

# Earliness – What is it and How can it be Managed?

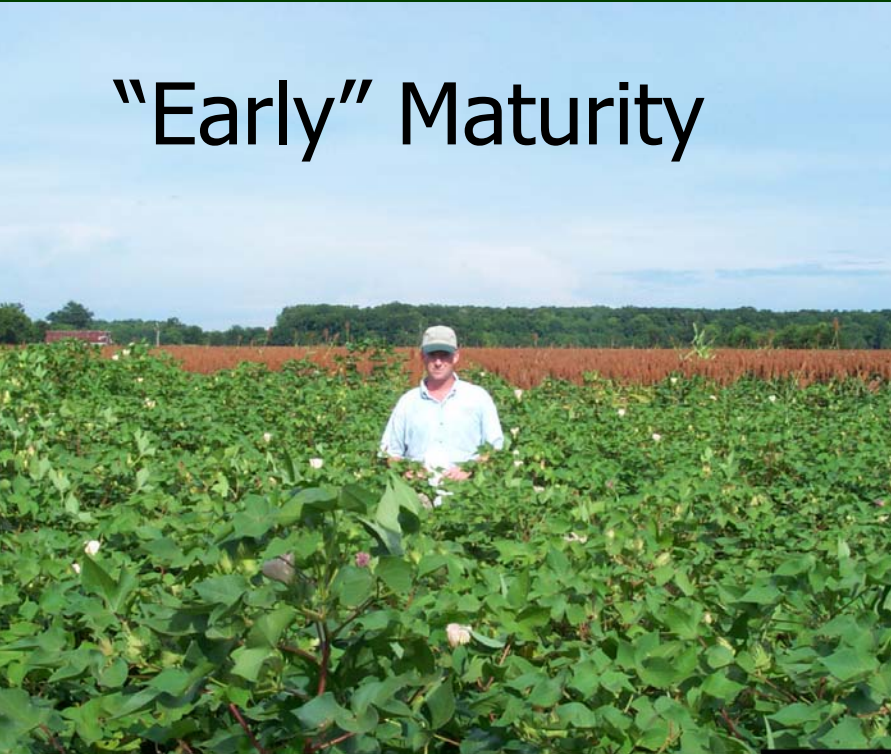
***Sandy Stewart***

*Burch and D&PL Associate Professor and Cotton Specialist,  
LSU AgCenter*

- Lower NFFB
- Earlier peak bloom
- Shorter bloom period
- Shorter plant
- Less stress tolerance
- Compressed season

- Higher NFFB
- Later peak bloom
- Longer bloom period
- Taller plant
- More stress tolerance
- Protracted season

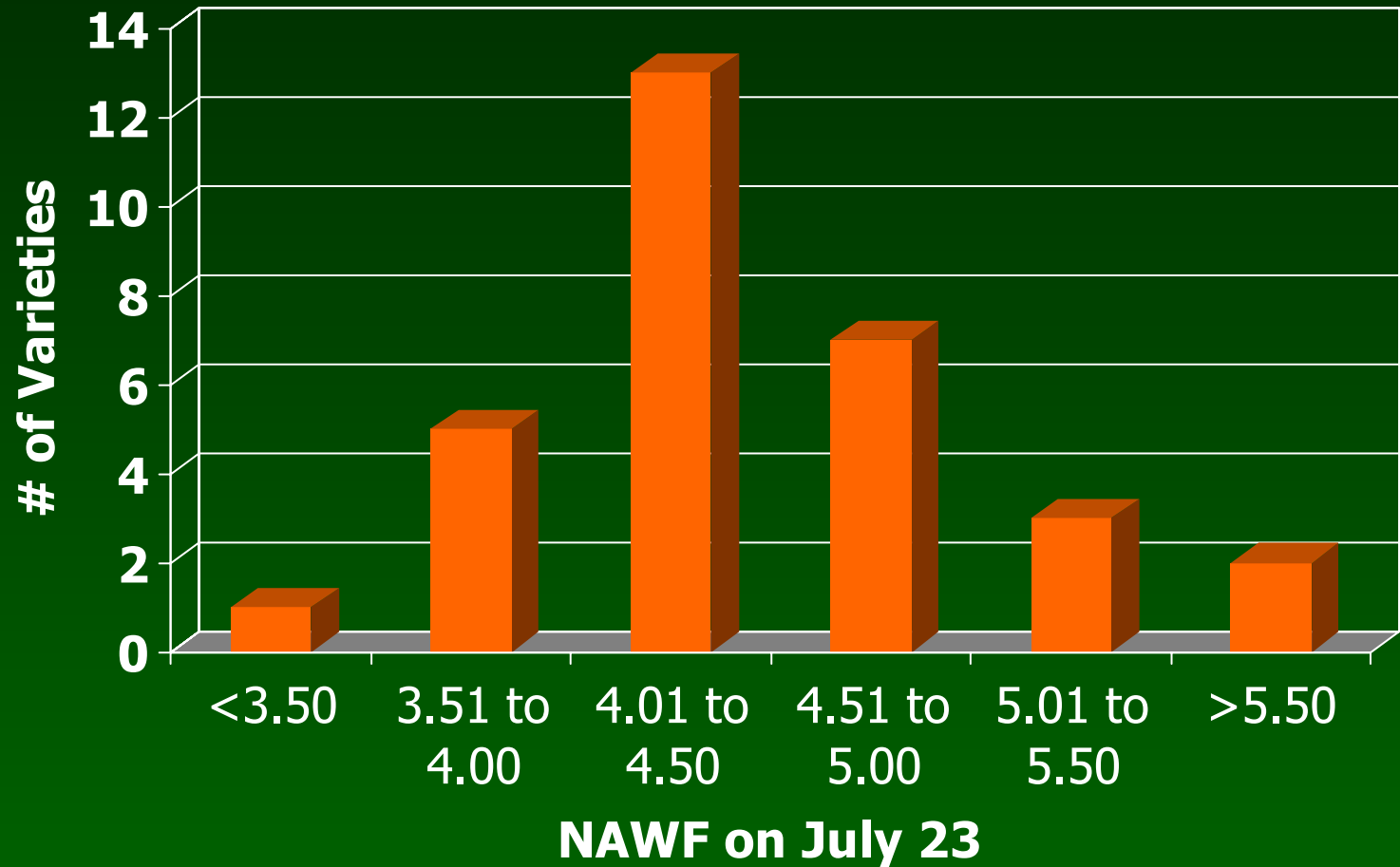
“Early” Maturity

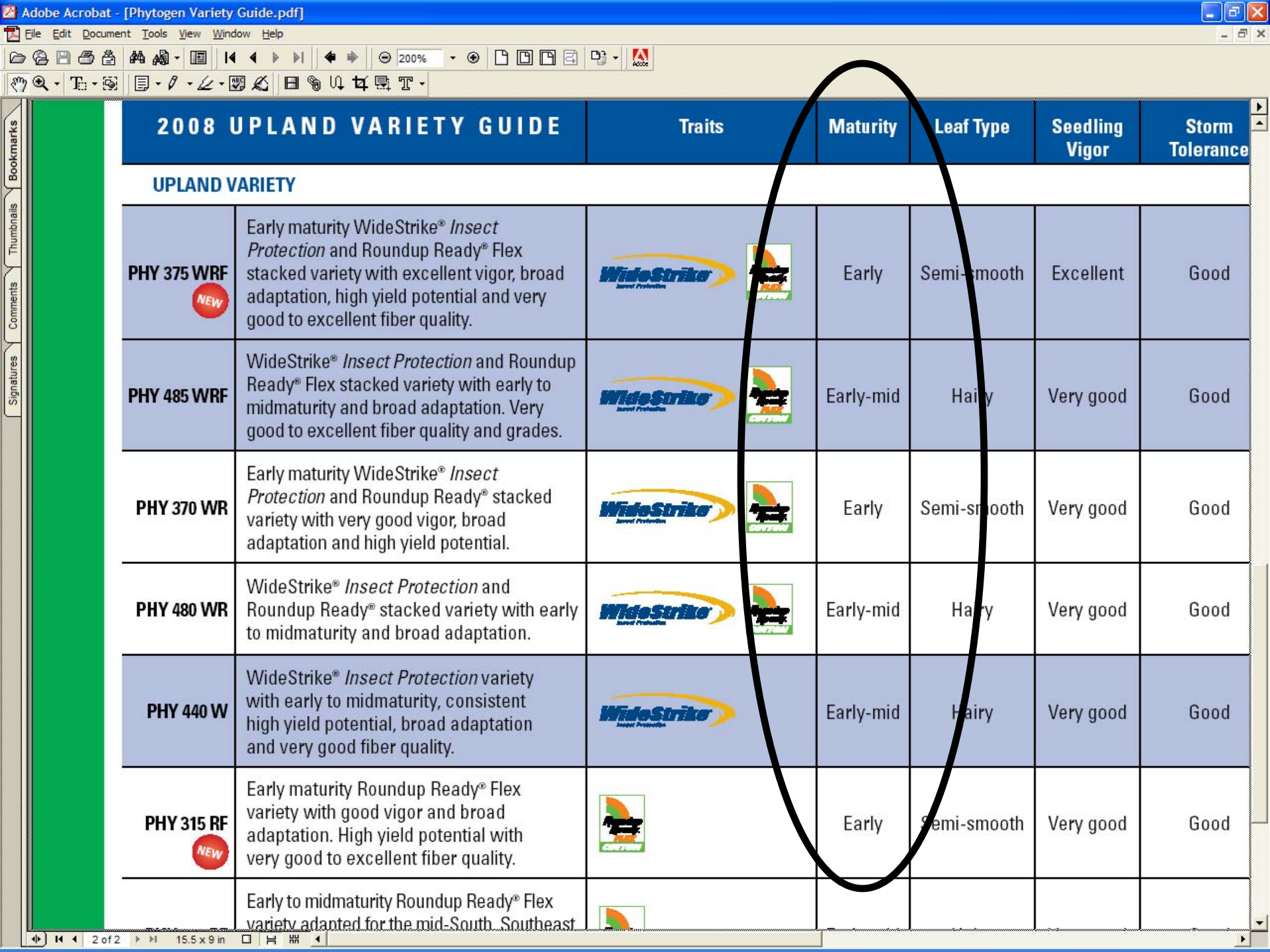


“Full” Maturity



# How much difference in earliness is there among varieties?





# 2008 UPLAND VARIETY GUIDE

Traits














Maturity

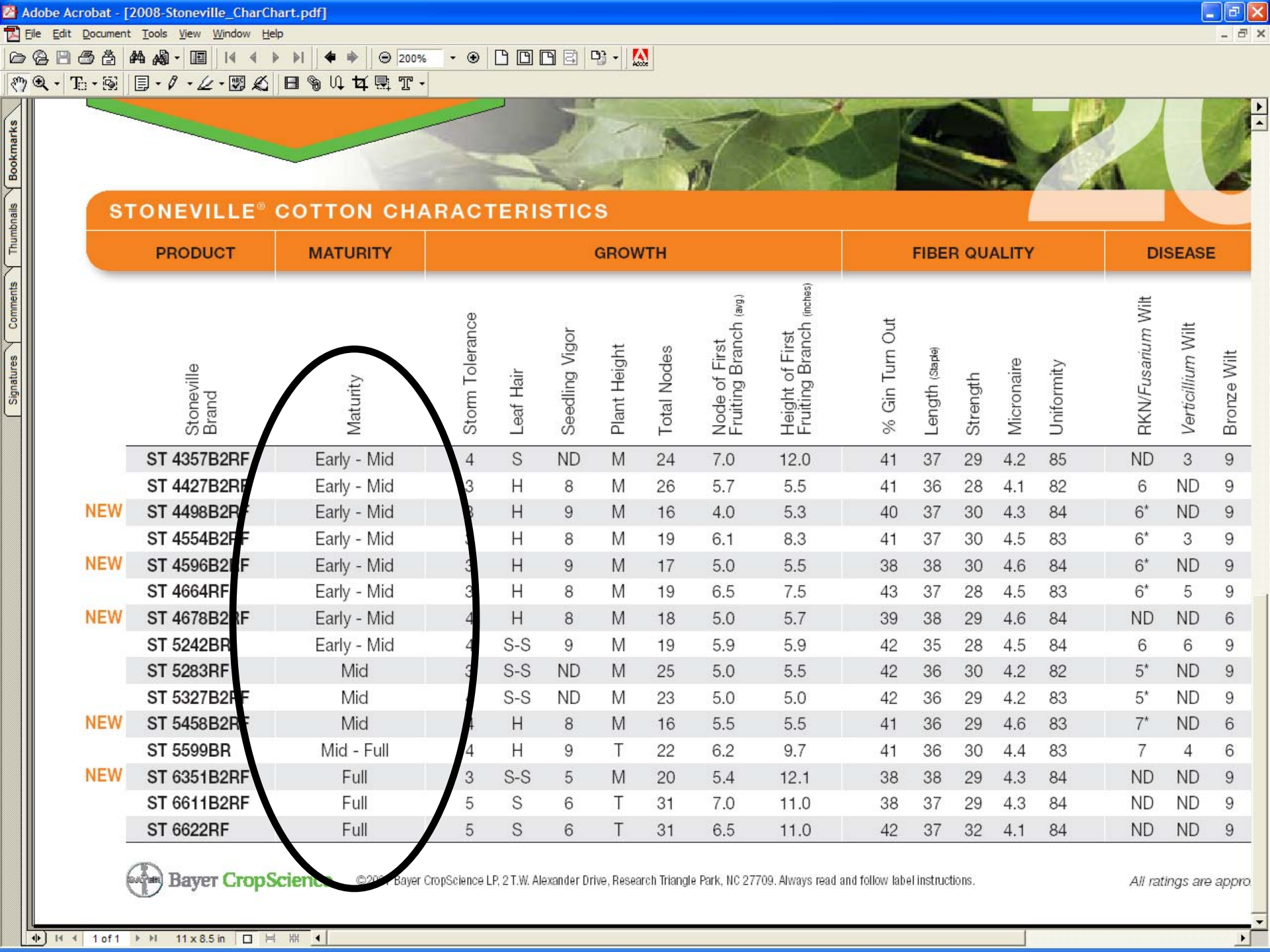
Leaf Type

Seedling Vigor

Storm Tolerance

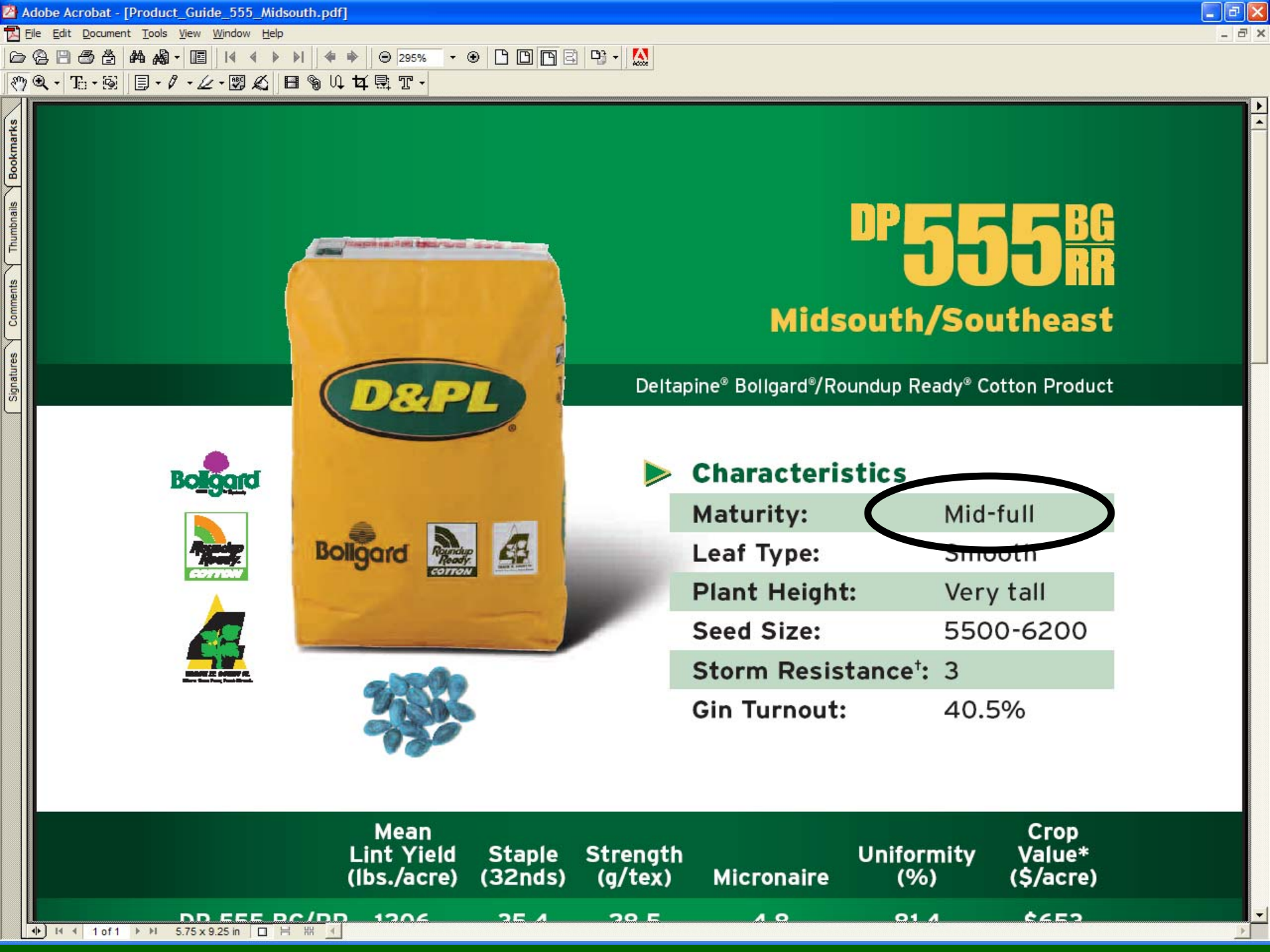
## UPLAND VARIETY

<b>PHY 375 WRF</b> 	<p>Early maturity WideStrike® <i>Insect Protection</i> and Roundup Ready® Flex stacked variety with excellent vigor, broad adaptation, high yield potential and very good to excellent fiber quality.</p>	 	Early	Semi-smooth	Excellent	Good
<b>PHY 485 WRF</b>	<p>WideStrike® <i>Insect Protection</i> and Roundup Ready® Flex stacked variety with early to midmaturity and broad adaptation. Very good to excellent fiber quality and grades.</p>	 	Early-mid	Hairy	Very good	Good
<b>PHY 370 WR</b>	<p>Early maturity WideStrike® <i>Insect Protection</i> and Roundup Ready® stacked variety with very good vigor, broad adaptation and high yield potential.</p>	 	Early	Semi-smooth	Very good	Good
<b>PHY 480 WR</b>	<p>WideStrike® <i>Insect Protection</i> and Roundup Ready® stacked variety with early to midmaturity and broad adaptation.</p>	 	Early-mid	Hairy	Very good	Good
<b>PHY 440 W</b>	<p>WideStrike® <i>Insect Protection</i> variety with early to midmaturity, consistent high yield potential, broad adaptation and very good fiber quality.</p>		Early-mid	Hairy	Very good	Good
<b>PHY 315 RF</b> 	<p>Early maturity Roundup Ready® Flex variety with good vigor and broad adaptation. High yield potential with very good to excellent fiber quality.</p>		Early	Semi-smooth	Very good	Good
	<p>Early to midmaturity Roundup Ready® Flex variety adapted for the mid-South, Southeast</p>					



## STONEVILLE® COTTON CHARACTERISTICS

PRODUCT	MATURITY	GROWTH							FIBER QUALITY					DISEASE			
		Storm Tolerance	Leaf Hair	Seedling Vigor	Plant Height	Total Nodes	Node of First Fruiting Branch (avg)	Height of First Fruiting Branch (inches)	% Gin Turn Out	Length (staple)	Strength	Micronaire	Uniformity	RKN/Fusarium Wilt	Verticillium Wilt	Bronze Wilt	
Stoneville Brand	Maturity																
ST 4357B2RF	Early - Mid	4	S	ND	M	24	7.0	12.0	41	37	29	4.2	85	ND	3	9	
ST 4427B2RF	Early - Mid	3	H	8	M	26	5.7	5.5	41	36	28	4.1	82	6	ND	9	
<b>NEW</b> ST 4498B2RF	Early - Mid	3	H	9	M	16	4.0	5.3	40	37	30	4.3	84	6*	ND	9	
ST 4554B2RF	Early - Mid	3	H	8	M	19	6.1	8.3	41	37	30	4.5	83	6*	3	9	
<b>NEW</b> ST 4596B2RF	Early - Mid	3	H	9	M	17	5.0	5.5	38	38	30	4.6	84	6*	ND	9	
ST 4664RF	Early - Mid	3	H	8	M	19	6.5	7.5	43	37	28	4.5	83	6*	5	9	
<b>NEW</b> ST 4678B2RF	Early - Mid	4	H	8	M	18	5.0	5.7	39	38	29	4.6	84	ND	ND	6	
ST 5242BR	Early - Mid	4	S-S	9	M	19	5.9	5.9	42	35	28	4.5	84	6	6	9	
ST 5283RF	Mid	3	S-S	ND	M	25	5.0	5.5	42	36	30	4.2	82	5*	ND	9	
ST 5327B2RF	Mid	4	S-S	ND	M	23	5.0	5.0	42	36	29	4.2	83	5*	ND	9	
<b>NEW</b> ST 5458B2RF	Mid	4	H	8	M	16	5.5	5.5	41	36	29	4.6	83	7*	ND	6	
ST 5599BR	Mid - Full	4	H	9	T	22	6.2	9.7	41	36	30	4.4	83	7	4	6	
<b>NEW</b> ST 6351B2RF	Full	3	S-S	5	M	20	5.4	12.1	38	38	29	4.3	84	ND	ND	9	
ST 6611B2RF	Full	5	S	6	T	31	7.0	11.0	38	37	29	4.3	84	ND	ND	9	
ST 6622RF	Full	5	S	6	T	31	6.5	11.0	42	37	32	4.1	84	ND	ND	9	



# DP 555 BG RR

## Midsouth/Southeast

Deltapine® Bollgard®/Roundup Ready® Cotton Product



### ► Characteristics

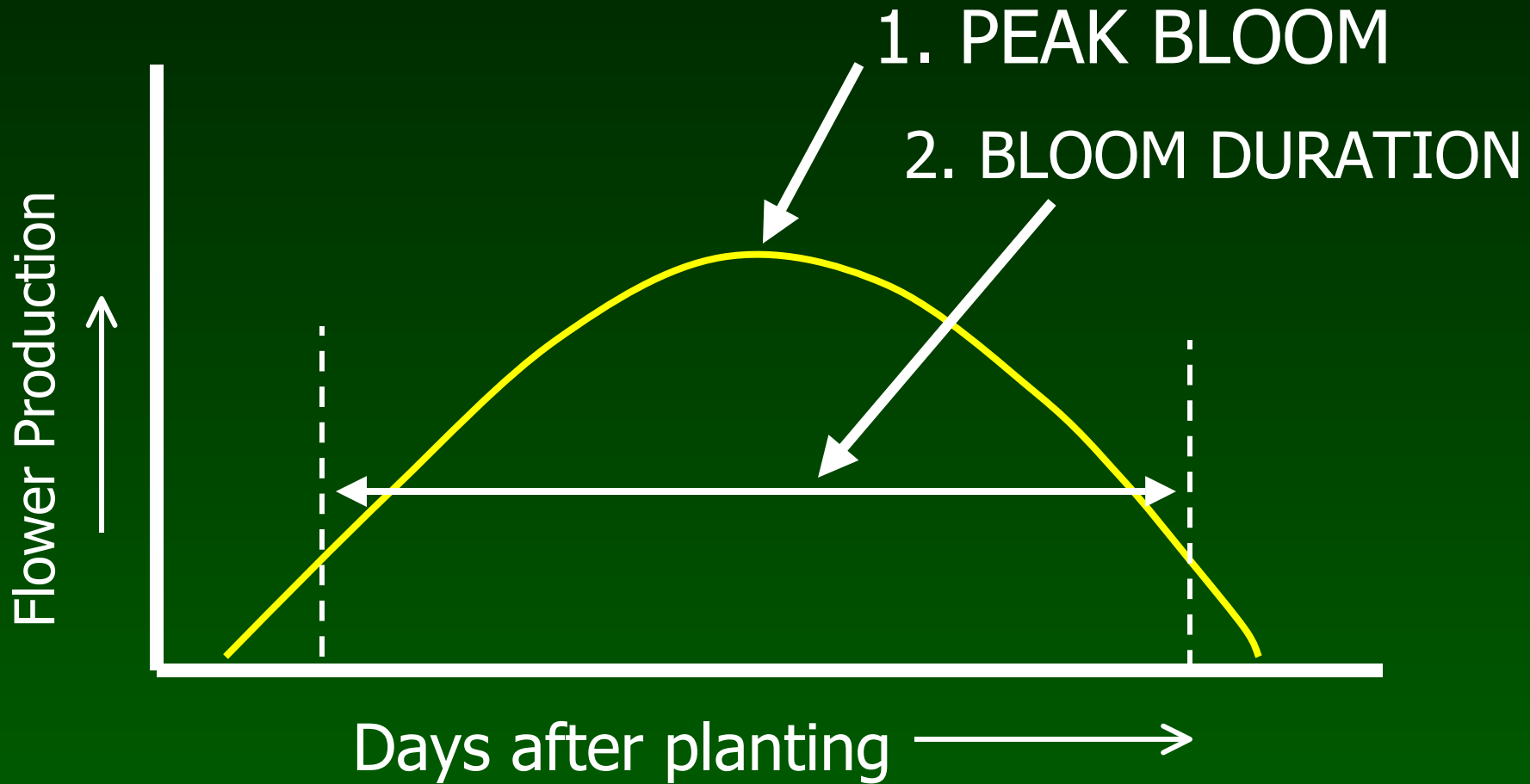
Maturity:	Mid-full
Leaf Type:	Smooth
Plant Height:	Very tall
Seed Size:	5500-6200
Storm Resistance <sup>†</sup> :	3
Gin Turnout:	40.5%

Mean Lint Yield (lbs./acre)	Staple (32nds)	Strength (g/tex)	Micronaire	Uniformity (%)	Crop Value* (\$/acre)
1206	35.4	28.5	4.8	81.4	\$653



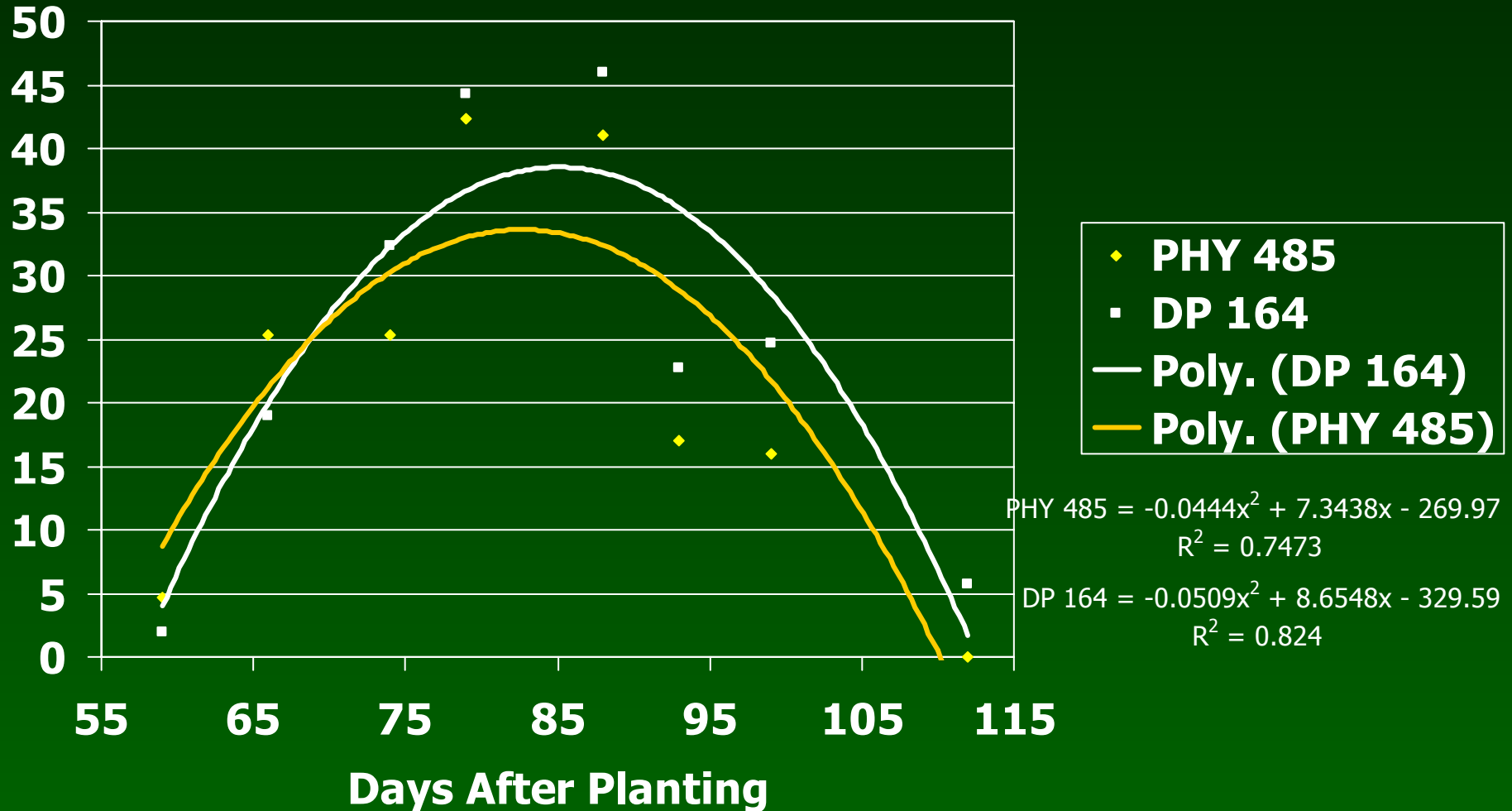
**What does earliness mean from a management perspective?**

# Earliness – Two Components





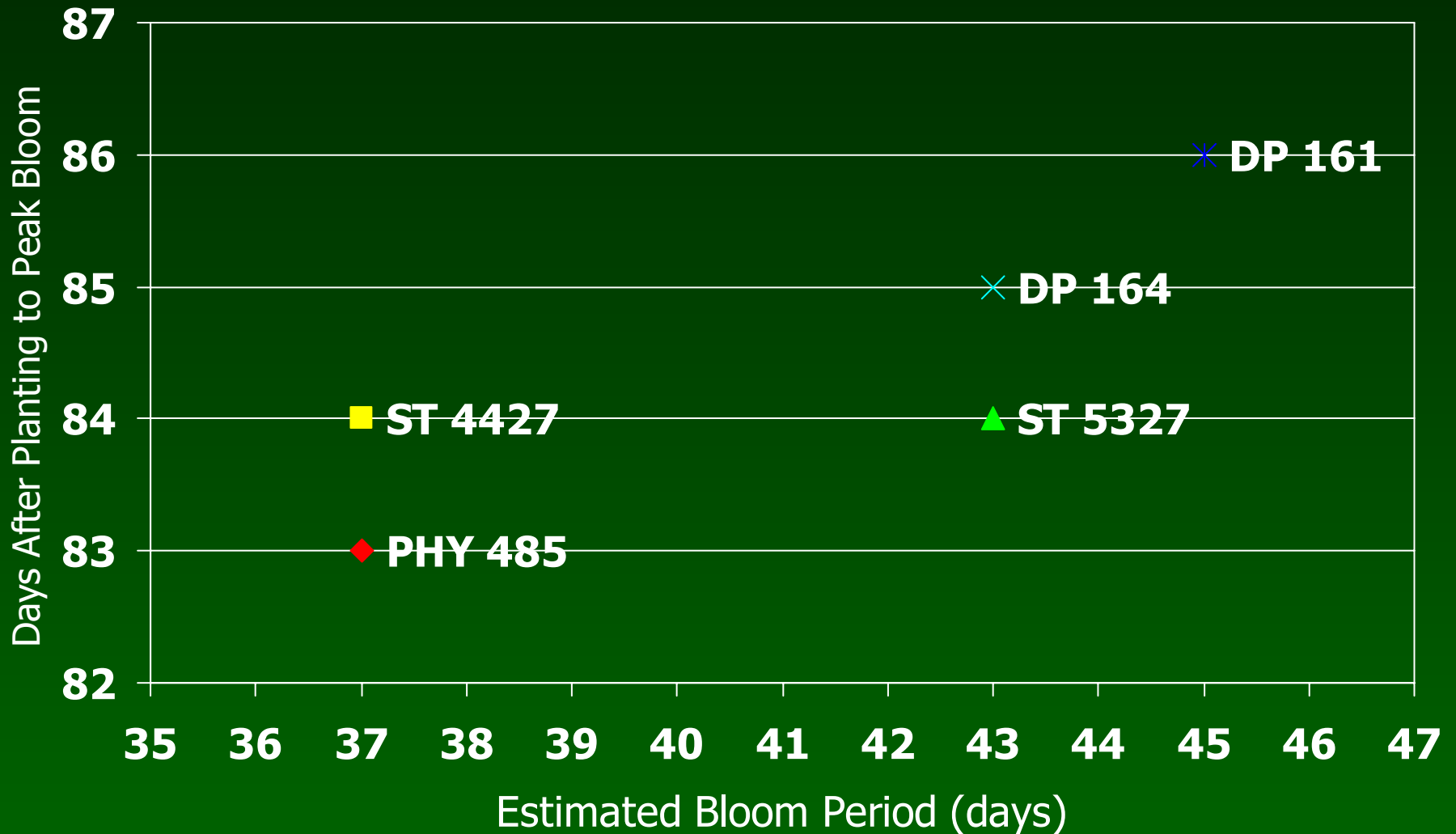
# Days to Peak Bloom and Bloom Duration



# Maturity Estimations

Variety	Days to Peak Bloom	Estimated Bloom Period
Phytogen 485	83	37
Stoneville 4427	84	37
Stoneville 5327	84	43
Deltapine DP 164	85	43
Deltapine DP 161	86	45
LSD <sub>0.10</sub>	2	2

# Maturity Estimations





# Managing Earliness

# General DD60 Requirements of Cotton

	DD60s	Days
Planting to Emergence	45-130	5-20
Emergence to first square	350-450	27-38
Between Nodes	40-50	2.5-4.5
Square to Bloom	250-500	20-27
Bloom to Open Boll	910-950	45-60
Season long	2550-4600	130-170

# Management Factors that Affect Maturity

- Variety
- Plant Population
- Nitrogen
- Water
- PGRs
- Insect Management
- Defoliation Timing





**4.5 plants/row ft**



**3 plants/row ft**





**24 inch Hill Drop**



**16 inch Hill Drop**



**8 inch Hill Drop**



# Plant population effect peak bloom

*Alexandria, 2003 & 2004 – PM 1218 BR*

Population	Peak Bloom (DAP)	
	2003	2004
61,896	74 a	76 a
30,958	77 ab	84 ab
20,631	78 b	90 b
13,755	79 b	91 b

Planting date: 5/22/03 and 5/24/04

Means in the same column followed by the same letter are not significantly different, P(0.05).

# Management Factors that Affect Maturity

Large Effect	Some Effect	Minimal Effect
Variety	Nitrogen	Plant Growth Regulators
Plant Population	Water	Defoliation Timing
Insect Management		
Early Retention		

**Almost everything we do in managing a cotton crop is done in response to, or to overcome cotton's perennial growth habit in an annual row-crop environment.**

**- Gospel According to Sandy**

*GOOD LUCK IN 2008*

