Crop Update and Harvest Aid Considerations

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Cotton Agronomics Manager

Windstar, Inc.

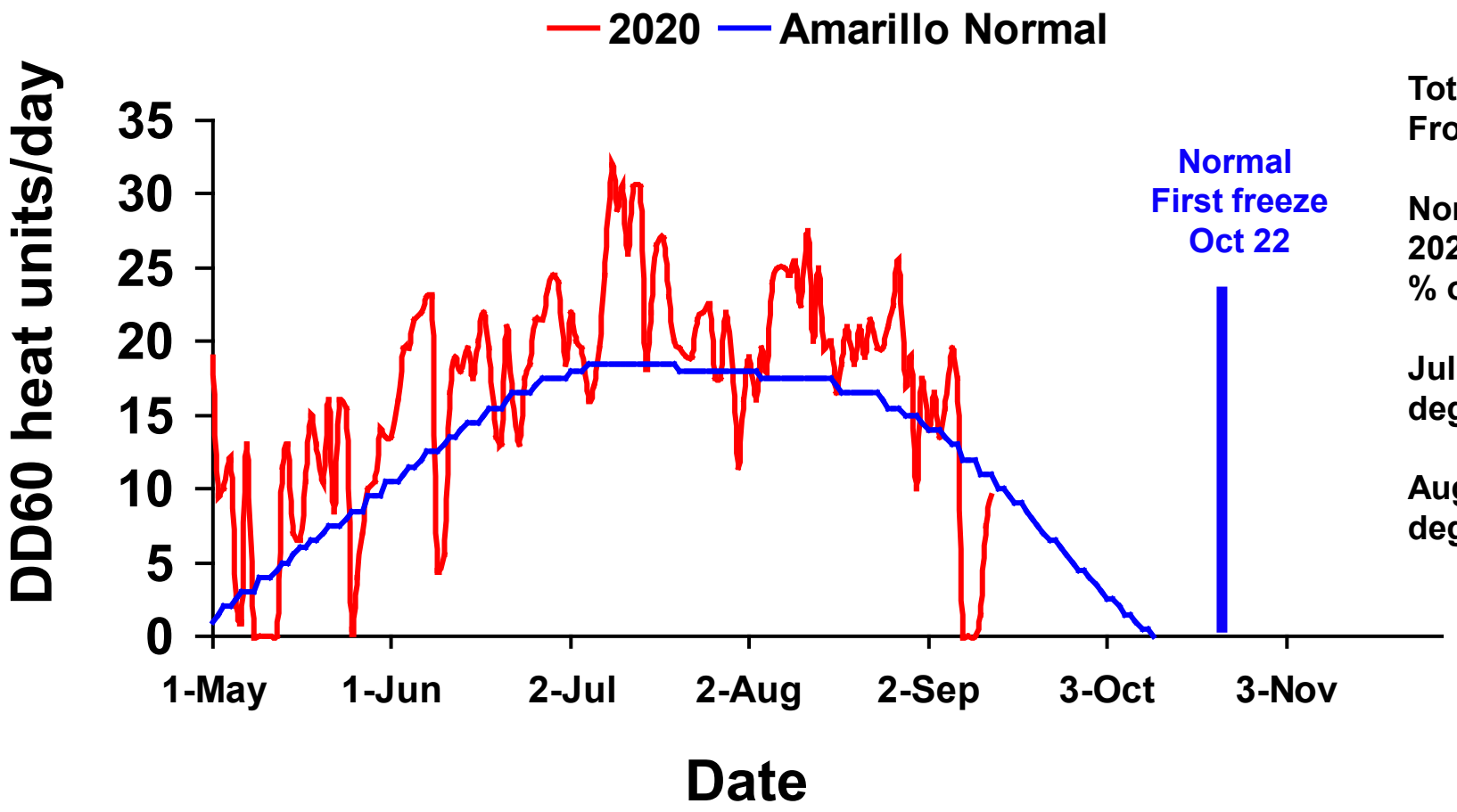
Crop Update

- Record cold September low temperatures encountered in region
- 4 days with essentially ZERO cotton heat units from Sep 8-11
- No freezes/frosts noted, but mid- to upper 30s likely have impacted fiber development
- Purpling of leaves showing up in many fields
- Some Alternaria leaf disease has resulted in defoliation
- Loss of photosynthetic factories will likely impact micronaire development

Crop Update

- Carbohydrates from leaves drive cellulose deposition and fiber maturity (secondary wall development)
- Leaves manufacture carbohydrates (glucose and sucrose) which are transported to developing fiber and converted to cellulose via cellulose synthase enzyme systems
- Effects of sudden cold temperatures (above freezing but below around 40 degrees) are poorly understood by fiber physiologists
- Natural leaf senescence and Alternaria fungi are also impacting leaves

Amarillo
30-Year Normal (1981-2010) and 2020
Daily Heat Units



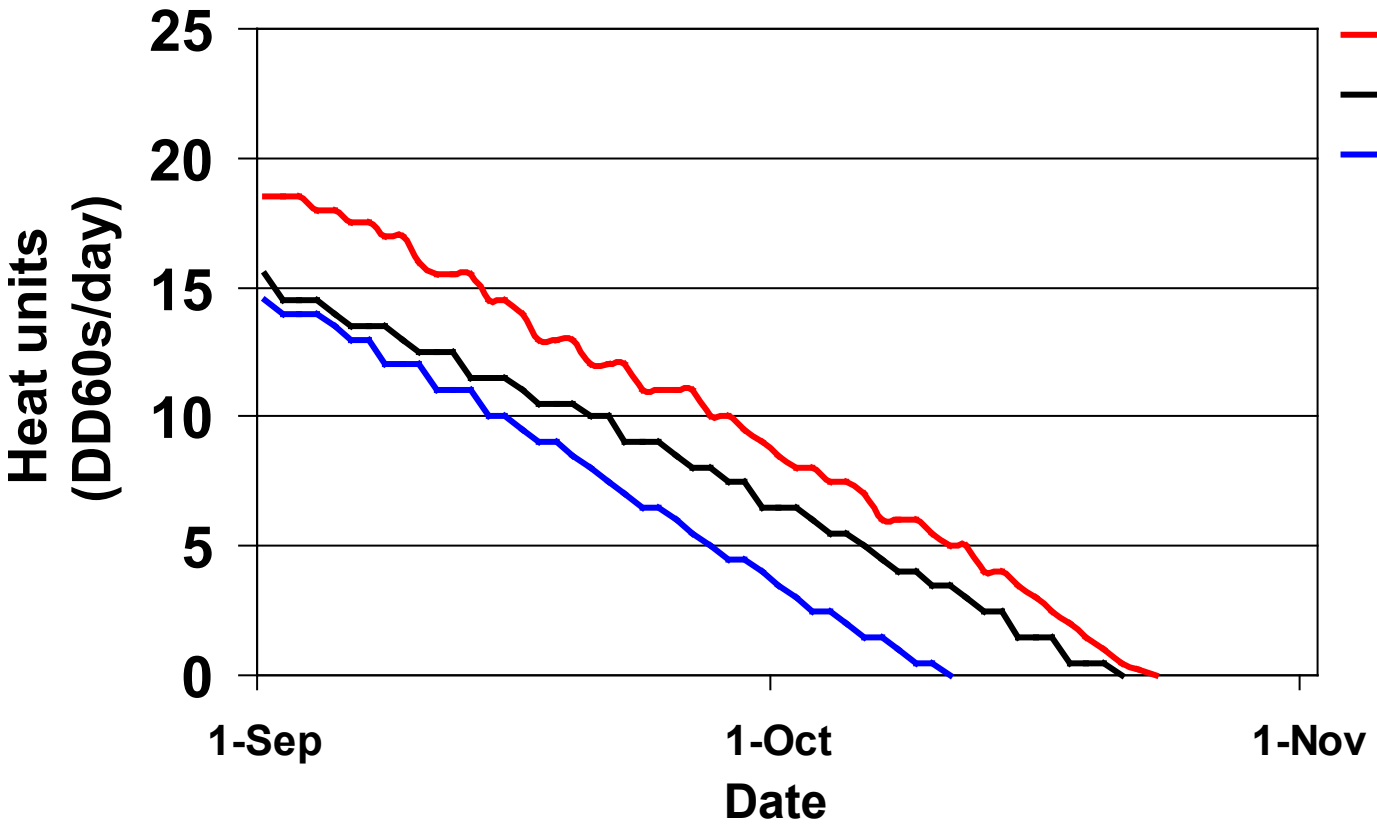
Total Accumulated Heat Units From May 1 through Sep 13:

Normal: 1862
2020: 2269
% of normal: +22%

Jul had 10 days of 100 degrees or greater

Aug had 7 days of 100 degrees or greater

Altus, Lubbock and Amarillo
30-Yr Normal
Cotton Heat Unit Accumulation

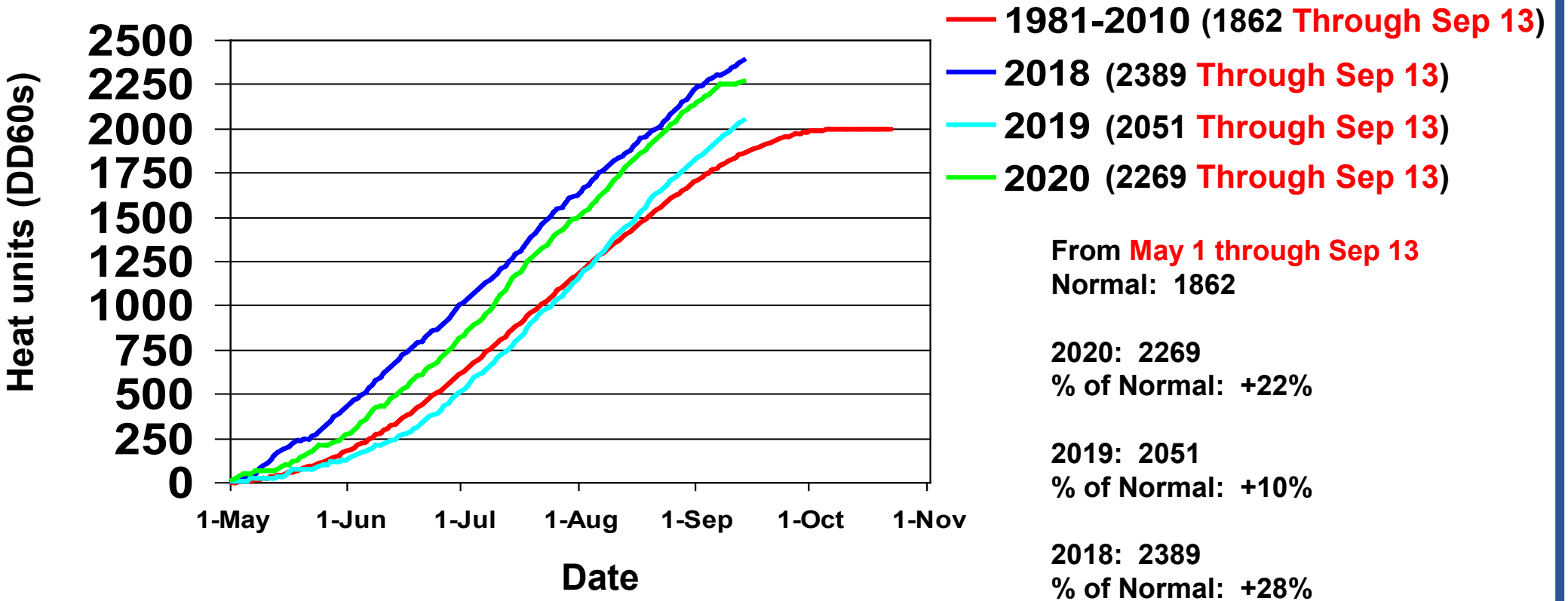


	Date DD60s Hit Zero
Altus	October 23
Lubbock	October 21
Amarillo	October 11

First freeze:
Altus – November 4
Lubbock – October 31
Amarillo – October 22

Altus: http://climate.ok.gov/county_climate/Products/QuickFacts/jackson.pdf
Lubbock: http://www.srh.noaa.gov/lub/?n=climate-firstfreeze
Amarillo: https://w2.weather.gov/climate/index.php?wfo=ama

Amarillo 30-Yr Normal (1981-2010) vs. 2018, 2019, and 2020 Cotton Heat Unit Accumulation for May 1 Through Sep 8



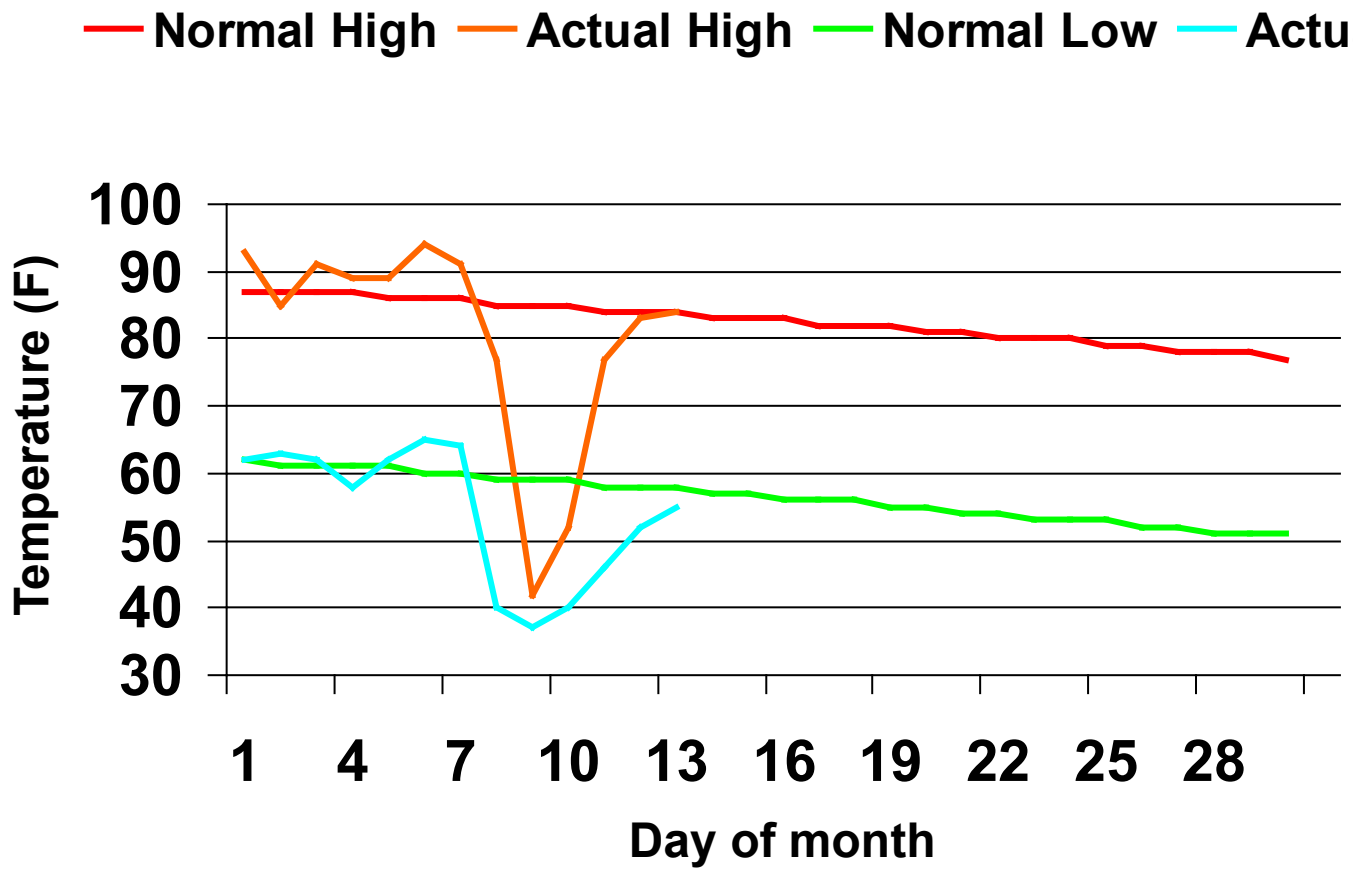
From May 1 through Sep 13
Normal: 1862

2020: 2269
% of Normal: +22%

2019: 2051
% of Normal: +10%

2018: 2389
% of Normal: +28%

Amarillo
30-Yr Normal (1981-2010) and September 2020 Air Temperatures



Heat Units

Normal for Month: 286

2020 thru Sep 13: 133
% of normal thru Sep 8: -20

Purpling Showing Up on Leaves (Anthocyanin Pigmentation) in Response to Cold Snap – Variety Differences

Plainview – Sep 15

Hart – Sep 15

Purpling in Canopy

Alternaria Leaf Spot - Field Observations

- Associated with premature senescence
  - Common in fields exhibiting drought stress, and early varieties
- On older leaves there is a necrotic zone
- Typically found on desiccated leaves
  - Prolific sporulation
- Severe defoliation

Courtesy Dr. Jason Woodward

Alternaria Leaf Spot - Field Observations

- Recent problem due to a combination of factors
  - Rainfall, cooler temperatures, and natural leaf senescence

Courtesy Dr. Jason Woodward

Alternaria macrospora - (Leaf spot)

- Often associated with ‘marginal’ cotton
  - On older leaves there is a necrotic zone
  - Appear sooty, due to prolific sporulation
  - Typically found on desiccated leaves

Courtesy Dr. Jason Woodward

Courtesy Dr. Jason Woodward

When do I spray my harvest aids?

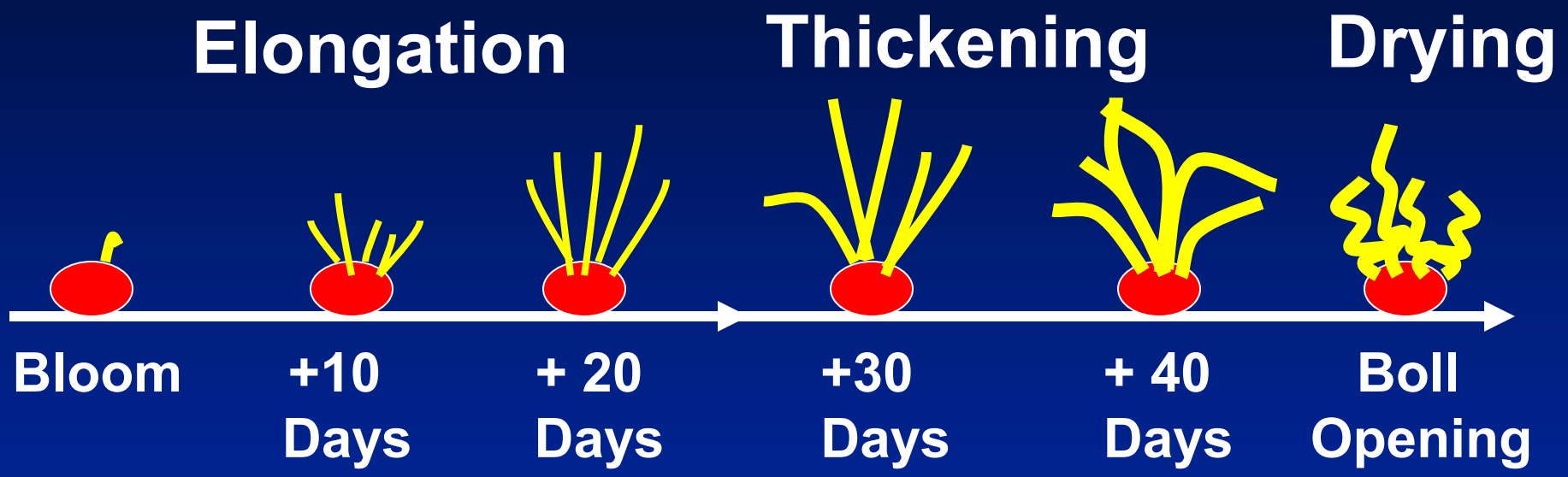
and

What products should I use?

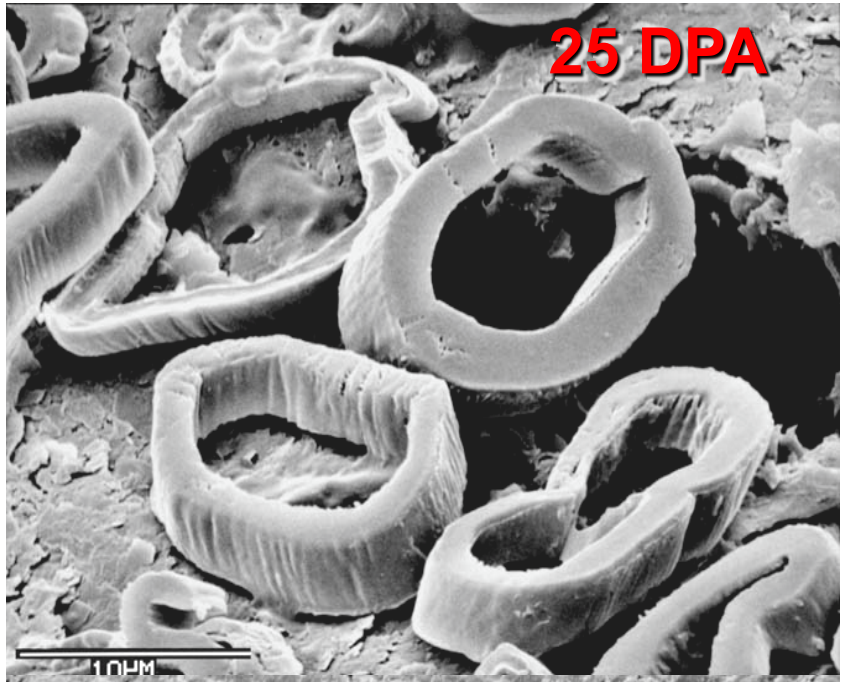
Fiber Development

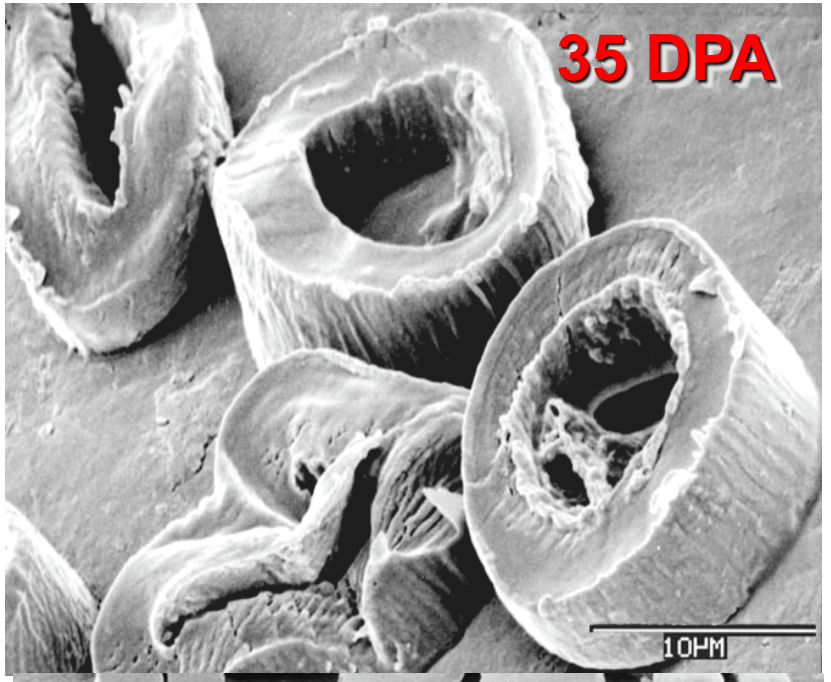
- The fiber is an extension of the cell wall of a cell on the seedcoat
- If you don't make seed, you can't make fiber
- It takes about 21-22 days for the fiber to elongate in a given boll (maximum boll VOLUME)
- After that, it takes another ~30-50 days (regionally dependent) depending upon temperatures, functional leaves, and healthy plants for the fiber to reach maturity (maximum boll WEIGHT)
- The inner part of the fiber is called the lumen.
- Concentric rings of cellulose are deposited on a diurnal basis

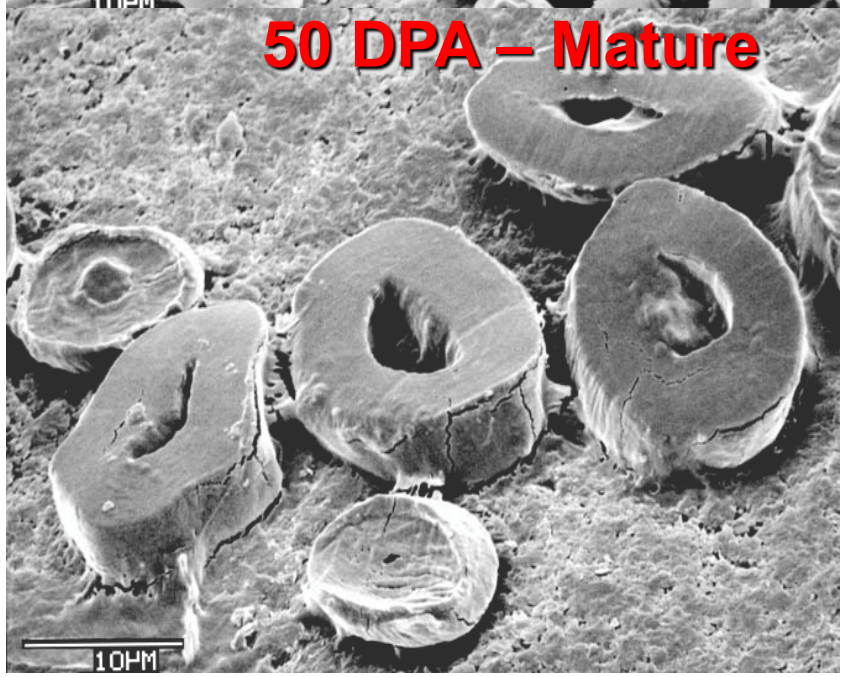
Fiber Development Timeline

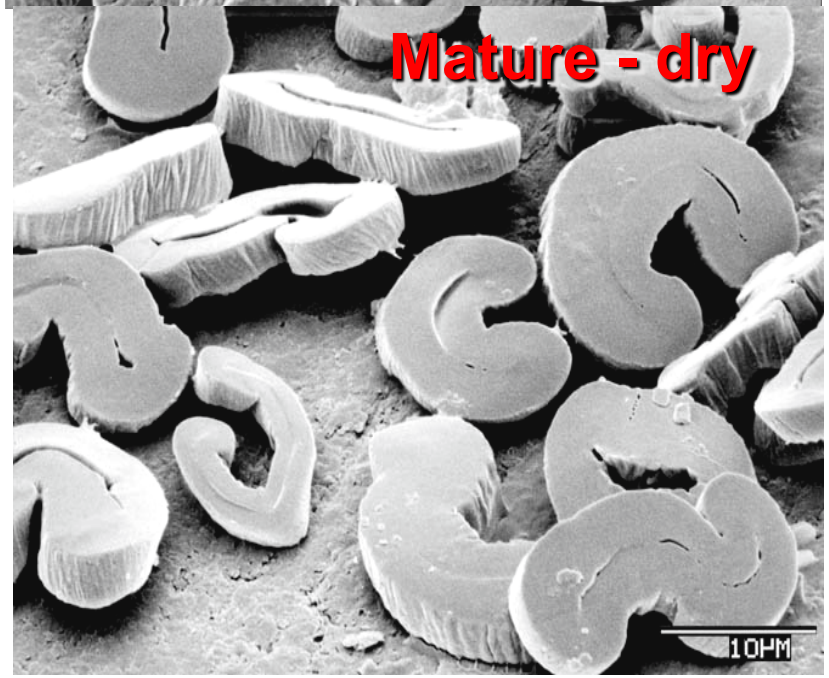


Boll Size vs. Days after Pollination









USDA-ARS

How Do Harvest Aids Work ?

J. T. Cothren and T. K. Witten

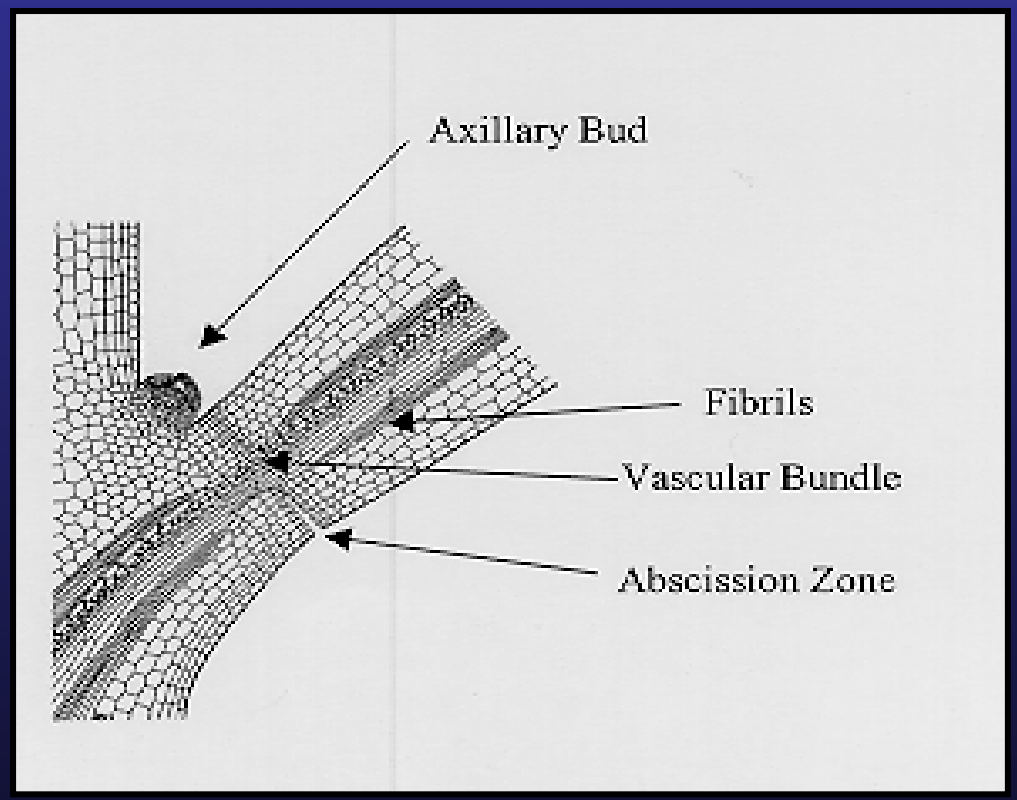
Texas A&M University
Texas Agricultural Experiment Station
College Station, TX

How Do Harvest Aids Work?

- **Mimic 'Mother Nature'**
  - Senescence and abscission
  - Abscission zone formation
  - Types of Harvest Aids and Modes of Action
    - Defoliants – (Hormonal and Herbicidal)
    - Desiccants – (Herbicidal)
    - Boll openers / Conditioners – (Hormonal)
    - Regrowth Inhibitors

Abscission Zone

- Located at the base of the petiole of a leaf where the petiole joins the stem
- Cells of the abscission zone are smaller and more densely filled with cytoplasm than cells in adjacent regions



Harvest Aid Program Considerations

- There are a lot of ways to get to the desired end result
  - Can be considered “art rather than science” but “understanding the science is important to implement the art”
- Many times local conditions drive what is most effective. Think:
  - Dry conditions vs. wet
  - Cool temperatures vs. warm
  - Some natural leaf senescence vs. very green cotton (September cold snap likely fixed that challenge)
  - Juvenile growth vs. none (may have this due to recent rainfall in many areas)
- Paraquat (or a terminating freeze) is typically the “great equalizer”

Harvest Aid "Tool Chest"

- Ethephon boll openers – hormonal
- Defoliants
  - Folex (tribufos) – herbicidal
    - In my opinion, still effective under cooler conditions, especially in ethephon tank mixes
  - Ginstar (thidiazuron plus diuron and special surfactants) – hormonal and herbicidal
    - Likely not best suited under cooler conditions; rates must be increased under cooler conditions
  - PPO inhibitors (ETX, Aim, Display, Sharpen) – herbicidal
    - Must use adjuvants/additives required by label. Effective on juvenile growth in top of canopy; less effective on lower leaves, higher labeled rates generate more desiccation and potential "leaf stick"; lower labeled rates generally result in more defoliation
  - Etc.

Harvest Aid “Tool Chest”

- **Sequential desiccants - herbicidal**
  - **Paraquat (Gramoxone SL 2.0, Firestorm, Parazone, Helmquat etc.)**
    - **Watch small grains planted in field proximity (physical drift); or planted for cover**
  - **PPO inhibitors at high rates**
    - **Safe on small grains**

Boll Openers – Ethylene Release

Boll Openers – Ethephon Products

- Prep (brand name obsolete), SuperBoll, Boll'd, and others
- Enhanced or premium ethephons:
  - Finish 6 Pro (ethephon + cyclanilide)
  - FirstPick (ethephon + AMADS)
- All based on ethephon chemistry
  - converted to ethylene (a senescence phytohormone) to increase abscission rate in leaves and bolls
- Generally tank mixed with defoliant to enhance defoliation
- Higher ethephon rates can increase defoliation
- Applied at 40-70% open bolls or "when sufficient mature unopened bolls present to produce desired crop"

Ethephon

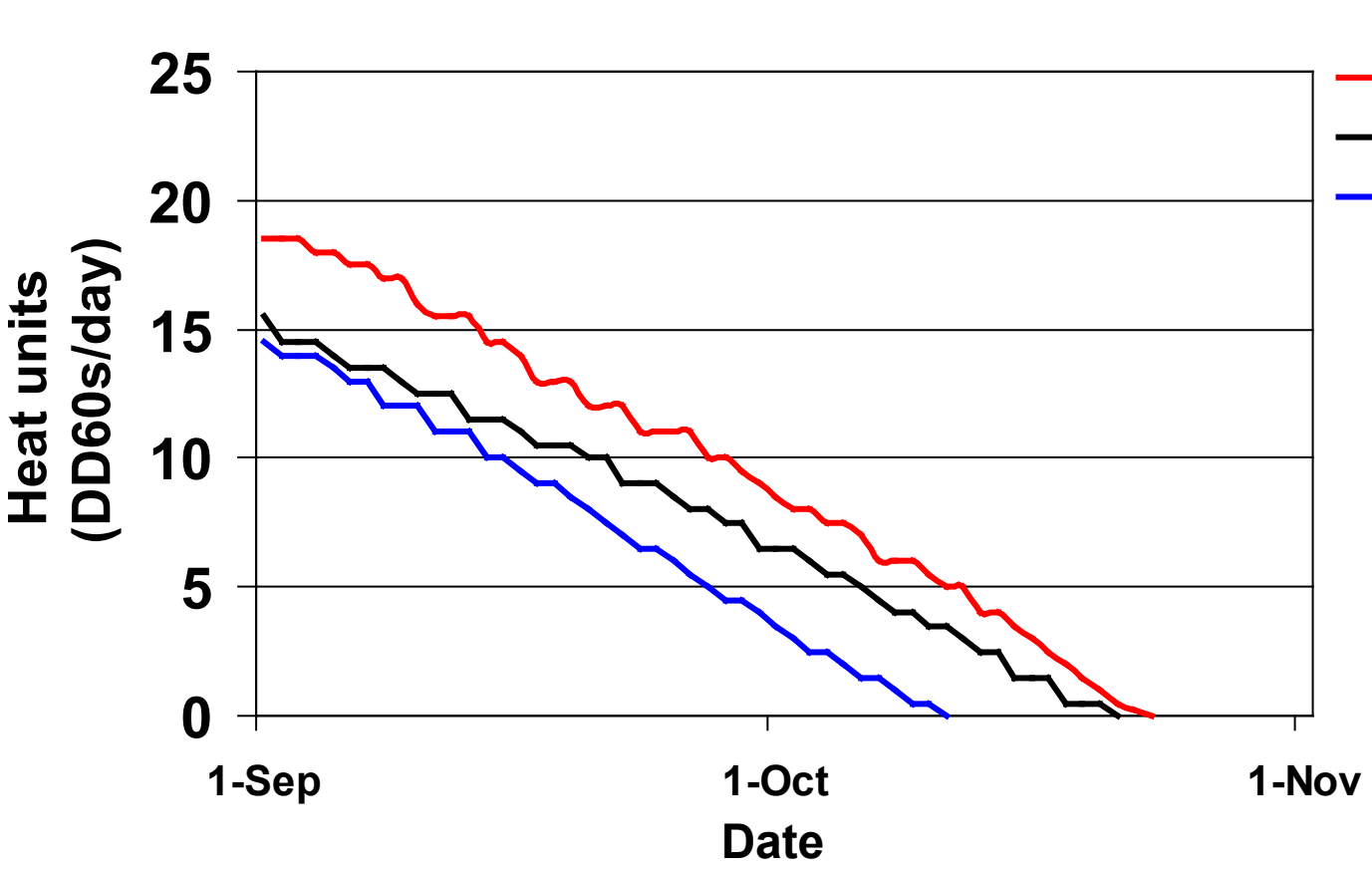
- For 6 lb/gallon products
- 21 oz/acre = 1 lb a.i./acre
- 42 oz/acre – 2 lb a.i./acre

- Maximum labeled rate is 42 oz/acre

Dilemma:

What to do when the “clock runs out”

Altus, Lubbock and Amarillo
30-Yr Normal
Cotton Heat Unit Accumulation



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Amarillo: https://w2.weather.gov/climate/index.php?wfo=ama

Doing Something Is Probably Better Than Doing Nothing

- **Sticky cotton is bad news**
- **Dr. Steven Hague's TAMU dissertation concerning physiological sugars and potential sticky cotton:**
  - **"the 1996 data suggests that cotton left until freeze is more likely to produce sticky fibers than cotton treated with harvest aids"**
  - **"fiber from the ethephon treatment at the middle and top fruiting positions was lower in physiological sugars than other treatments"**
  - **"this suggests a positive effect the ethephon treatments have towards reducing stickiness potential"**

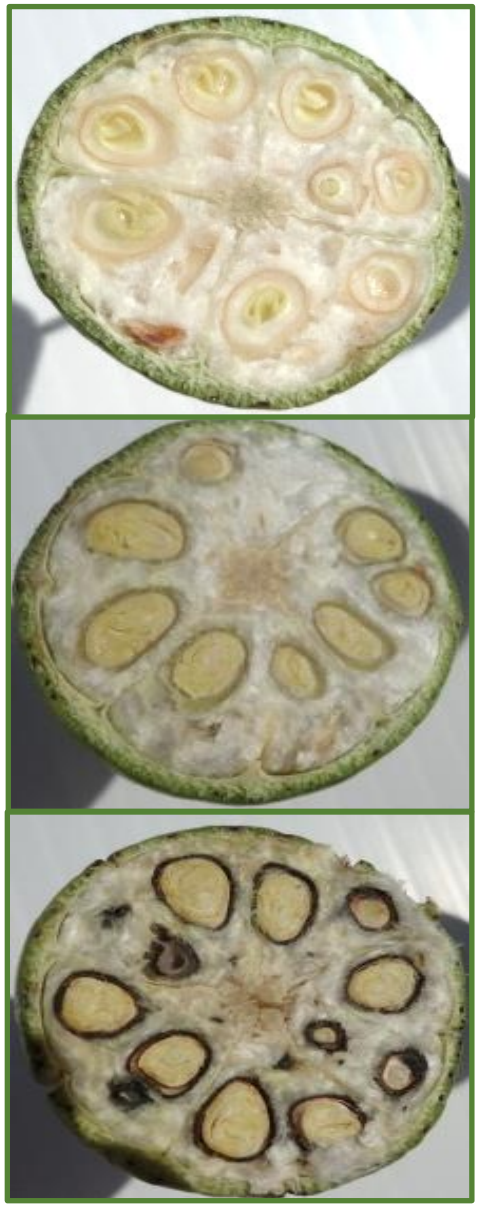
What To Do When “the Clock Runs Out”

- **Late maturing cotton will be susceptible to potential yield and quality losses if a hard freeze is encountered.**
- **Need to make a judgment call concerning harvest aid application 7-10 days before a freeze, not the day before a freeze is forecast**
- **Must have at least 70 degree temperatures for several days in order for ethephon to work. *It is ineffective AFTER a killing freeze!***
- **Can apply at higher rates at least 7 days prior to killing freeze date in order to get some activity**
- **If a freeze is not encountered, ethephon treatment on immature cotton will potentially reduce yield and fiber maturity as measured by micronaire**

Evaluating Boll Maturity Using the Knife Test

These bolls require considerably more heat units prior to ethephon application.

Note “watery” lint and “jelly” in seed



Requires more heat units prior to ethephon application. Ethephon will probably open this boll but it likely will not "fluff." Still has "watery" lint, and "jelly" in seed.

Fully formed seed leaves (cotyledons), no "jelly" in seed, tan seedcoat ring forming, lint stringing out. Ready for ethephon application.

Fully mature, blackened seed coat, should open with paraquat.

Definitions: NACB and Percent Open Bolls

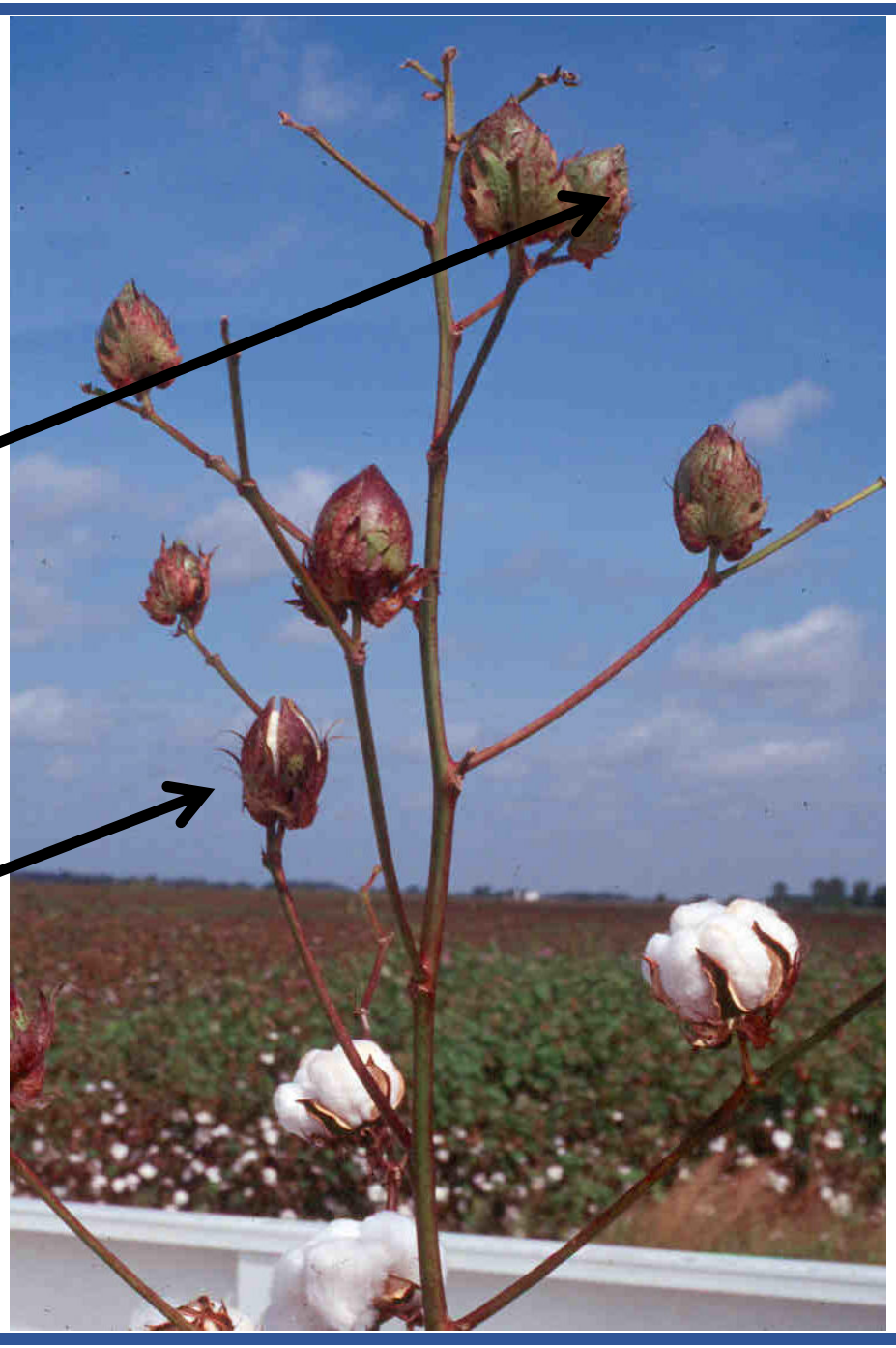
- **Nodes Above Cracked Boll (NACB)**
  - Number of nodes above the uppermost first position cracked (open) boll to the uppermost harvestable first position boll. Count the mainstem node of that fruiting branch as zero.
  - Then count the mainstem nodes to the uppermost harvestable first position boll (this is a judgement call and should be supported by the knife test for maturity and remaining season for that boll's likelihood of producing a fluffy, harvestable boll)
  - Typical target is 4 NACB for boll opener/defoliant harvest aid application
- **Percent Open Bolls**
  - The percentage of total bolls in a sample that are open.
  - Count total number of open bolls and green bolls in a given area. Calculate percent open bolls = open bolls divided by (open + green bolls) * 100.
  - Typical target is 60% open bolls for boll opener/defoliant harvest aid application

Nodes Above Cracked Boll (NACB)

Uppermost First Position Harvestable Boll

First Position Cracked Boll

Typical target is 4 NACB for boll opener/defoliant harvest aid application



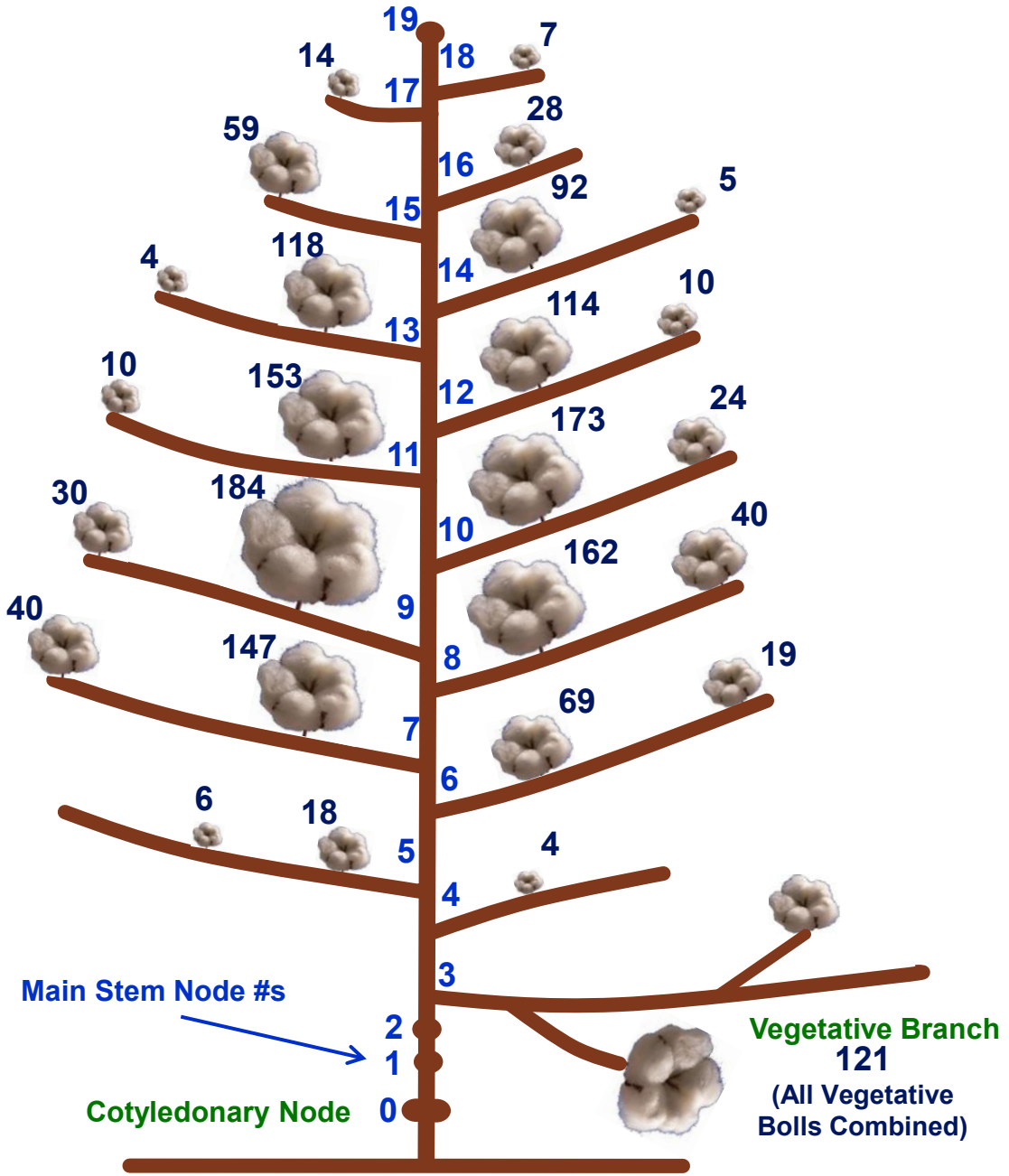
Contribution to Lint Yield by Fruiting Position (Lbs/Acre)

2009 - Lubbock

100% Open Bolls
FM 9180 B2F
Planted May 19
1st Flower July 19
2588 Total DD60s

Boll Location	Lint Yield (lb/ac)
1st Position	1343 (81%)
2nd Position	188 (12%)
Vegetative	121 (7%)
Total yield	**1652**

Source: Wanjura – USDA-ARS Lubbock
Note: Sub-surface drip irrigation and ~55,000 plants/acre



Contribution to Lint Yield by Fruiting Position (% of Total Lbs/Acre)

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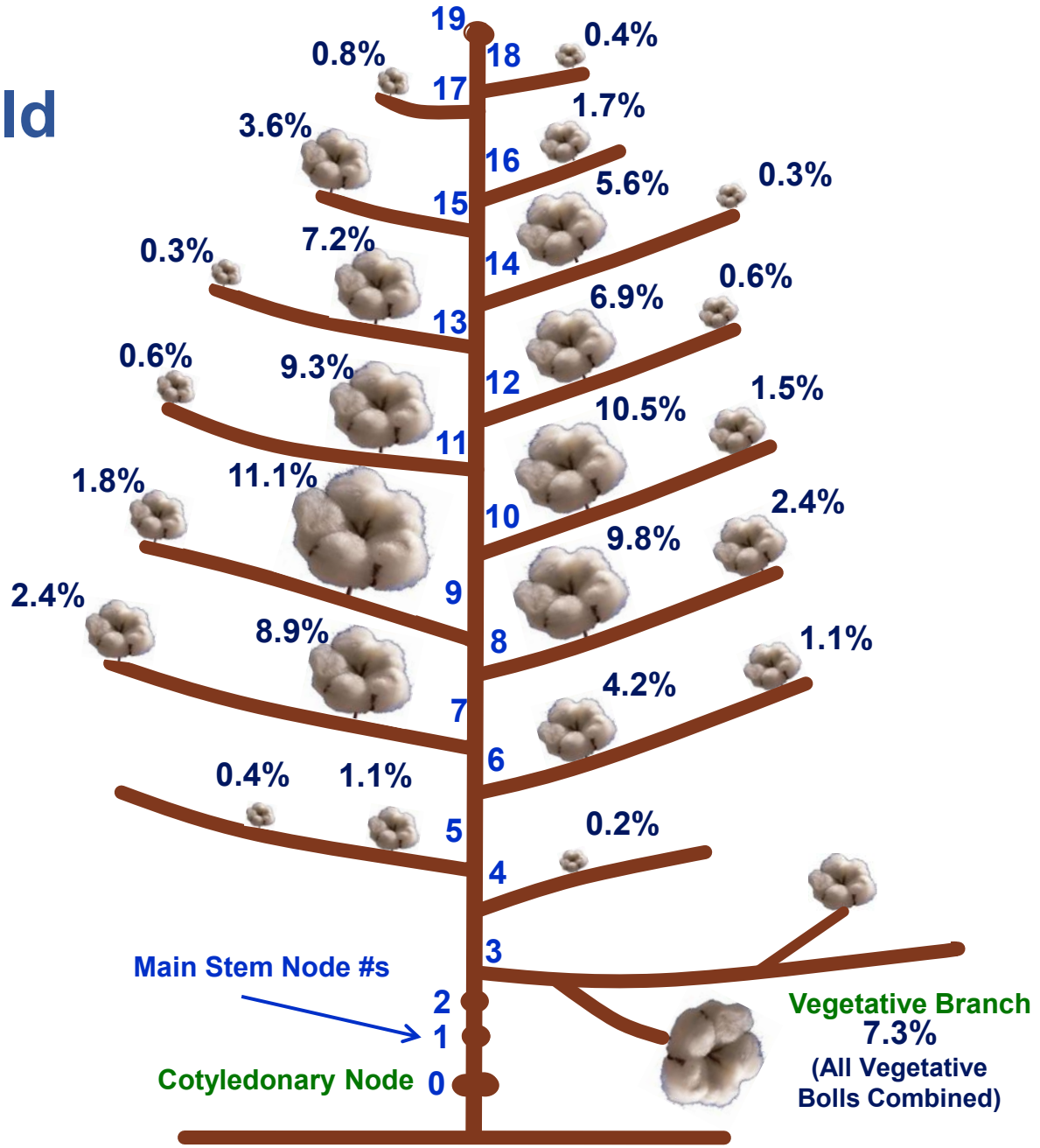


Contribution to Lint Value by Fruiting Position Based on CCC Loan Value ($/Acre)

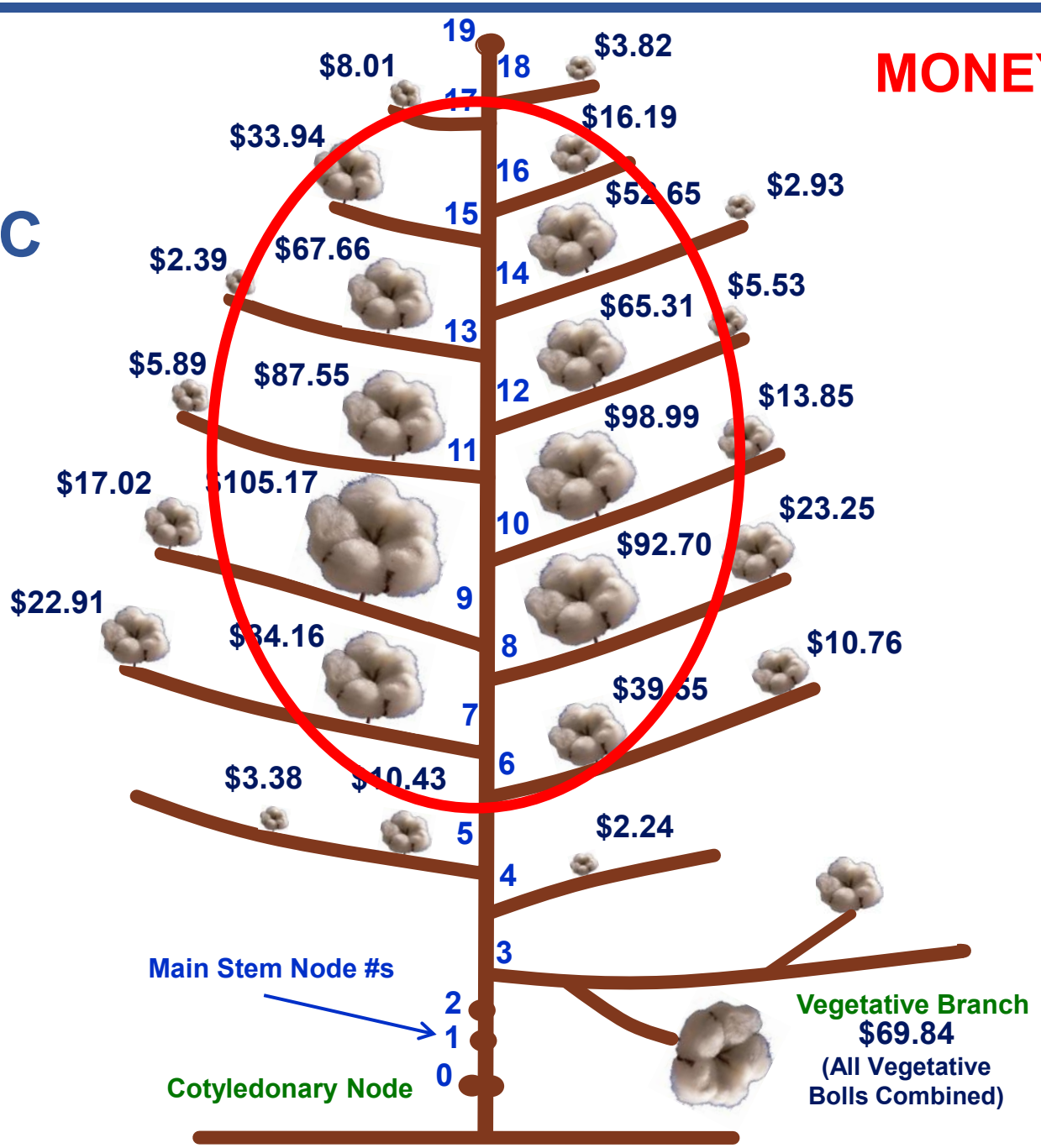
2009 - Lubbock

100% Open Bolls
FM 9180 B2F
Planted May 19
1st Flower July 19
2588 Total DD60s

Boll Location	Lint Yield (lb/ac)	Lint Value ($/ac)
1st Position	1343 (81%)	$768.36 (81%)
2nd Position	188 (12%)	$107.91 (12%)
Vegetative	121 (7%)	$69.84 (7%)
Total	**1652**	**$946.11**

Source: Wanjura – USDA-ARS Lubbock
Note: Sub-surface drip irrigation and ~55,000 plants/acre

MONEY BOLLS!



Influence of Genetics and Environment on Cotton Fiber Quality Variability

Fiber Property	Genetics %	Environment %
Staple	82	18
Micronaire	41	59
Color	21	79
Strength	90	10

Source: http://www.cotton.org/tech/ace/growth-and-development.cfm

Summary
Cotton Incorporated Texas State Support Weathering Project 2000 Crop Year Data

- **Reductions in USDA-AMS fiber quality due to rainfall, biotic activity and photodegradation**
  - **color grade – from 11 to 42/52**
  - **staple – loss of ~1/32nd**
  - **leaf grade – from 2 to 3**
  - **strength – loss of ~ 2 g/tex**
  - **uniformity – loss of 1.25%**
  - **bark – from 0 up to 100% incidence**
- **$ 0.44 Loan value before weather events to $ 0.38**
  - **$ 28.80 loss in Loan value per 480 bale**

Color Grades of Upland Cotton

Decreasing quality →

↓ Decreasing quality

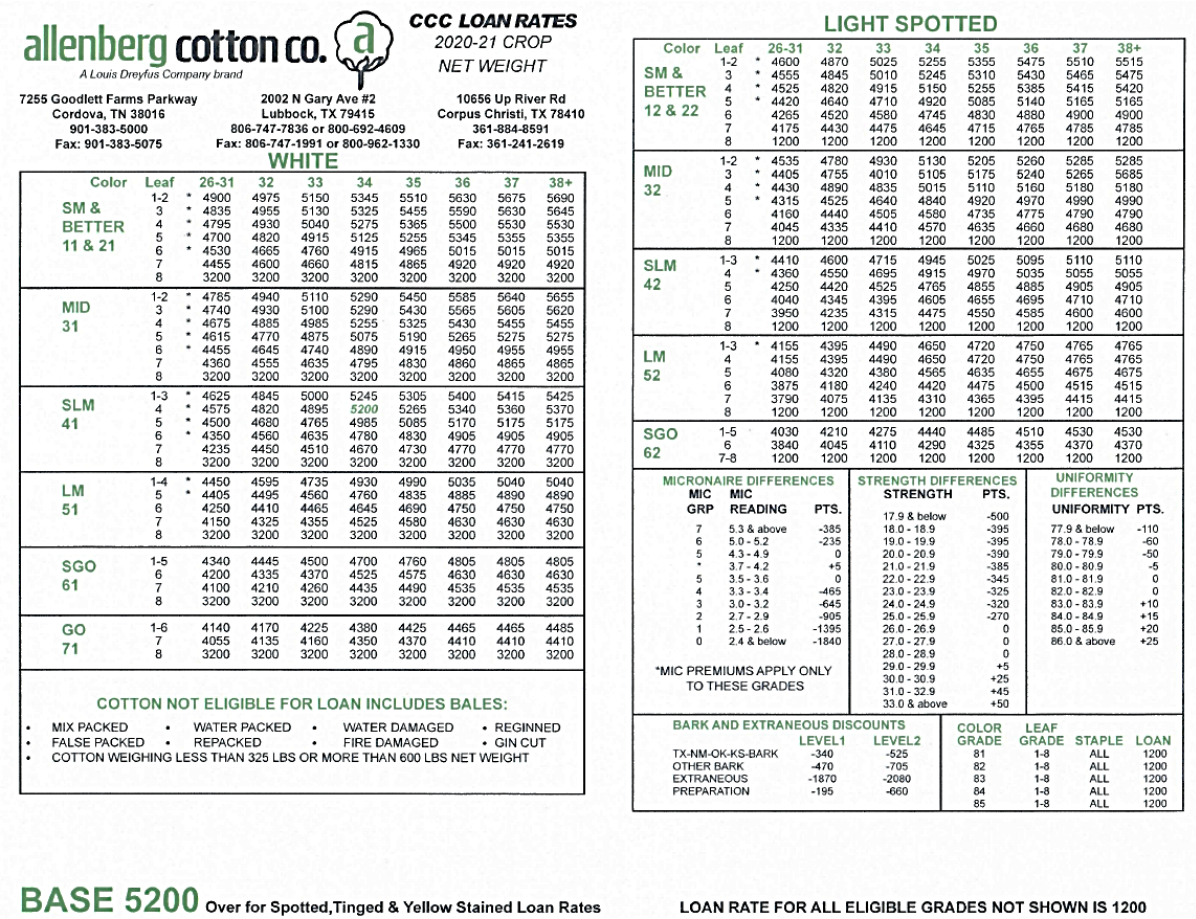
	White	Light Spotted	Spotted	Tinged	Yellow Stained
Good Middling	11*	12	13	--	--
Strict Middling	21*	22	23*	24	25
Middling	31*	32	33*	34*	35
Strict Low Middling	41*	42	43*	44*	--
Low Middling	51*	52	53*	54*	--
Strict Good Ordinary	61*	62	63*	--	--
Good Ordinary	71*	--	--	--	--
Below Grade	81	82	83	84	85

Variety Watch

- Some varieties have considerable leaf, stem and boll bract hair
- Sometimes even under the best of harvest aid response conditions we may encounter higher than normal leaf grades (lower quality)
- Some of these that we have planted in our area include:
  - NG 2982 B3XF (hairy)
  - FM 1621 GL (hairy)
  - PHY 394 W3FE (dense canopy)
- We need to endeavor to do a good job of defoliation on these types

Commodity Credit Corporation Loan Chart

- **USDA-AMS Classing Office High Volume Instrument (HVI) quality parameters and classer's calls used to determine Commodity Credit Corporation (CCC) Loan Value**



allenberg cotton co.
A Louis Dreyfus Company brand

CCC LOAN RATES
2020-21 CROP
NET WEIGHT

7255 Goodlett Farms Parkway
Cordova, TN 38016
901-383-5000
Fax: 901-383-5075

2002 N Gary Ave #2
Lubbock, TX 79415
806-747-7836 or 800-692-4609
Fax: 806-747-1991 or 800-962-1330

10656 Up River Rd
Corpus Christi, TX 78410
361-884-8591
Fax: 361-241-2619

WHITE

Color	Leaf		26-31	32	33	34	35	36	37	38+
SM & BETTER 11 & 21	1-2	*	4900	4975	5150	5345	5510	5630	5675	5690
	3	*	4835	4955	5130	5325	5455	5590	5630	5645
	4	*	4795	4930	5040	5275	5365	5500	5530	5630
	5	*	4700	4820	4915	5125	5255	5345	5355	5355
	6	*	4530	4665	4760	4915	4965	5015	5015	5015
	7		4455	4600	4660	4815	4865	4920	4920	4920
	8		3200	3200	3200	3200	3200	3200	3200	3200
MID 31	1-2	*	4785	4940	5110	5290	5450	5585	5640	5655
	3	*	4740	4930	5100	5290	5430	5565	5605	5620
	4	*	4675	4885	4985	5255	5325	5430	5455	5455
	5	*	4615	4770	4875	5075	5190	5265	5275	5275
	6	*	4455	4645	4740	4890	4915	4950	4955	4955
	7		4360	4555	4635	4795	4830	4860	4865	4865
	8		3200	3200	3200	3200	3200	3200	3200	3200
SLM 41	1-3	*	4625	4845	5000	5245	5305	5400	5415	5425
	4	*	4575	4820	4895	*5200*	5265	5340	5360	5370
	5	*	4500	4680	4765	4985	5085	5170	5175	5175
	6	*	4350	4560	4635	4780	4830	4905	4905	4905
	7		4235	4450	4510	4670	4730	4770	4770	4770
	8		3200	3200	3200	3200	3200	3200	3200	3200
LM 51	1-4	*	4450	4595	4735	4930	4990	5035	5040	5040
	5	*	4405	4495	4560	4760	4835	4885	4890	4890
	6		4250	4410	4465	4645	4690	4750	4750	4750
	7		4150	4325	4355	4525	4580	4630	4630	4630
	8		3200	3200	3200	3200	3200	3200	3200	3200
SGO 61	1-5		4340	4445	4500	4700	4760	4805	4805	4805
	6		4200	4335	4370	4525	4575	4630	4630	4630
	7		4100	4210	4260	4435	4490	4535	4535	4535
	8		3200	3200	3200	3200	3200	3200	3200	3200
GO 71	1-6		4140	4170	4225	4380	4425	4465	4465	4485
	7		4055	4135	4160	4350	4370	4410	4410	4410
	8		3200	3200	3200	3200	3200	3200	3200	3200

COTTON NOT ELIGIBLE FOR LOAN INCLUDES BALES:

- MIX PACKED • WATER PACKED • WATER DAMAGED • REGINNED
- FALSE PACKED • REPACKED • FIRE DAMAGED • GIN CUT
- COTTON WEIGHING LESS THAN 325 LBS OR MORE THAN 600 LBS NET WEIGHT

BASE 5200 Over for Spotted,Tinged & Yellow Stained Loan Rates

LIGHT SPOTTED

Color	Leaf		26-31	32	33	34	35	36	37	38+
SM & BETTER 12 & 22	1-2	*	4600	4870	5025	5255	5355	5475	5510	5515
	3	*	4555	4845	5010	5245	5310	5430	5465	5475
	4	*	4525	4820	4915	5150	5255	5385	5415	5420
	5	*	4420	4640	4710	4920	5085	5140	5165	5165
	6		4265	4520	4580	4745	4830	4880	4900	4900
	7		4175	4430	4475	4645	4715	4765	4785	4785
	8		1200	1200	1200	1200	1200	1200	1200	1200
MID 32	1-2	*	4535	4780	4930	5130	5205	5260	5285	5285
	3	*	4405	4755	4010	5105	5175	5240	5265	5685
	4	*	4430	4890	4835	5015	5110	5160	5180	5180
	5	*	4315	4525	4640	4840	4920	4970	4990	4990
	6		4160	4440	4505	4580	4735	4775	4790	4790
	7		4045	4335	4410	4570	4635	4660	4680	4680
	8		1200	1200	1200	1200	1200	1200	1200	1200
SLM 42	1-3	*	4410	4600	4715	4945	5025	5095	5110	5110
	4	*	4360	4550	4695	4915	4970	5035	5055	5055
	5		4250	4420	4525	4765	4855	4885	4905	4905
	6		4040	4345	4395	4605	4655	4695	4710	4710
	7		3950	4235	4315	4475	4550	4585	4600	4600
	8		1200	1200	1200	1200	1200	1200	1200	1200
LM 52	1-3	*	4155	4395	4490	4650	4720	4750	4765	4765
	4		4155	4395	4490	4650	4720	4750	4765	4765
	5		4080	4320	4380	4565	4635	4655	4675	4675
	6		3875	4180	4240	4420	4475	4500	4515	4515
	7		3790	4075	4135	4310	4365	4395	4415	4415
	8		1200	1200	1200	1200	1200	1200	1200	1200
SGO 62	1-5		4030	4210	4275	4440	4485	4510	4530	4530
	6		3840	4045	4110	4290	4325	4355	4370	4370
	7-8		1200	1200	1200	1200	1200	1200	1200	1200

MICRONAIRE DIFFERENCES

MIC GRP	MIC READING	PTS.
7	5.3 & above	-385
6	5.0 - 5.2	-235
5	4.3 - 4.9	0
*	3.7 - 4.2	+5
5	3.5 - 3.6	0
4	3.3 - 3.4	-465
3	3.0 - 3.2	-645
2	2.7 - 2.9	-905
1	2.5 - 2.6	-1395
0	2.4 & below	-1840

*MIC PREMIUMS APPLY ONLY TO THESE GRADES

STRENGTH DIFFERENCES

STRENGTH	PTS.
17.9 & below	-500
18.0 - 18.9	-395
19.0 - 19.9	-395
20.0 - 20.9	-390
21.0 - 21.9	-385
22.0 - 22.9	-345
23.0 - 23.9	-325
24.0 - 24.9	-320
25.0 - 25.9	-270
26.0 - 26.9	0
27.0 - 27.9	0
28.0 - 28.9	0
29.0 - 29.9	+5
30.0 - 30.9	+25
31.0 - 32.9	+45
33.0 & above	+50

UNIFORMITY DIFFERENCES

UNIFORMITY	PTS.
77.9 & below	-110
78.0 - 78.9	-60
79.0 - 79.9	-50
80.0 - 80.9	-5
81.0 - 81.9	0
82.0 - 82.9	0
83.0 - 83.9	+10
84.0 - 84.9	+15
85.0 - 85.9	+20
86.0 & above	+25

BARK AND EXTRANEOUS DISCOUNTS

	LEVEL1	LEVEL2
TX-NM-OK-KS-BARK	-340	-525
OTHER BARK	-470	-705
EXTRANEOUS	-1870	-2080
PREPARATION	-195	-660

COLOR GRADE	LEAF GRADE	STAPLE	LOAN
81	1-8	ALL	1200
82	1-8	ALL	1200
83	1-8	ALL	1200
84	1-8	ALL	1200
85	1-8	ALL	1200

LOAN RATE FOR ALL ELIGIBLE GRADES NOT SHOWN IS 1200

allenberg cotton co.

A Louis Dreyfus Company brand

CCC LOAN RATES
2020-21 CROP
NET WEIGHT

7255 Goodlett Farms Parkway
Cordova, TN 38016
901-383-5000
Fax: 901-383-5075

2002 N Gary Ave #2
Lubbock, TX 79415
806-747-7836 or 800-692-4609
Fax: 806-747-1991 or 800-962-1330

10656 Up River Rd
Corpus Christi, TX 78410
361-884-8591
Fax: 361-241-2619

WHITE

Color	Leaf		26-31	32	33	34	35	36	37	38+
SM & BETTER 11 & 21	1-2	*	4900	4975	5150	5345	5510	5630	5675	5690
	3	*	4835	4955	5130	5325	5455	5590	5630	5645
	4	*	4795	4930	5040	5275	5365	5500	5530	5530
	5	*	4700	4820	4915	5125	5255	5345	5355	5355
	6	*	4530	4665	4760	4915	4965	5015	5015	5015
	7		4455	4600	4660	4815	4865	4920	4920	4920
	8		3200	3200	3200	3200	3200	3200	3200	3200
MID 31	1-2	*	4785	4940	5110	5290	5450	5585	5640	5655
	3	*	4740	4930	5100	5290	5430	5565	5605	5620
	4	*	4675	4885	4985	5255	5325	5430	5455	5455
	5	*	4615	4770	4875	5075	5190	5265	5275	5275
	6	*	4455	4645	4740	4890	4915	4950	4955	4955
	7		4360	4555	4635	4795	4830	4860	4865	4865
	8		3200	3200	3200	3200	3200	3200	3200	3200
SLM 41	1-3	*	4625	4845	5000	5245	5305	5400	5415	5425
	4	*	4575	4820	4895	*5200*	5265	5340	5360	5370
	5	*	4500	4680	4765	4985	5085	5170	5175	5175
	6	*	4350	4560	4635	4780	4830	4905	4905	4905
	7		4235	4450	4510	4670	4730	4770	4770	4770
	8		3200	3200	3200	3200	3200	3200	3200	3200
LM 51	1-4	*	4450	4595	4735	4930	4990	5035	5040	5040
	5	*	4405	4495	4560	4760	4835	4885	4890	4890
	6		4250	4410	4465	4645	4690	4750	4750	4750
	7		4150	4325	4355	4525	4580	4630	4630	4630
	8		3200	3200	3200	3200	3200	3200	3200	3200
SGO 61	1-5		4340	4445	4500	4700	4760	4805	4805	4805
	6		4200	4335	4370	4525	4575	4630	4630	4630
	7		4100	4210	4260	4435	4490	4535	4535	4535
	8		3200	3200	3200	3200	3200	3200	3200	3200
GO 71	1-6		4140	4170	4225	4380	4425	4465	4465	4485
	7		4055	4135	4160	4350	4370	4410	4410	4410
	8		3200	3200	3200	3200	3200	3200	3200	3200

COTTON NOT ELIGIBLE FOR LOAN INCLUDES BALES:

- MIX PACKED • WATER PACKED • WATER DAMAGED • REGINNED
- FALSE PACKED • REPACKED • FIRE DAMAGED • GIN CUT
- COTTON WEIGHING LESS THAN 325 LBS OR MORE THAN 600 LBS NET WEIGHT

LIGHT SPOTTED

Color	Leaf		26-31	32	33	34	35	36	37	38+
SM & BETTER 12 & 22	1-2	*	4600	4870	5025	5255	5355	5475	5510	5515
	3	*	4555	4845	5010	5245	5310	5430	5465	5475
	4	*	4525	4820	4915	5150	5255	5385	5415	5420
	5	*	4420	4640	4710	4920	5085	5140	5165	5165
	6		4265	4520	4580	4745	4830	4880	4900	4900
	7		4175	4430	4475	4645	4715	4765	4785	4785
	8		1200	1200	1200	1200	1200	1200	1200	1200
MID 32	1-2	*	4535	4780	4930	5130	5205	5260	5285	5285
	3	*	4405	4755	4010	5105	5175	5240	5265	5685
	4	*	4430	4890	4835	5015	5110	5160	5180	5180
	5	*	4315	4525	4640	4840	4920	4970	4990	4990
	6		4160	4440	4505	4580	4735	4775	4790	4790
	7		4045	4335	4410	4570	4635	4660	4680	4680
	8		1200	1200	1200	1200	1200	1200	1200	1200
SLM 42	1-3	*	4410	4600	4715	4945	5025	5095	5110	5110
	4	*	4360	4550	4695	4915	4970	5035	5055	5055
	5		4250	4420	4525	4765	4855	4885	4905	4905
	6		4040	4345	4395	4605	4655	4695	4710	4710
	7		3950	4235	4315	4475	4550	4585	4600	4600
	8		1200	1200	1200	1200	1200	1200	1200	1200
LM 52	1-3	*	4155	4395	4490	4650	4720	4750	4765	4765
	4		4155	4395	4490	4650	4720	4750	4765	4765
	5		4080	4320	4380	4565	4635	4655	4675	4675
	6		3875	4180	4240	4420	4475	4500	4515	4515
	7		3790	4075	4135	4310	4365	4395	4415	4415
	8		1200	1200	1200	1200	1200	1200	1200	1200
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84	1-8	ALL	1200
85	1-8	ALL	1200

Upcoming Tours

- **September 18, starts at 10:00 am – Top of Texas Gin. Steven and Billy will have a tour of the PhytoGen Innovation trial with the Gruhlkey Brothers. After the variety tour, a lunch will be provided.**

- **September 22, starts with lunch at 12:00 noon – Adobe Walls Gin. Jerrell and Doug are planning to do lunch then tour the XtendFlex variety trial with Travis Patterson.**

- **September 23, starts at 11:00 am at the PhytoGen Innovation trial with Lance Williams near Panhandle. After the variety trial tour, lunch will be served in Lance's barn. After lunch we will tour the PhytoGen 250 W3FE N rate trial that we have with Lance.**

Questions?

Randy’s cell number:
580-481-4050