

Soybean Disease Loss Estimate for Southern United States in 1987

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The Disease Loss Estimate Committee of the Southern Soybean Disease Workers compiles estimates of disease loss in soybeans for the southern United States. This record serves as the official disease loss statement for the production year. The estimates are solicited annually from personnel of the Cooperative Extension Service and experiment stations in each southern state. The loss estimates were derived from IPM field monitoring programs; regional trials for seedling, nematode, and foliar disease control; field observations; laboratory

diagnoses; grower demonstrations; and diagnostic clinic records.

The loss estimates for each state listed in Table 1 are based on the percent loss of what yields would have been had there been no disease present. The actual production figures for each state were supplied by the state crop reporting service.

In 1987 in the United States, 1,904,712,000 bu of soybeans were harvested from 56,437,000 acres (33.7 bu/acre). The southern states produced 25.6% (488,329,000 bu) of the nation's soybeans on 34.7% (19,600,000 acres) of the harvested acreage (24.9 bu/acre).

In 1987, the estimated disease loss for

the southern states was 12.8%. The estimated disease losses for the individual southern state ranged from 4.3% (Georgia) to 45% (Florida). An estimated 75.33 million bushels of soybean yield were lost to disease. This loss was valued at \$414.3 million. Losses were attributed to seedling diseases (5%), root and lower stem rots (22%), nematodes (32%), foliar and stem diseases (38%), and virus and other diseases (3%). Obviously, soybean diseases are important and continue to limit soybean production in the southern states. Expanded efforts are needed to provide more effective and economical control practices for these known disease problems.

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Table 1. Estimated loss of soybean yields in 1987 to disease in 16 southern states

Disease	Percent loss for state																Avg. ^a
	AL	AR	DE	FL	GA	KY	LA	MD	MS	MO	NC	OK	SC	TN	TX	VA	
Seedling diseases	TR ^b	2.5	TR	10.0	0.04	0.8	1.0	0.0	0.58	TR	0.1	0.5	0.2	0.75	0.5	0.2	1.08
Root and stem rots	TR	1.5	0.05	20.0	0.05	0.3	3.0	0.0	6.9	4.0	1.0	2.0	1.5	4.0	0.2	0.7	2.82
Diaporthe pod and stem blight	2.0	1.5	0.05	2.0	0.05	0.1	2.0	TR	4.01	2.0	0.1	5.0	1.0	0.01	0.5	1.0	1.33
Stem canker	TR	0.5	TR	TR	0.02	TR	3.0	0.0	1.55	0.0	TR	0.0	0.1	2.0	3.0	0.0	0.63
Anthraxnose	2.5	0.5	TR	2.0	0.05	0.3	1.0	0.0	0.83	2.0	TR	2.0	1.25	1.0	1.0	0.1	0.91
Downy mildew	TR	TR	0.0	TR	0.0	TR	TR	0.0	TR	0.0	TR	0.0	0.2	0.0	0.0	TR	0.01
Cercospora leaf blight and purple seed stain	TR	0.5	TR	1.0	0.02	TR	TR	0.0	2.81	TR	0.1	1.0	0.3	0.02	0.1	0.2	0.38
Brown leaf spot	0.5	1.0	0.0	TR	0.0	1.4	TR	0.0	TR	0.0	0.2	0.0	0.1	1.5	0.1	0.1	0.31
Bacterial diseases	0.1	0.5	0.0	TR	0.0	TR	TR	0.0	TR	TR	0.0	0.0	0.1	0.0	0.0	TR	0.04
Foliar diseases—others	0.0	4.0	0.0	0.0	0.08	TR	1.5	0.0	1.92	TR	0.0	0.0	0.25	0.05	0.3	0.0	0.50
Soybean cyst nematode	4.0	4.0	3.0	1.0	1.0	4.0	2.5	3.0	0.29	4.0	5.0	0.5	4.5	3.0	0.01	2.0	2.61
Root-knot nematodes and ectoparasitic species	2.5	1.0	2.0	9.0	3.0	0.0	2.5	1.5	0.27	TR	2.0	0.0	5.5	0.30	0.01	1.0	1.91
Virus diseases	TR	TR	0.02	TR	0.0	0.1	TR	0.0	TR	1.0	1.0	0.0	0.25	0.0	0.0	0.2	0.16
Other diseases	TR	0.0	0.0	0.0	0.0	0.2 ^c	TR	0.0	TR	TR ^c	0.0	0.5	0.0	0.51	0.01	0.0	0.07
Total percent loss	11.6	17.5	5.12	45.0	4.31	7.2	16.50	4.5	19.16	13.0	9.5	11.5	15.25	13.14	5.27	5.5	12.78
Average yield (bu/A)	20	22	18	24	21	28	24	22.5	19.5	33.0	24	30	19	24	28	22	
Loss (bu/A) ^d	2.6	4.6	0.8	18.9	1.1	2.1	6.0	1.0	7.0	4.9	2.5	4.1	3.5	3.7	1.3	1.4	Total
Acres ($\times 10^6$)	0.5	3.35	0.235	0.095	0.8	1.02	1.66	0.41	2.45	4.9	1.3	0.22	0.75	1.2	0.15	0.56	19.6×10^6
Total yield loss (bu $\times 10^6$) ^d	1.3	15.4	0.2	1.8	0.7	2.2	7.7	0.4	9.1	23.9	3.2	0.9	2.6	4.4	0.2	0.8	75.3×10^6 bu
Total dollar loss ($\times 10^6$) ^{d,e}	7.2	85.9	1.2	10.2	4.1	12.1	42.4	2.4	50.3	131.6	17.9	4.7	14.1	24.0	1.3	4.2	$\$414.3 \times 10^6$

^a Based on percent disease weighted by acreage for each state.

^b TR = trace.

^c Sudden death syndrome (SDS).

^d Rounding errors present.

^e Based on \$5.50/bu.