COTTON DISEASE LOSS ESTIMATE COMMITTEE REPORT, 2018

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Abstract

The National Cotton Council Disease Loss committee submitted estimates of the losses due to each disease during the 2018 growing season across the United States cotton belt. Multiple cotton researchers and extension specialists report disease incidence estimates observed within each respective state and have done so since 1952. Yield losses, in total bales lost to each disease indicated in the table below, are calculated using the USDA "Crop Production" published at https://downloads.usda.library.cornell.edu/usda-esmis/files/tm70mv177/r781wm151/vm40xw490/crop1218.pdf, which documents cotton acreage planted, harvested, and average yield by state. Cotton acreage is expected to total 18.6 million 480- pound bales, which is an 11% reduction from 2017. Cotton yields are currently reported to average 860 pounds per acre, which is a slight decrease of 45 pounds or 5 % from 2017. Alabama, Arkansas, Missouri, Oklahoma, and Tennessee reported increased cotton acres harvested between 2017 and 2018, an increase of approximately 1.6% in acres harvested from the five states.

Estimates of the total cotton disease losses were down by 2.9% between 2017 and estimated at 8.8 % in 2018. Plant parasitic nematodes as a group (reniform nematode, root-knot nematode, and other nematodes) were responsible for the largest average percent loss estimated at 4.1% followed by boll rot, attributed to numerous fungal and bacterial pathogens at 1.8% and Verticillium wilt at 1.2% disease losses. Georgia, Florida, and South Carolina suffered the greatest estimated total disease losses of 19.1, 17.8 and 15.7%, respectively. The southeastern U.S. suffered severe weather as a result of Hurricane Michael crossing these states in October. Florida and Georgia lost harvestable cotton due to hurricane wind damage, delays in harvest due to excessive moisture, and subsequent boll rots; however, other states also suffered losses because of hurricane damage. Georgia indicated their season started extremely wet, which resulted in increased incidence of seedling disease. The foliar pathogens that plagued the Gulf Coast and adjacent states included Target spot, Areolate mildew and Stemphylium leaf spot. In 2018, Alabama working with Arizona also identified a new cotton virus, *Cotton leafroll dwarf-like virus* (CLRDV) present in Alabama, which had not previously been detected in the USA. Cotton virus category was added to the disease loss estimates to facilitate monitoring the spread of viruses in an attempt to capture the subsequent yield effects.

Table 1. Cotton disease loss estimates for the 2018 season.																		
Percent disease loss estimates	AL	AZ	AR	CA	FL	GA	LA	MS	MO	NM	NC	OK	SC	TN	TX	VA	Bales lost	% Bales lost
Fusarium Wilt (*F.o. vasinfectum*)	0.1	0.0	0.3	2.2	0.1	0.2	0.0	0.0	0.1	0.0	0.0	0	0.3	0.0	0.1	0.0		
Bales lost to Fusarium (x 1,000)	0.9	0.0	3.5	4.3	0.1	3.8	0.0	0.0	0.9	0.0	0.1	0.0	1.1	0.0	7.0	0.0	**21.7**	**0.12**
Verticillium Wilt (*V. dahliae*)	0.5	1.5	0.0	0.3	0.0	0.0	0.0	0.0	0.5	1.0	0.0	2	0.0	0.5	2.5	0.0		
Bales lost to Verticillium (x 1,000)	4.3	6.8	0.0	0.6	0.0	0.0	0.0	0.0	4.3	1.4	0.1	16.0	0.0	3.8	175.0	0.0	**212.3**	**1.21**
Bacterial Blight (*X. malvacearum*)	T	0.0	0.1	0.0	T	0.1	0.1	0.1	0.1	0.2	0.0	0	0.1	0.0	0.1	0.0		
Bales lost to Xanthomonas (x 1,000)	0.0	0.0	1.2	0.0	0.0	1.9	0.4	1.5	0.9	0.3	0.0	0.0	0.2	0.1	7.0	0.0	**13.4**	**0.08**
Root Rot (*P. omnivora*)	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0		
Bales lost to Phymatotrichopsis (x 1,000)	0.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	7.0	0.0	**17.6**	**0.10**
Seedling Diseases (*Rhizoctonia* & Etc.)	2.0	2.0	2.5	1.0	1.0	1.0	0.5	0.4	2.5	0.5	2.5	0	0.5	2.0	0.2	3.0		
Bales lost to Seedling disease (x 1,000)	17.3	9.0	29.0	2.0	1.3	19.0	2.1	5.9	21.3	0.7	17.3	0.0	2.3	15.3	14.0	5.9	**162.1**	**0.93**
Ascochyta Blight (*A. gossypii*)	0.0	0.0	0.0	0.0	0.5	0.0	0.1	0.0	0.0	0.0	0.5	0	0.0	0.0	0.0	0.5		
Bales lost to Ascochyta (x 1,000)	0.0	0.0	0.0	0.0	0.6	0.0	0.4	0.0	0.0	0.0	3.5	0.0	0.0	0.0	0.0	1.0	**5.5**	**0.03**
Boll Rots (*Rhizopus*, etc.)	3.0	0.1	1.0	0.0	5.0	7.0	1.0	1.2	1.0	0.0	1.0	1	5.0	4.0	0.5	3.0		
Bales lost to Rhizopus (x 1,000)	26.0	0.5	11.6	0.0	6.3	133.0	4.1	17.8	8.5	0.0	6.9	8.0	22.5	30.6	35.0	5.9	**316.5**	**1.81**
Nematodes (All)	5.0	3.0	4.5	0.1	9.5	8.0	6.0	5.0	4.3	0.5	4.0	0.1	9.5	2.6	3.1	4.0		
Bales lost to Nematodes (x 1,000)	43.3	13.5	52.2	0.2	11.9	152.0	24.6	74.0	36.6	0.7	27.6	0.8	42.8	19.9	217.0	7.8	**724.7**	**4.15**
Nematodes (*Meloidogyne* spp.)	2.0	3.0	2.3	0.1	**7.0**	7.0	3.0	2.8	2.0	0.5	3.0	0.1	4.5	0.1	2.4	2.0		
Bales lost to Meloidogyne (x 1,000)	17.3	13.5	26.7	0.2	8.8	133.0	12.3	41.4	17.0	0.7	20.7	0.8	20.3	0.8	168.0	3.9	**485.3**	**2.78**
Nematodes (*Rotylenchulus reniformis*)	3.0	0.0	2.1	0.0	2.0	0.5	3.0	2.2	2.0	0.0	0.5	0	2.0	2.5	0.7	0.0		
Bales lost to Reniform (x 1,000)	26.0	0.0	24.4	0.0	2.5	9.5	12.3	32.6	17.0	0.0	3.5	0.0	9.0	19.1	49.0	0.0	**204.7**	**1.17**
Nematodes (Other spp.)	0.1	0.0	0.1	0.0	0.5	0.5	0.0	0.0	0.1	0.0	0.5	0	3.0	0.0	0.0	2.0		
Bales lost to other Nematodes (x 1,000)	0.9	0.0	1.2	0.0	0.6	9.5	0.0	0.0	0.9	0.0	3.5	0.0	13.5	0.0	0.0	3.9	**33.9**	**0.19**
LeafSpots & Others	0.5	0.5	0.1	0.0	3.0	1.5	0.3	0.4	0.2	0.2	1.0	0.4	0.3	0.2	0.1	0.5		
Bales lost to Leafspots & Others (x 1,000)	4.3	2.3	1.2	0.0	3.8	28.5	1.2	5.9	1.7	0.3	6.9	3.2	1.4	1.5	7.0	1.0	**70.1**	**0.40**
Cotton viruses	1.0	0.1	0.0	0.0	T	T	0.0	T	0.0	0.0	0.0	0	0.1	0.0	0.0	0.0		
Bales lost to CLRDV & Others (x 1,000)	8.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	**9.6**	**0.05**
Total Percent Lost	**12.2**	**9.2**	**8.5**	**3.6**	**19.1**	**17.8**	**8.0**	**7.1**	**8.5**	**2.4**	**9.0**	**3.7**	**15.7**	**9.3**	**6.7**	**11.0**		
Total Bales Lost (x 1,000)	**105.5**	**41.4**	**98.6**	**7.0**	**23.9**	**338.2**	**32.8**	**105.1**	**72.3**	**3.4**	**62.4**	**29.6**	**70.7**	**71.2**	**469.0**	**21.5**	**1552.4**	**8.88**
Dec'18)	**865**	**450**	**1160**	**195**	**125**	**1900**	**410**	**1480**	**850**	**140**	**690**	**800**	**450**	**765**	**7000**	**195**	**17475.0**	