

Cotton Cultivar Evaluation & Performance in the Southeast

2006 Cotton Inc. Crop Management Seminar

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Variety Selection for 2007

- **Do your homework (Study the data)**
- Temper data with local experience
- Spread risks over variety, maturity, planting date
- Don't over-buy technology
- Roundup Ready (Flex too?) may be a poor choice in high yield environments
- Purchase quality seed

COTTON SEED COMPANY MARKET SHARE IN THE SOUTHEAST IN 2006

Seed Company	% Market Share		
	NC	SC	GA
Deltapine	82	86	91
Stoneville	15	11	2
Fibermex	2	2	3
Phytogen	1	0.5	2

Reference: USDA-AMS

VARIETIES PLANTED IN SOUTHEAST IN 2006

NORTH CAROLINA	SOUTH CAROLINA	GEORGIA
DPL 444BR – 37 %	DPL 555BR – 46 %	DPL 555BR - 77 %
DPL 445BR – 10 %	DPL 444BR – 10 %	DPL 444BR – 3 %
DPL 449BR – 9 %	DPL 455BR – 6 %	DPL 494RR – 2 %
DPL 555BR – 9 %	ST 6611B2RF – 5 %	DPL 455BR – 2 %
ST 5599BR – 4 %	DPL 143 B2RF – 5 %	DPL 449BR – 1 %
ST4554B2RF – 4 %	DPL 449BR – 4 %	DPL 455BR – 1 %
ALL OTHERS – 27 %	ALL OTHERS – 24 %	ALL OTHERS – 14 %

Reference: USDA-AMS

DPL 555BR planted on over
46% of cotton acreage in South
Carolina & 76% in Georgia in
2006!

(Management issues???)

MANAGEMENT ISSUES

(Because DPL 555 BR has)

extra small seed

full season maturity

- Don't plant it too early
- Don't subject it to significant emergence challenges
- Don't forget to set seed spacing
- Don't plant it too late
- Don't abuse it with glyphosate
- Don't let insects take early fruit

***In most situations, apply PGR's early to DPL 555BR! (**BUT NOT ALWAYS!**)

VARIETY SELECTION CRITERIA

- **YIELD POTENTIAL!**
- **YIELD STABILITY**
- **FIBER QUALITY**
- **VALUE-ADDED TRAITS**
- **PLANT MATURITY**
- **STORMPROOFNESS**
- **LINT PERCENTAGE**
- **LEAF HAIRINESS**
- **GROWTH & FRUITING HABIT**

YIELD POTENTIAL & YIELD STABILITY!!

LINT YIELD RANKINGS (**TOP TEN**) OF SELECTED VARIETIES IN SOUTHEAST VARIETY TRIALS (NC, SC, GA) – 1998 TO 2005

VARIETY	NO. OF SE OVT TRIALS	% OF TRIALS TOP 25%	% OF TRIALS TOP 50%	% OF TRIALS TOP 75%
DPL 454 BR	38	87	95	100
DPL 555 BR	114	78	95	98
DPL 515 BR	38	71	89	95
DPL 455 BR	75	65	91	100
PHY 370 WR	17	58	74	95
ST 4554 B2RF	17	53	88	100
DPL 445 BR	75	52	77	88
ST 5599 BR	107	52	73	92
FM 960 BR	63	49	78	90
DPL 444 BR	64	48	77	94

YIELD TRIAL RANK AND MARKET SHARE OF COTTON VARIETIES IN S.C.

OVT YEAR	% Market Share Top 10 Yield Rank***
1999	0.5
2000	10.0
2001	4.1
2002	21.9
2003	47.0
2004	73.5
2005	73.2
2006	73.3

*****Source: Clemson University OVTs & USDA-AMS**

LINT YIELD RANKINGS OF SELECTED **STACKED (BR)
COTTON VARIETIES IN SOUTHEAST VARIETY TRIALS
(NC, SC, GA) – 1998 TO 2005**

BR VARIETY	YIELD RANK
DPL 454 BR	1
DPL 555 BR	2
DPL 515 BR	3
DPL 455 BR	4
DPL 445 BR	7
ST 5599 BR	8
FM 960 BR	9
DPL 444 BR	10
ST 5242 BR	14
PM 1218 BR	17

**LINT YIELD RANKINGS OF SELECTED RR ONLY
COTTON VARIETIES IN SOUTHEAST VARIETY TRIALS
(NC, SC, GA) – 1998 TO 2005**

RR VARIETY	YIELD RANK
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DPL 432 RR	21
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PHY 310 RR	24
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DPL 434 RR	27
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DPL 494 RR	31
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PHY 410 RR	41
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DPL 5415 RR	46
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ST 4686 RR	59
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FM 991 RR	49
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FM 989 RR	55
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FM 960 RR	57
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LINT YIELD RANKINGS OF SELECTED **BG II(W)/RR
COTTON VARIETIES IN SOUTHEAST VARIETY TRIALS
(NC, SC, GA) – 1998 TO 2005**

BG2(W)/RR VARIETY	YIELD RANK
PHY 370 WR	5
FM 960 B2R	28
DPL 543 BGII/RR	37
DPLX05X648 DR	35
DPL 424 B2R	54
FM 989 B2R	56
FM 991 B2R	63
ST 4664 B2R	65
ST 3636 B2R	67
ST 5454 B2R	69

**LINT YIELD RANKINGS OF SELECTED RR FLEX ONLY
COTTON VARIETIES IN SOUTHEAST VARIETY TRIALS
(NC, SC, GA) – 1998 TO 2005**

RR FLEX VARIETY	YIELD RANK
ST 6622 RF	30
ST 4664 RF	36
DPL 108 RF	37
DPL 147 RF	38
PHY 415 RF	43
PHY 425 RF	44
DPL 167 RF	50
DPL 152 RF	52

LINT YIELD RANKINGS OF SELECTED **BG II(W)/RR
FLEX COTTON VARIETIES IN SOUTHEAST VARIETY
TRIALS (NC, SC, GA) – 1998 TO 2005**

BG2(W)/RR FLEX VARIETY	YIELD RANK
ST 4554 B2RF	6
DPL 113 B2RF	12
DPL 117 B2RF	18
PHY 485 WRF	25
ST 6611 B2RF	29
DPL 156 B2RF	45
DPL 164 B2RF	59
PHY 475 WRF	60
DPL 143 B2RF	66
ST 5885 B2RF	70

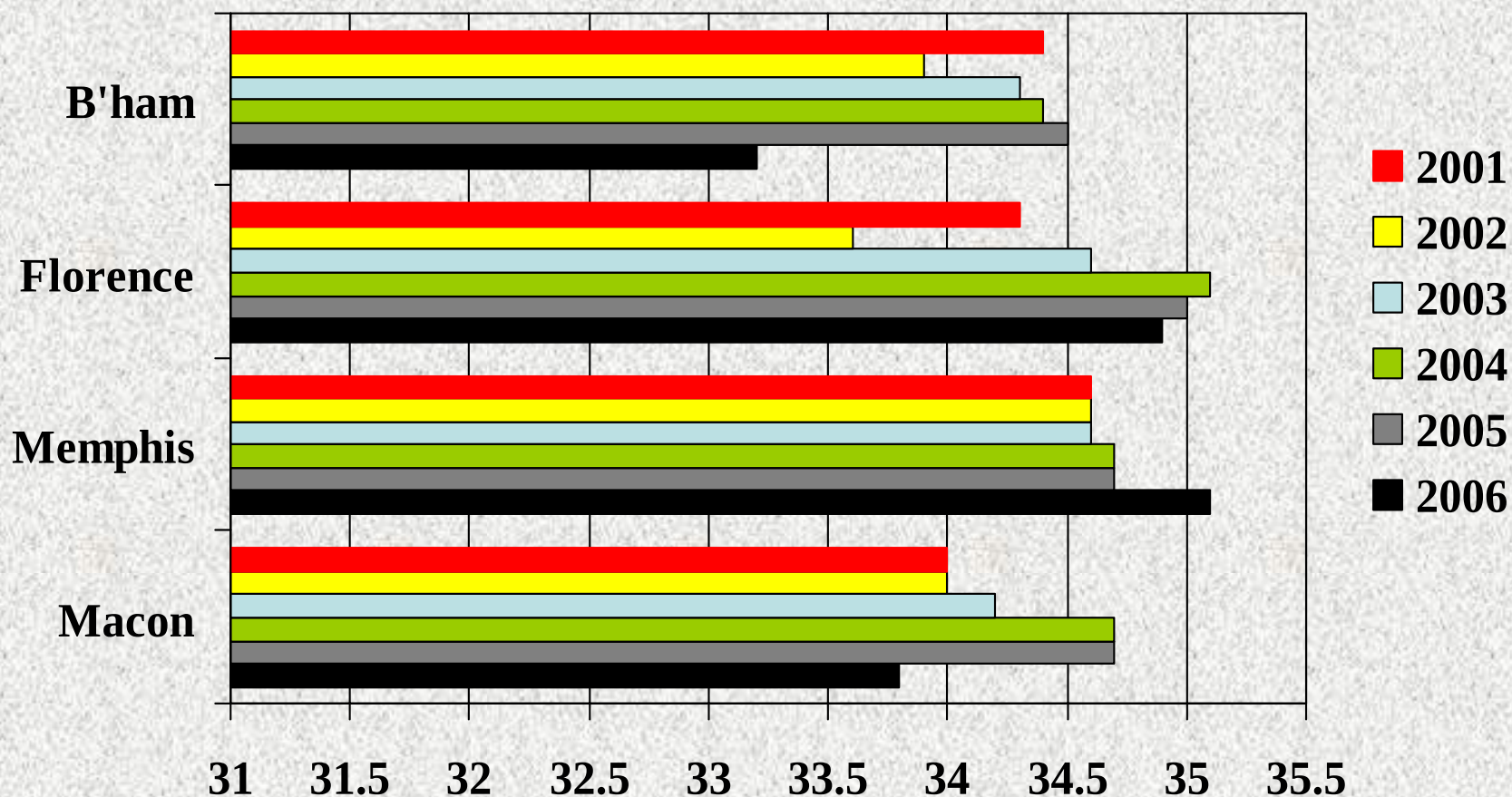
FIBER QUALITY

Fiber Quality

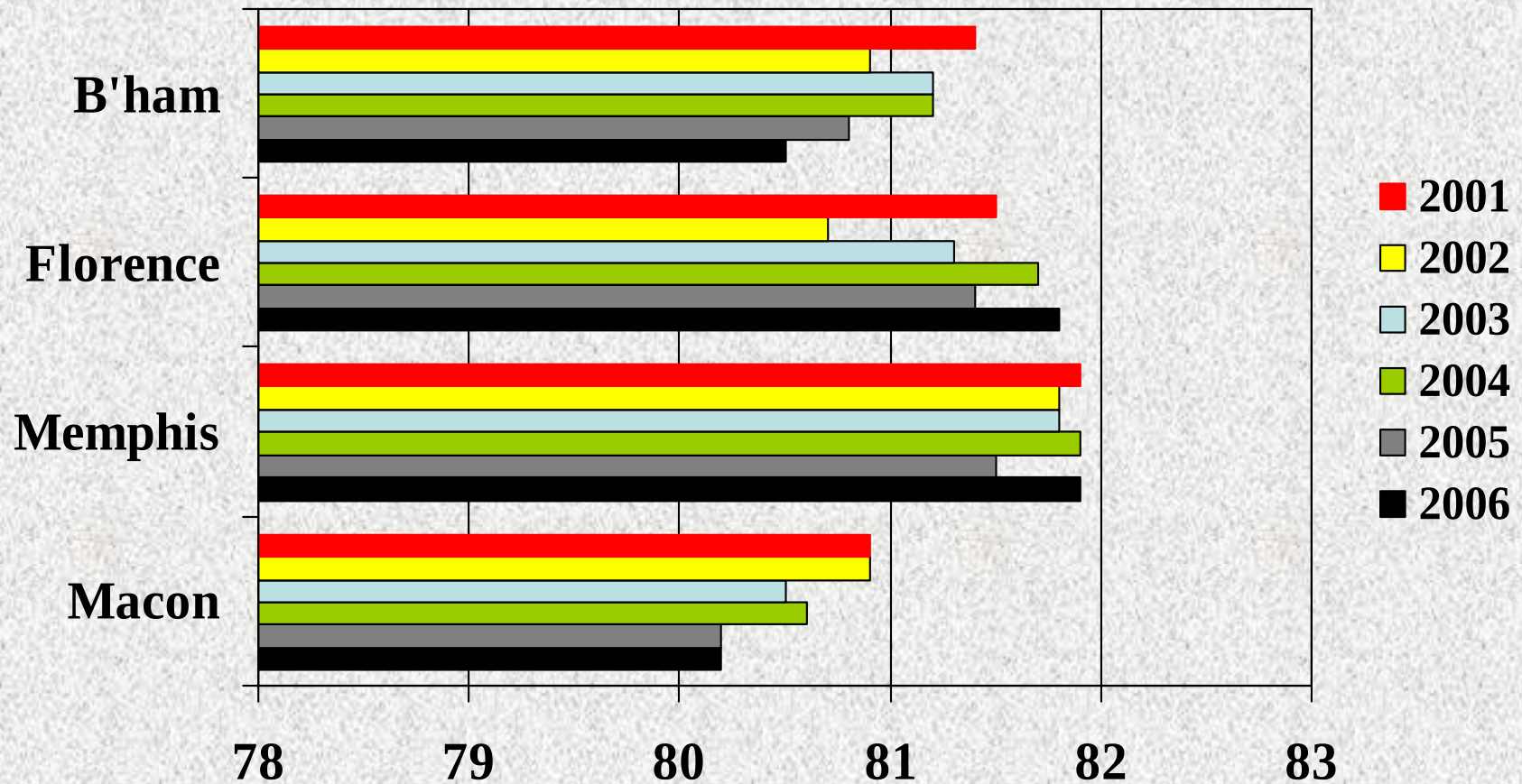
Determined by Many Factors

- Physiology of the plant
- **Variety**
- Defoliation Timing
- Harvest Timing
- Agronomic Practices

Fiber Length in the S.E. 2006



Fiber Uniformity in the S.E. 2006



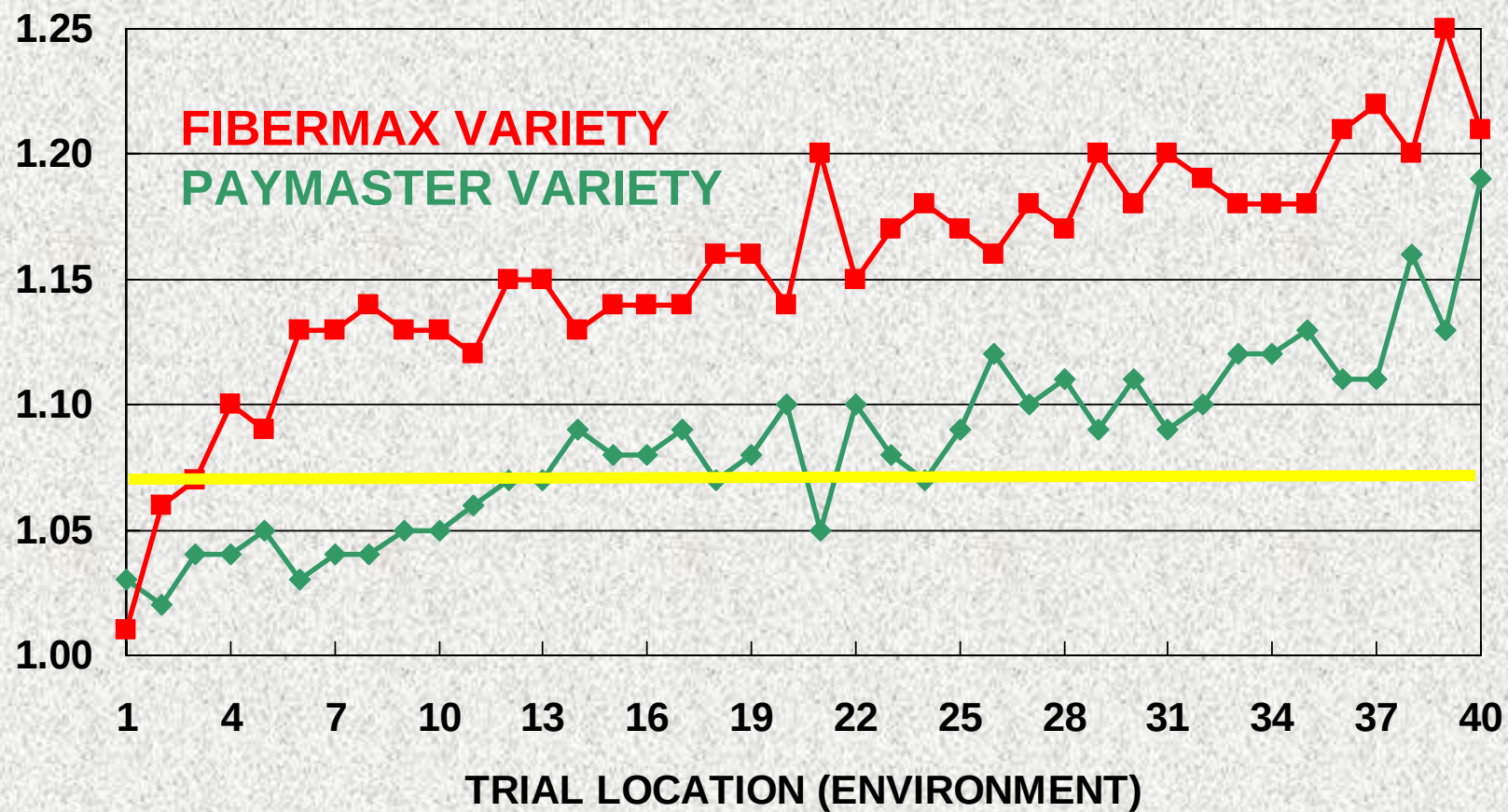
COTTON QUALITY

% of Variation

PARAMETER	GENETICS	ENVIRONMENT
STRENGTH	82	18
LENGTH	81	19
MICRONAIRE	41	59
COLOR	21	79

REF: MEREDITH, Jr.

FIBER LENGTH OF TWO VARIETIES AT 40 DIFFERENT ENVIRONMENTS



Fiber Length Characteristics of Selected Varieties

Good Fiber Length

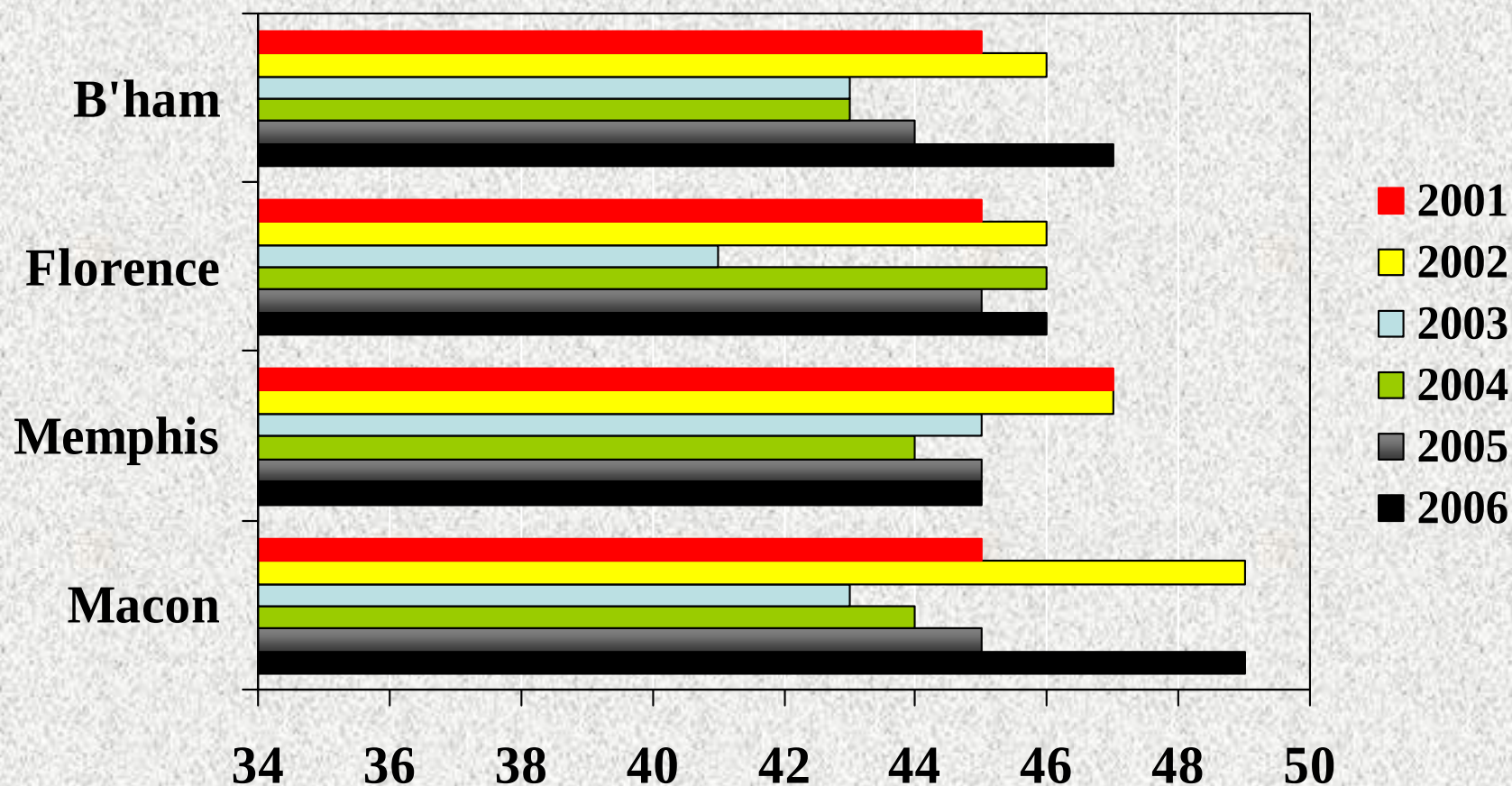
- FM 960 RR
- FM 958 LL
- FM 960 B2R
- FM 991 B2R
- DPL 491
- DPL 393
- DeltaPEARL
- DPL 434 RR
- DPL 494 RR
- DPL 147 RF
- DPL 167 RF
- DPL 143 B2RF
- ST 4357 B2RF
- ST 5007 B2RF
- PHY 440 W

Poor Fiber Length

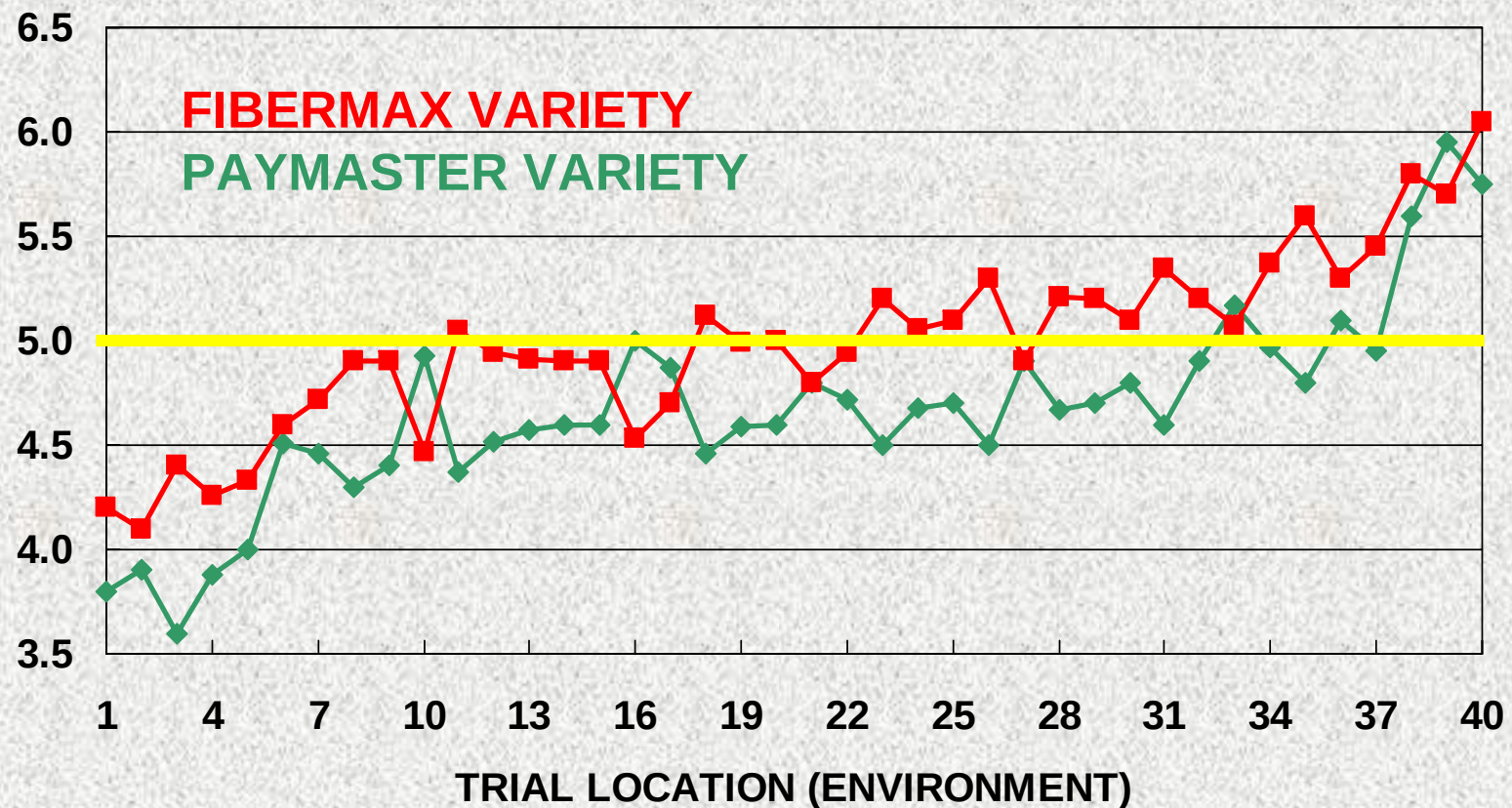
- FM 960 BR ←
- DPL 454 BR ←
- DPL 555 BR ←
- DPL 449 BR
- DPL 515 BR ←
- DPL 424 B2R
- DPLX 05X648 DR
- ST 5303 RR
- ST 5242 BR ←
- ST 5599 BR ←
- ST 4664 RF
- PHY 370 WR ←
- PHY 470 WR
- PHY 415 RF
- PHY 475 WRF

Source: NC, SC, GA OVTs

Micronaire in the S.E. 2006



MICRONAIRE OF TWO VARIETIES AT 40 DIFFERENT ENVIRONMENTS



Micronaire Characteristics of Selected Varieties

High Micronaire

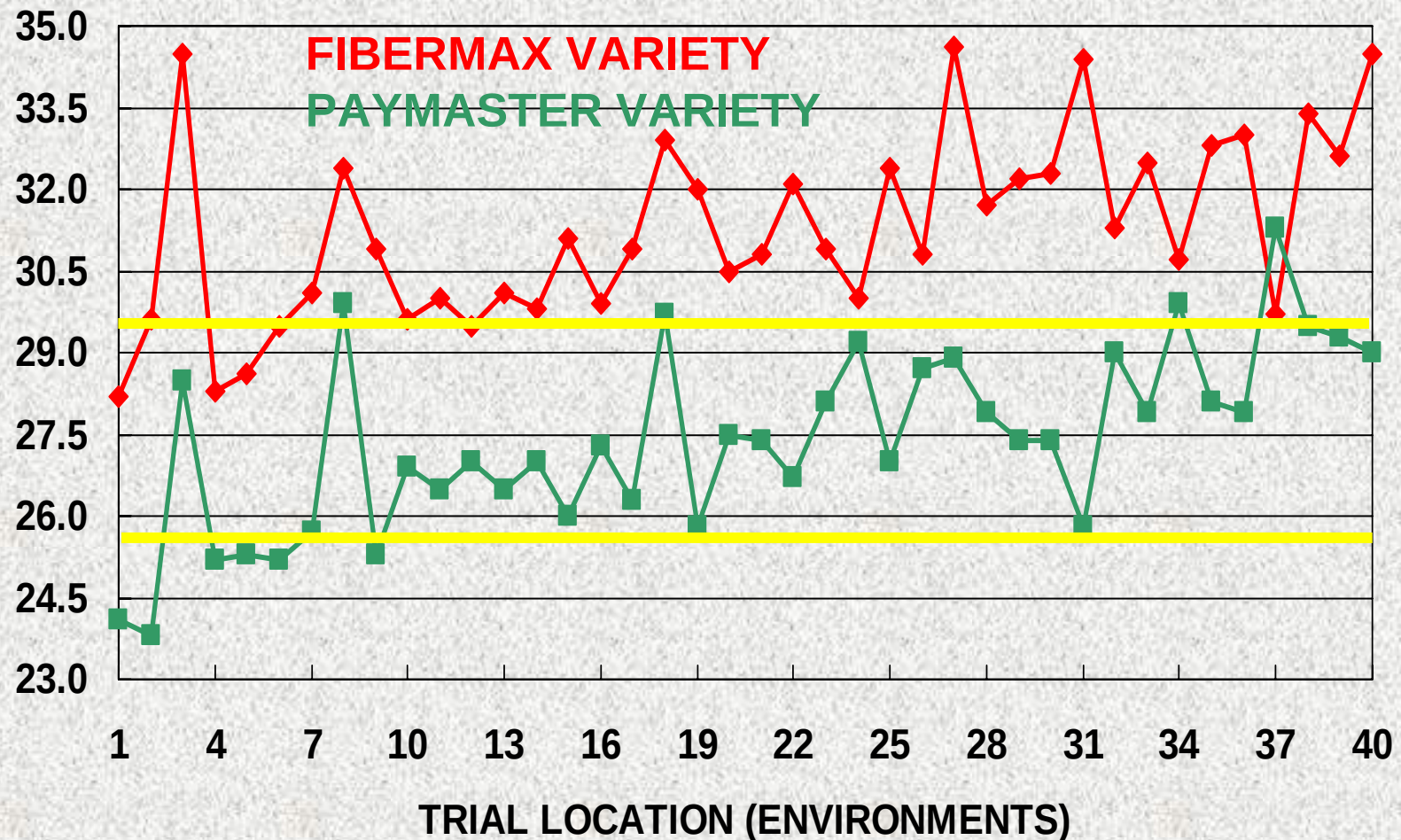
- DPL 393
- DPL 445 BR ←
- DPL 555 BR ←
- DPL 515 BR ←
- DPLX 03X179 RR ←
- DPLX 05X648 DR
- DPL 164 B2RF
- ST 4575 BR
- ST 6848 RR
- ST 4664 RF
- ST 4554B2RF ←
- PSC 355 ←
- PSC 410 RR
- PHY 370 WR
- PHY 485 WRF

Low Micronaire

- FM 960 RR
- FM 960 BR ←
- FM 960 B2R
- FM 989 RR
- FM 958 LL
- FM 966 LL
- DPL 434 RR
- DPL 444 BR ←
- DPL 454 BR ←
- DPL 455 BR ←
- DPL 432 RR
- DPL 108 RF
- DPL 113 B2RF ←
- ST 5303 RR
- ST 5007B2RF

Source: NC, SC, GA OVTs

FIBER STRENGTH OF TWO VARIETIES AT 40 DIFFERENT ENVIRONMENTS



Fiber Strength Characteristics of Selected Varieties

Good Fiber Strength

- FM 960 BR ←
- FM 960 RR
- FM 960 B2RR
- FM 991 BR
- FM 958 LL
- FM 966 LL
- FM 989 RR
- DPLX 03X179 RR ←
- DPL 494 RR
- DPL 110 RF
- DPL 108 RF
- DPL 117 B2RF
- DPL 113 B2RF ←
- ST 5303 RR
- ST 6848 RR

Poor Fiber Strength

- DPL 434 RR
- DPL 432 RR
- DPL 555 BR ←
- DPL 454 BR ←
- DPL 445 BR ←
- DPL 424 B2R
- DPL 156 B2RF
- DPL 143 B2RF
- ST 5242 BR ←
- ST 4575 BR
- ST 4686 RR
- ST 4664 RF
- ST 4357 B2RF
- ST 5007 B2RF
- PSC 470 WR

Source: NC, SC, GA OVTs

VALUE-ADDED TRAITS

ROUNDUP-READY FLEX COTTON

- Commercially Available in 2006
- Extended Over-the-Top Application Window Until 7 Days Before Harvest
- Outstanding Vegetative & Reproductive Tolerance
- Excellent Weed Control with Glyphosate (Weed Species Shifts, Delayed Application Problems, Resistance Issue!)

**ROUNDUP-READY FLEX TRIAL,
PDREC, 2004**

LINT YIELD (LB/A)

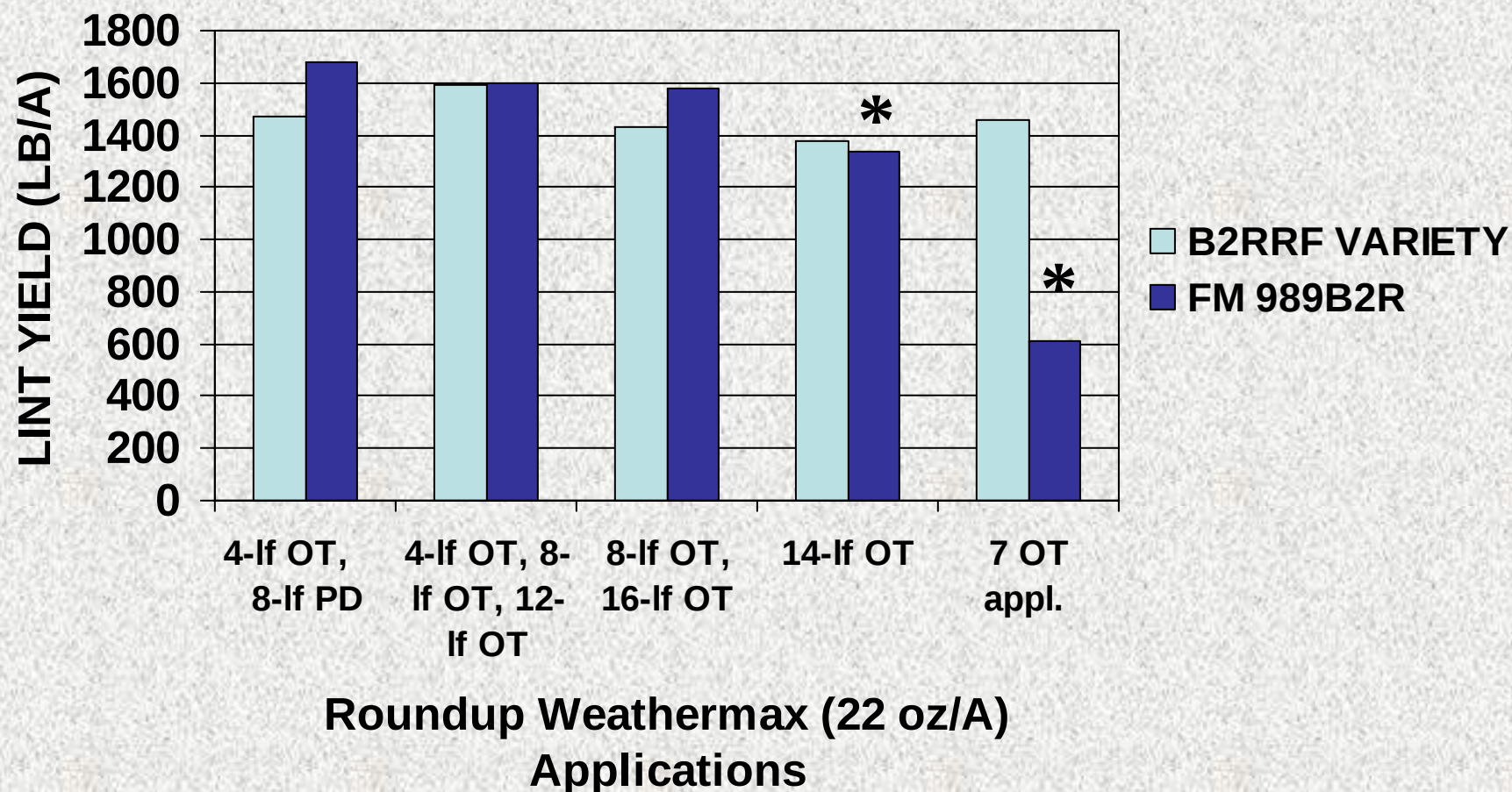




Figure 2. FM 989 B2R sprayed with 7 over-the-top applications of Roundup Weathermax (left) versus a Roundup-Ready Flex variety sprayed with 7 over-the-top applications of Roundup Weathermax (right). PDREC, Florence, SC, 2004. M. Jones.

RR FLEX VARIETY ADOPTION ESTIMATES (B2/RR, WRF & RF ONLY VARIETIES) IN THE SOUTHEAST IN 2006

SE. STATE	% of ACREAGE IN RR FLEX
ALABAMA	<1
FLORIDA	0
GEORGIA	<1
NO. CAROLINA	8
SO. CAROLINA	18
VIRGINIA	1

REF: USDA-AMS

Big Question:

How much Roundup Ready
Flex do I plant in 2007?

RR FLEX TECHNOLOGY PRICING 2006

(NC, SC, and VA with 25% Discount)

ROUNDUP READY	\$31.91/ac
BOLLGARD/ROUNDUP READY	\$45.20/ac
ROUNDUP READY FLEX	\$44.02/ac
BOLLGARD II/RR FLEX	\$61.90/ac

Based on 38 inch rows and 4.0 seed/ft