

INTERNATIONAL
**COTTON
CONFERENCE
BREMEN**

2024



20 - 22 MARCH 2024 | BREMEN PARLIAMENT HOUSE

PRESENTATION

Session:

Cotton Production In The Growing Regions

Title:

Fiber Quality Trends in the U.S. Cotton Crop (2008 - 2022) by Region and Varieties Planted

Speaker:

David Albers, Development Manager - Cotton Germplasm Bayer Crop Science Starkville, MS (USA)

Conference Organisation

Faserinstitut Bremen e.V., Bremen, Germany. E-Mail: conference@faserinstitut.de

Bremer Baumwollbörse, Bremen, Germany. E-Mail: info@baumwollboerse.de

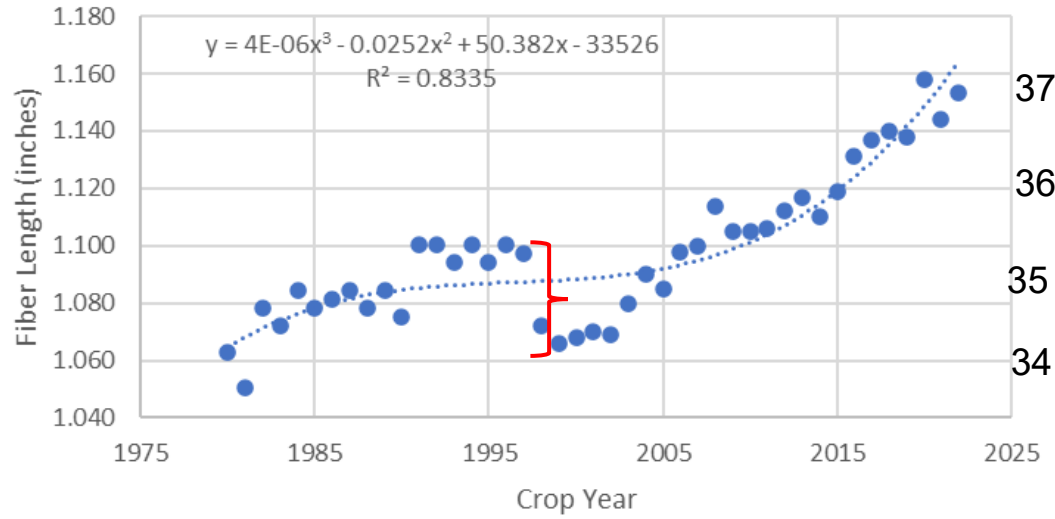


FIBER QUALITY TRENDS IN THE U.S. COTTON CROP (2008 - 2022) BY REGION AND VARIETIES PLANTED

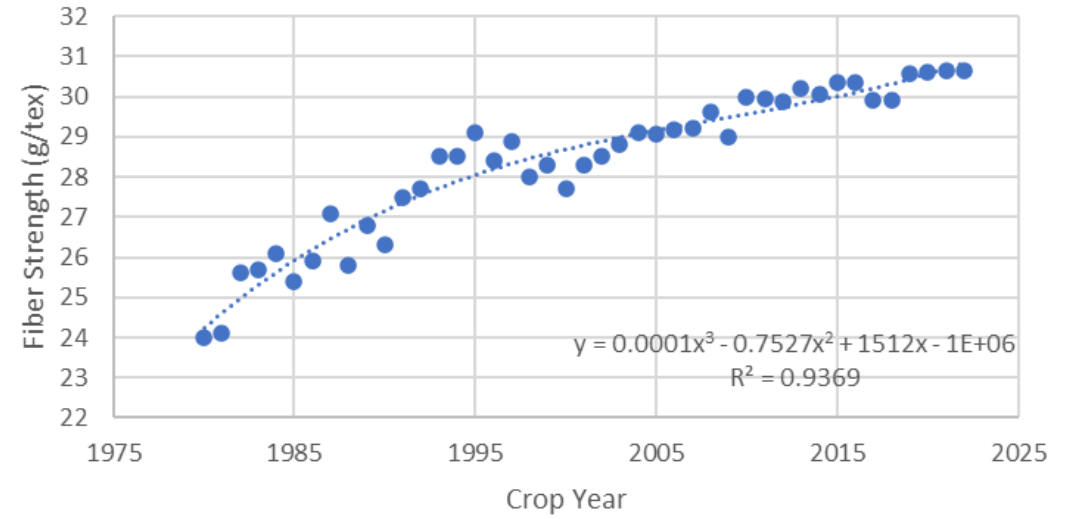
David W. Albers, Cotton Germplasm PDM, Bayer



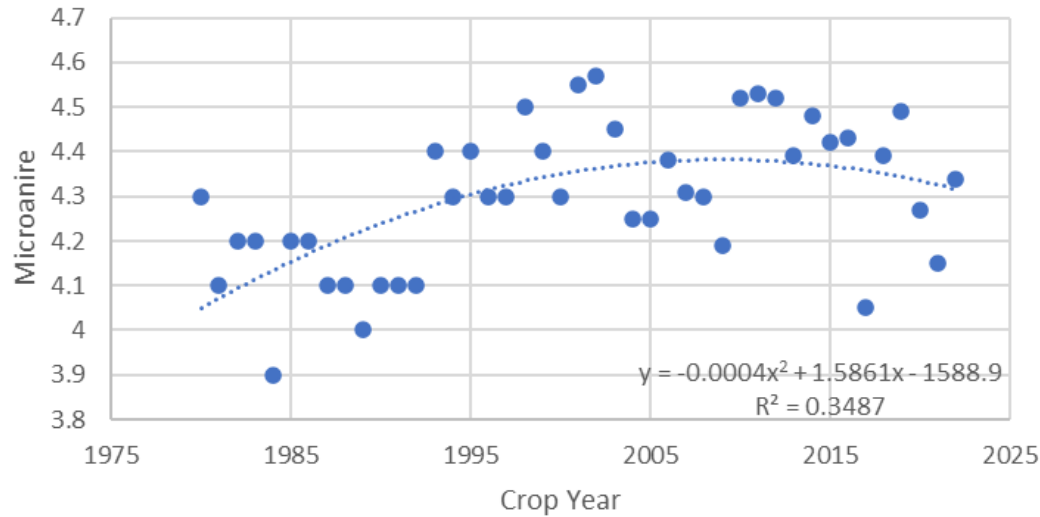
U.S. Cotton Crop Average Fiber Length (in.)



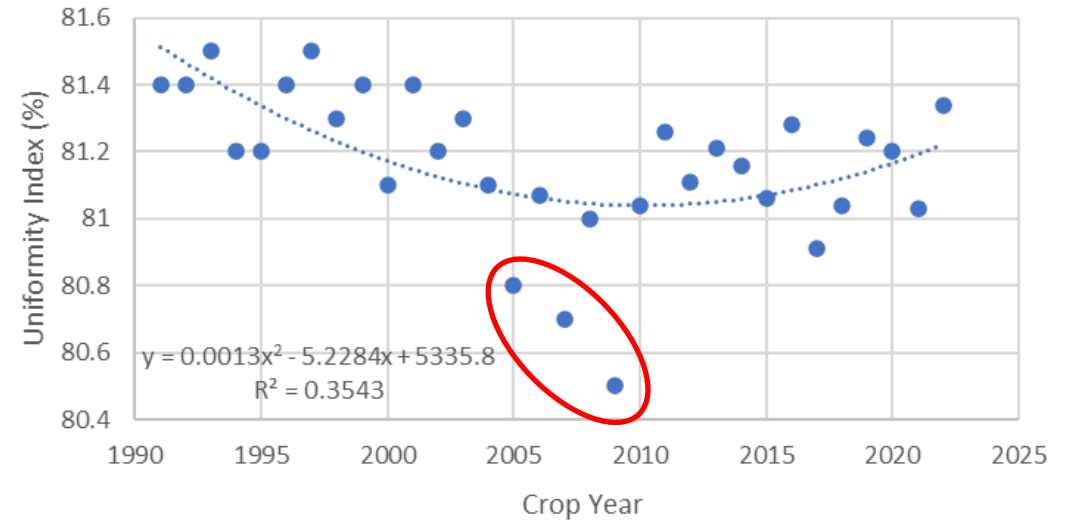
Average U.S. Cotton Crop Fiber Strength (g/tex)



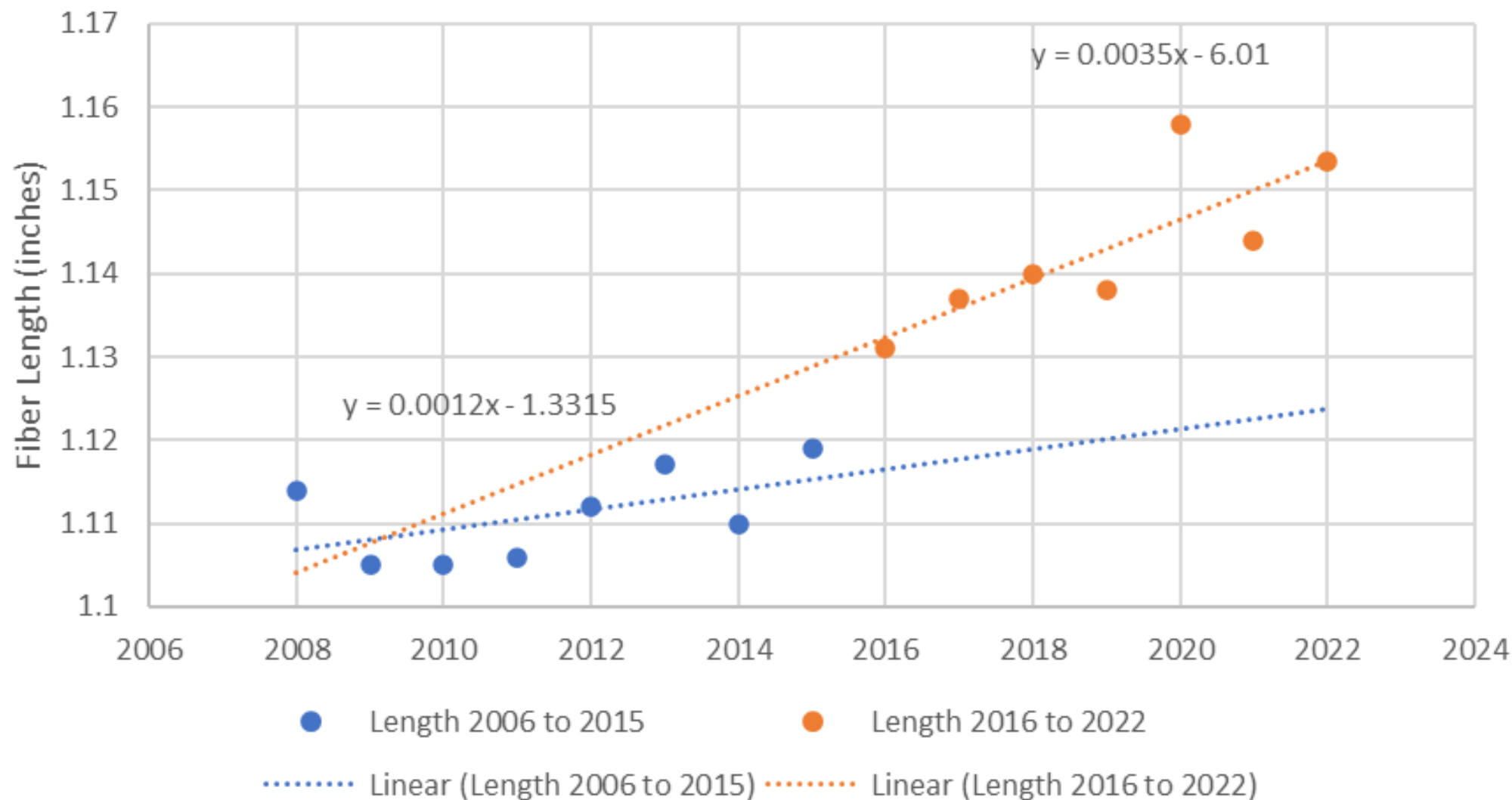
U.S. Average Cotton Crop Micronaire



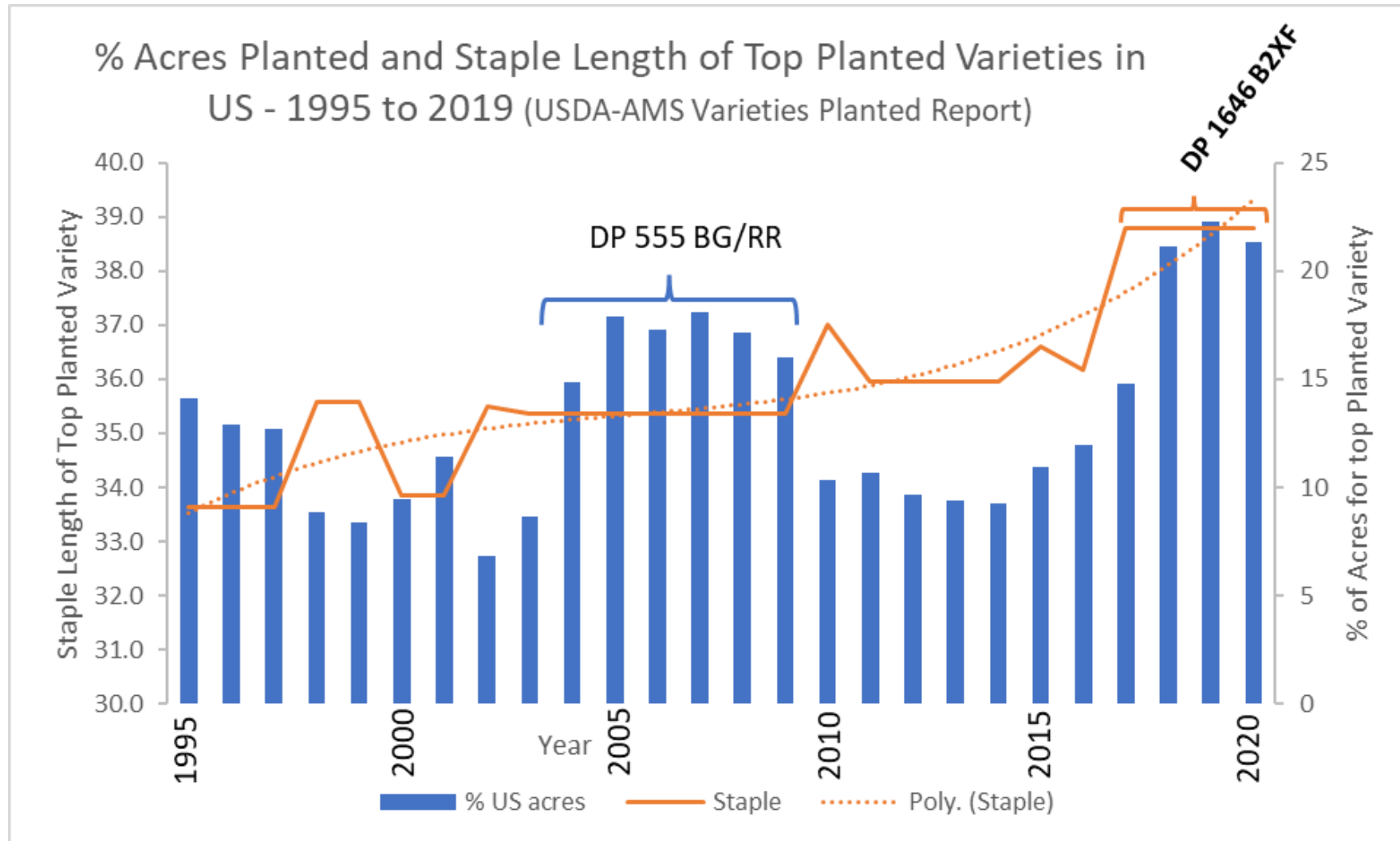
U.S. Cotton Crop Average Uniformity Index



US Crop Fiber Length Trends (Pre-2016 and Post 2016)



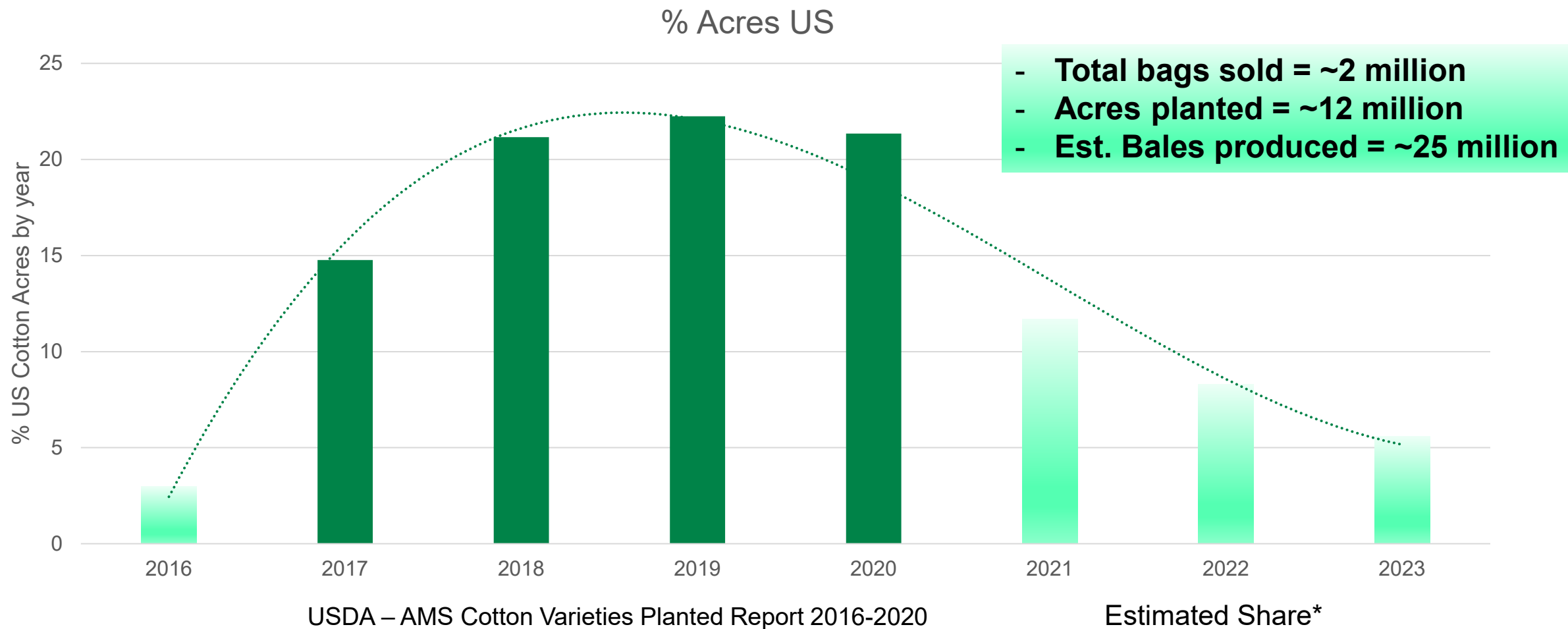
U.S. Top Planted Varieties – 2020 Summary



Data Source – USDA AMS “Varieties Planted Report” and fiber length from internal and external (OVT) field trials.



DP 1646 B2XF – USDA-AMS Varieties planted report



Fiber Length Step for DP 1646 B2XF

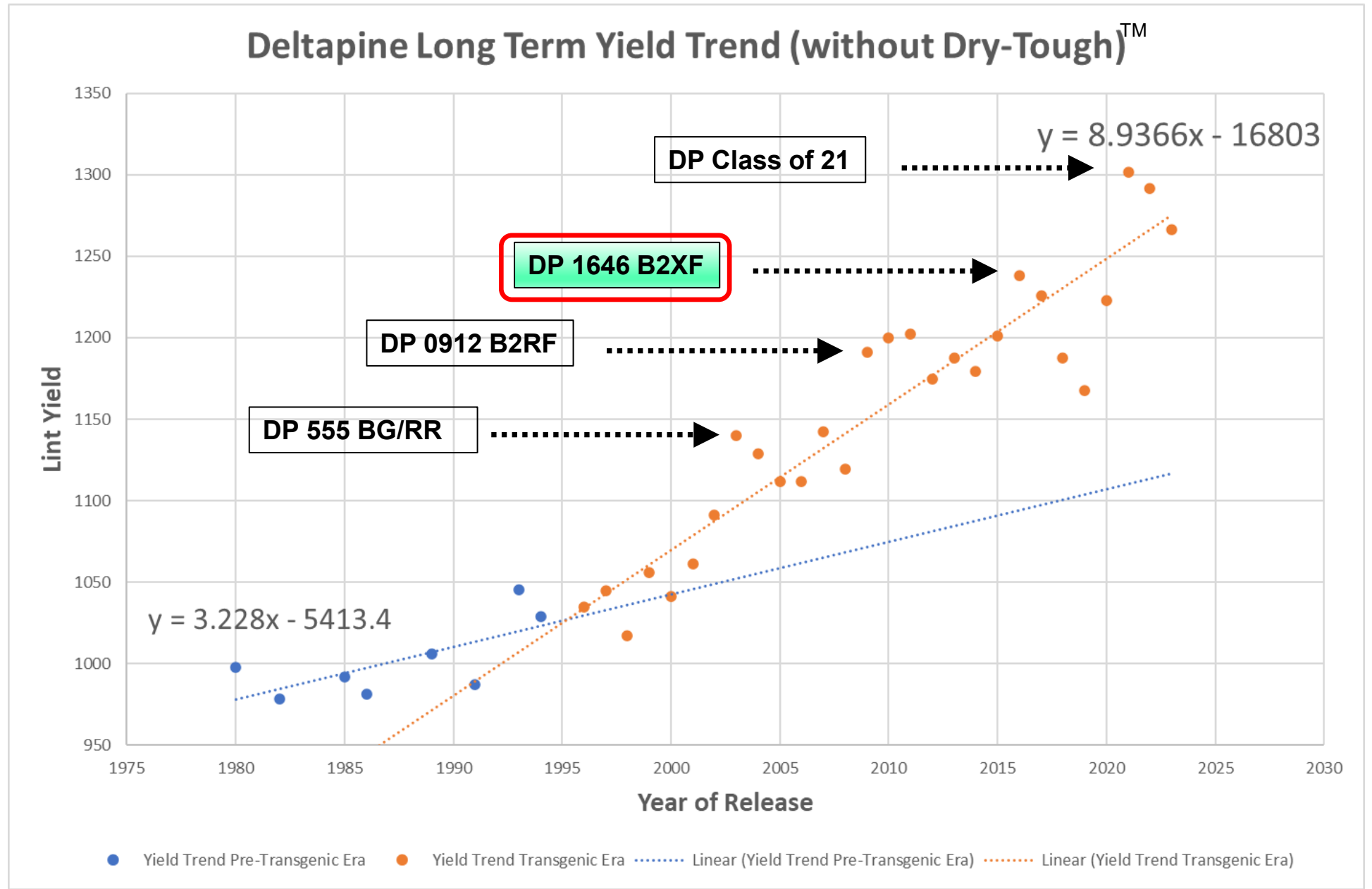
Fiber Parameter	DP 1646 B2XF	Previous Classes (Class of 09 to Class of 15)	Difference
Fiber Length	1.22 inches	1.14 inches	0.08 inches (96.3% wins)
Micronaire	4.36	4.40	Similar
Fiber Strength (g/tex)	29.6	29.5	Similar
Length Unif. (%)	82.5%	82.3%	Similar

Data Source: All internal Bayer and external (OVT) data from 2013 to 2019.

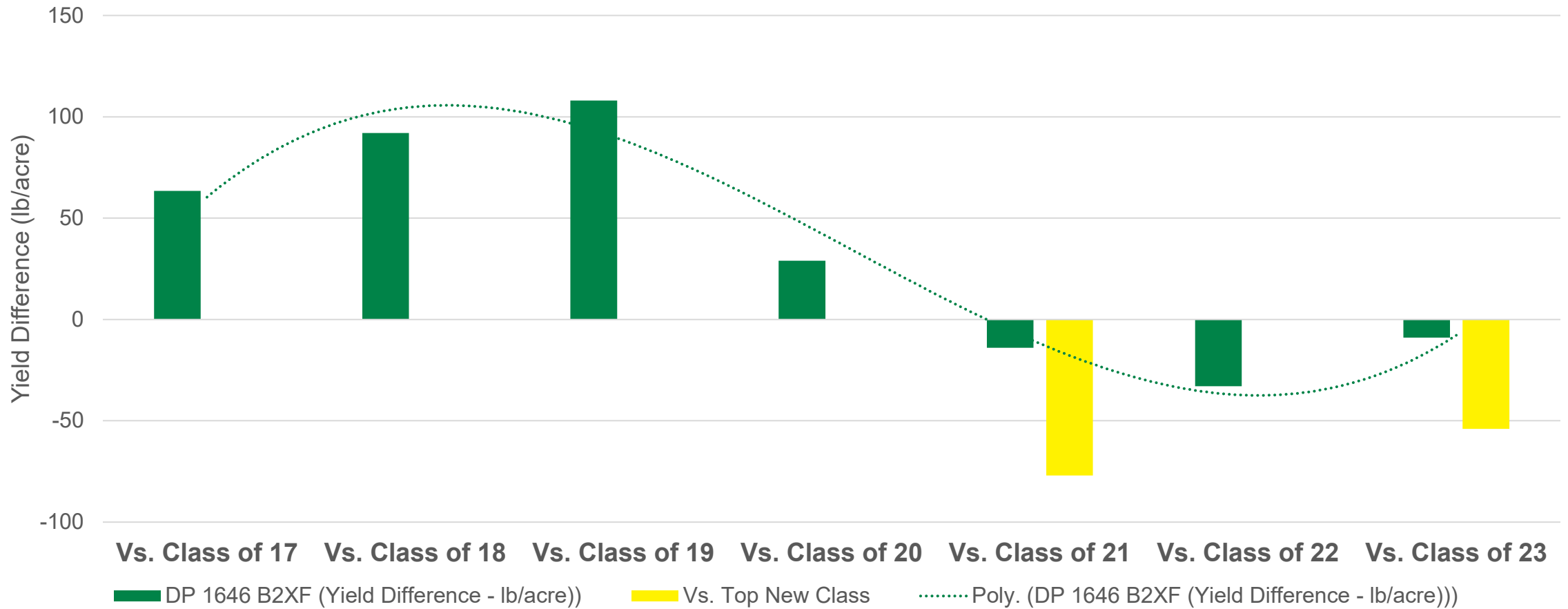


Genetic gain slope nearly tripled from pre-transgenic era (3.2 lb./year) to transgenic era (8.9 lb./year)

Data source: Analysis of D&PL, Monsanto, Bayer internal trials and external (OVT) trials from 1994 to 2022.



DP 1646 B2XF vs. New classes ('17 to '23)



Data Source: All internal Bayer and external (OVT) data from 2016 to 2022)



U.S. Crop Staple length trends

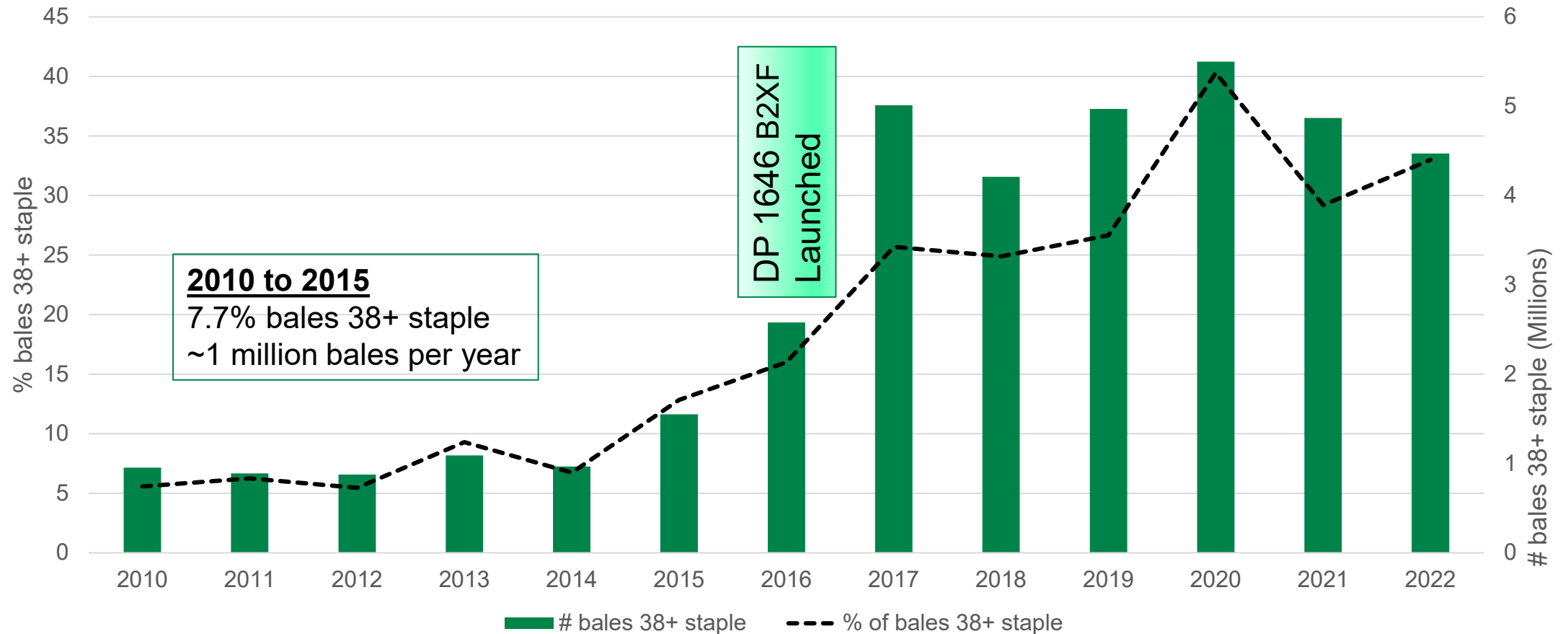
- Bales 38+ staple length

2017 to 2022

30% bales 38+ staple

4.8 million bales per year

Extra ~ 24 million bales since 2016



Source: EFS® USCROP™ Software. Cotton Incorporated; summarizing the USDA –AMS HVI classing information for each US cotton crop – 2010 - 2022

U.S. Crop Staple length trends

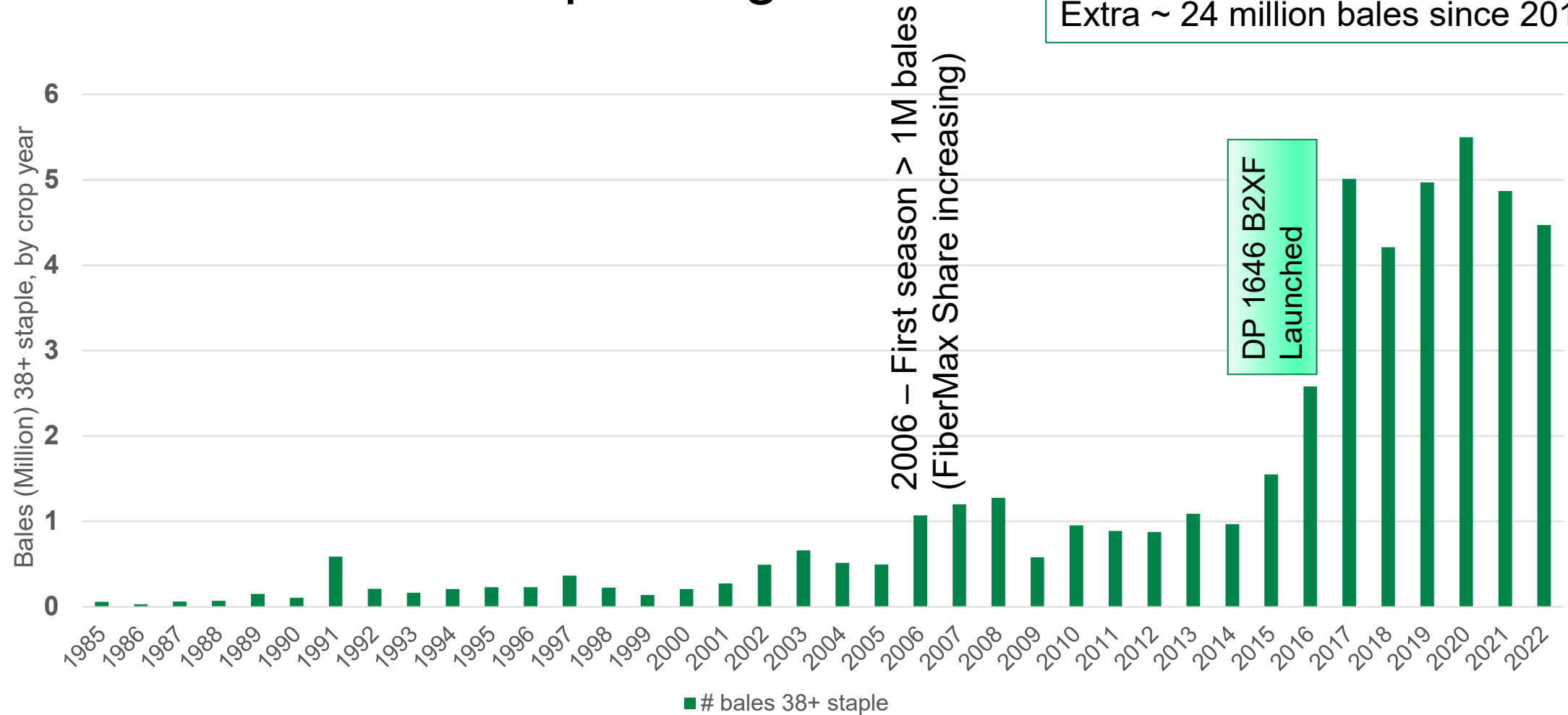
Bales 38+ staple length

2017 to 2022

30% bales 38+ staple

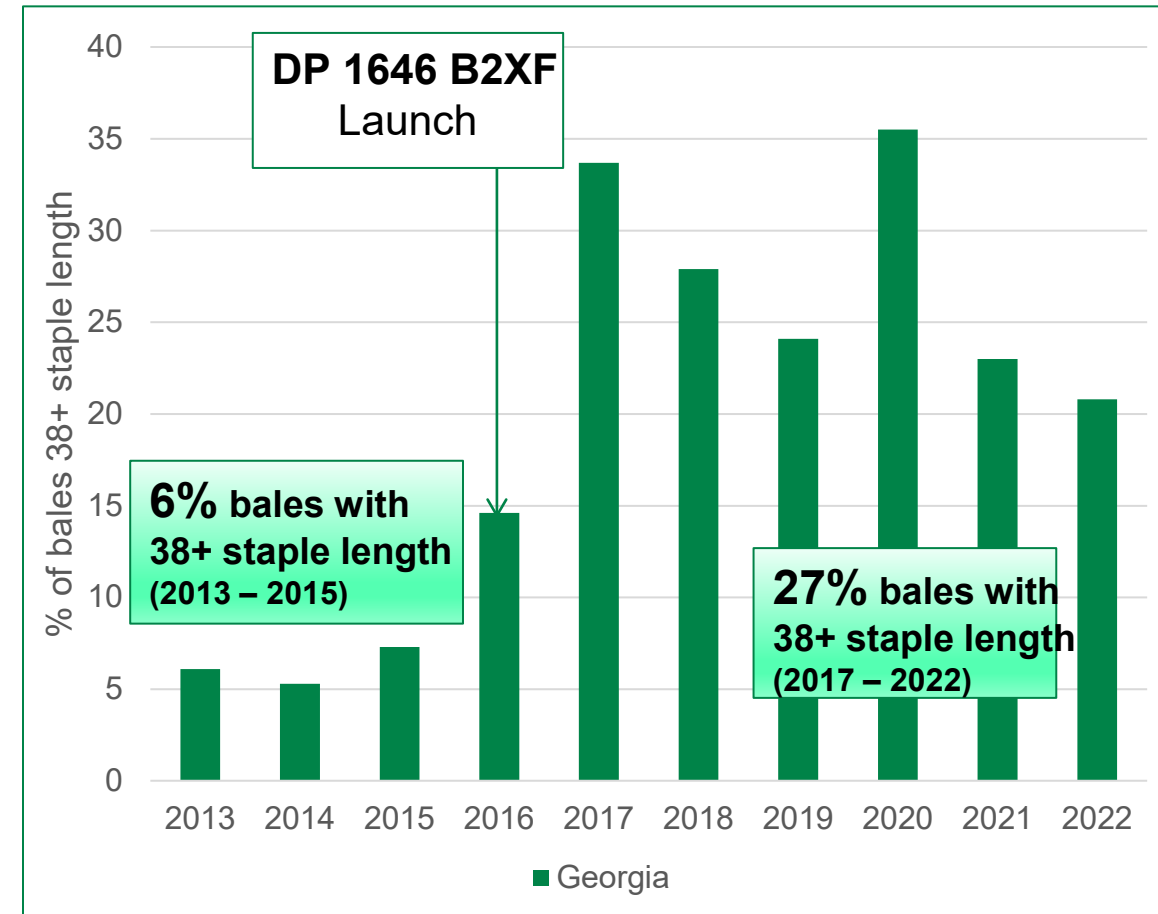
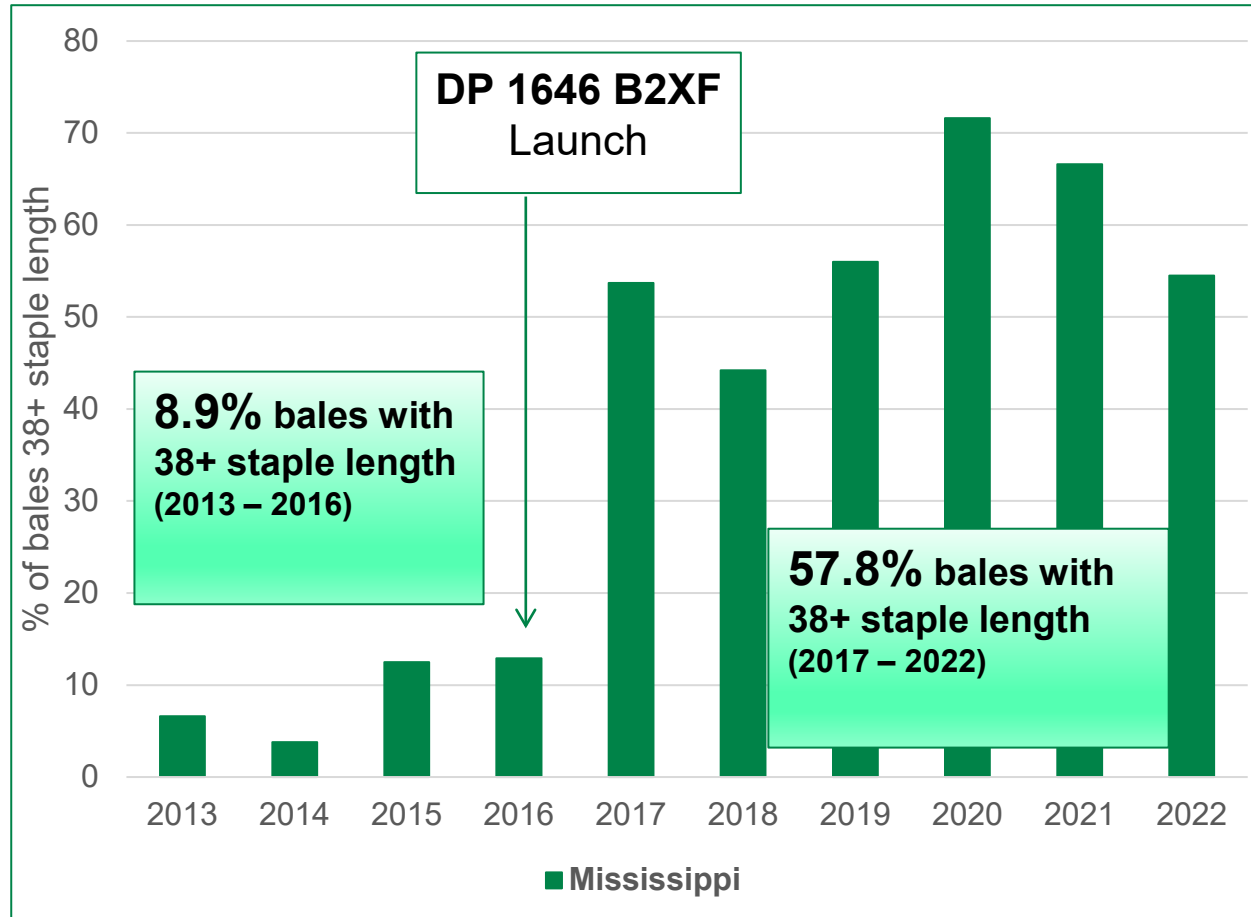
4.8 million bales per year

Extra ~ 24 million bales since 2016



Source: EFS® USCROP™ Software. Cotton Incorporated; summarizing the USDA –AMS HVI classing information for each US cotton crop – 2010 – 2022
 1985 to 2009 - USDA-AMS annual “Cotton Quality – United States” report [apps.ams.usda.gov - /Cotton/AnnualCNMarketNewsReports/Quality/](https://apps.ams.usda.gov/Cotton/AnnualCNMarketNewsReports/Quality/)

Percent of commercial bales with 38+ staple length in Mississippi and Georgia

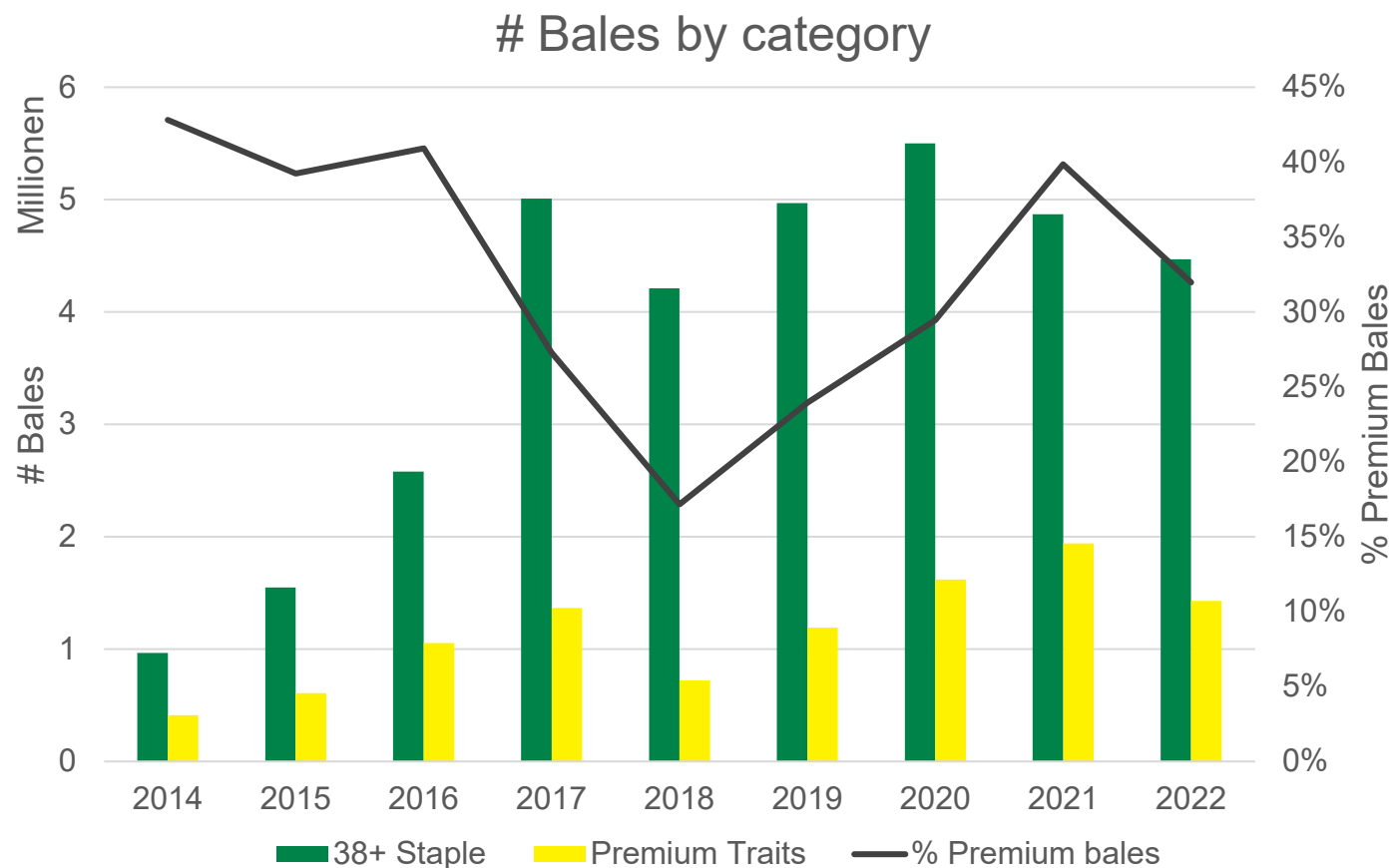


Source: Annual Quality of Cotton Classed Report, USDA-AMS; 2014 to 2023.

Bales with 38+ staple only vs. Bales with other premium fiber traits

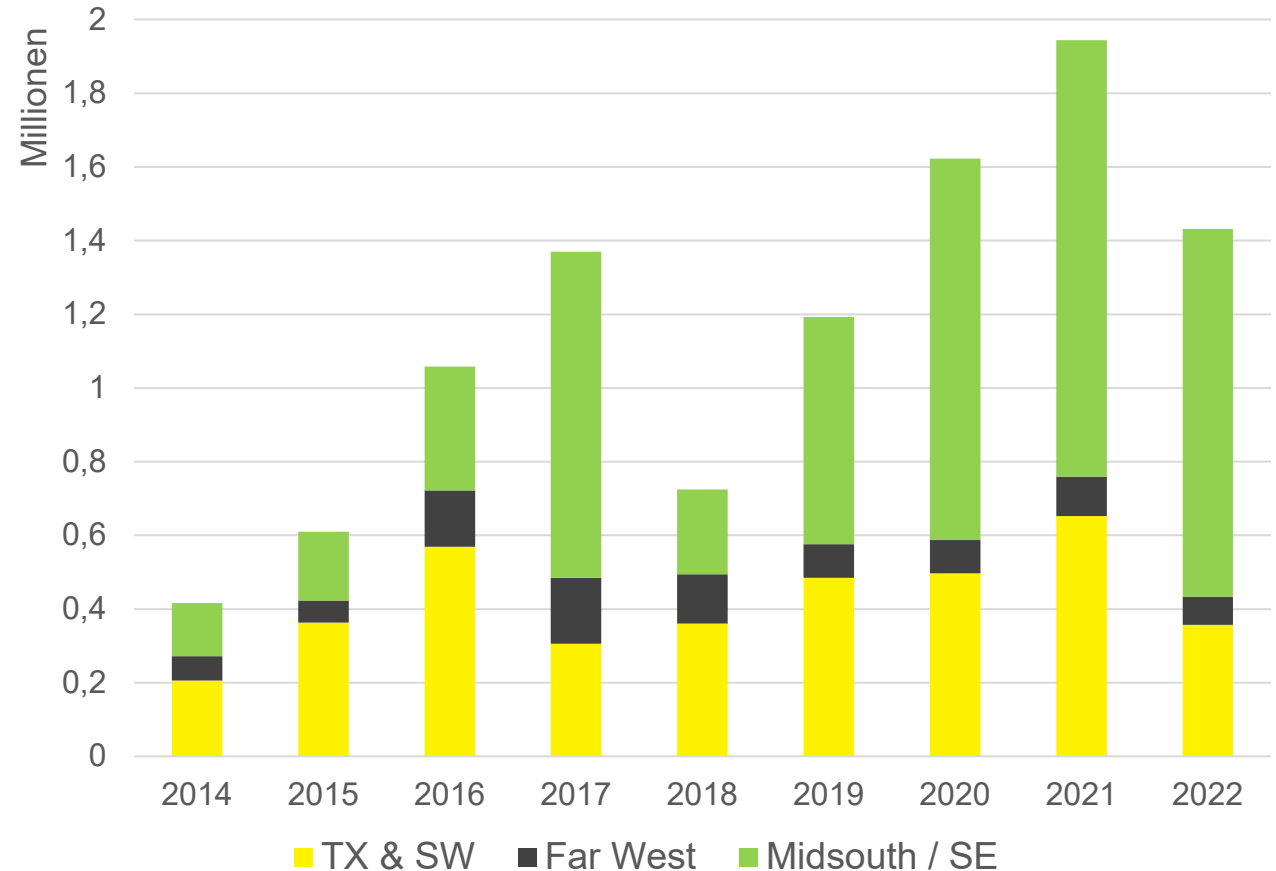
- Bales included:

- 38+ staple length
- Fiber Strength: 31 g/tex or stronger
- Micronaire = 3.5 to 4.5
- Classer color grade
 - 11, 12, 21, 22, 31, 32, 41, 42
- Leaf grade = 1 to 4



Bales with 38+ staple, and improved micronaire, strength, and color / leaf grades

- Bales included:
 - 38+ staple length
 - Fiber Strength: 31 g/tex or stronger
 - Micronaire = 3.5 to 4.5
 - Classer color grade
 - 11, 12, 21, 22, 31, 32, 41, 42
 - Leaf grade = 1 to 4



Impact on Spinning Quality

DP 1646 B2XF Spinning Study - 2016

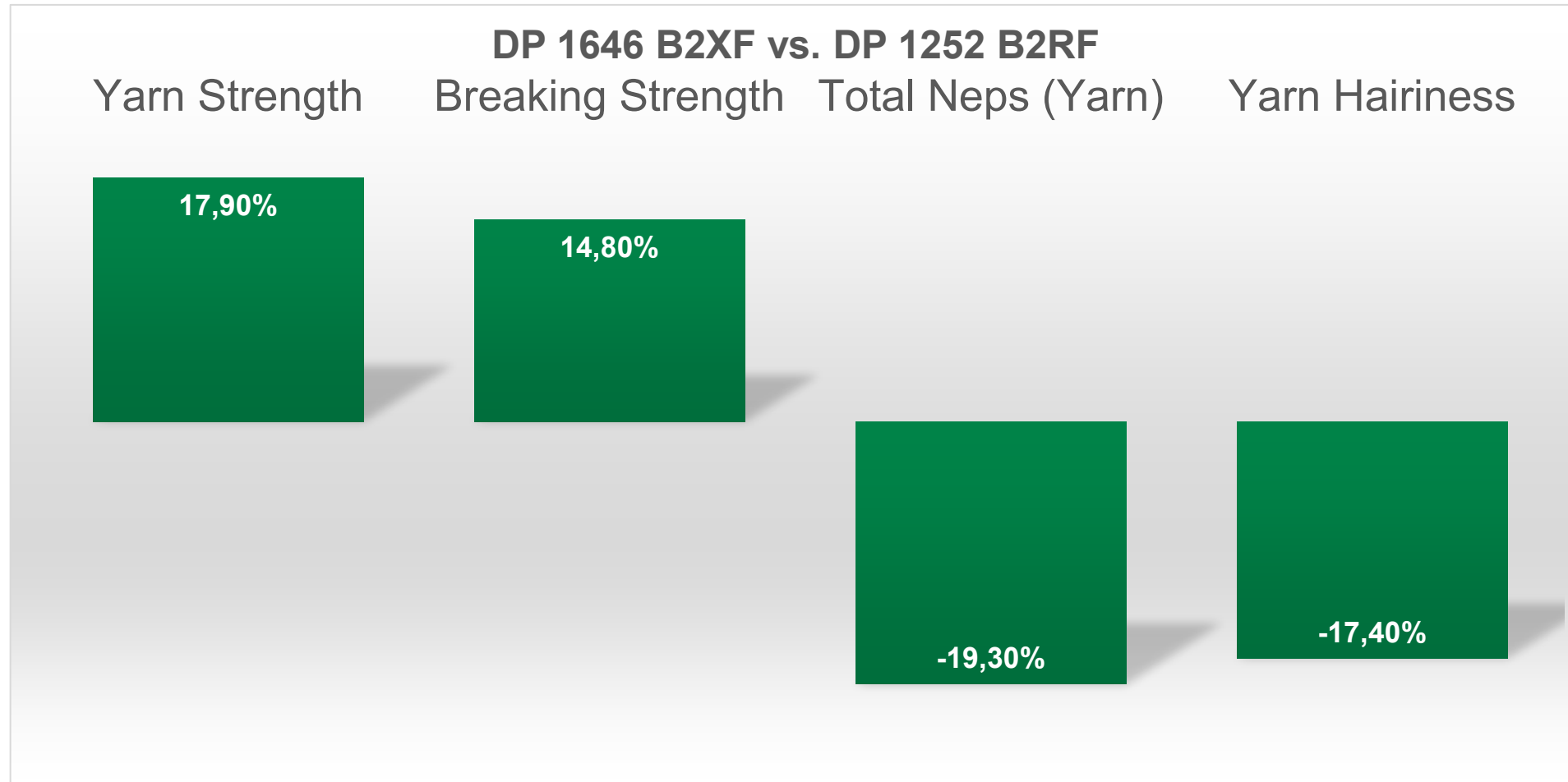
Average Yarn Report	Sample	DP 1646 B2XF - BALE 1	DP 1252 B2RF - BALE 2
Yarn Number	Ne	29.80	29.92
	Ne CV%	0.62	0.46
Twist	Twist [T/in]	19.81	19.73
	Twist CV %	3.17	3.17
	Twist Mult	3.55	3.56
Skein - Scott	Skein [lbs]	71.65	60.76
	Skein CV %	1.80	2.67
	Act. Break Fact	2135	1818
	Adj. Break Fact	2131	1816
Single End - UTR4	Brk Str. [g/f]	262.9	229.0
	Brk. CVo %	7.61	9.78
	Brk. Min	212.0	172.8
	RKM [g / Tex]	13.20	11.60
	Elo. [%]	6.12	5.97
	Elo. CVo %	6.76	8.20
	Elo. Min	4.49	4.48
	Evenness - UT5	CV %	17.91
CV % [10m]		2.35	2.51
Thin -50%		47.0	101.0
Thick +50%		602.0	757.0
Neps +200%		605.0	695.0
Total/ 1000m		1254	1553
Neps +280%		87.00	98.00
Hair-iness		5.83	6.03
SH		1.53	1.62
G567	Hair-iness S3	1609.2	1946.7

Summary – DP 1646 B2XF vs. DP 1252 B2RF

- Spun 30 count yarn
- Improved yarn strength
- Improved Yarn evenness
- Reduced Neps
- Reduced Hairiness

Bales – Both bales from NPE grower and gin in Colquitt County, GA in 2015

Yarn Properties Improvements: DP 1646 B2XF vs. Check Variety



Bales – Both bales from NPE grower and gin in Colquitt County, GA in 2015



Summary Comments

- U.S. Cotton quality has seen a consistent improvement in recent years
 - For example: DP 1646 B2XF set a new bar for fiber properties (primarily length) in the U.S. market
- The U.S. Crop has produced:
 - 4 to 5 million bales of 38+ staple (1.19 in) each season since 2017
 - 1 million+ bales of 38+ staple, 3.5 to 4.5 micronaire, 31+ g/tex strength, 42 or better color, leaf grade < 4 in 5 of the past 6 seasons (2017-2022)
 - Much of this increase is from Midsouth and Southeast region
- What is needed to continue this trend:
 - Breeding innovation and investment (public and private partnerships)
 - New “breakthrough” varieties with broad adaptation

Questions?