLASS	CLASS	CLASS	CLASS
CODE	ST	ST	ST	ST	ST	ST	CI	CI	CI	CI	CI	CI
1	26	27	28	29	30	31	32	33	34	35	36	37
LOT	STL2	STL1	STUI	STIM	STRD	STB	CI50	CI25	CIUR	CIT1	CIE1	CIP0
2139	24.64	20.45	83.00	4.40	75.90	8.40	12.01	25.12	47.79	20.81	6.01	95.73
2140	27.94	22.91	82.00	4.70	78.40	8.90	12.67	27.88	45.44	19.30	6.28	86.81
2141	25.91	21.24	82.00	4.40	77.60	8.40	12.34	25.71	48.01	21.59	6.61	93.94
2148	27.43	22.49	82.00	3.90	72.30	8.30	12.00	26.71	44.94	20.97	5.24	94.40
2188	26.42	20.60	78.00	3.90	79.80	9.40	12.52	28.00	44.70	19.55	6.91	86.49
2189	30.73	25.82	84.00	4.00	74.80	9.10	14.29	30.64	46.64	22.04	6.05	92.20
2190	25.15	20.12	80.00	4.40	78.20	8.60	11.96	26.76	44.67	21.68	6.79	91.10
2191	25.91	21.50	83.00	4.00	69.70	10.50	12.30	25.82	47.64	19.44	6.05	87.92
2192	24.89	19.91	80.00	4.40	75.70	8.00	12.28	26.28	46.74	21.21	7.14	90.41
2193	26.42	21.93	83.00	4.50	76.30	8.30	13.46	26.92	50.00	23.39	7.40	91.47
2194	25.65	20.52	80.00	3.80	74.70	8.80	11.79	25.71	45.83	20.79	4.91	96.79
2195	25.40	20.83	82.00	4.00	74.40	9.60	12.11	25.29	47.89	20.47	7.22	86.18
2196	25.65	20.52	80.00	4.00	75.60	9.40	12.38	25.49	48.56	20.79	7.76	82.67
2197	25.40	20.32	80.00	4.40	75.70	9.40	11.99	24.87	48.21	22.06	5.84	98.24
2198	25.15	20.12	80.00	4.30	70.70	7.70	11.39	25.02	45.53	16.92	6.54	77.62
(2138)							11.61	25.29	45.89	21.34	5.39	101.36
(2188.1442)							12.22	27.42	44.55	19.73	6.81	85.88

TEXAS COTTON QUALITY EVALUATION

crop of 1990

COMPLETE TECHNOLOGICAL DATA from

INTERNATIONAL CENTER FOR TEXTILE RESEARCH and DEVELOPMENT LABORATORY

and

INSTITUT DE RECHERCHE DU COTON ET DES TEXTILES LABORATORY

TECHNO FIBRES TEXAS TECH 1991/09
TEXAS1.CMP le 26/09/91

QUI	IRCT	IRCT	IRCT	IRCT	IRCT	IRCT	IRCT	IRCT	IRCT	IRCT	IRCT	IRCT
COMMENT	CLASS	CLASS	CLASS	CLASS	CLASS	CLASS	FMT3	FMT3	FMT3	FMT3	ICCS S=Spinlab	ICCS
CODE	CI	CI	CI	CI	CI	CI	FI	FI	FI	FI	SI..I	SI..I
1	38	39	40	41	42	43	44	45	46	47	48	49
LOT	CIP8	CIIM	FIIM1	FIMR1	FIH.1	FIHS1	FIIM3	FIMR3	FIH.3	FIHS3	SIL1I	SIL2I
2139	25.04	4.35	4.44	0.86	196.9	230.2	4.5	1.01	171.0	170.0	11.09	25.06
2140	23.99	4.59	4.63	0.88	202.8	230.7	4.7	1.04	179.0	172.0	12.22	28.01
2141	26.73	4.45	4.51	0.87	197.3	226.0	4.5	1.01	176.0	175.0	11.55	25.80
2148	24.98	3.54	3.66	0.81	163.2	202.3	3.7	0.92	147.0	160.0	11.24	26.79
2188	24.51	3.90	3.99	0.81	181.2	224.0	4.1	0.94	162.0	172.0	11.88	28.33
2189	26.95	3.99	4.00	0.85	174.6	206.4	4.1	0.93	167.0	179.0	13.67	30.87
2190	26.13	3.58	3.66	0.77	169.2	219.1	3.7	0.89	152.0	171.0	11.27	27.06
2191	24.54	3.97	4.08	0.77	193.1	249.1	4.1	0.89	172.0	193.0	11.51	25.92
2192	25.55	4.08	4.18	0.81	192.1	237.9	4.2	0.94	169.0	180.0	11.38	26.20
2193	27.20	4.45	4.52	0.85	201.5	235.8	4.7	0.98	189.0	192.0	12.69	26.86
2194	25.66	3.59	3.74	0.77	174.7	227.0	3.9	0.89	159.0	178.0	10.99	25.65
2195	24.90	4.05	4.14	0.79	194.2	246.7	4.2	0.92	172.0	186.0	11.25	25.39
2196	25.18	3.74	3.86	0.75	185.2	246.2	3.9	0.88	165.0	188.0	11.33	25.35
2197	25.80	4.25	4.31	0.83	196.1	237.6	4.4	0.95	175.0	187.0	10.74	24.59
2198	21.40	3.79	3.89	0.76	186.2	246.6	4.0	0.84	178.0	212.0	10.45	24.84
(2138)	26.75	3.92	3.94	0.87	167.5	192.8	4.0	1.00	152.0	153.0	10.76	25.43
(2188.14	24.53	3.86	3.94	0.81	178.6	221.4	4.0	0.94	160.0	170.0	11.79	28.13

TEXAS COTTON QUALITY EVALUATION

crop of 1990

COMPLETE TECHNOLOGICAL DATA from

INTERNATIONAL CENTER FOR TEXTILE RESEARCH and DEVELOPMENT LABORATORY

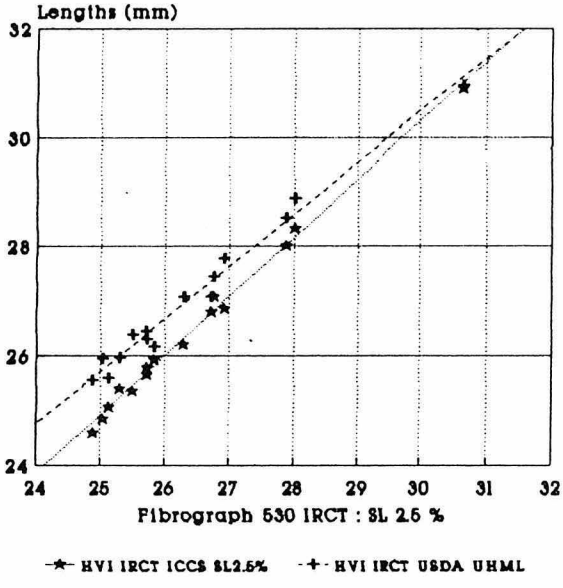
and

INSTITUT DE RECHERCHE DU COTON ET DES TEXTILES LABORATORY

TECHNO FIBRES TEXAS TECH 1991/09
TEXAS1.CMP le 26/09/91

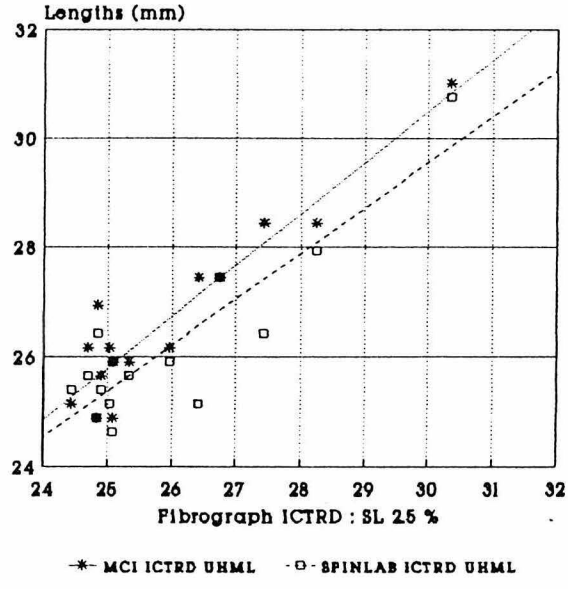
QUI	IRCT	IRCT	IRCT	IRCT	IRCT	IRCT	IRCT	IRCT	IRCT	IRCT	
COMMENT	ICCS	ICCS	ICCS	USDA	USDA	USDA	USDA	USDA			
CODE	SI..I	SI..I	SI..I	SI..U	SI..U	SI..U	SI..U	SI..U			
1	50	51	52	53	54	55	56	57	58	59	60
LOT	SIURI	SISTI	SIELI	SIL1U	SIL2U	SIUIU	SISTU	SIELU	SIRD	SIB	VAR
2139	44.23	17.29	6.13	21.02	25.59	82.12	24.42	6.15	74.90	8.70	DPL51
2140	43.61	16.84	6.43	23.62	28.52	82.79	22.51	6.15	77.90	9.30	DPL50
2141	44.76	18.86	6.64	21.95	26.43	83.06	24.52	6.29	76.20	8.80	DPL50
2148	41.96	18.01	5.91	22.03	27.06	81.44	24.95	5.88	69.60	9.20	DPL50
2188	41.96	17.48	6.72	23.58	28.88	81.66	23.47	6.55	78.90	9.90	DPLAC90
2189	44.30	18.21	6.09	26.11	30.94	84.40	25.46	6.09	76.20	10.00	AC1517
2190	41.65	19.96	6.70	22.36	27.43	81.51	26.15	6.46	77.00	9.10	AC90
2191	44.38	18.67	6.37	21.54	26.17	82.33	25.82	6.38	70.00	11.00	PAYHS26
2192	43.45	20.40	6.70	22.07	27.06	81.57	26.65	6.56	74.60	8.50	DPL80
2193	47.25	21.83	6.74	23.34	27.78	83.99	28.35	6.63	75.60	9.00	PAYHS26
2194	42.87	18.62	5.95	21.51	26.31	81.75	24.54	5.96	73.50	9.10	PAY145
2195	44.31	19.45	6.84	21.46	25.97	82.66	25.47	6.81	73.70	10.30	PAYHS26
2196	44.70	19.90	6.90	21.62	26.38	82.00	26.12	6.98	74.60	9.90	PAYHS26
2197	43.69	21.20	6.64	20.83	25.56	81.53	27.82	6.53	75.40	10.00	SR383
2198	42.05	15.58	6.61	20.99	25.95	80.88	21.01	6.55	71.80	8.00	LANKART611
(2138)	42.29	18.69	6.16	21.22	26.10	81.28	25.63	5.92	76.00	9.10	
(2188.14	41.90	18.07	6.73	23.36	28.81	81.07	23.69	6.41	78.60	9.90	

COMPARISON IRCT and ICTRD
SL 2.5 % and UHML
1 : intra-IRCT



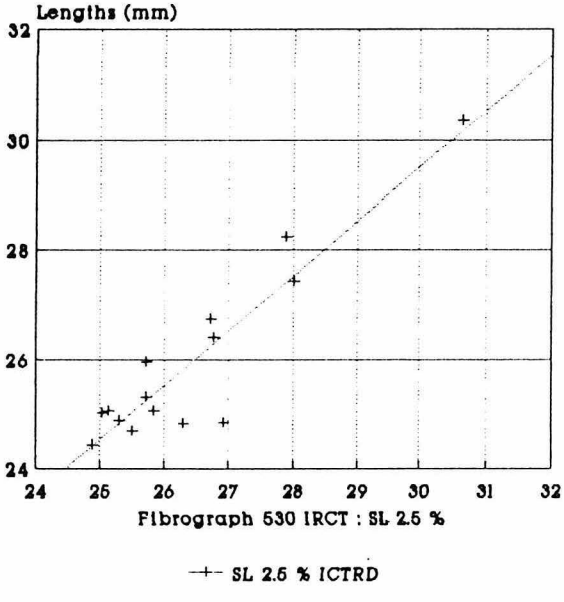
with 15 cotton samples

COMPARISON IRCT and ICTRD
SL 2.5 % and UHML
2 : intra-ICTRD



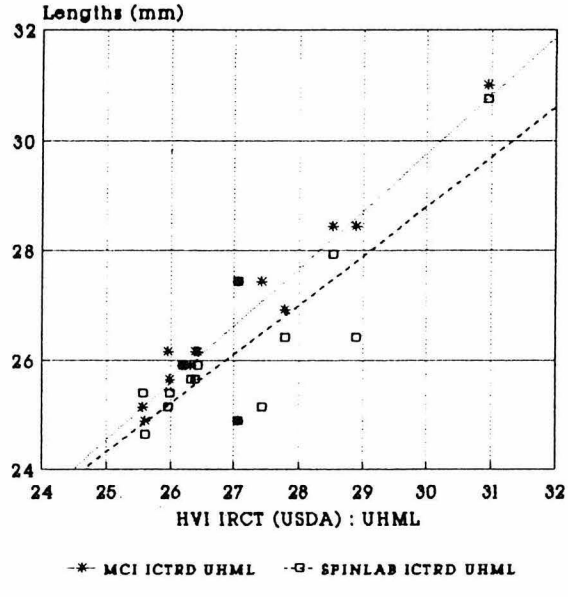
with 15 cotton samples

COMPARISON IRCT and ICTRD
SL 2.5 % with Fibrographs
3 : inter-Fibrographs



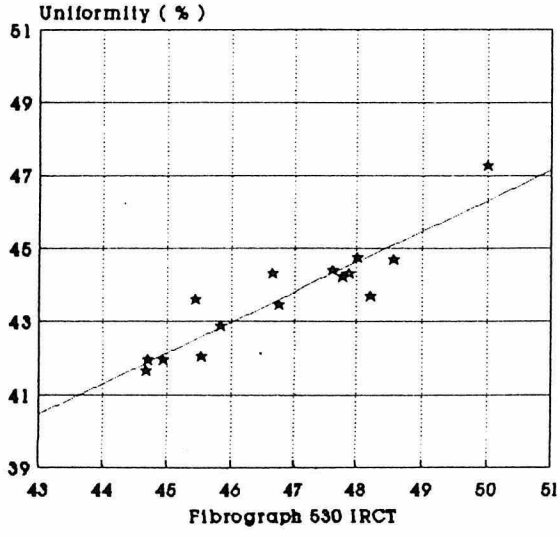
with 15 cotton samples

COMPARISON IRCT and ICTRD
UHML with HVI
4 : inter-HVI



with 15 cotton samples

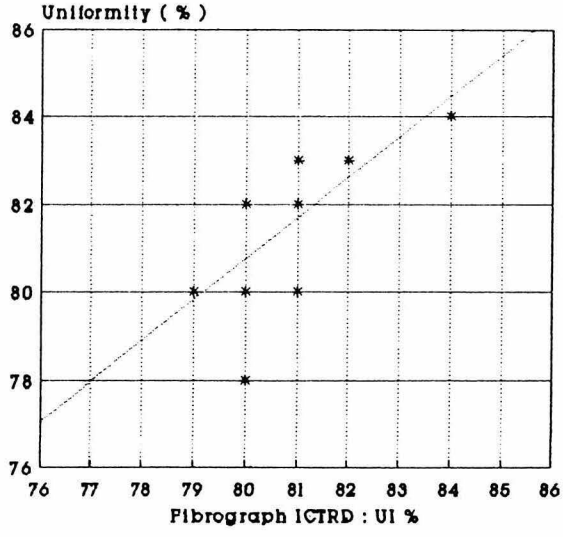
COMPARISON IRCT and ICTRD UNIFORMITY 1 : intra-IRCT



HVI (ICCS) IRCT

with 15 cotton samples

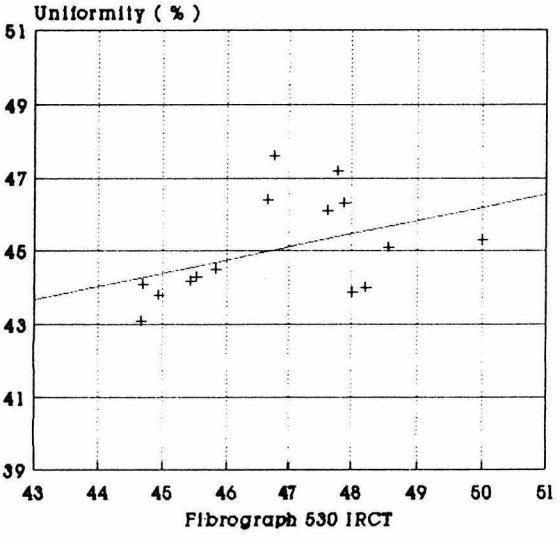
COMPARISON IRCT and ICTRD UNIFORMITY 2 : intra-ICTRD



MCI ICTRD UHML

with 15 cotton samples

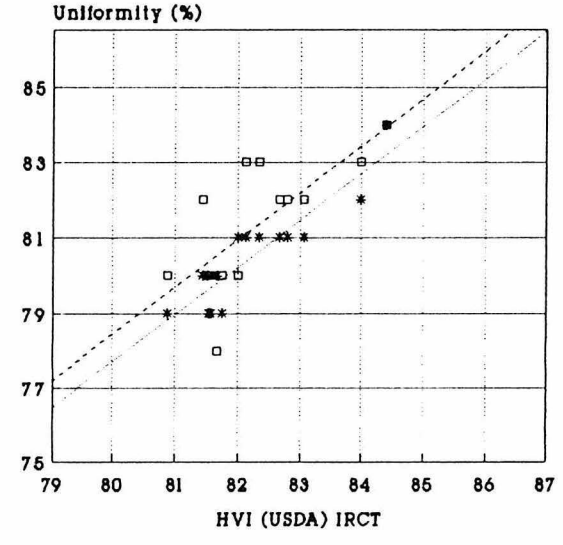
COMPARISON IRCT and ICTRD UNIFORMITY 3 : inter-Fibrographs



Fibrograph ICTRD

with 15 cotton samples

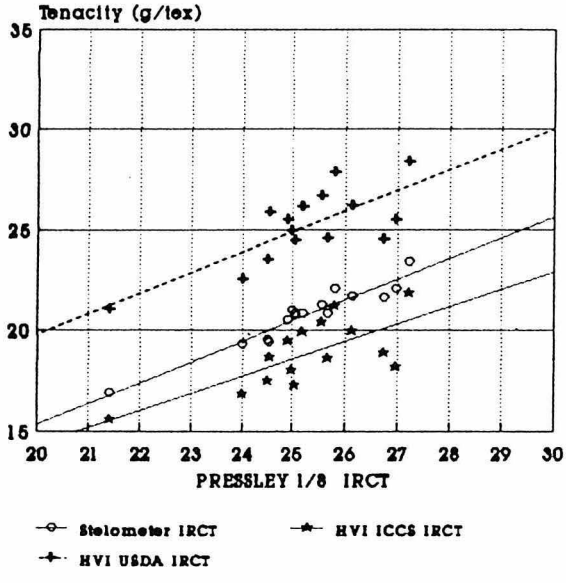
COMPARISON IRCT and ICTRD TENACITY 4 : inter-HVI



MCI ICTRD SPINLAB ICTRD

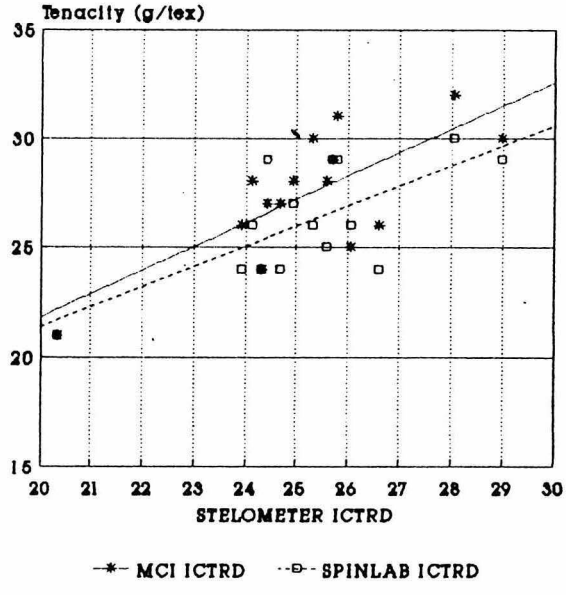
with 15 cotton samples

COMPARISON IRCT and ICTRD TENACITY
1 : intra-IRCT



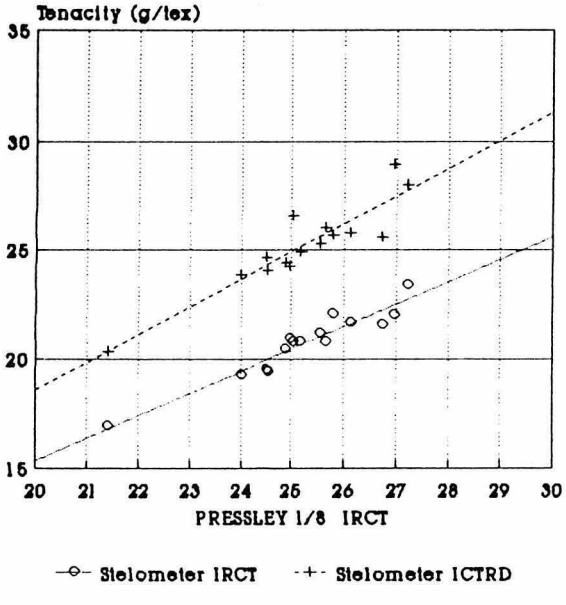
with 15 cotton samples

COMPARISON IRCT and ICTRD TENACITY
2 : intra-ICTRD



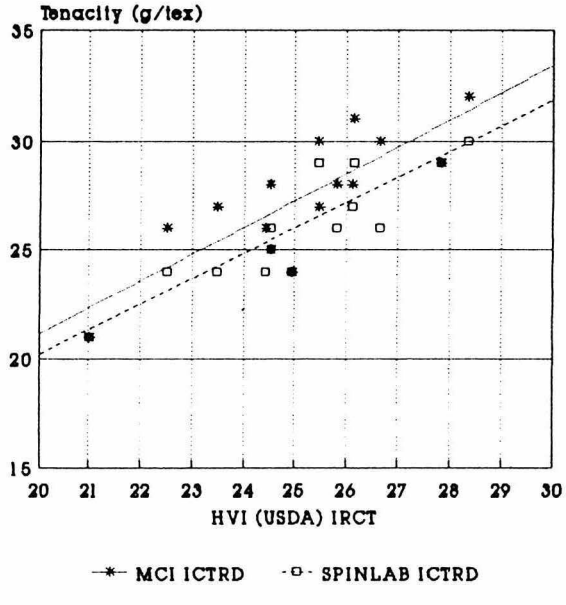
with 15 cotton samples

COMPARISON IRCT and ICTRD TENACITY
3 : inter-Classic Tenacity Testers



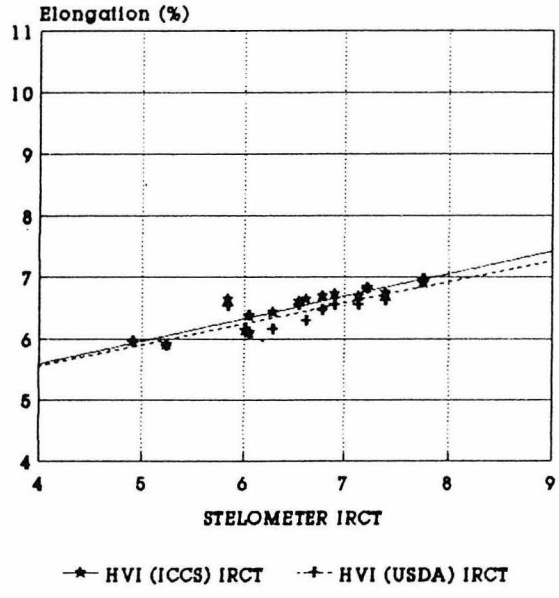
with 15 cotton samples

COMPARISON IRCT and ICTRD TENACITY
4 : inter-HVI



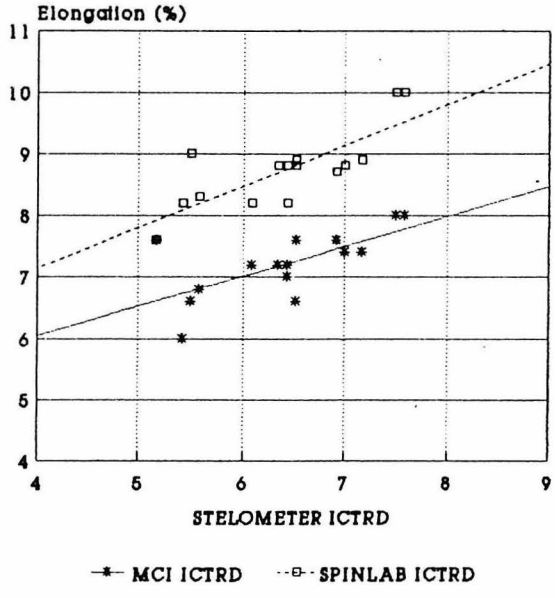
with 15 cotton samples

COMPARISON IRCT and ICTRD
ELONGATION
1 : intra-IRCT



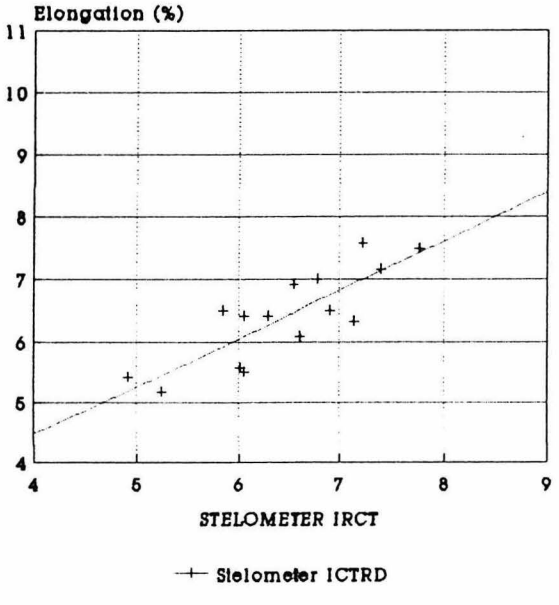
with 16 cotton samples

COMPARISON IRCT and ICTRD
ELONGATION
2 : intra-ICTRD



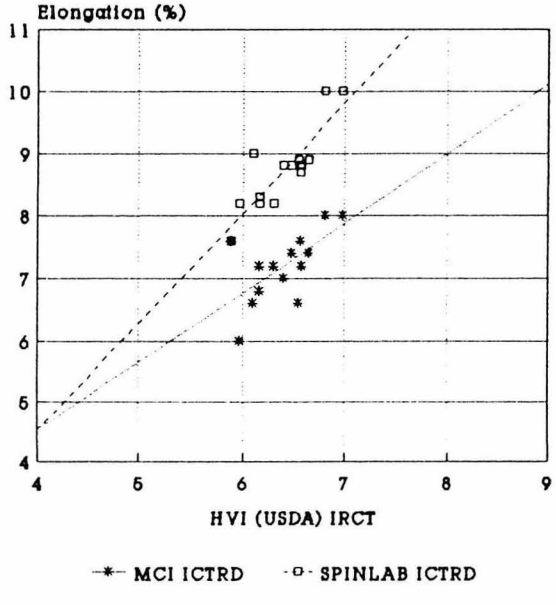
with 16 cotton samples

COMPARISON IRCT and ICTRD
ELONGATION
3 : inter-Stelometers



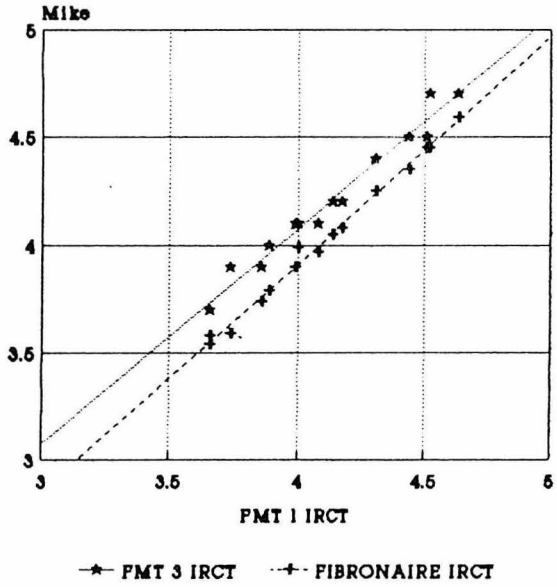
with 16 cotton samples

COMPARISON IRCT and ICTRD
ELONGATION
4 : inter-HVI



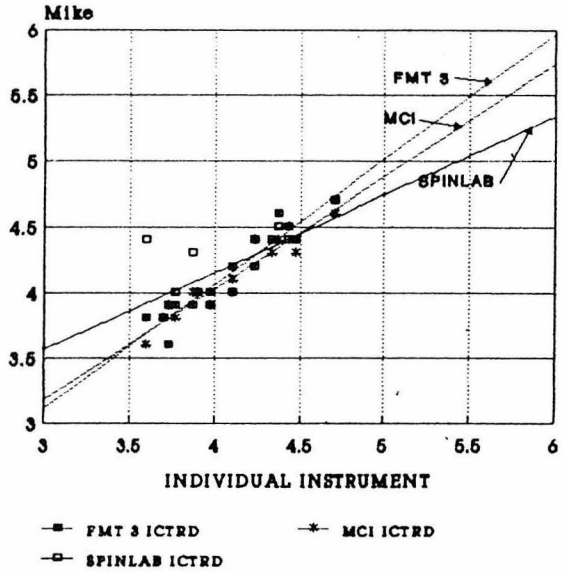
with 16 cotton samples

COMPARISON IRCT and ICTRD
MIKE VALUE
1 : intra-IRCT



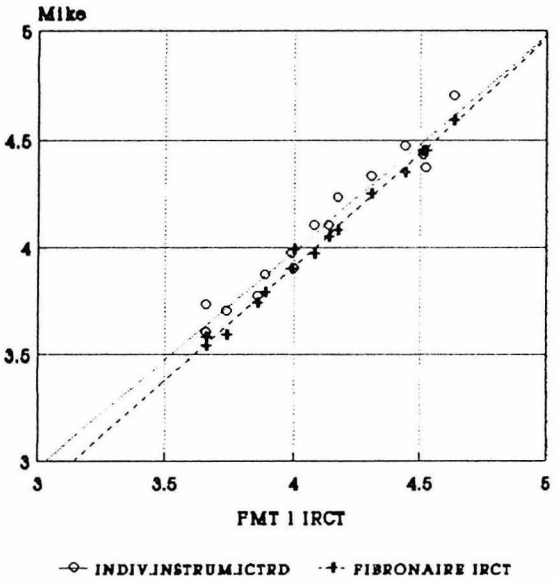
with 15 cotton samples

COMPARISON IRCT and ICTRD
MIKE VALUE
2 : intra-ICTRD



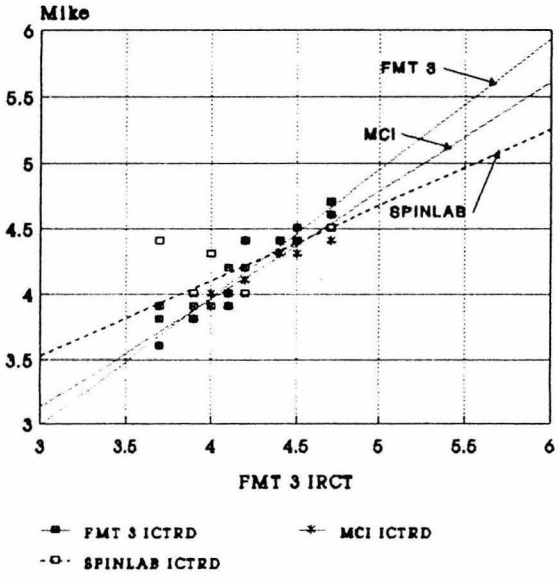
with 15 cotton samples

COMPARISON IRCT and ICTRD
MIKE VALUE
3 : inter-INDIVIDUAL INSTRUMENTS



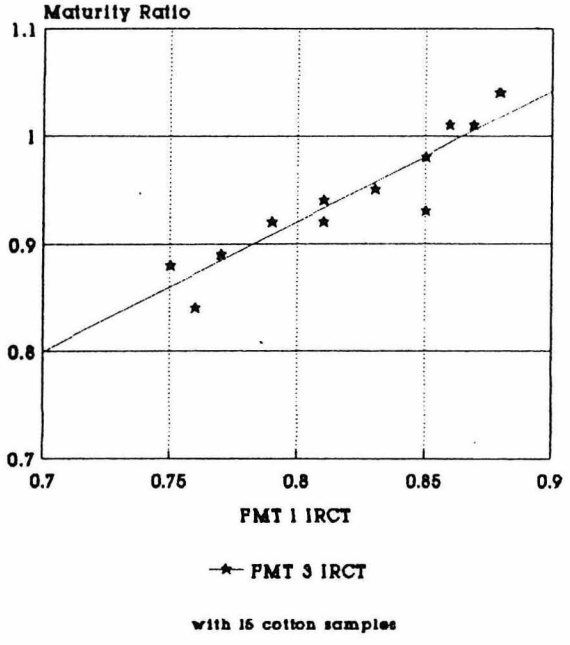
with 15 cotton samples

COMPARISON IRCT and ICTRD
MIKE VALUE
4 : inter-HVI

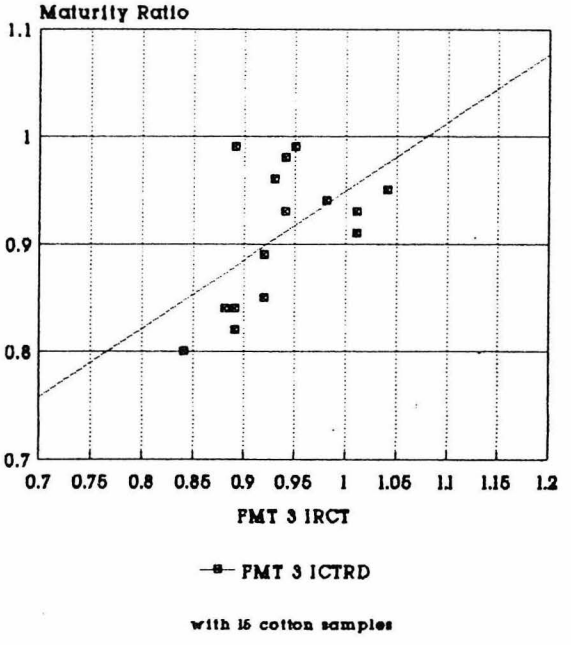


with 15 cotton samples

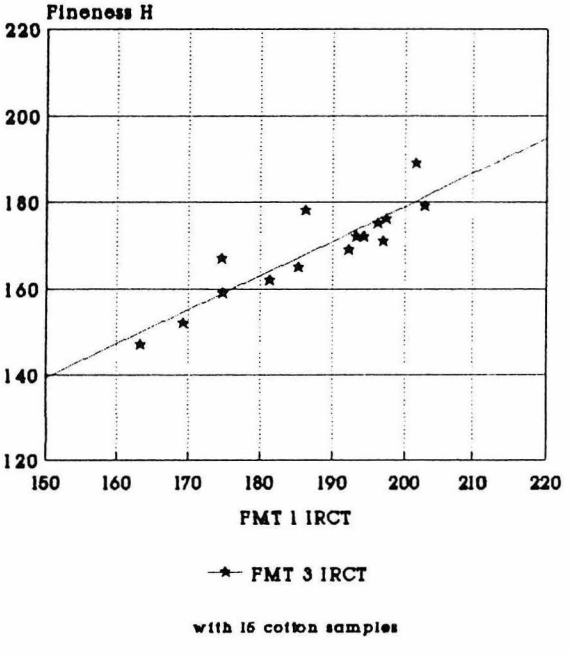
COMPARISON IRCT and ICTRD
MATURITY RATIO
1 : intra-IRCT



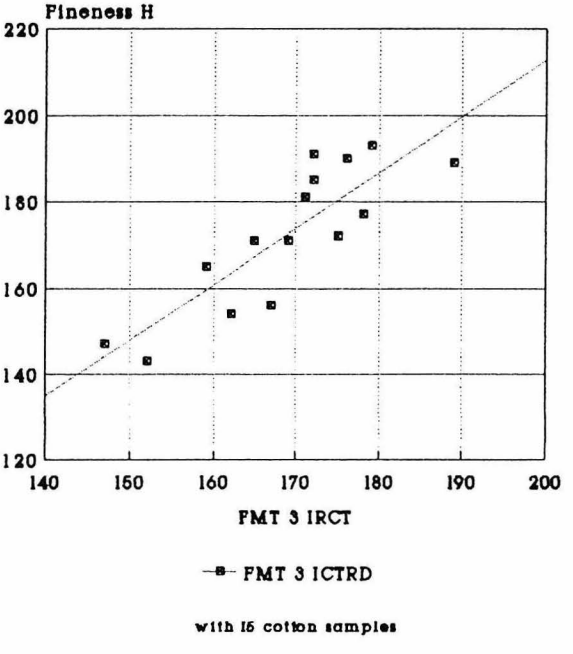
COMPARISON IRCT and ICTRD
MATURITY RATIO
2 : inter-HVI



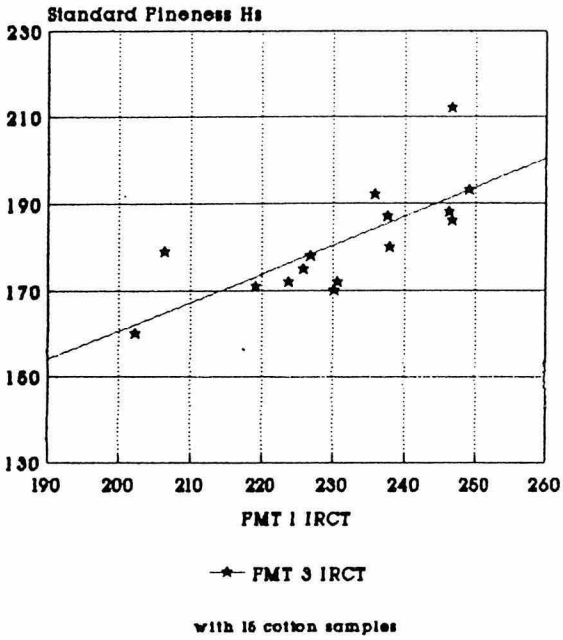
COMPARISON IRCT and ICTRD
LINEAR FINENESS H
1 : intra-IRCT



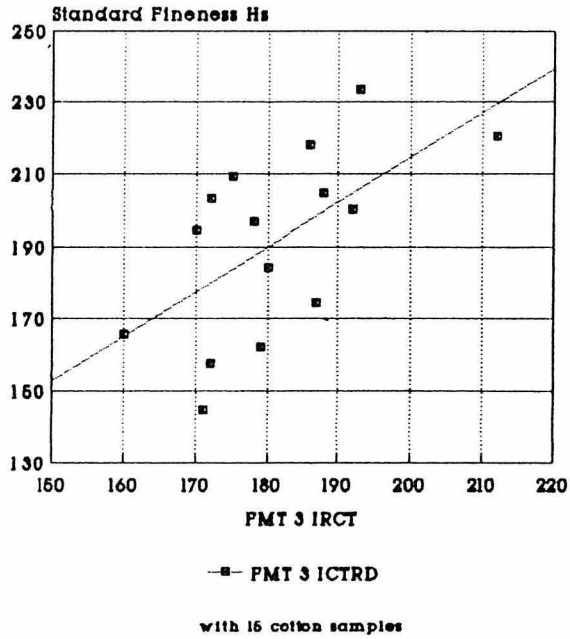
COMPARISON IRCT and ICTRD
LINEAR FINENESS H
2 : inter-HVI



COMPARISON IRCT and ICTRD
STANDARD FINENESS Hs
1 : intra-IRCT



COMPARISON IRCT and ICTRD
STANDARD FINENESS Hs
2 : inter-HVI



SPINNING

IRCT SPINNING SPECIFICATIONS

****

Microspinning plant SHIRLEY - PLATT

USTER CRL Single yarn strength

DCF Skein strength

USTER GGP- IPI Uniformity : thin (50%) - thick (50%) neps (200%)

Conditions :	spinning	RH = 50 %	t° = 23°
	laboratory	RH = 65 %	t° = 22°

COMMENTS

In this study, we have used IRCT's fiber parameters. We have spun two counts : 20 tex and 27 tex . Then we have compared our results with ICTRD results

1 - TENACITY RESULTS

The tenacity results have been obtained for about 20 tex or 27 tex yarns. To compare the results , it was necessary to correct them for 20 tex and 27 tex exactly. The calculations have been made as follow :

With ICTRD three counts by yarn, we have calculated a linear regression analysis and we have corrected tenacities for each yarn (table 5).

Concerning IRCT results, we have corrected with a formula, where we use an average intercept of K= -50. The formula is :

$$\text{calculated tenacity} = \text{observed tenacity} + K \left(\frac{1}{\text{calculated tex}} - \frac{1}{\text{observed tex}} \right)$$

The results are resumed in table 6.

We have calculated some correlations between IRCT and ICTRD for tenacity and imperfections. They appear on table 8.

- Tenacity 20 tex : we have the same level and a good correlation
- Tenacity 27 tex : the ICTRD's results are correct. IRCT's results are lower. But we have a good coorelation.

2 - IMPERFECTIONS

We have tested thin, thick, neps, and uniformity. ICTRD's results have been transformed on 1000 m of yarn, CV% to U%. The results are summarized in the table 7 .

We have examinated the nature of the differents neps as SCF, fiber neps, sticky neps, various fragments with our method. The results are summarized in tables and figures. Its' very interesting to see that SCF don't following total neps. Fiber neps are important for some cottons, the same for various fragments.

REFERENCE : TEXAS TECH - 27 tex - COMPARATIVE STUDY ON TEXAS CROP OF 1990

Date : February 1992 Laboratory : HR % = 65 t° = 22

Table 1

VARIETE	SKEIN STRENGTH (D C F)			SINGLE END STRENGTH (U S T E R)						UNIFORMITY (USTER)				Stickiness Thermodetector Sticky spots
	Breaking force da N	COUNT Ne / tex	Tenacity cN/tex	Breaking force cN	COUNT Ne / tex	Tenacity cN/tex	Tenacity g/tex	CV % F	E %	U %	Number per 1000 m GGP or Tester III Thin	Thick	Neps	
2139	52.88	26.57	9.95	338.39	26.63	12.71	12.96	12.34	5.7	17.1	210	406	402	6
2140	54.05	27.00	10.01	342.07	26.97	12.68	12.93	11.86	6.2	16.6	124	346	250	10
2141	57.40	26.69	10.75	352.36	26.47	13.31	13.58	11.85	5.9	17.0	268	412	408	8
2148	53.05	26.55	9.99	333.98	26.65	12.53	12.78	11.44	5.3	17.2	172	422	628	4
2188	52.40	26.78	9.78	339.86	27.60	12.31	12.56	12.46	6.4	17.4	272	474	316	4
2189	63.95	27.71	11.54	410.42	28.00	14.66	14.95	10.46	6.6	16.0	56	360	672	9
2190	50.45	26.51	9.52	340.60	27.67	12.31	12.56	10.36	6.2	18.7	394	684	510	2
2191	47.43	26.15	9.07	314.87	27.12	11.61	11.84	11.20	5.6	17.8	284	532	576	2
2192	55.40	26.13	10.60	357.50	27.02	13.23	13.49	10.03	6.2	16.9	160	404	718	3
2193	58.10	26.33	11.03	394.25	27.44	14.37	14.66	11.19	6.6	15.9	132	302	536	15
2194	51.10	25.56	10.00	332.51	26.12	12.73	12.98	12.02	5.3	17.6	148	500	758	26
2195	50.30	26.34	9.55	322.96	26.79	12.06	12.30	13.84	6.4	17.2	288	458	526	4
2196	50.88	26.54	9.59	336.92	27.16	12.41	12.66	11.17	6.6	16.9	176	432	390	3
2197	49.45	25.62	9.65	310.46	25.77	12.05	12.29	13.64	5.3	18.2	314	624	652	3
2198	40.90	25.87	7.90	267.83	26.14	10.25	10.46	12.29	5.8	19.0	584	724	888	7

REFERENCE : TEXAS TECH - 20 tex - COMPARATIVE STUDY ON TEXAS CROP OF 1990

Date : February 92 Laboratory : HR % = 65 t° = 22

Table 2

VARIETE	SKEIN STRENGTH (D C F)			SINGLE END STRENGTH (U S T E R)						UNIFORMITY (USTER)				Stickiness Thermode-tector Sticky spots
	Breaking force da N	COUNT Ne / tex	Tenacity cN/tex	Breaking force cN	COUNT Ne / tex	Tenacity cN/tex	Tenacity g/tex	CV % F	E %	U %	Number per 1000 m GGP or Tester III Thin	Thick	Neps	
2139	41.25	19.49	10.58	260.13	19.93	13.05	13.31	15.37	6.4	17.5	198	532	326	6
2140	41.59	19.78	10.52	266.02	19.93	13.35	13.62	13.04	7	16.1	64	494	278	10
2141	42.88	19.84	10.81	271.51	19.43	13.97	14.25	15.59	6.7	18.5	428	748	516	8
2148	42.85	19.92	10.76	271.88	19.65	13.84	14.12	12.11	6.1	17.0	164	698	750	4
2188	43.10	19.89	10.83	273.71	20.52	13.34	13.61	12.67	7.4	16.8	132	622	366	4
2189	50.73	20.29	12.50	333.04	20.86	15.97	16.29	8.6	7.2	16.3	106	618	724	9
2190	41.03	19.70	10.41	263.05	19.71	13.35	13.62	12.3	6.7	20.0	500	1004	690	2
2191	38.38	19.46	9.85	241.37	19.33	12.48	12.73	14.3	6.2	17.9	440	944	826	2
2192	42.0	19.29	10.89	288.05	20.15	14.30	14.58	11.0	7.1	18.1	328	872	892	3
2193	48.1	19.93	12.07	313.77	20.31	15.45	15.76	12.74	7	16.9	264	678	698	15
2194	42.30	19.88	10.64	269.30	19.81	13.60	13.87	10.70	5.9	19.3	876	1122	1054	26
2195	38.65	19.26	10.03	245.05	19.33	12.68	12.93	13.9	6.9	19.1	688	998	924	4
2196	39.10	19.32	10.12	253.13	19.50	12.98	13.24	13.94	7.3	19.6	776	1068	676	3
2197	38.67	19.69	9.82	232.92	19.19	12.14	12.38	16.15	5.8	19.5	706	1138	670	3
2198	32.97	19.43	8.48	200.21	19.31	10.37	10.57	14.68	6.6	20.9	1050	1326	1110	7

REFERENCE : TEXAS TECH - 20 tex - COMPARATIVE STUDY ON TEXAS CROP OF 1990

Date : February 92 Laboratory : HR % = 65 t° = 22

Table 3

VARIETY	SPINNING	REGULARIMETER 1000 m											STICKING THERMODE -TECTOR Sticky spots
		TOTAL NEPS	DETAILED ANALYSIS										
			SEED COAT FRAGMENT	%	FIBER NEPS		DETAILED OF FIBER NEPS				VARIOUS FRAGMENT	%	
					total	%	fiber	%	Stickiness	%			
2139		326	171	52.5	155	47.5					0	0	
2140		278	163	58.6	86	31.0					29	10.4	
2141		516	221	42.9	254	49.2					41	7.9	
2148		750	454	60.5	188	25.0					108	14.5	
2188		366	202	55.2	139	37.9					25	6.9	
2189		724	562	77.6	111	15.3					51	7.1	
2190		690	311	45.0	338	49.0					41	6.0	
2191		826	442	53.5	322	39.0					62	7.5	
2192		892	438	49.2	227	25.4					227	25.4	
2193		698	387	55.4	202	28.9					109	15.7	
2194		1054	544	51.6	329	31.2					181	17.2	
2195		924	579	62.6	311	33.6					34	3.8	
2196		676	373	55.2	250	37.0					53	7.8	
2197		670	480	71.6	172	25.7					18	2.7	
2198		1110	428	38.5	458	41.3					224	20.2	

REGULARIMETEUR : Thin - Thick - V - F - GGP
Test length : TESTER III

REFERENCE : TEXAS TECH - 27 tex - COMPARATIVE STUDY ON TEXAS CROP OF 1990

Date : February 92 Laboratory : HR % = 65 t° = 22

Table 4

VARIETY	SPINNING	REGULARIMETER 1000 m											STICKING THERMODE -TECTOR Sticky spots
		TOTAL NEPS	DETAILED ANALYSIS										
			SEED COAT FRAGMENT	%	FIBER NEPS		DETAILED OF FIBER NEPS				VARIOUS FRAGMENT	%	
					total	%	fiber	%	Stickiness	%			
2139		402	281	70.0	109	27.1					12	2.9	
2140		250	205	82.1	32	12.8					13	5.1	
2141		408	184	45.0	204	50.0					20	5.0	
2148		628	389	62.0	143	22.8					96	15.2	
2188		316	186	59.0	97	30.8					33	10.2	
2189		672	588	87.5	53	7.8					31	4.7	
2190		510	221	43.4	248	48.7					41	7.9	
2191		576	464	80.5	92	15.9					20	3.6	
2192		718	517	72.1	95	13.2					106	14.7	
2193		536	345	64.3	144	26.8					47	8.9	
2194		758	430	56.7	202	26.7			6	0.8	120	15.8	
2195		526	348	66.1	125	23.7					53	10.2	
2196		390	247	63.5	75	19.2					68	17.3	
2197		652	381	58.5	236	36.2					35	5.3	
2198		888	417	47.0	278	31.3					193	21.7	

REGULARIMETEUR : Thin - Thick - V - F - GGP

Test length : TESTER III

TABLE 5

ICTRD SINGLE YARN STRENGTH RESULTS
ON RING SPINNING AND TENACITY CALCULATED FOR 20 TEX - 27 TEX.

COTTON	MEAN Strength (g)	COUNT (tex)	SLOPE a	INTERCEPT b	R	TENACITY G/TEX calculated	
						20 tex	27 tex
1	557 384 249	37.01 26.61 19.14	17.19	- 77.76	0.999	13.30	14.31
2	510 349 244	37.15 26.70 19.93	15.44	- 63.62	0.999	12.26	13.08
3	562 382 240	36.44 26.41 18.23	17.69	- 83.50	0.999	13.59	14.60
4	563 406 292	36.60 26.56 19.88	16.16	- 27.05	0.999	14.89	15.16
5	541 377 265	36.33 26.99 19.83	16.77	- 70.43	0.999	13.24	14.15
6	695 485 348	37.44 27.62 20.55	20.60	- 78.56	0.999	16.67	17.69
7	554 397 261	35.74 26.88 19.47	18.00	- 88.52	0.999	13.57	14.72
8	493 339 244	36.13 26.43 19.65	15.16	- 56.82	0.999	12.32	13.05
9	598 413 286	36.53 26.45 19.69	18.51	- 77.79	0.999	14.62	15.62
10	647 455 335	36.99 27.56 20.38	18.86	-55.04	0.998	16.11	16.82
11	582 393 285	36.94 27.24 20.49	18.15	- 92.38	0.998	13.53	14.73
12	496 350 261	35.58 26.64 20.25	15.38	- 54.05	0.997	12.68	13.38

COTTON	MEAN Strength (g)	COUNT (tex)	SLOPE a	INTERCEPT b	R	TENACITY G/TEX calculated	
						20 tex	27 tex
13	515 380 255	36.13 26.92 20.20	16.22	- 66.85	0.997	12.88	13.74
14	543 362 255	36.06 26.85 19.93	17.95	- 109.03	0.997	12.50	13.91
15	455 322 213	37.65 27.68 20.52	14.07	- 72.83	0.999	10.43	11.37

TABLE 6

IRCT SINGLE YARN STRENGTH
CALCULATED RESULTS FOR 20 TEX - 27 TEX

COTTON	INTERCEPT	TENACITY G/TEX	
		20 TEX	27 TEX
1		13.31	13.00
2		13.62	12.93
3		14.32	13.60
4		14.17	12.81
5		13.55	12.51
6		16.18	14.89
7		13.66	12.51
8		12.82	11.83
9		14.55	13.50
10		15.72	14.63
11		13.89	13.06
12		13.02	12.32
13		13.30	12.90
14		12.48	12.63
15		10.66	10.73

TABLE 7

ICTRD YARN IMPERFECTIONS
CALCULATED FOR 1000 M

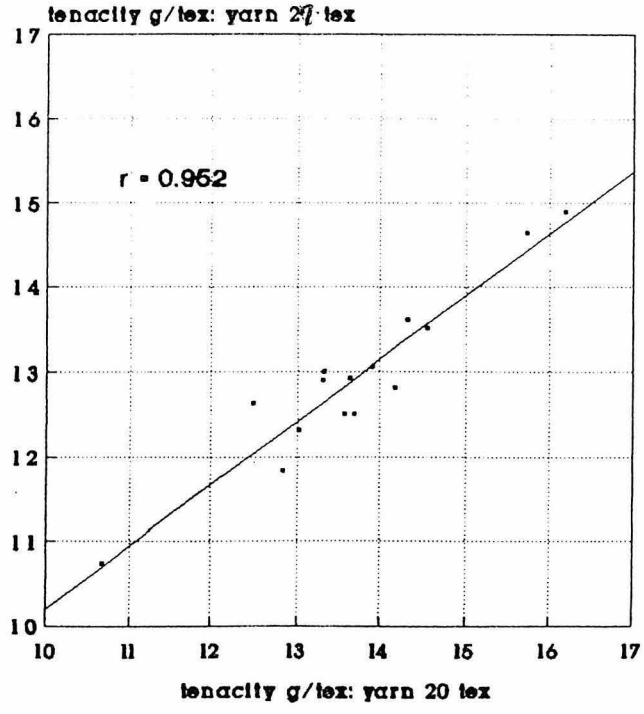
COTTON	THIN		THICK		NEPS		U %	
	20 tex	27 tex	20 tex	27 tex	20 tex	27 tex	20 tex	27 tex
1	1134	554	2074	1183	620	178	19.3	17.1
2	1201	503	2379	1488	812	234	19.8	17.4
3	1051	464	2091	1197	625	213	19.2	16.9
4	993	408	2049	1159	1081	298	19.5	17.0
5	998	392	2046	1079	839	167	19.2	16.8
6	276	92	1256	605	851	353	16.6	14.6
7	1319	583	2352	1289	951	188	20.2	17.6
8	1582	744	2396	1413	1097	314	20.8	18.1
9	935	416	1855	932	789	229	19.1	16.7
10	381	160	1211	544	482	153	16.9	14.9
11	288	447	1902	1032	873	236	19.2	16.9
12	1376	663	2262	1316	935	252	20.3	17.1
13	1125	512	1900	1031	523	108	19.5	17.2
14	1860	1083	2571	1691	856	246	21.7	19.6
15	2011	1068	2833	1781	1044	340	21.8	19.6

Table 8

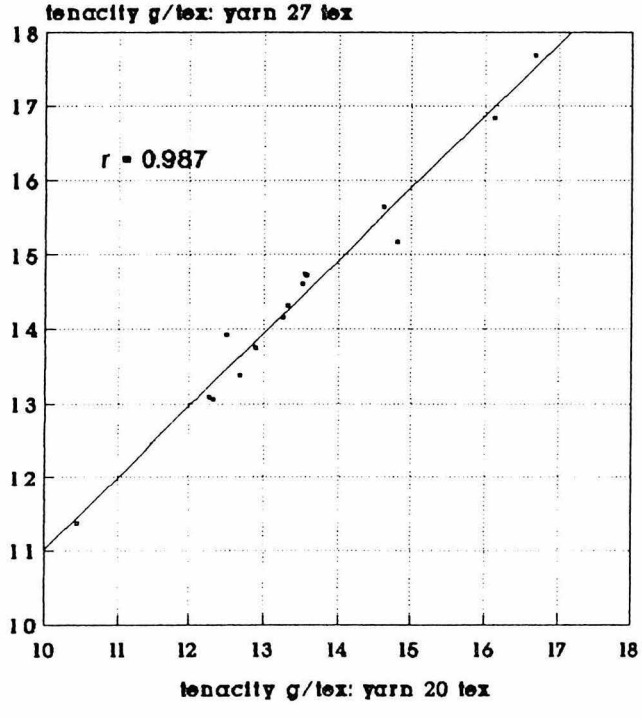
CORRELATIONS IRCT-ITCRD on yarns 20 tex and 27 tex
Tenacity g/tex - imperfections 1 000 m

VARIABLES	MEAN 15 COTTONS IRCT COUNT		MEAN 15 COTTONS ICTRD COUNT		CORRELATIONS			
	20 tex	27 tex	20 tex	27 tex	IRCT - ICTRD COUNT		IRCT	ICTRD
					20 tex	27 tex	20-27 tex	20-27 tex
Single yarn strength								
Real tenacity g/tex Count spinning	13.66	12.87	13.49	14.34	0.940	0.913	0.973	0.961
Calculated tenacity g/tex for 20 tex and 27 tex	13.68	12.92	13.50	14.42	0.953	0.921	0.952	0.987
Uster Eveness test 1000 m								
Thin	448	239	1102	539	0.419	0.788	0.601	0.917
Thick	857	472	2078	1183	0.492	0.706	0.770	0.985
Neps	700	549	825	234	0.439	0.624	0.878	0.754
U %	18.2	17.3	19.53	17.16	0.649	0.853	0.765	0.98

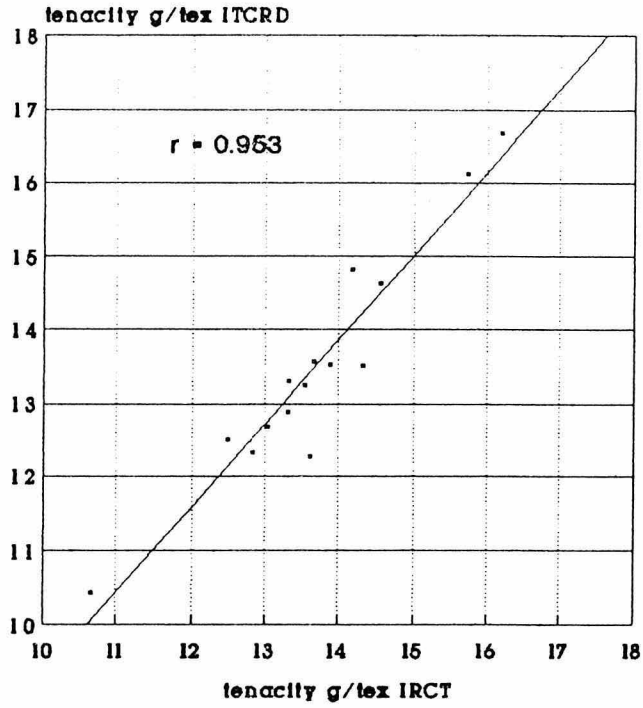
IRCT
CORRELATION YARN TENACITY 20 - 27 TEX
SINGLE YARN STRENGTH



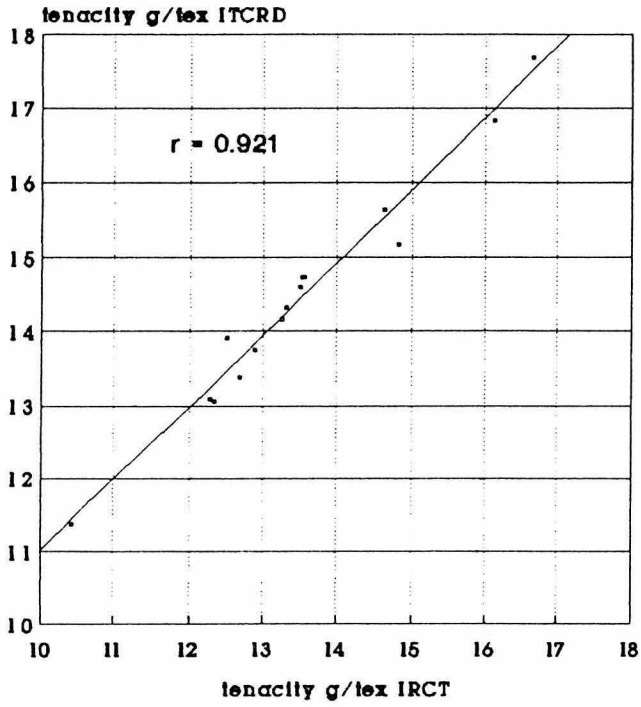
ITCRD
CORRELATION YARN TENACITY 20 - 27 TEX
SINGLE YARN STRENGTH



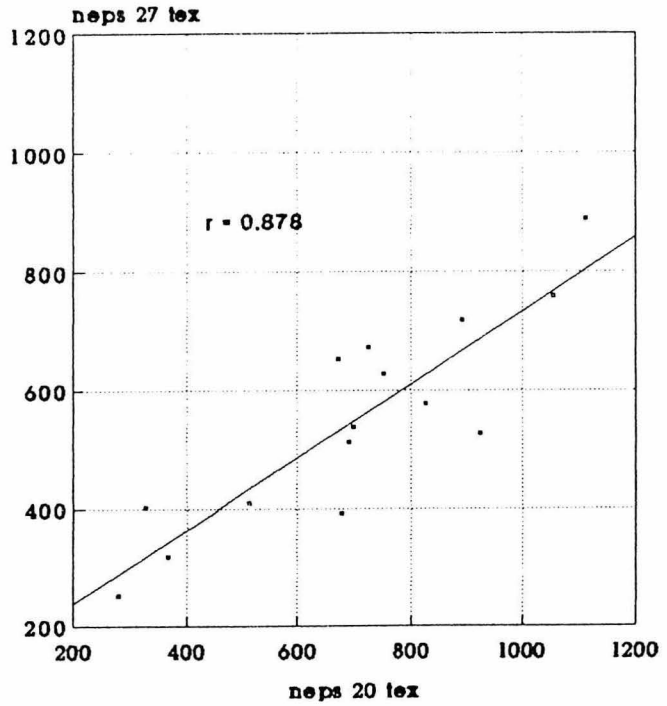
IRCT - ITCRD
CORRELATION YARN TENACITY 20 TEX
SINGLE YARN STRENGTH



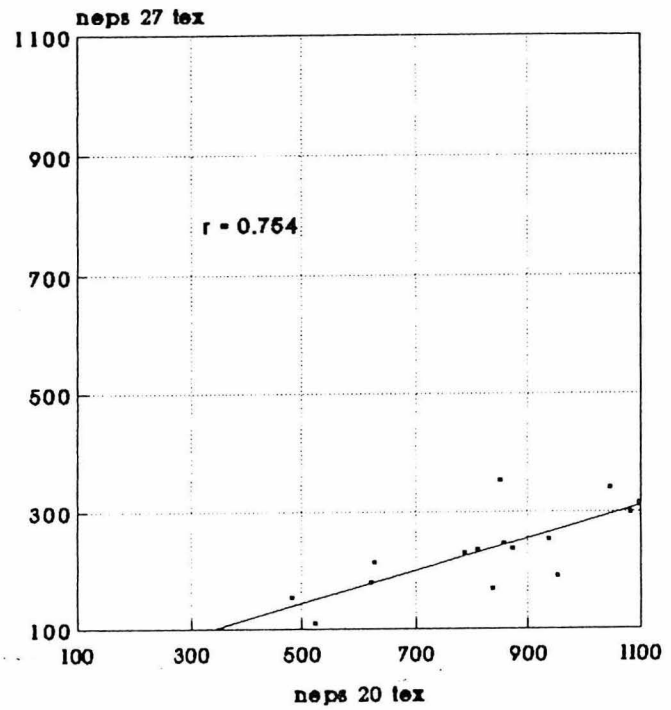
IRCT - ITCRD
CORRELATION YARN TENACITY 27 TEX
SINGLE YARN STRENGTH



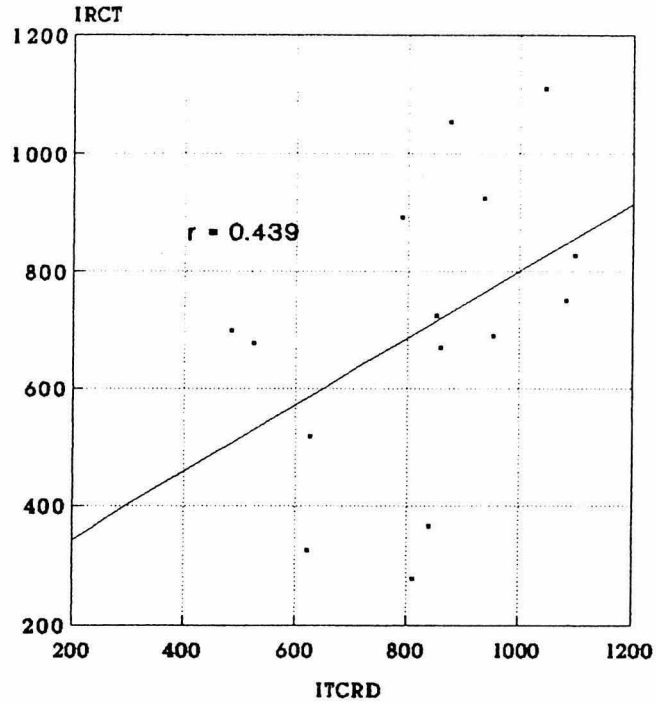
IRCT
NEPS 20 - 27 tex
YARN 1000 m



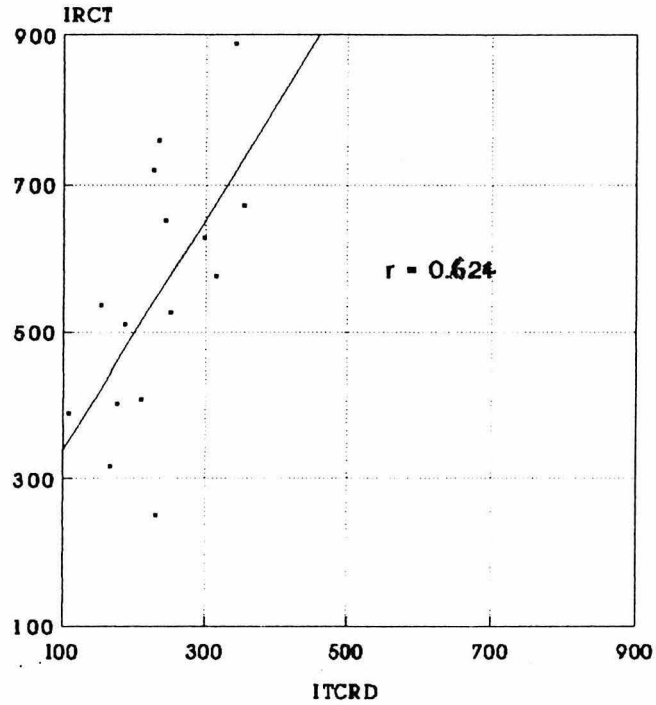
ICTRD
NEPS 20 - 27 tex
YARN 1000 m



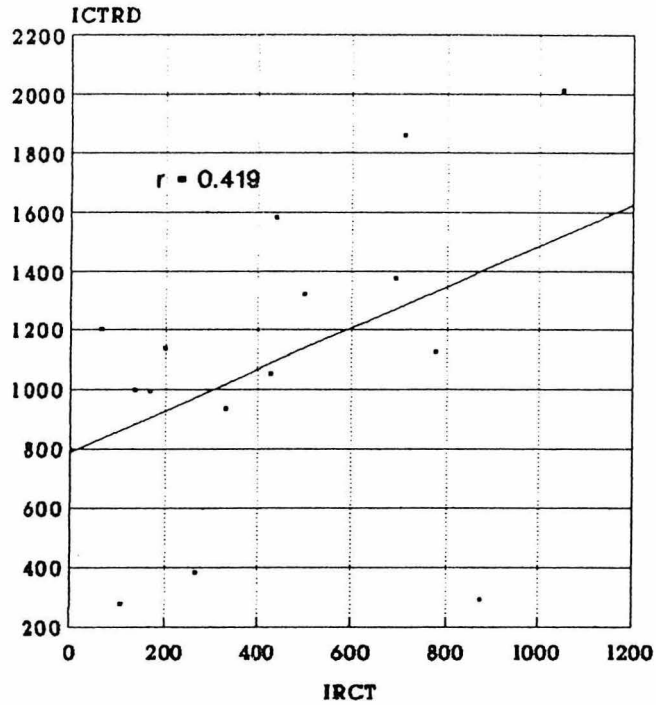
ICTRD - IRCT
NEPS 20 tex
YARN 1000 m



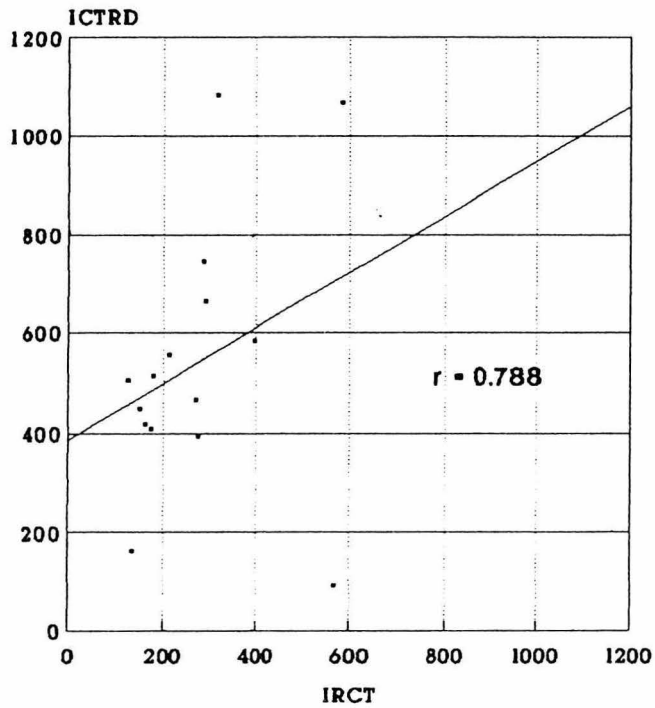
ICTRD - IRCT
NEPS 27 TEX
YARN 1000 m



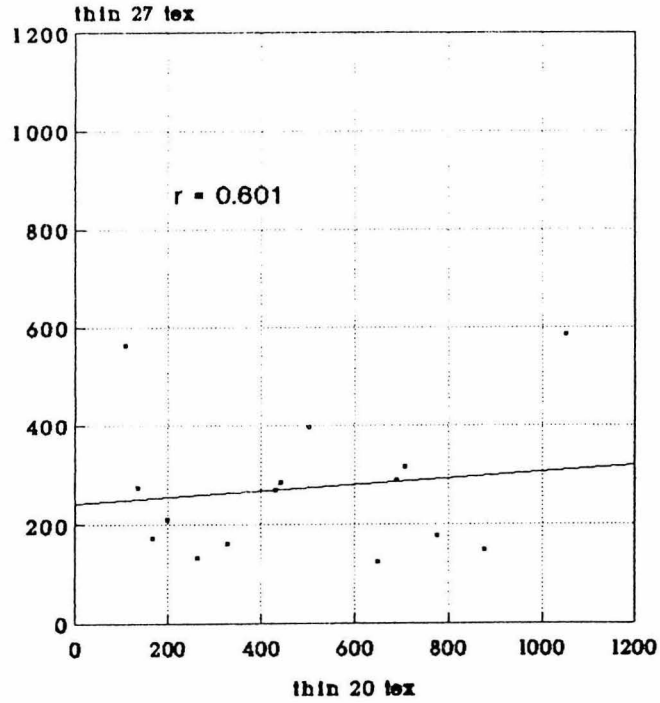
IRCT - ICTRD
THIN 20 tex
YARN 1000 m



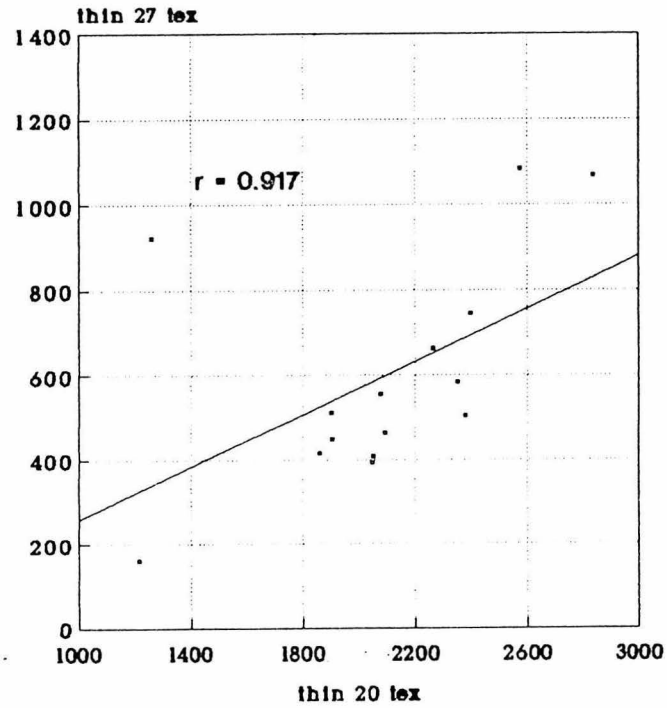
IRCT - ICTRD
THIN 27 tex
YARN 1000 m



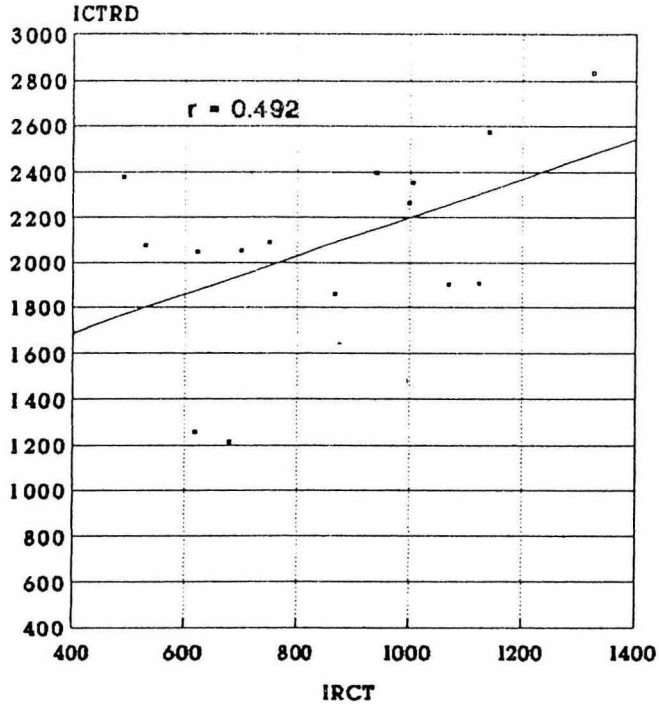
IRCT
THIN 20 - 27 tex
YARN 1000 m



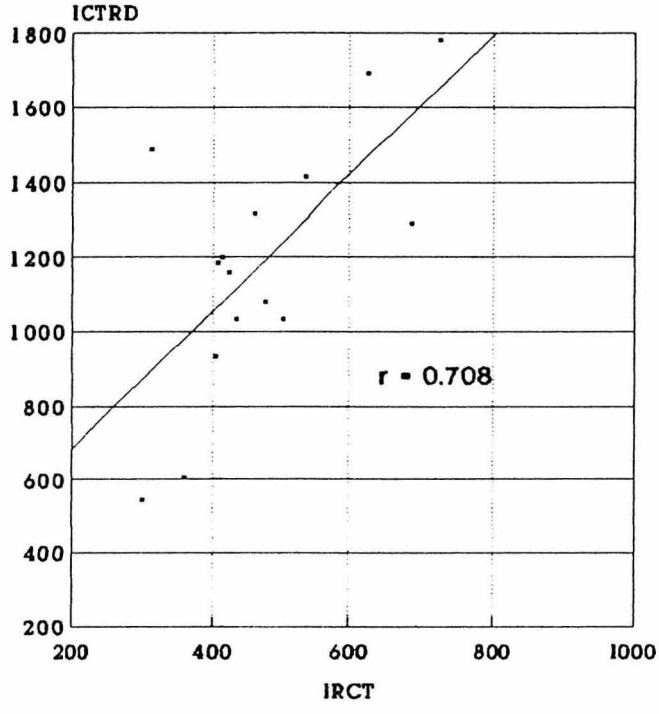
ICTRD
THIN 20 - 27 tex
YARN 1000 m



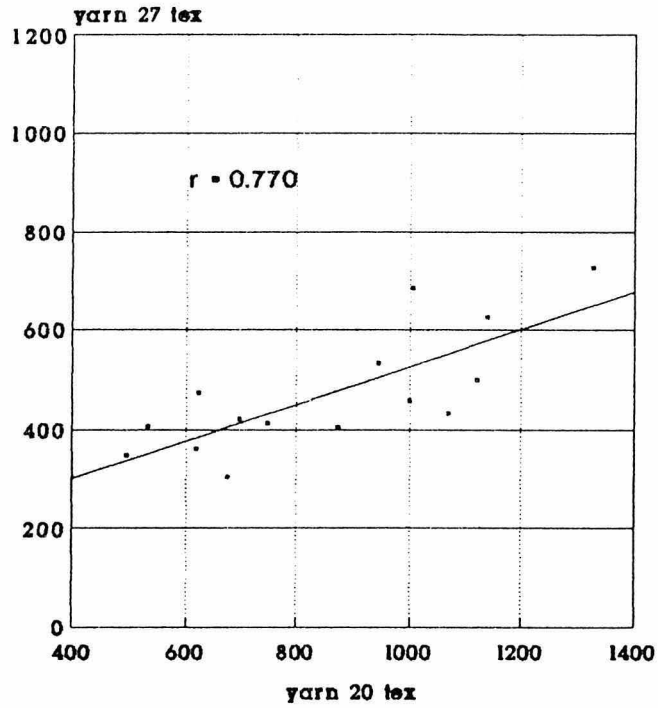
IRCT - ICTRD
THICK 20 TEX
YARN 1000 m



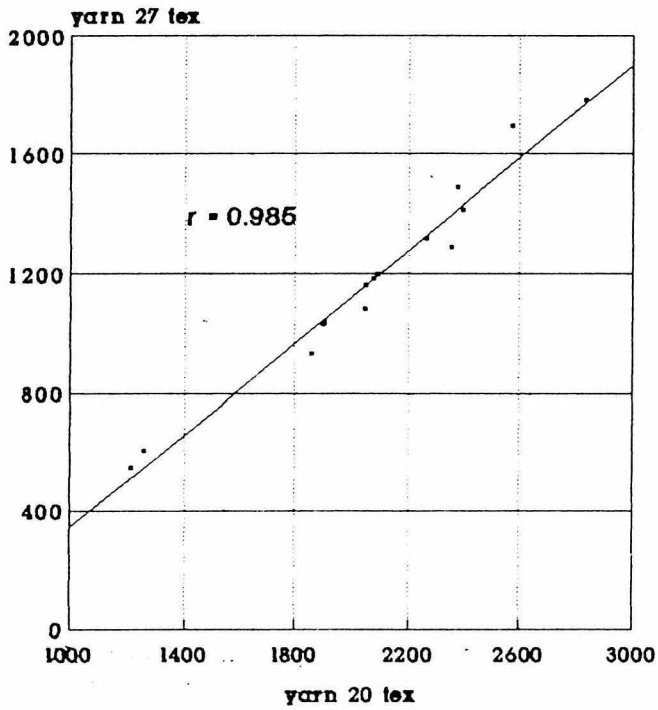
IRCT - ICTRD
THICK 27 TEX
YARN 1000 m



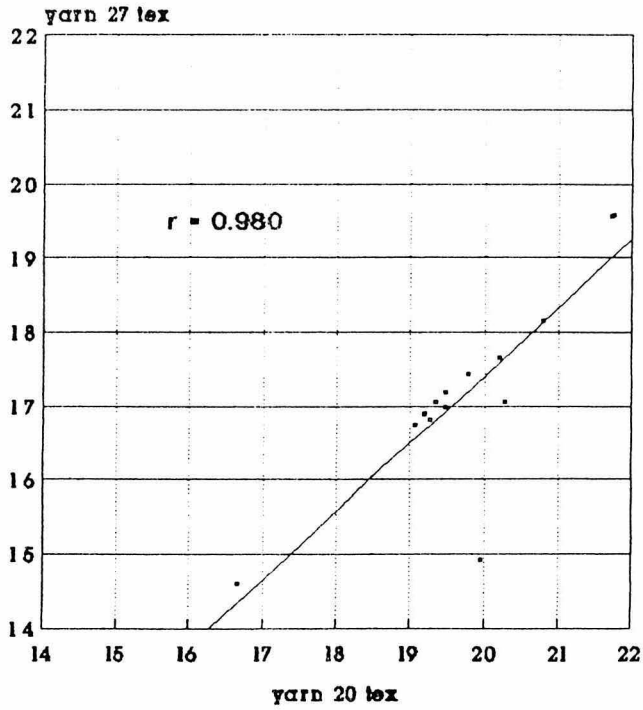
IRCT
THICK 20 - 27 TEX
YARN 1000 m



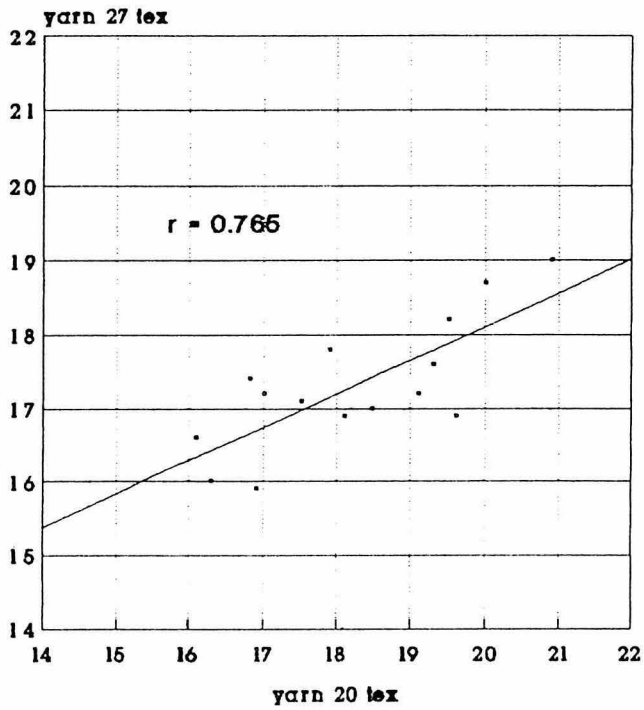
ICTRD
THICK 20 - 27 TEX
YARN 1000 m



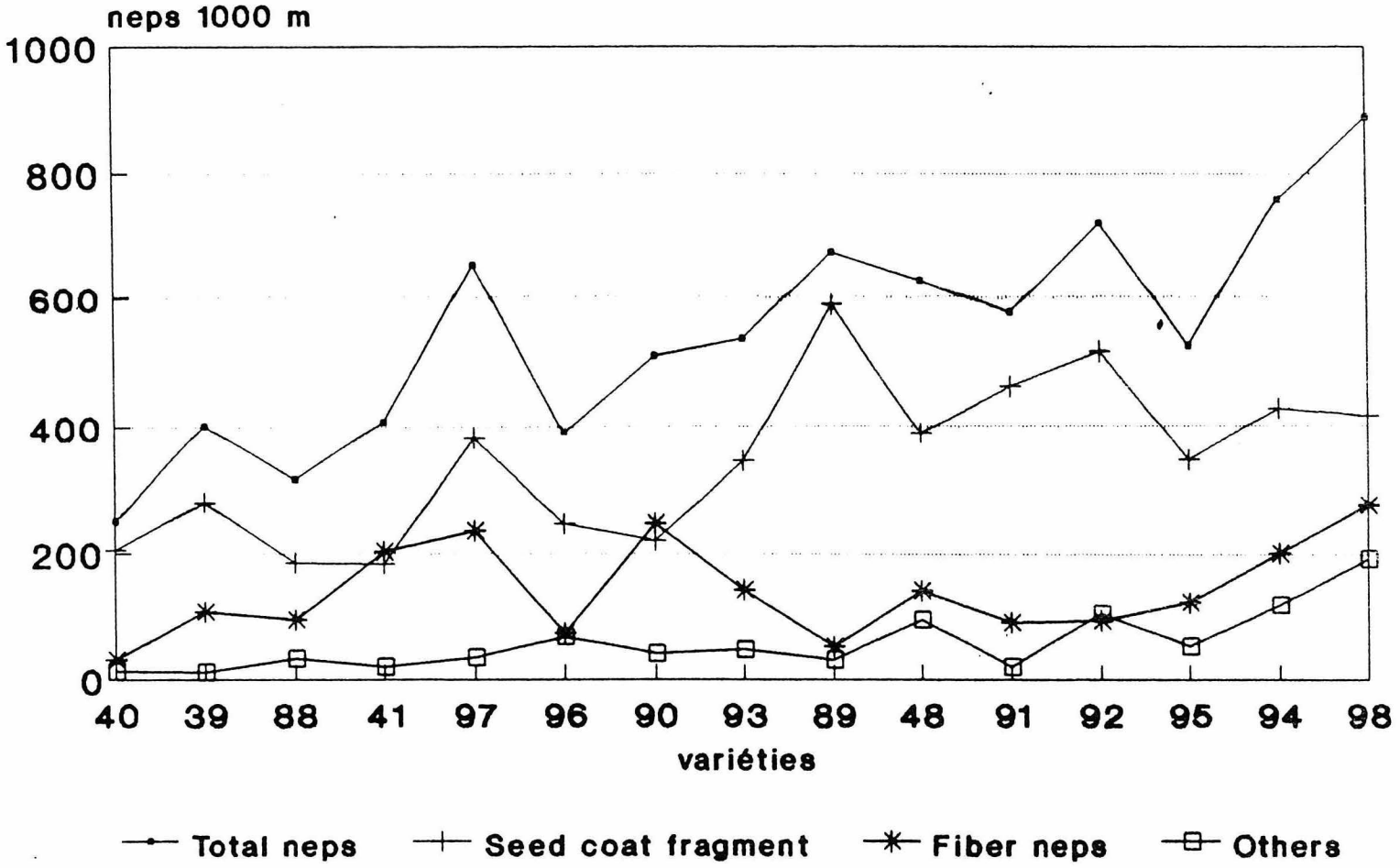
ICTRD
UNIFORMITY 20 - 27 TEX
YARN 1000 m



IRCT
UNIFORMITY 20 - 27 TEX
YARN 1000 m



IMPERFECTIONS 27 TEX
IRCT



IMPERFECTIONS 20 TEX
IRCT