



When Extraneous Matter, Contamination & Maturity are Important For the Textile Chain

EXPERIENCE WITH THE CONTEST[®] CONTAMINATION TESTING

Cotton maturity and contamination tester



Blending



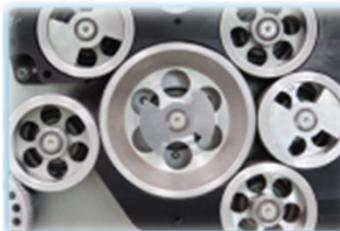
+

Double compression



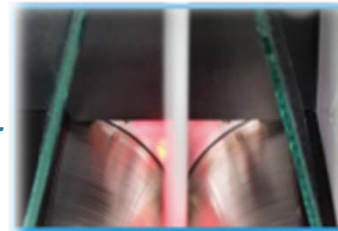
*Detailed and Reliable
Maturity*

Carding



+

10 m of Thin web

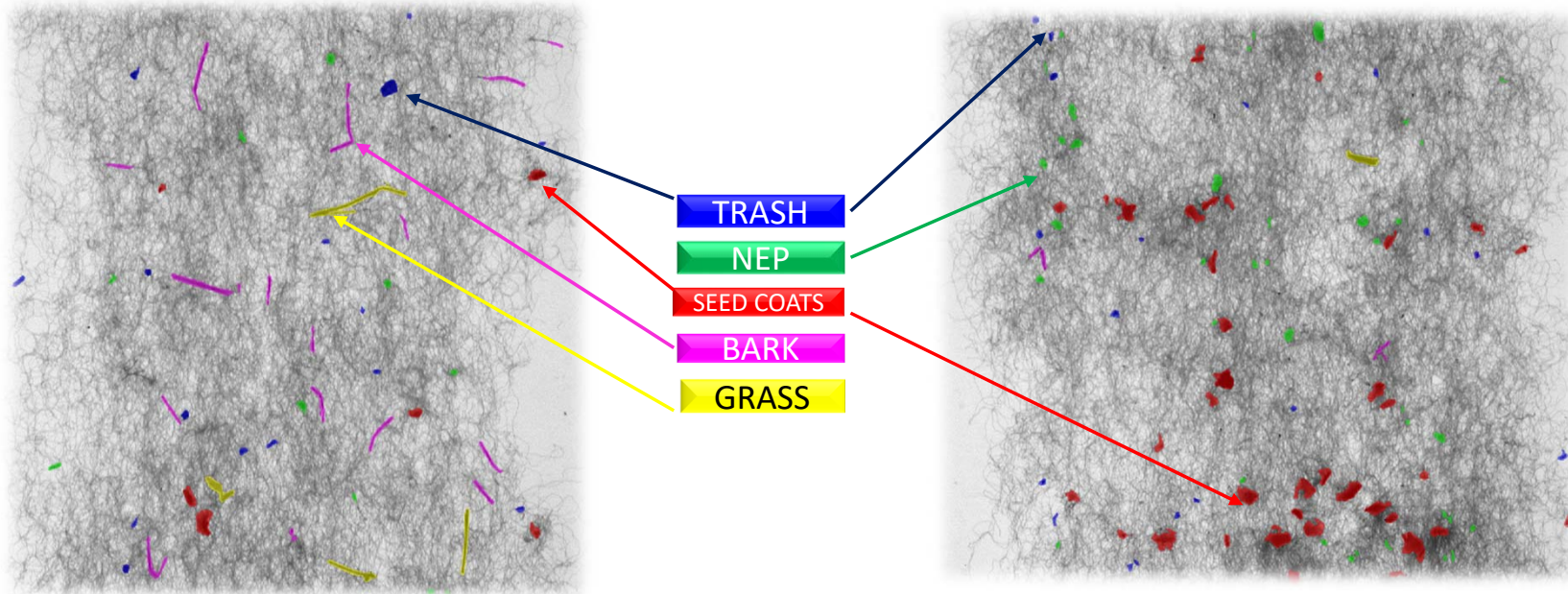


*Detailed
Extraneous Matter*



*Detailed and reliable
Stickiness*

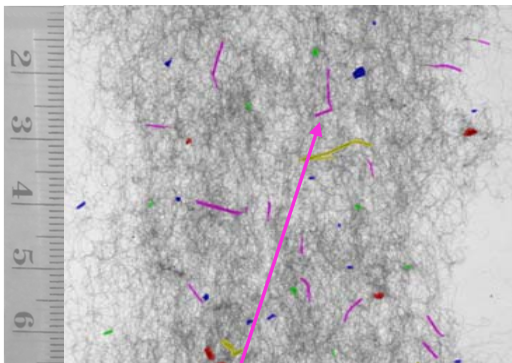
CONTEST® / FIBERMAP® PROVIDES THE MOST ADVANCED TESTING AND ANALYSIS OF **EXTRANEOUS MATTER**, DUE TO ITS NOVEL TECHNOLOGY BASED ON A **MACHINE LEARNING**



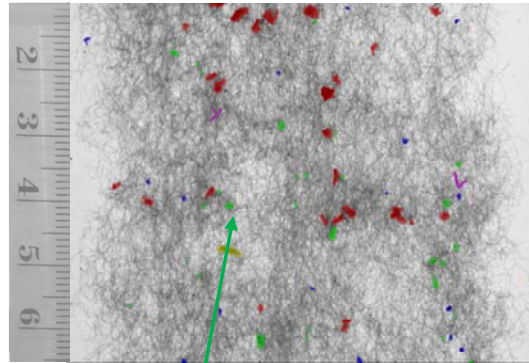


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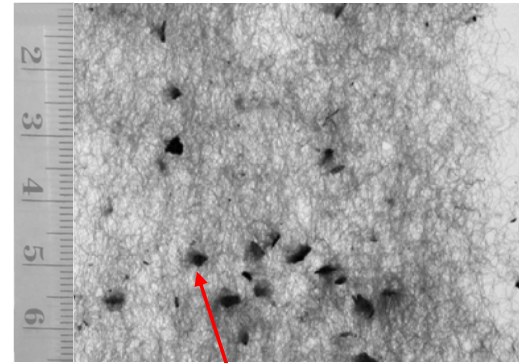
CONTEST® / FIBERMAP® NEW OPTICS AND ALGORITHM PROVIDES DATA AS A MASS TESTERS, (AN AVERAGE OF ~100 FRAMES IN 20"), WITH A VERY HIGH ACCURACY



BARKS

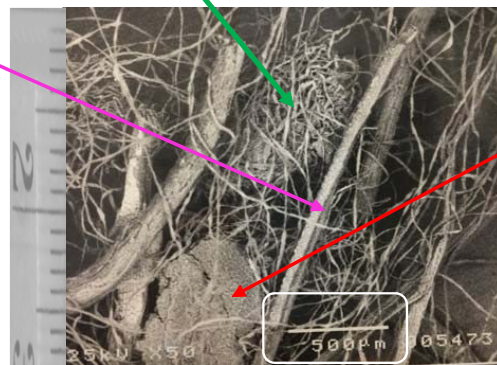
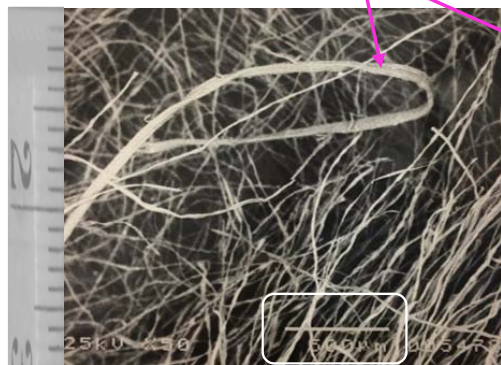


NEP



SEED COATS FRAGMENTS

**EXM AS SEEN BY
CONTEST® /
FIBERMAP®**



**EXM AS SEEN BY
ELECTRON
MICROSCOPE
(SEE SEED SURROUNDING BY FIBERS)**

**EXTRANEEOUS MATTER ARTIFICIALLY PLANTED ON THIN WEB
IN A TRANSPARENT PLEXIGLAS SLIDE FOR TESTING BY THE CONTEST® / FIBERMAP®**



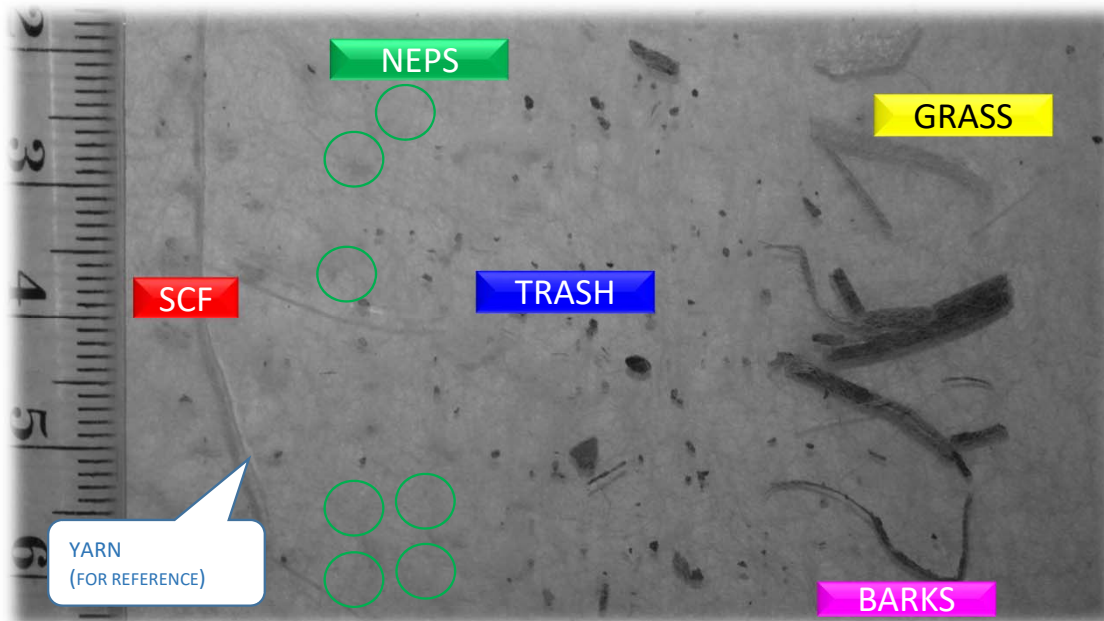
EXTRANEEOUS MATTER ON BLACK BACKGROUND



EXTRANEEOUS MATTER ON WHITE BACKGROUND

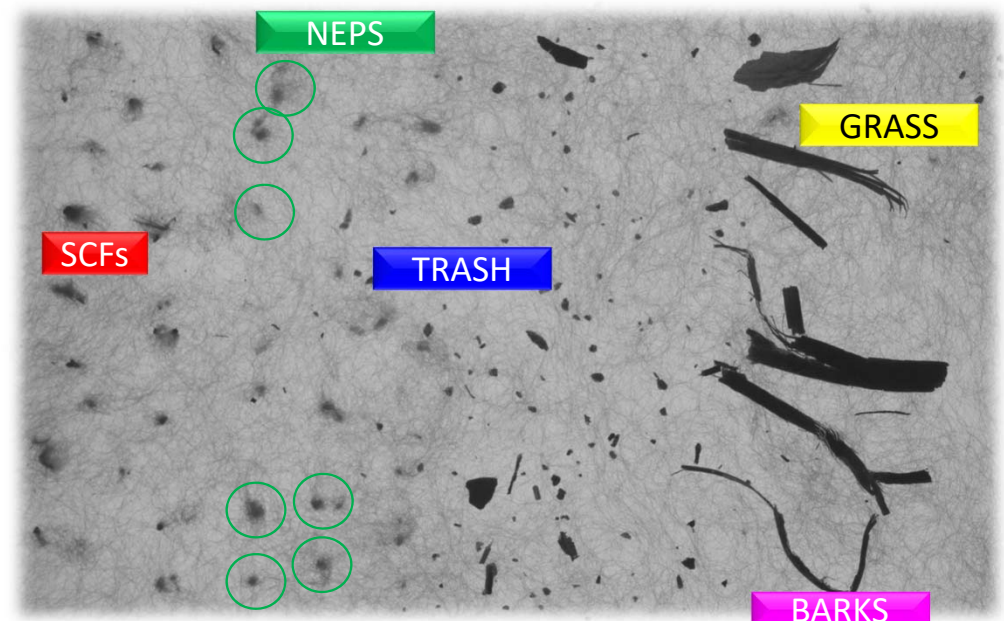
IT WAS CLEARLY EVIDENT THAT ALL EXTRANEEOUS MATTER ARE BETTER RECOGNIZED BY PRODUCING THIN WEB, USING BACK LIGHT AND HIGH RESOLUTION IMAGE ANALYSIS.

ARTIFICIAL SLIDE OF EXTRANEEOUS MATTER
FRONT LIGHT



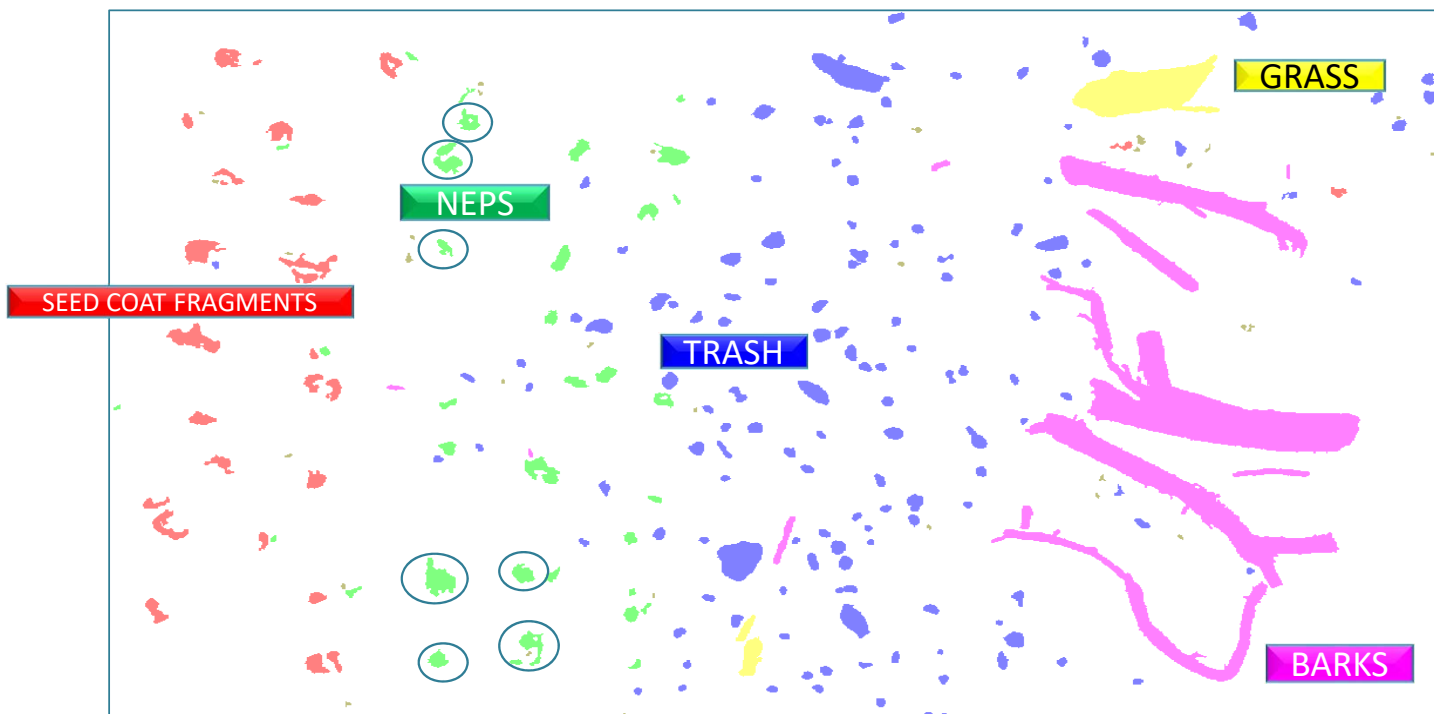
NEPS – ARE UNSEEN IN FRONT LIGHT (See above)

ARTIFICIAL SLIDE OF EXTRANEEOUS MATTER
BACK LIGHT



NEPS – ARE CLEARLY SEEN AND RECOGNIZABLE ON A FIBER WEB ILLUMINATED BY BACK LIGHT (see above)

**ARTIFICIAL SLIDE ILLUMINATED BY BACK LIGHT
SEGMENTATION BY MACHINE LEARNING ALGORITHM**



**NEPS – ARE CLEARLY SEEN AND
RECOGNIZABLE IN BACK LIGHT**

**BARKS AND GRASS ARE RECOGNIZABLE IN MASS TESTING
IN ADDITION TO THE PEPPER TRASH AND LEAF**



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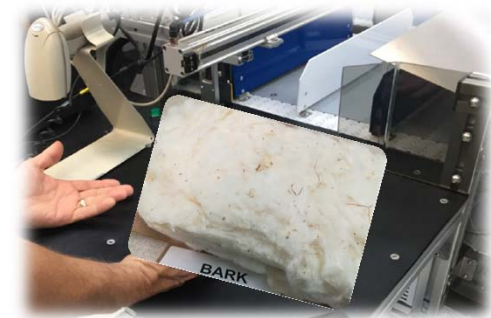
COTTON QUALITY CLASSIFICATION IS BASED ON 8 MEASUREMENTS :

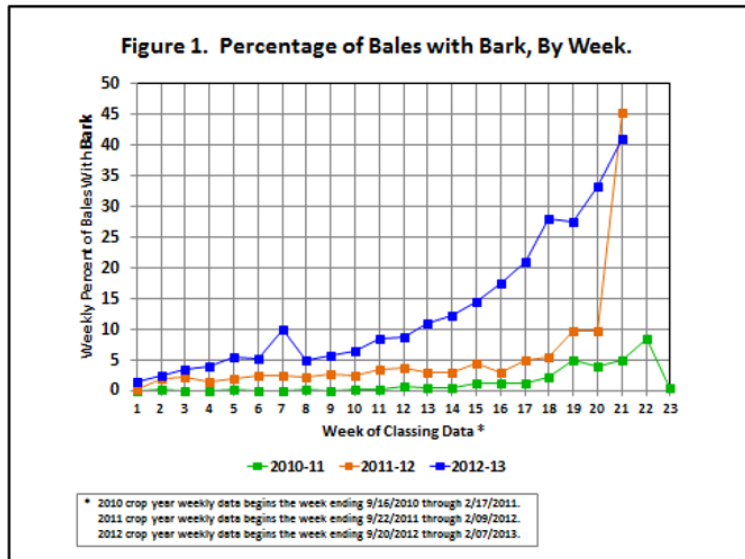
COLOR, LEAF, STAPLE, STRENGTH, MICRONAIRE, UNIFORMITY, TRASH (LEAF GRADE)

ALL ARE INCLUDED IN THE FIBERMAP®

USDA CLASSIFICATION ALSO INCLUDES EXTRANEEOUS MATTER (EXM), THE ONLY STILL MANUALLY CLASSED BY CLASSERS. EXM IS REPORTED IN A SEPARATE MEASUREMENT (EXM. LEVEL 1 LIGHT LEVEL, 2 IS HEAVIER BARK CONTAMINATION). (MADE BY SWIFT LOOK OF A CLASSER)

HOWEVER, EXTRANEEOUS MATTER AND NEPS (bark, grass, seed coat fragments, trash and fiber neps) ARE AUTOMATICALLY TESTED BY BOTH THE CONTEST® & FIBERMAP® IN 20" (100 FRAMES)



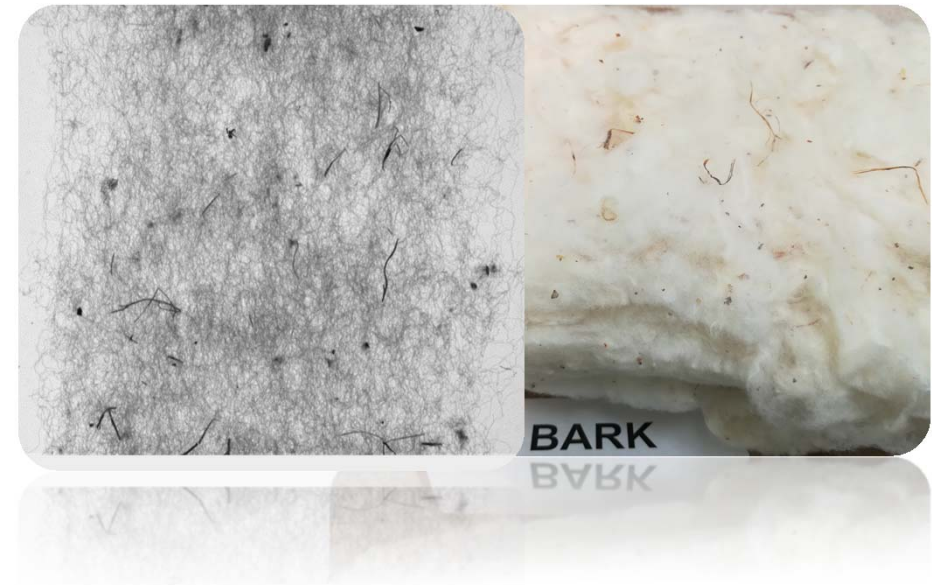


ANALYSIS OF EXTRANEEOUS MATTER (MAINLY FOR BARKS AND SEED COAT FRAGMENTS) SHOWS INCREASING TRENDS IN RECENT YEARS.

THIS PHENOMENON IMPACTS THE COTTON SUPPLY CHAIN (COTTON PRICE DISCOUNT, LOSS OF COTTON FIBER)

Source: The bark problem in 2012 Georgia cotton, an analysis of classing data
W. Don Shurley¹ and Guy Collins²,
(1) Department of Agriculture and applied economics (2) Crop and Soil sciences

MASS TESTING OF BARKS, AS DONE BY CONTEST[®] HELPS TO UNDERSTAND BETTER THE NATURE AND THE LEVEL OF EXTRANEEOUS MATTER.





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CONTEST® RESULTS OF BARKS & GRASS IN 2017

COMPLIES THE USDA BARKS LEVEL TRACE, 1&2 AND CAN BE AUTOMATICALLY GRADED IN THE FUTURE.

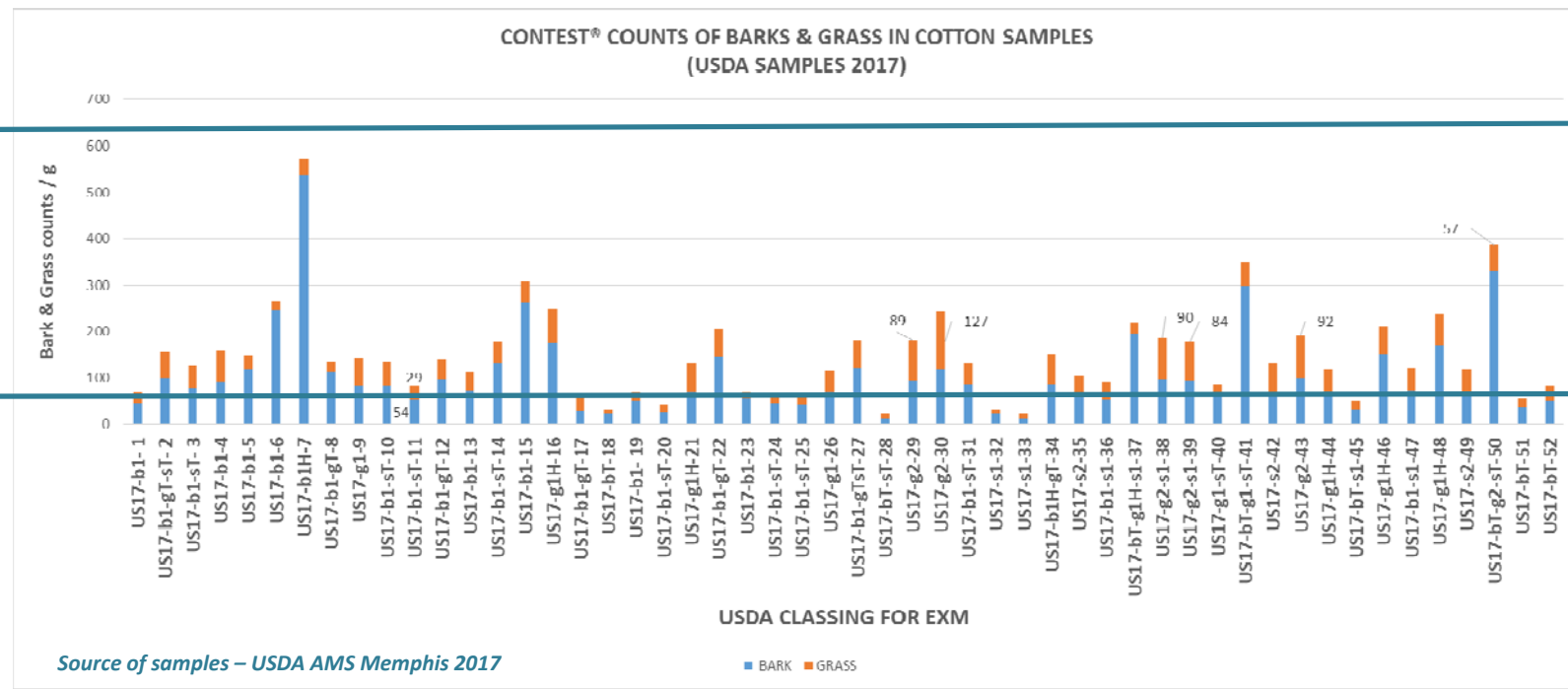
USDA Bark/grass level 2 > 650

Possible Threshold Barks & Grass

USDA Bark/grass level 1 > 80 < 650

Possible Threshold Barks & Grass

USDA Bark/grass level trace < 80



b-bark level : T(trace) 1H(high) ,2
 g-grass level : T(trace) 1,2
 s- SCF level : T(trace) 1,2



CONTEST® RESULTS OF SEED COAT FRAGMENTS OF DIFFERENT LEVELS (2017)

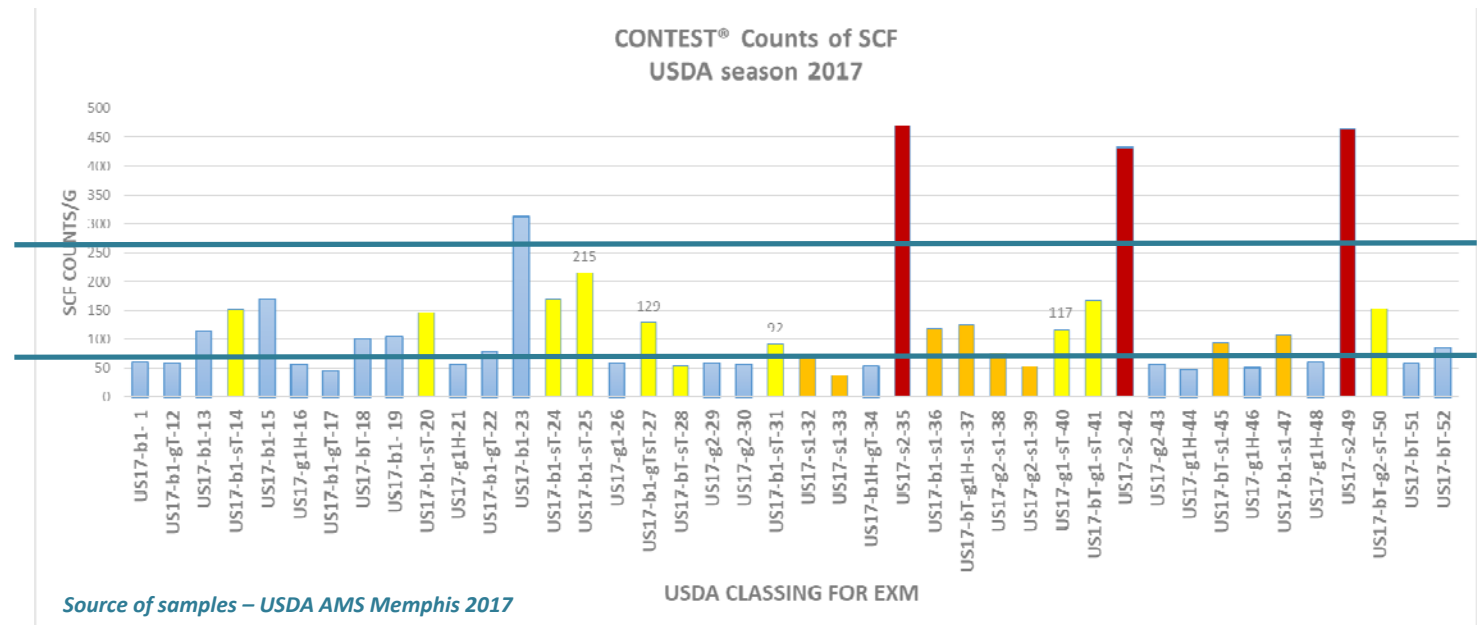
USDA SCF level 2 > 250

Possible Threshold SCF

USDA SCF level Trace & 1 > 80 < 250

Possible Threshold SCF

- SCF no level for SCF
- SCF level: T(trace)
- SCF level: 1
- SCF level: 2





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SUMMARY :

- **EXTRANEEOUS MATTER IN COTTON IS A KNOWN AND INCREASING PROBLEM AND IS THE ONLY COTTON QUALITY ATTRIBUTES THAT STILL MANUALLY CLASSSED.**
- **BY CONTEST® / FIBERMAP® NEW HIGH RESOLUTION OPTICS, EXTRANEEOUS MATTER ATTRIBUTES BECAME TRACEABLE PARAMETERS THAT CAN REPLACE MANUAL CLASSING.**
- **NEW AND STATE OF THE ART MACHINE LEARNING ALGORITHM OF NEPS, LEAF AND EXTRANEEOUS MATTER ARE ALREADY INTEGRATED IN BOTH THE CONTEST® / FIBERMAP® INSTRUMENTS.**
- **THRESHOLDS FOR ALL ATTRIBUTES OF EXM CAN BE DEFINED BY THE TEXTILE COMMUNITY TO ENABLE BETTER COMMUNICATION BETWEEN PRODUCERS AND SPINNERS REGARDING EXM AND NEPS.**
- **CONTEST® & FIBERMAP® ARE HIGH SPEED INSTRUMENTS THAT CAN BE USED BY SPINNERS NOT ONLY FOR PROCESS CONTROL BUT ALSO FOR LAYOUT SELECTION FOR NEPS, BARKS & GRASS AND SEED COAT FRAGMENTS.**





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***THANK YOU
ALL FOR
YOUR
ATTENTION.***