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

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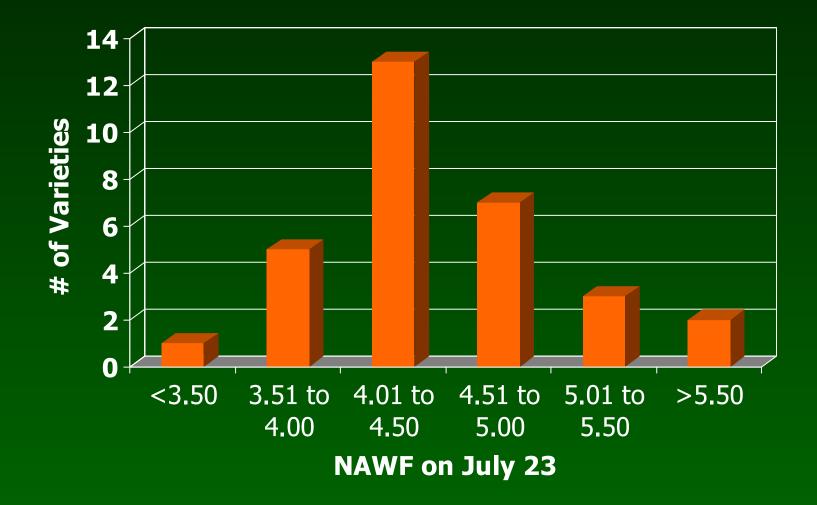
- Lower NFFB
- Earlier peak bloom
- Shorter bloom period
- Shorter plant
- Less stress tolerance
- Compressed season

"Early" Maturity

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

"Full" Maturity

How much difference in earliness is there among varieties?



| | | at - [Phytogen Variety | | | | | | | × |
|---------------------|-----------------------|---|---|------------|-----------|--------------|-------------------|--------------------|---|
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| Bookmarks | | | JPLAND VARIETY GUIDE | Traits | Maturity | Leaf Type | Seedling Vigor | Storm Tolerance | • |
| Bod | | UPLAND V | ARIETY | | | | | | |
| Comments Thumbnails | | PHY 375 WRF | Early maturity WideStrike [®] <i>Insect</i> <i>Protection</i> and Roundup Ready [®] Flex stacked variety with excellent vigor, broad adaptation, high yield potential and very good to excellent fiber quality. | WideStrike | Early | Semi-smooth | Excellent | Good | |
| Signatures | | PHY 485 WRF | WideStrike [®] Insect Protection and Roundup Ready [®] Flex stacked variety with early to midmaturity and broad adaptation. Very good to excellent fiber quality and grades. | WideStrike | Early-mid | Haiy | Very good | Good | |
| | | PHY 370 WR | Early maturity WideStrike [®] <i>Insect</i> <i>Protection</i> and Roundup Ready [®] stacked variety with very good vigor, broad adaptation and high yield potential. | WideStrike | Early | Semi-sriooth | Very good | Good | |
| | | PHY 480 WR | WideStrike [®] <i>Insect Protection</i> and Roundup Ready [®] stacked variety with early to midmaturity and broad adaptation. | WideSuite | Early-mid | Hary | Very good | Good | |
| | | PHY 440 W | WideStrike [®] Insect Protection variety with early to midmaturity, consistent high yield potential, broad adaptation and very good fiber quality. | | Early-mid | Hairy | Very good | Good | |
| | | PHY 315 RF | Early maturity Roundup Ready® Flex variety with good vigor and broad adaptation. High yield potential with very good to excellent fiber quality. | | Early | 9emi-smooth | Very good | Good | |
| | (⊧) 14 4 20 | of2 ▶ № 15.5 x 9 in | Early to midmaturity Roundup Ready® Flex variety adapted for the mid-South. Southeast | | | | | | • |

| | | [2008-Stoneville_CharCh | nart.pdf] | | | | | | | | | | | | | | | | E | . 7 |
|------------|----------|---|---------------------------------------|-----------------|-----------|----------------|--------------|-------------|--|--|-----|----------------|-----------------|----------|------------|------------|---|---------------------------|-------------------|-------------|
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| Thumbnails | S | TONEVILLE® | COTTON CHA | RACI | ERI | STIC | S | | | | | | | | | | | | | |
| Thum | | PRODUCT | MATURITY | | | | GROW | /тн | | | | | FIBER | | ALITY | | | DIS | EASE | |
| | - | | | | | | | | | | 17 | | | | | | | | | |
| Comments | | | | | | | | | ('BM | Height of First Fruiting Branch _(inches) | | | | | | | | lit | | |
| Com | | | | nce | | r | | | Node of First Fruiting Branch (avg) | ت ج ج | |)ut | | | | | | RKN/ <i>Fusarium</i> Wilt | iit | |
| 2 | | | \frown | Storm Tolerance | | Seedling Vigor | jht | es | irst ranc | Firs | | % Gin Turn Out | (ejd | | đ | - | | nur | Verticillium Wilt | .≓ |
| Signatures | | Stoneville Brand | 2 | Tol | air | bu | Plant Height | Total Nodes | g B | g B | | Iu | Length (staple) | ţ | Micronaire | Uniformity | | nsa | lliun | Bronze Wilt |
| Sigr | | and | Maturity | щ | Leaf Hair | edli | nt | al | de (| itin | | Gin | lgt | Strength | cror | ifori | | N/P | rtici | onz(|
| | | Bra | N N N N N N N N N N N N N N N N N N N | Sto | Le | Se | Pla | Tot | Pro | Ън | | % | Lei | Str | Ž | Π | | 뚪 | Vei | Bro |
| | | ST 4357B2RF | Early - Mid | 4 | S | ND | М | 24 | 7.0 | 12.0 | 1 | 41 | 37 | 29 | 4.2 | 85 | ١ | D | 3 | 9 |
| | | ST 4427B2RF | Early - Mid | З | Н | 8 | М | 26 | 5.7 | 5.5 | | 41 | 36 | 28 | 4.1 | 82 | | 6 | ND | 9 |
| | NEW | ST 4498B2R | Early - Mid | В | Н | 9 | М | 16 | 4.0 | 5.3 | | 40 | 37 | 30 | 4.3 | 84 | | 6* | ND | 9 |
| | | ST 4554B2FF | Early - Mid | : | Н | 8 | М | 19 | 6.1 | 8.3 | | 41 | 37 | 30 | 4.5 | 83 | | 6* | 3 | 9 |

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| 1 | ST 4357B2RF | Early - Mid | 4 | S | ND | М | 24 | 7.0 | 12.0 | 41 | 37 | 29 | 4.2 | 85 | ND | 3 | 9 |
| | ST 4427B2RF | Early - Mid | 3 | Н | 8 | М | 26 | 5.7 | 5.5 | 41 | 36 | 28 | 4.1 | 82 | 6 | ND | 9 |
| NEW | ST 4498B2R | Early - Mid | В | Н | 9 | М | 16 | 4.0 | 5.3 | 40 | 37 | 30 | 4.3 | 84 | 6* | ND | 9 |
| | ST 4554B2FF | Early - Mid | | Н | 8 | М | 19 | 6.1 | 8.3 | 41 | 37 | 30 | 4.5 | 83 | 6* | 3 | 9 |
| NEW | ST 4596B2I F | Early - Mid | 3 | Н | 9 | М | 17 | 5.0 | 5.5 | 38 | 38 | 30 | 4.6 | 84 | 6* | ND | 9 |
| | ST 4664RF | Early - Mid | З | Н | 8 | М | 19 | 6.5 | 7.5 | 43 | 37 | 28 | 4.5 | 83 | 6* | 5 | 9 |
| NEW | ST 4678B28F | Early - Mid | 4 | Н | 8 | М | 18 | 5.0 | 5.7 | 39 | 38 | 29 | 4.6 | 84 | ND | ND | 6 |
| | ST 5242BR | Early - Mid | 4 | S-S | 9 | М | 19 | 5.9 | 5.9 | 42 | 35 | 28 | 4.5 | 84 | 6 | 6 | 9 |
| | ST 5283RF | Mid | 3 | S-S | ND | М | 25 | 5.0 | 5.5 | 42 | 36 | 30 | 4.2 | 82 | 5* | ND | 9 |
| | ST 5327B2FF | Mid | | S-S | ND | М | 23 | 5.0 | 5.0 | 42 | 36 | 29 | 4.2 | 83 | 5* | ND | 9 |
| NEW | ST 5458B2RF | Mid | 4 | Н | 8 | М | 16 | 5.5 | 5.5 | 41 | 36 | 29 | 4.6 | 83 | 7* | ND | 6 |
| | ST 5599BR | Mid - Full | 4 | Н | 9 | Т | 22 | 6.2 | 9.7 | 41 | 36 | 30 | 4.4 | 83 | 7 | 4 | 6 |
| NEW | ST 6351B2RF | Full | 3 | S-S | 5 | М | 20 | 5.4 | 12.1 | 38 | 38 | 29 | 4.3 | 84 | ND | ND | 9 |
| | ST 6611B2RF | Full | 5 | S | 6 | Т | 31 | 7.0 | 11.0 | 38 | 37 | 29 | 4.3 | 84 | ND | ND | 9 |
| | ST 6622RF | Full | 5 | S | 6 | Т | 31 | 6.5 | 11.0 | 42 | 37 | 32 | 4.1 | 84 | ND | ND | 9 |

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All ratings are appro.

Bayer CropScient

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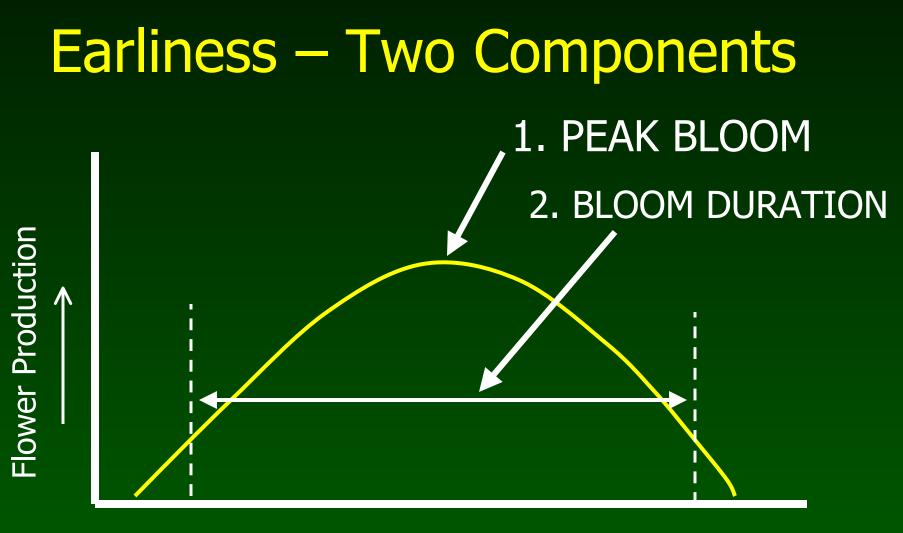
DP555BG Midsouth/Southeast

Deltapine® Bollgard®/Roundup Ready® Cotton Product

| Characteristics | |
|---------------------------------|-----------|
| Maturity: | Mid-full |
| Leaf Type: | Smooth |
| Plant Height: | Very tall |
| Seed Size: | 5500-6200 |
| Storm Resistance ⁺ : | 3 |
| Gin Turnout: | 40.5% |

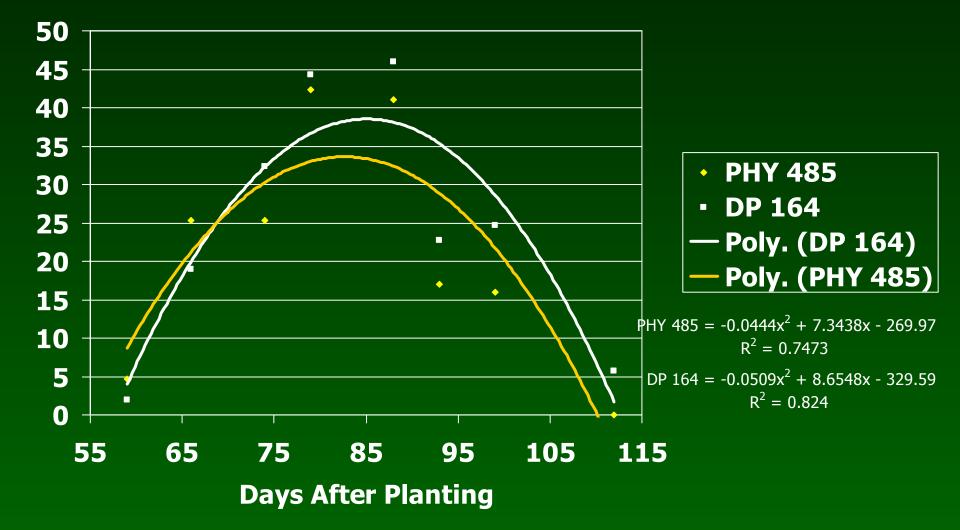


What does earliness mean from a management perspective?



Days after planting -

Days to Peak Bloom and Bloom Duration

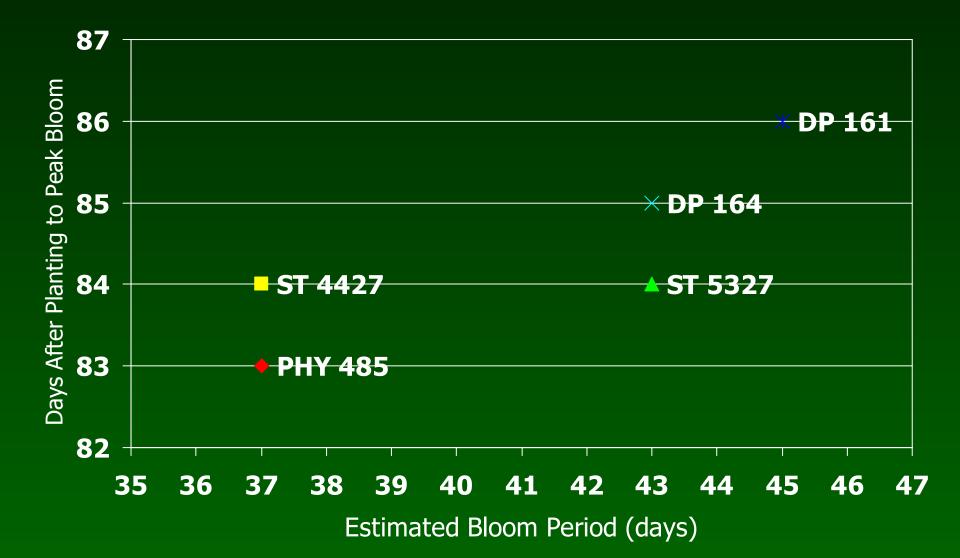


Maturity Estimations

| 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 _{0.10} | 2 | 2 |

DLRS, 2007.

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 |

Silvertooth, Edmisten, McCarty, 1999

Management Factors that Affect Maturity

- Variety
- Plant Population
- Nitrogen
- Water
- PGRs
- Insect ManagementDefoliation Timing



4.5 plants/row ft

orove

25

24

LOWE'S KNOWS Home

21

20

19

22

26

3 plants/row ft

LOWE'S TOT

24 inch Hill Drop

20 21

216 217 218 219 30 311 32 33 34 35 36 lome improvement

20

16 inch Hill Drop

8 inch Hill Drop

Plant population effect peak bloom Alexandria, 2003 & 2004 – PM 1218 BR

| Dopulation | Peak Bloom (DAP) | | | | | | |
|------------|------------------|-------|--|--|--|--|--|
| Population | 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