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ESTIMATES OF DAMAGE TO CORN BY THE EUROPEAN CORN BORER IN 1942

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Loss to the 1942 corn crop in the northeastern part of the United States as a result of infestation by the European corn borer (*Pyrausta nubilalis* (Hbn.)) was the highest on record in this country. Weather conditions in general were so favorable for corn in 1942, however, that much of the damage was not apparent and a considerable portion of the total loss was traceable to the effect of moderate populations of the insect in vast acreages of corn in the eastern part of the Corn Belt. The estimated amount of damage in 1942 in 308 counties, comprising most of the heavily populated sections in the infested area plus recently infested counties and critical counties in which continuity of annual data is desirable, involving a corn production valued at approximately \$478,000,000, was slightly over \$17,000,000. This estimate is believed to include at least 90 percent of the total loss caused by the corn borer during the 1942 season.

The 1942 estimates were made by the same procedure used in the preparation of similar estimates in previous years, as follows: (1) Established damage indices of 3-, 5-, and 8-percent loss per borer per plant, in corn for grain, canning sweet corn, and market sweet corn, respectively, were applied to populations of the insect found in each county surveyed in the fall of 1942 to obtain percentages of loss in the types of corn represented. (2) Values of the corn crop in each county were estimated, and the money loss caused by the borer was calculated by applying to them the estimated percentages of loss. To obtain these values, data on corn production and current market prices were taken from the 16th Agricultural Census (1940), from reports of the Bureau of Agricultural Economics and the Agricultural Marketing Administration of the U. S. Department of Agriculture, and from various State and city organizations which generously supplied information. The 1942 quotations used for corn harvested for grain were preliminary. In the case of sweet corn, an effort was made to evaluate the crop on the basis of the proportion used for

market and canning purposes in the various counties surveyed within named States. (3) The county data were combined to show the money loss of corn for grain and of sweet corn, for each State and for the surveyed area as a whole.

In Table 1 are presented the data on the estimated value of the corn crop and the losses caused by the European corn borer in 1942 within the counties surveyed in each and all of the 18 States. These damage estimates were prepared on the basis of 10,815,767 acres of corn harvested for grain, with an estimated crop value of \$458,924,211, and 229,966 acres of sweet corn, with an estimated crop value of \$18,963,042. The combined acreage of grain and sweet corn was 11,045,733, and the estimated crop value of both totaled \$477,887,253. The estimated total loss caused by the European corn borer to the corn crop in the area surveyed in 1942 was \$17,029,076. Of this amount, 89.3 percent, or \$15,211,895, occurred in corn harvested for grain, and 10.7 percent, or \$1,817,181, in sweet corn. About 90 percent of the total loss in grain corn occurred in the three States of Ohio, Indiana, and Illinois.

Table 1.--Estimates of damage by the European corn borer to corn harvested for grain, and to sweet corn, in the 308 counties surveyed in 1942 of the 651 counties known to be infested

State	Corn harvested for grain			Sweet corn			Total estimated loss of crop value
	Number of counties	Extent of area surveyed	Estimated value of crop	Number of counties	Extent of area surveyed	Estimated value of crop	
		Acreage	Dollars		Acreage	Dollars	Dollars
Connecticut	8	8,350	356,048	9,013	3,275	602,600	49,189
Delaware	3	134,850	3,309,776	113,424	3,573	195,848	13,520
Illinois	24	3,193,378	148,904,828	3,518,325	61,956	3,459,464	307,746
Indiana	78	3,605,195	151,707,202	8,533,831	28,201	1,673,707	214,624
Maine	13	4,381	178,564	159	8,225	752,278	1,261
Maryland	9	197,385	4,986,234	77,767	9,922	354,703	8,672
Massachusetts	7	6,126	250,214	1,490	4,691	713,032	12,021
Michigan	18	543,570	18,463,570	224,591	7,857	1,131,408	59,749
New Hampshire	9	3,106	129,397	609	1,222	185,744	1,167
New Jersey	19	123,637	4,341,421	166,667	20,450	3,208,200	502,776
New York	20	92,487	3,295,425	122,156	25,945	2,756,886	308,201
North Carolina	3	50,001	1,369,375	22,397	392	53,312	1,553
Ohio	39	2,013,728	90,324,630	1,677,636	15,210	1,284,659	53,540
Pennsylvania	22	583,387	23,228,331	599,512	16,527	1,728,888	264,624
Rhode Island	4	1,655	45,283	961	759	115,368	4,623
Vermont	14	7,347	271,979	1,776	1,492	100,824	1,169
Virginia	9	143,643	4,380,654	118,293	582	79,152	5,837
Wisconsin	9	103,541	3,371,280	23,288	19,687	566,969	6,909
Total	308	10,815,767	458,924,211	15,211,895	229,966	18,963,042	1,817,181

