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THE PLANT DISEASE BULLETIN

Issued By

THE PLANT DISEASE SURVEY

SUPPLEMENT 18

Crop Losses from Plant Diseases in the United States in 1920

July 1, 1921

BUREAU OF PLANT INDUSTRY

UNITED STATES DEPARTMENT OF AGRICULTURE

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PLANT DISEASE SURVEY

1920

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CROP LOSSES FROM PLANT DISEASES IN THE UNITED STATES

IN 1920.

Supplement 18.

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CONTENTS

Tables showing disease losses by states for the following crops:

Wheat	318	Corn	326	Cotton	334
Rye.....	320	Potato.....	328	Peach.....	335
Barley.....	322	Sweet potato.....	332	Apple.....	336
Oats.....	324	Dry beans.....	333	Tomato.....	338

Foreword

In preparing the 1920 crop loss estimates the usual sources of information were utilized and the same methods followed as in 1918 and 1919. The symbols adopted last year also have been employed and a condensed key to these is given here. (For more detailed explanation see Pl. Dis. Bul. Suppl. 12: 308, 1920).

- = No data.	* = Occurrence.
t = Trace, less than 1%.	*- = Occurrence, no data as to loss.
+ = Loss occurred but amount not known.	*0 = Occurrence, but no loss.

Crop losses from plant diseases in 1920.

Although the loss to the cereal crops was not so great in 1920 as in 1919, the toll taken by diseases of other crops, such as potatoes, beans, peaches, and apples, was in excess of that taken in 1919, so that the total disease losses for the eleven crops listed here average about the same for the two years.

The following table gives a comparison of the estimated total disease losses of the years 1919 and 1920.

Table 107. Estimated losses to eleven crops from plant diseases in 1919 and 1920.

Crop	1920		1919		Crop	1920		1919	
	%	Bushels	%	Bushels		%	Bushels	%	Bushels
	loss	loss (000)	loss	loss (000)		loss	loss (000)	loss	loss (000)
	omitted		omitted			omitted		omitted	
Wheat	11.7	104,129	16.96	192,275	Sweet potato	25.8	39,150	36.23	58,841
Rye	1.98	1,406	1.74	1,572	Dry				
Barley	4.6	9,747	5.9	10,445	beans	4.3	404	3.7	435
Oats	4.8	78,199	5.91	78,353	Cotton	13.4	2,002*	13.59	1,742*
Corn	6.39	220,862	6.41	200,050	Peach	19.4	10,505	12.04	7,026
Potato	21.7	119,474	19.5	86,997	Apple	16.5	47,474	11.37	18,920

*Bales.

WHEAT

Estimated reduction in yield of wheat due to scab (*Fusarium* sp.), leaf rust (*Puccinia triticina*), stem rust (*Puccinia graminis*), bunt (*Tilletia laevis* and *T. tritici*), loose smut (*Ustilago tritici*), and other diseases, 1920.

Production:		Estimated reduction in yield due to diseases.									
State	Bushels	Scab	Leaf rust	Stem rust	Bunt	Loose smut	Other	diseases	All diseases.		
	(000 omitted)	%	: (000 o-): %	: (000 o-): %	: (000 o-): %	: (000 o-): %	: (000 o-): %	: (000 o-): %	: (000 o-): %	: (000 o-): %	
		: mitted):	: mitted):	: mitted):	: mitted):	: mitted):	: mitted):	: mitted):	: mitted):	: mitted):	
Me.	159	-	-	-	-	1.	2	-	-	2	
N. H.	-	-	-	-	-	2.	-	-	-	+	
Vt.	209	-	t	+	0	2.	4	-	-	4+	
Mass.	-	-	-	-	-	2.	+	-	-	+	
R. I.	-	-	-	-	-	2.	+	-	-	+	
Conn.	-	-	-	-	-	1.	+	-	-	+	
N. Y.	10,998	t	t	+	t	3.	344	114	4.	458+	
N. J.	1,520	1.	t	+	1.	3.	49	33	7.	114+	
Pa.	25,284	1.	t	+	t	2.5	661	265	4.5	1191+	
Dela.	2,040	.5	2.	4	+	2.	43	32	5.2	112+	
Md.	11,390	1.	1.5	185	+	3.5	431	62	7.5	924+	
Va.	11,425	t	2.	247	+	2.8	61	247	7.3	900+	
W. Va.	4,250	1.	t	+	2.	5.	97	48	12.	580+	
N. C.	8,471	t	3.	282	+	4.	188	94	10.	941+	
S. C.	1,760	t	2.	38	+	3.	19	19	7.	132+	
Ga.	2,110	t	2.	46	+	3.	23	12	8.5	196+	
Ohio	28,698	.5	t	+	.5	2.	604	604	5.	1,510+	
Ind.	23,540	.5	1.	25	.3	2.	495	495	5.	1,238	
Ill.	40,670	2.	.5	221	21	3.	1,326	884	8.	3,536+	
Mich.	14,275	t	t	+	8.	1.	162	+	12.	1,947+	
Wis.	5,152	1.5	t	+	30.	.5	38	+	32.	2,424+	
Minn.	29,116	2.	t	+	30.	2.	222	889	34.5	15,336+	
Iowa	13,011	.5	1.	144	7.	.5	72	+	9.5	1,366+	
Mo.	32,721	2.	1.	346	.5	1.	346	+	5.5	1,904+	

RYE

Estimated reduction in yield of rye due to smut (*Ustilago* sp.), ergot (*Claviceps purpurea*), leaf rust (*Puccinia dispersa*), stem rust (*Puccinia graminis*), and other diseases, 1920.

State	Production: 1920 Bushels (000 omitted)	Estimated reduction in yield due to diseases.											
		Smut			Ergot			Leaf rust			Stem rust		
		:Bushels :(000 omitted):	%	:	:Bushels :(000 omitted):	%	:	:Bushels :(000 omitted):	%	:	:Bushels :(000 omitted):	%	:Other diseases: :Bushels :(000 omitted):
Vt.	20	-	-	:	-	-	:	-	-	:	-	-	-
Mass.	105	+	-	:	-	-	:	+	-	:	+	-	+
Conn.	140	-	-	:	+	-	:	+	-	:	-	-	+
N. Y.	1,872	+	t	:	+	t	:	+	-	:	+	-	+
N. J.	1,155	+	t	:	-	-	:	+	t	:	+	-	+
Pa.	2,656	+	-	:	13	-	:	+	-	:	+	-	+
Del.	60	-	.5	:	-	-	:	+	-	:	+	-	13+
Md.	462	+	-	:	0	-	:	5	-	:	-	-	+
Va.	864	+	t	:	+	t	:	+	t	:	+	-	5+
W. Va.	165	-	t	:	+	t	:	+	-	:	+	-	+
N. C.	912	-	-	:	-	-	:	-	-	:	-	-	+
S. C.	264	-	-	:	-	-	:	-	-	:	-	-	-
Ga.	290	3	-	:	-	-	:	3	-	:	-	-	3
Ohio	1,152	-	.5	:	-	-	:	6	-	:	6	-	15+
Ind.	4,340	4	t	:	6	2.	:	+	t	:	+	6	12+
Ill.	3,276	+	.1	:	+	t	:	+	-	:	-	-	4+
Mich.	9,702	-	t	:	+	t	:	-	-	:	-	-	+
Wis.	7,728	+	-	:	+	t	:	+	t	:	+	-	+
Minn.	8,160	85	.5	:	41	t	:	+	5.	:	41	41	493+
Iowa	1,071	+	1.	:	85	t	:	+	1.5	:	126	126	296+
Mo.	600	-	t	:	+	.5	:	-	-	:	-	-	5+
		-	-	:	+	-	:	-	-	:	-	-	+

Production:		Estimated reduction in yield due to disease.																				
State	1920 Bushels (000 omitted)	Smut			Ergot			Leaf rust			Stem rust			Other diseases:			All diseases. Bushels (000 omitted)					
		%	Bushels		%	Bushels		%	Bushels		%	Bushels		%	Bushels							
			(000 omitted)	:		(000 omitted)	:		(000 omitted)	:		(000 omitted)	:		(000 omitted)	:		(000 omitted)	:			
N. D.	9,340	-	:	19	:	t	:	+	:	-	:	485	:	-	:	2+	:	19+				
S. D.	4,320	-	:	49	:	-	:	-	:	10.	:	:	:	-	:	11.	:	534				
Nebr.	3,722	-	:	+	:	t	:	+	:	t	:	+	:	-	:	+	:	+				
Kans.	1,612	-	:	-	:	t	:	+	:	-	:	-	:	-	:	+	:	+				
Ky.	480	-	:	1	:	t	:	6	:	-	:	-	:	-	:	2+	:	1+				
Tenn.	300	0	:	0	:	2.	:	-	:	-	:	-	:	+	:	2.	:	6+				
Ala.	44	-	:	-	:	-	:	-	:	-	:	-	:	-	:	-	:	-				
Miss.	-	-	:	-	:	t	:	+	:	-	:	-	:	-	:	+	:	+				
La.	-	-	:	-	:	t	:	+	:	-	:	-	:	-	:	+	:	+				
Texas	48	-	:	-	:	-	:	-	:	-	:	-	:	-	:	+	:	+				
Okla.	375	-	:	-	:	-	:	-	:	t	:	+	:	-	:	+	:	+				
Ark.	40	-	:	-	:	-	:	+	:	t	:	+	:	-	:	+	:	+				
Mont.	880	0	:	0	:	0	:	0	:	t	:	+	:	+	:	+	:	+				
Wyo.	540	-	:	-	:	-	:	-	:	-	:	-	:	-	:	-	:	-				
Colo.	1,357	-	:	-	:	-	:	-	:	-	:	-	:	-	:	-	:	-				
Utah	124	0	:	+	:	-	:	-	:	t	:	+	:	-	:	+	:	+				
Ida.	252	-	:	-	:	-	:	-	:	t	:	+	:	-	:	+	:	+				
Wash.	370	-	:	-	:	-	:	-	:	-	:	-	:	-	:	-	:	-				
Ore.	520	0	:	0	:	0	:	0	:	0	:	0	:	-	:	-	:	-				
Calif.	-	-	:	-	:	t	:	+	:	t	:	+	:	-	:	+	:	+				
U. S.	69,318	.13:	:	92	:	.3	:	214	:	.04:	:	25	:	1.27:	:	.24:	:	173	:	1.98:	:	1406

BARLEY

Estimated reduction in yield of barley due to stripe (*Helminthosporium graminum*), loose smut (*Ustilago nuda*), covered smut (*Ustilago hordei*), leaf rust (*Puccinia simplex*), stem rust (*Puccinia graminis*), and other diseases, 1920.

Production:		Estimated reduction in yield due to disease.												
State	Bushels (000 omitted)	Stripe		Loose smut		Covered smut		Leaf rust		Stem rust		Other diseases		All diseases.
		:Bushels: :(000 o- mitted):	%	:Bushels: :(000 o- mitted):	%	:Bushels: :(000 o- mitted):	%	:Bushels: :(000 o- mitted):	%	:Bushels: :(000 o- mitted):	%	:Bushels: :(000 o- mitted):	%	
Me.	104	-	-	-	-	-	-	-	-	-	-	-	-	-
N. H.	27	-	-	-	-	-	-	-	-	-	-	-	-	-
Vt.	336	+	t	7	2.	7	2.	+	t	+	+	-	4.	14+
N. Y.	3,400	+	t	73	1.	36	1.	+	t	+	+	36	4.	145+
N. J.	-	-	-	+	t	+	t	-	-	-	-	-	2.	+
Pa.	480	-	-	10	2.	+	t	-	-	-	-	-	2.	10+
Md.	165	-	-	5	3.	2	1.	+	t	-	-	-	4.	7+
Va.	405	+	t	21	5.	+	t	+	t	+	+	-	5.	21+
Ohio	2,825	29	1.	59	1.	29	1.	+	t	-	+	-	4.	117+
Ind.	2,025	21	1.	43	1.	21	1.	-	t	+	+	21	5.	106+
Ill.	6,080	62	1.	62	1.	31	.5	+	t	+	+	-	2.5	155+
Mich.	6,240	63	1.	32	.5	32	.5	+	t	-	+	-	2.	127+
Wis.	15,913	+	t	52	.3	35	.2	+	t	+	+	869	8.5	1,478+
Minn.	25,000	279	1.	140	.5	419	1.5	0	5.	522	2.5	698	10.5	2,933+
Iowa	7,810	196	2.	98	1.	49	.5	+	t	1670	17.	-	20.5	2,013+
Mo.	224	+	t	3	1.5	2	1.	-	-	-	+	-	2.5	5+
N. D.	22,680	+	t	+	t	114	.5	+	t	+	+	-	5.	114+
S. D.	26,825	136	.5	136	.5	136	.5	-	-	-	-	-	1.5	408
Nebr.	7,424	+	t	75	1.	38	.5	-	t	+	+	-	1.5	113+
Kans.	21,285	-	-	443	2.	443	2.	-	t	+	+	-	4.	886+

Estimated reduction in yield due to disease.

State	Production: 1920 Bushels (000 omitted)	Estimated reduction in yield due to disease.									
		Stripe	Loose smut	Covered smut	Leaf rust	Stem rust	Other	diseases	All diseases	Bushels	: (000 o- mitted)
		Bushels: :(000 o- mitted):	Bushels: :(000 o- mitted):	Bushels: :(000 o- mitted):	Bushels: :(000 o- mitted):	Bushels: :(000 o- mitted):	Bushels: :(000 o- mitted):	Bushels: :(000 o- mitted):	Bushels: :(000 o- mitted):	Bushels: :(000 o- mitted):	Bushels: :(000 o- mitted):
Ky.	112	-	3	1	t	-	-	-	4	+	4
Tenn.	225	+	12	5	t	0	t	+	7	+	17
Texas	253	-	3	3	t	+	1	2	3	+	8
Okla.	3,120	+	32	32	-	+	-	-	2	+	64
Mont.	1,540	+	49	40	t	+	t	+	5	+	89
Wyo.	1,008	-	-	-	-	-	-	-	-	-	-
Colo.	4,674	-	24	47	-	-	-	-	1	+	71
N. Mex.	630	-	3	6	-	-	-	-	1	+	9
Ariz.	680	+	5	10	25	39	-	-	30	+	291
Utah	685	+	t	7	-	+	-	-	1	+	7
Nev.	304	-	-	3	-	-	-	-	1	+	3
Ida.	4,256	+	+	89	-	+	2	88	4	+	177
Wash.	3,883	+	+	39	-	-	-	-	1	+	39
Ore.	2,576	+	+	26	t	+	-	-	1	+	26
Calif.	28,750	+	+	290	t	+	-	-	1	+	290
U. S.	202,024	4	7	9	1	1	1	1	1	1	1
		786	1,385	1,992	242	3,628	8	1,714	4	6	9,747

Estimated reduction in yield due to disease.

State	Production:		Loose and				Stem rust				Crown rust				Other diseases				All diseases			
	1920	Bushels	%	covered	smuts	%	Bushels	%	:000 omitted	Bushels	%	Bushels	%	:000 omitted	Bushels	%	Bushels	%	:000 omitted	Bushels	%	:000 omitted
N. D.	59,640	1,230	2.			1.	615	t			t									1,845+	3.	+
S. D.	75,446	1,293	1.5			10.	8,623	t			1.				862	12.5				10,778+	12.5	+
Nebr.	83,040	1,695	2.			-	-	-			-				-	2.				1,695	2.	
Kans.	68,799	1,419	2.			-	-	-			1.				709	3.				2,128	3.	
Ky.	8,225	168	2.			-	-	-			-				-	2.				168	2.	
Tenn.	8,225	268	3.			0	0	5.			t				+	8.				715+	8.	+
Ala.	6,551	207	3.			t	+	2.			-				-	5.				345+	5.	+
Miss.	4,012	127	3.			0	0	2.			0				0	5.				211	5.	
La.	1,380	15	1.			0	0	5.			-				-	6.				88	6.	
Texas	44,100	2,450	5.			4.	1,960	-			1.				490	11.				4,900	11.	
Okla.	48,000	1,485	3.			t	0	-			t				+	3.				1,485+	3.	+
Ark.	8,800	506	5.			0	0	5.			3.				303	13.				1,315	13.	
Mont.	16,800	1,072	6.			t	+	t			t				+	6.				1,072+	6.	+
Wyo.	11,400	-	-			-	-	-			-				-	-				-	-	
Colo.	8,058	164	2.			t	+	-			-				-	2.				164+	2.	+
N. Mex.	2,278	46	2.			-	-	-			-				-	2.				46	2.	
Ariz.	481	25	5.			t	+	0			t				+	5.				25+	5.	+
Utah	3,143	165	5.			t	+	-			-				-	5.				165+	5.	+
Nev.	252	5	2.			t	+	-			-				-	2.				5	2.	+
Ida.	8,000	167	2.			t	+	-			2.				166	4.				333+	4.	+
Wash.	15,052	307	2.			-	-	0			-				-	2.				307	2.	
Ore.	12,045	122	1.			t	+	0			-				-	1.				122+	1.	+
Calif.	5,425	58	1.			5.	288	t			t				+	6.				346+	6.	+
U. S.	1,526,055	40,143	2.5			.9	14,783	.4			1.				6,785	4.8				78,199	4.8	

Production:		Estimated reduction in yield due to disease.									
State	1920 Bushels (000 omitted)	Smut		Leaf rust		Physoderma		Root and ear		Other diseases	
		Bushels (000 omitted)	%	Bushels (000 omitted)	%	Bushels (000 omitted)	%	Bushels (000 omitted)	%	Bushels (000 omitted)	%
N. D.	17,064	87	5.	+	0	0	1.	173	-	1.5	260
S. D.	105,600	1,123	1.	-	0	0	5.	5,617	-	6.	6,740
Nebr.	255,528	14,196	5.	-	t	t	5.	14,196	-	10.	28,392+
Kans.	137,535	13,418	8.	-	-	-	10.	16,772	-	18.	30,190
Ky.	100,650	2,236	2.	-	t	+	8.	8,947	-	10	11,183+
Tenn.	93,100	996	1.	+	.5	498	5.	4,978	t.	6.5+	6,472+
Ala.	67,149	722	1.	-	1.	722	5.	3,610	-	7.	5,054
Miss.	63,680	688	1.	688	.5	344	5.	3,443	-	7.5+	5,163+
La.	36,595	197	.5	396	1.	396	5.	1,978	-	7.5	2,967
Texas	174,200	3,573	2.	-	-	-	.5	893	t.	2.5+	4,466+
Okla.	89,320	1,880	2.	-	-	-	3.	2,821	-	5.	4,701
Ark.	55,224	1,194	2.	-	.5	299	5.	2,985	-	7.5	4,478
Mont.	3,580	+	t	-	0	0	-	-	t	+	+
Wyo.	1,560	+	t	-	0	0	-	-	-	+	+
Colo.	17,450	918	5.	-	0	0	-	-	-	5.	918
N. Mex.	7,155	146	2.	-	0	0	-	-	-	2.	146-
Ariz.	644	34	5.	-	0	0	-	-	-	5.	34
Utah	521	5	1.	-	0	0	-	-	-	1.	5
Nev.	33	+	t	-	0	0	-	-	-	+	+
Ida.	1,800	+	t	-	0	0	-	-	-	+	+
Wash.	2,808	+	t	-	0	0	t	+	-	+	+
Ore.	1,426	+	t	-	0	0	t	+	-	+	+
Calif.	3,150	64	2.	-	0	0	t	+	-	2.	64+
U. S.	3,232,367	70,477	2.04	1,084	.12	4,286	4.12	142,393	.08	2,623	220,862

POTATO

Estimated reduction in yield of potatoes due to mosaic, leaf roll, late blight (Phytophthora infestans), Rhizoctonia (Rhizoctonia solani), and black leg (Bacillus atrosepticus), 1920.

State	Estimated reduction in yield due to disease									
	Production		Mosaic		Leaf roll		Late blight		Rhizoctonia	
	Bushels	%	Bushels	%	Bushels	%	Bushels	%	Bushels	%
	:000 omitted:		:000 omitted:		:000 omitted:		:000 omitted:		:000 omitted:	
Me.	22,140	7.	2,279	2.	651	20.	6,512	1.	326	t
N. H.	1,950	8.	230	1.	29	20.	575	1.	29	.2
Vt.	3,510	8.	493	2.	123	30.	1,847	t	+	0
Mass.	4,000	8.	427	1.	53	15.	800	t	+	+
R. I.	345	3.	13	1.	4	15.	66	t	+	+
Corn.	2,760	3.	100	1.	33	10.	333	1.	33	t
N. Y.	46,250	1.5	934	1.5	934	15.	9,337	1.	622	t
N. J.	14,820	3.	631	2.	420	5.	1,051	5.	1,051	t
Pa.	36,455	1.	736	10.	7,365	25.	18,412	3.	2,209	368
Del.	1,166	2.	27	-	-	3.	41	4.	54	+
Md.	6,120	1.	74	2.	147	10.	737	2.	147	+
Va.	13,608	t	+	2.	289	1.	145	2.	289	+
W. Va.	6,840	t	+	2.	157	10.	786	t	+	+
N. C.	5,040	1.	59	2.	117	1.	59	4.	234	+
S. C.	3,100	1.	34	-	-	-	-	4.	136	+
Ga.	1,623	20.	486	5.	122	-	-	5.	122	+
Fla.	2,625	-	-	-	-	1.	29	-	-	0
Ohio	11,500	1.	153	2.	307	10.	1,533	1.	153	+
Ind.	7,680	t	+	t	+	0	0	.5	42	+
Ill.	8,775	t	+	1.	98	0	0	.5	49	+
Mich.	35,700	1.	413	t	+	1.	413	3.	1,238	206
Wis.	33,264	t	+	t	+	1.	360	2.	719	108
Minn.	20,025	2.	648	t	+	t	+	2.	648	486
Iowa	11,440	t	+	-	-	0	0	-	-	+
Mo.	7,790	-	-	-	-	0	0	-	-	+

Estimated reduction in yield due to disease.

Estimated reduction in yield due to disease.												
State	Production 1920		Mosaic		Leaf roll		Late blight		Rhizoctonia		Black leg	
	Bushels	%	Bushels	%	Bushels	%	Bushels	%	Bushels	%	Bushels	%
	:000 omitted:	:	:000 omitted:	:	:000 omitted:	:	:000 omitted:	:	:000 omitted:	:	:000 omitted:	:
N. D.	7,110	t	+	t	0	:	0	2.	159	1.5	119	:
S. D.	8,904	t	+	-	0	:	0	2.	200	1.	100	:
Nebr.	8,415	t	+	t	0	:	0	3.	294	t	64	+
Kans.	5,780	t	+	-	0	:	0	6.	381	1.	64	+
Ky.	6,435	1.	74	5.	t	:	+	3.	222	t	0	:
Tenn.	3,569	t	+	t	-	:	+	t	+	0	0	:
Ala.	3,216	6.	217	t	0	:	0	t	+	0	0	:
Miss.	1,392	6.	96	t	0	:	0	t	+	0	0	:
La.	1,755	10.	206	t	0	:	0	t	+	0	0	:
Texas	2,340	t	+	t	0	:	0	t	+	0	0	:
Okla.	3,318	t	+	t	0	:	0	t	+	0	0	:
Ark.	2,418	5.	134	t	0	:	0	t	+	t	+	:
Mont.	5,060	t	+	t	0	:	0	t	+	3.	160	:
Wyo.	3,375	-	-	-	0	:	0	2.	71	1.	35	+
Colo.	10,920	1.	117	-	0	:	0	1.	117	t	0	:
N. Mex.	475	-	-	-	0	:	0	-	-	0	0	:
Ariz.	450	-	-	-	0	:	0	10.	54	0	0	:
Utah	3,298	1.	39	t	0	:	0	2.	78	3.	116	:
Nev.	1,032	t	+	-	0	:	0	1.	13	3.	38	:
Ida.	7,380	1.	97	t	0	:	0	5.	486	3.	291	:
Wash.	8,680	t	+	-	t	:	+	10.	1,046	2.	209	:
Ore.	5,590	t	+	t	3.	:	221	10.	735	1.	74	+
Calif.	13,015	t	+	-	t	:	+	8.	1,352	t	+	:
U. S.	430,458	1.6	8,717	2.	7.9	:	43,257	2.	13,309	.4	2,380	:

Estimated reduction in yield of potatoes due to Fusarium wilt (Fusarium oxysporum), tip burn, early blight (Macrosporium solani), and other diseases, 1920.

State	Production : : Bushels :000 omitted:	Estimated reduction in yield due to disease.						
		Fusarium wilt % : Bushels : :000 omitted:	Tip burn % : Bushels : :000 omitted:	Early blight % : Bushels : :000 omitted:	Other diseases % : Bushels : :000 omitted:	All diseases % : Bushels : :000 omitted:		
Me.	22,140	0	0	+	219	651	32. +	10,419+
N. H.	1,950	0	0	+	+	57	32.2+	926+
Vt.	3,510	0	0	+	+	185	43. +	2,648+
Mass.	4,000	0	0	+	+	53	25. +	1,333+
R. I.	345	0	0	4	+	4	21. +	91+
Conn.	2,760	-	-	33	+	33	17. +	565+
N. Y.	46,250	5	311	622	125	3,112	25.7+	15,997+
N. J.	14,820	t	+	420	526	2,102	23.5+	6,201+
Pa.	36,455	3	2,209	1,473	1,473	2,946	53.5	37,191
Del.	1,166	1	13	-	41	13	14. +	189+
Md.	6,120	t	+	-	74	74	17. +	1,253+
Va.	13,608	t	+	+	+	145	6. +	868+
W. Va.	6,840	1	79	+	+	+	13. +	1,022+
N. C.	5,040	2	117	59	+	175	14. +	820+
S. C.	3,100	1	34	+	34	68	3. +	306+
Ga.	1,628	t	+	+	24	48	33. +	802+
Fla.	2,625	1	+	-	144	87	9. +	260
Ohio	11,500	4	613	+	307	767	25. +	3,833+
Ind.	7,680	2	170	339	+	255	9.5+	806+
Ill.	8,775	2	195	195	146	292	13. +	975+
Mich.	35,700	2	825	1,238	72	1,238	13.5+	5,571+
Wis.	33,264	t	+	719	+	719	7.5+	2,697+
Minn.	28,025	5	162	810	+	1,620	13.5+	4,374+
Iowa	11,440	-	-	1,362	136	681	16. +	2,179+
Mo.	7,790	-	-	-	+	-	+	+

Production :		Estimated reduction in yield due to disease.									
State :	1920	Fusarium wilt :		Tip burn :		Early blight :		Other diseases :		All diseases :	
Bushels		%	Bushels	%	Bushels	%	Bushels	%	Bushels	%	Bushels
:000 omitted:		:000 omitted:		:000 omitted:		:000 omitted:		:000 omitted:		:000 omitted:	
N. D.	7,110	4.	318	1.	79	t	+	2.	159	13.5+	834+
S. D.	8,904	4.	400	-	-	t	+	4.	400	11.	1,100+
Nebr.	8,415	6.	587	-	-	t	+	5.	489	14.	1,370+
Kans.	5,780	t.	+	2.	127	t	+	t	+	3.	572+
Ky.	6,435	1.	74	-	-	2.	148	1.	74	13.	962+
Tenn.	3,569	t.	+	t	+	4.	149	t	+	4.	149+
Ala.	3,216	t.	+	t	+	3.	108	2.	72	11.	397+
Miss.	1,392	t.	+	t	+	3.	48	4.	64	13.	208+
La.	1,755	0	0	1.	21	t	+	4.	83	15.	310+
Texas.	2,340	1.	24	-	-	1.	24	1.	24	3.	72+
Okla.	3,318	-	81	-	-	t	+	1.	34	1.	34+
Ark.	2,418	3.	106	-	-	t	+	2.	54	13.	269+
Mont.	5,060	2.	106	t	+	0	0	t	+	5.	266+
Wyo.	3,375	-	234	-	-	5.	18	1.	35	4.5	159
Colo.	10,920	2.	234	-	-	5.	58	2.	233	6.5+	759+
N. Mex.	475	7.	-	-	-	t	+	2.	10	2.	10+
Ariz.	450	-	-	-	-	3.	16	2.	11	17.	92
Utah	3,298	4.	155	1.	39	t	+	4.	155	15.	582+
Nev.	1,032	10.	127	t	+	-	-	5.	64	19.	242+
Ida.	7,380	5.	486	t	+	t	+	10.	971	24.	2,331+
Wash.	8,680	t	+	-	-	0.	0	5.	523	17.	1,778+
Ore.	5,590	t	+	t	+	t	+	10.	735	24.	1,765+
Calif.	13,015	10.	1,690	-	-	+	-	5.	845	23.	3,887+
U. S.	430,458	1.6	9,010	1.4	7,551	.7	3,671	3.7	20,360	21.7	119,474

Estimated reduction in yield of sweet potatoes due to stem rot (*Fusarium hyperoxysporum* and *F. batatatis*), foot rot (*Plenodomus destruens*), black rot (*Sphaeronema fimbriatum*), storage rots, pox (*Cystospora batata*), and other diseases, 1920.

Estimated reduction in yield due to disease.														
State	Production: 1920	Stem rot : Bushels :(000 omitted)	%	Foot rot : Bushels :(000 omitted)	%	Black rot (Field losses) : Bushels :(000 omitted)	%	Storage rot : Bushels :(000 omitted)	%	Pox : Bushels :(000 omitted)	%	Other : diseases :(000 omitted)	All diseases. : Bushels :(000 omitted)	
N. J.	2,002	511	12.	16.	682	25.	1,065	t	+	13	53.	2,258+		
Pa.	280	197	15.	6.	79	-	-	1.	-	-	-	-	-	
Del.	1,024	165	10.	5.	82	-	-	1.	-	17	22.	289		
Md.	1,386	538	8.	2.	134	30.	2,016	t	+	-	16.	264		
Va.	4,032	166	-	-	-	-	-	-	-	-	40.	2,688+		
W. Va.	238	125	1.	10.	1,657	25.	4,142	-	-	-	-	-	-	
N. C.	10,605	125	1.	-	-	25.	3,121	-	-	-	36.	5,965		
S. C.	9,240	+	t	5.	983	25.	4,916	0	0	-	26.	3,246		
Ga.	13,764	+	t	-	-	-	-	-	-	-	30.	5,899+		
Fla.	4,275	2	2.	-	-	-	-	-	-	-	-	+		
Ohio	103	4	1.	t	+	-	-	-	-	-	2.	2		
Ind.	360	18	2.	1.	9	-	-	-	-	-	1.	4+		
Ill.	873	22	5.	-	-	-	-	-	-	-	3.	27		
Iowa	416	67	-	-	-	-	-	-	-	-	5.	22		
Mo.	1,430	-	-	-	-	-	-	-	-	-	-	-	-	
Kans.	540	-	10.	5.	34	5.	34	-	-	-	20.	135+		
Ky.	1,890	-	-	-	-	15.	334	-	-	-	15.	334		
Tenn.	4,284	+	t	0	659	25.	1,648	0	0	t	35.	2,307+		
Ala.	17,460	236	1.	5.	1,180	20.	4,719	-	-	-	26.	6,135		
Miss.	11,330	165	1.	10.	1,654	20.	3,308	0	0	5.	83	5,210		
La.	8,080	+	t	0	455	25.	2,845	-	-	-	29.	3,300+		
Texas	9,345	+	t	5.	503	-	-	1.	100	1.	7.	703+		
Okla.	2,760	28	1.	2.	57	-	-	-	-	-	3.	85		
Ark.	5,145	107	2.	2.	107	-	-	-	-	-	4.	214		
N. Mex.	300	-	-	-	-	-	-	-	-	-	-	-	-	
Ariz.	150	-	-	-	-	5.	8	-	-	-	5.	8		
Calif.	1,056	33	3.	2.	22	-	-	-	-	-	5.	55		
U. S.	112,368	2,384	1.6	5.4	8,297	18.6	28,156	1.	130	1.	25.8	39,150		

DRY BEANS

Estimated reduction in yield of dry beans due to anthracnose (*Colletotrichum lindemuthianum*),
bacterial blight (*Bacterium phaseoli*), mosaic, root rots, and other diseases,
1920.

Production:		Estimated reduction in yield due to disease.											
State	1920 Bushels (000 omitted)	Anthracnose			Bacterial blight			Mosaic			Root rots		
		%	Bushels (000 omitted)	%	%	Bushels (000 omitted)	%	%	Bushels (000 omitted)	%	%	Bushels (000 omitted)	All diseases Bushels (000 omitted)
N. Y.	1,260	10.	155	1.5	23	3.	46	1.4	16	3.	46	18.5	286
Mich.	3,575	4	+	3.	111	4	+	-	-	-	-	3.	111+
Colo.	504	0	0	-	-	-	-	-	-	-	-	-	-
N. Mex.	811	0	0	-	-	-	-	-	-	-	-	-	-
Ariz.	75	0	0	8	7	-	-	-	-	-	-	8.	7
Calif.	2,850	-	-	-	-	-	-	-	-	-	-	-	-
U. S.	9,075	1.6	155	1.5	141	.5	46	.2	16	.5	46	4.3	404

Estimated reduction in yield of cotton due to anthracnose (Colletotrichum gossypii), angular leaf spot (Bacterium malvacearum), Fusarium wilt (Fusarium vasinfectum), root knot (Heterodera radicicola), and other diseases, 1920.

Estimated reduction in yield due to disease.																							
Production:		Angular				Fusarium				Root knot				Other diseases:				All diseases.					
1920		leaf spot		wilt		Bales		Bales		Bales		Bales		Bales		Bales		Bales		Bales		Bales	
Bales (000)		Bales		Bales		Bales		Bales		Bales		Bales		Bales		Bales		Bales		Bales		Bales	
omitted)		(000		(000		(000		(000		(000		(000		(000		(000		(000		(000		(000	
%		%		%		%		%		%		%		%		%		%		%		%	
omitted)		omitted)		omitted)		omitted)		omitted)		omitted)		omitted)		omitted)		omitted)		omitted)		omitted)		omitted)	
Va.	19	1	+	2.	+	+	t	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
N. C.	840	166	+	5.	55	11	1.	11	3.	33	24.	265+											
S. C.	1,530	144	+	3.	54	18	1.	18	3.	54	15.	270+											
Ga.	1,400	83	33	2.	33	49	3.	49	3.	49	15.	247											
Fla.	18	-	-	-	-	-	-	-	-	-	-	-											
Mo.	85	-	-	-	-	-	-	-	-	-	-	-											
Tenn.	310	27	+	t	+	0	0	0	t	+	8.	27+											
Ala.	660	15	7	5.	37	7	1.	7	1.	7	10.	73											
Miss.	885	30	10	5.-	49	+	t	+	2.	20	11.	109+											
La.	380	23	5	7.	32	+	t	+	5.	23	18.	83+											
Texas	4,200	48	95	.1.	5	+	t	+	9.	430	12.1+	578+											
Okla.	1,300	14	-	t	+	-	-	-	5.	69	6.	83+											
Ark.	1,160	28	42	7.	98	14	1.	14	4.	56	17.	238											
Ariz.	110	-	21	*	-	-	-	-	5.	7	20.	28											
Calif.	75	-	-	*0	0	-	-	-	-	-	-	-											
Others:	15	-	-	-	-	-	-	-	-	-	-	-											
U. S.	12,987	579	213	2.4:	363	99	.7:	99	5.	748	:13.4 :	2,002											

Estimated reduction in yield of peaches due to leaf curl (Exoascus deformans), brown rot (Sclerotinia cinerea), and other diseases, 1920

State	:Production:		Estimated reduction in yield due to disease							
	: 1920 :		: Leaf curl :		: Brown rot :		: Other diseases :		: All diseases :	
	:Bus. (000 :	% :	:Bus. (000 :	% :	:Bus. (000 :	% :	:Bus. (000 :	% :	:Bus. (000 :	% :
	:omitted) :		:omitted) :		:omitted) :		:omitted) :		:omitted) :	
N. H.	0	-	-	-	-	-	-	-	-	-
Mass.	4	t	+	-	-	-	-	+	+	+
R. I.	3	t	+	-	-	-	-	+	+	+
Conn.	10	t	+	t	+	-	-	+	+	+
N. Y.	2,307	2.	49	1.	24	3.	74	6.	147	
N. J.	1,056	1.	12	10.	126	5.	63	16.	201	
Pa.	1,744	5.	124	15.	374	10.	249	30.	747	
Del.	248	10.	38	15.	57	10.	38	35.	133	
Md.	897	10.	120	10.	120	5.-	59	25.	299	
Va.	1,470	1.	16	5.	81	3.	48	9.	145	
W. Va.	992	1.	11	10.	115	3.	35	14.	161	
N. C.	1,909	1.	23	10.	227	5.	114	16.	364	
S. C.	1,110	1.	14	15.	211	5.	70	21.	295	
Ga.	3,799	t	+	40.	2,763	5.	345	45.+	3,108+	
Fla.	162	-	-	-	-	-	-	-	-	
Ohio	2,241	1.	28	5.	142	15.	426	21.	596	
Ind.	957	5.	52	1.	10	2.	21	8	83	
Ill.	1,350	2.	29	1.	14	3.	43	6.	86	
Mich.	1,500	3.	47	t	+	1.	16	4.+	63+	
Iowa	135	10.	15	1.	1	-	-	11.	16	
Mo.	789	2.	17	1.	9	5.	43	8.	69	
Nebr.	5	0	0	t	+	1.	+	1.+	+	
Kans.	70	0	0	t	+	2.	1	2.+	1+	
Ky.	1,560	3.	68	25.	565	3.	68	31.	701	
Tenn.	1,000	4.	49	10.	123	5.	62	19.	234	
Ala.	1,508	4.	77	15.	290	3.	58	22.	425	
Miss.	425	2.	11	15.	82	5.	27	22.	120	
La.	-	0	0	25.	+	5.	+	30.	+	
Texas	480	t	+	1.	5	5.	26	6.+	31+	
Okla.	61	t	+	2.	1	5.	3	7.+	4+	
Ark.	117	1.	1	2.	3	5.	6	8.	10	
Colo.	585	-	-	-	-	-	-	-	-	
N. Mex.	6	-	-	-	-	-	-	-	-	
Utah	825	-	-	-	-	-	-	-	-	
Ida.	40	2.	1	-	-	5.	2	7.	3	
Wash.	423	2.	9	t	+	3.	13	5.+	22+	
Ore.	100	3.	3	-	-	3.	3	6.	6	
Calif.	13,800	5.	812	5.	812	5.-	811	15.	2,435	
U. S.	43,697	3.	1,626	11.4	6,155	5.	2,724	19.4	10,505	

APPLE

Estimated reduction in yield of apples due to bitter rot (Glomerella cingulata), black rot (Physalospora cydoniae), blotch (Phyllosticta solitaria), and cedar rust (Gymnosporangium juniperi-virginianae), 1920.

State	Production:		Estimated reduction in yield due to disease.							
	1920		Bitter rot		Black rot		Blotch		Cedar rust	
	:Bus. (000 omitted)	: %	:Bus. (000 omitted)	: %	:Bus. (000 omitted)	: %	:Bus. (000 omitted)	: %	:Bus. (000 omitted)	: %
Me.	1,930	0	0	0	0	0	0	0	-	-
N. H.	1,320	0	0	0	0	0	0	0	-	-
Vt.	1,600	0	0	0	0	0	0	0	-	-
Mass.	3,680	t	+	1.5	61	0	0	0	t	+
R. I.	340	t	+	1	4	0	0	0	t	+
Conn.	2,520	t	+	t	+	0	0	0	t	+
N. Y.	55,650	0	0	1	636	0	0	0	.5	318
N. J.	4,134	2	93	t	+	t	+	1	46	
Pa.	23,937	1	279	.5	139	1	277	1	277	
Del.	1,017	-	-	-	-	t	+	t	+	
Md.	3,330	1	38	5	188	.5	19	-	-	-
Va.	15,210	1	185	3	557	t	+	5	927	
W. Va.	7,000	1+	87	3	259	1	86	1+	87	
N. C.	7,900	3	416	5	693	10	1,386	8	1,109	
S. C.	1,482	3	68	10	228	8	182	2	46	
Ga.	1,764	3	69	5	114	2	46	t	+	
Ohio	13,193	t	+	1	149	1	149	1	149	
Ind.	6,097	t	+	2	133	1	66	.2	14	
Ill.	6,175	t	+	1	75	4	302	.2	15	
Mich.	16,500	0	0	t	+	0	0	0	0	
Wis.	3,650	0	0	t	+	0	0	0	t	+
Minn.	1,462	0	0	t	+	0	0	0	1	18
Iowa	4,410	0	0	-	-	t	+	t	+	
Mo.	5,082	1	63	3	188	4	251	t	+	
N. D.	-	0	0	-	-	0	0	0	0	
S. D.	323	0	0	-	-	t	+	t	+	
Nebr.	750	0	0	t	+	3	26	1	9	
Kans.	1,144	0	0	t	+	10	145	t	+	
Ky.	5,780	5	425	3	255	10	850	1	85	
Tenn.	5,304	10	947	1	95	10	947	1	95	
Ala.	1,260	3	53	2	35	10	175	*	-	
Miss.	126	3	5	2	3	5	8	.5	1	
La.	-	*	-	-	-	*	-	0	0	
Texas	351	t	+	1	4	5	19	0	0	
Okla.	548	-	-	1	6	8	53	0	0	
Ark.	3,620	2	86	.5	21	5	216	.5	21	
Mont.	1,155	0	0	0	0	0	0	0	0	
Wyo.	-	0	0	-	-	0	0	0	0	
Colo.	2,760	0	0	t	+	0	0	-	-	
N. Mex.	566	0	0	t	+	0	0	0	0	
Ariz.	100	0	0	-	-	0	0	0	0	
Utah	918	0	0	0	0	0	0	0	0	
Nev.	-	0	0	-	-	0	0	0	0	
Ida.	3,631	0	0	-	-	0	0	0	0	
Wash.	13,420	0	0	t	+	0	0	0	0	
Ore.	3,300	0	0	t	+	0	0	0	0	
Calif.	6,003	0	0	t	+	0	0	0	0	
U. S.	240,442	1	2,812	1.3	3,843	1.8	5,203	1.1	3,217	

Estimated reduction in yield of apples due to fire blight (*Bacillus amylovorus*), scab (*Venturia inaequalis*), and other diseases, 1920.

State	Estimated reduction in yield due to disease.									
	Fire blight		Scab		Sum of traces and no data for six diseases		Other diseases		All diseases.	
	%	Bus. (000: omitted)	%	Bus. (000: omitted)	%	Bus. (000: omitted)	%	Bus. (000: omitted)	%	Bus. (000: omitted)
	:	:	:	:	:	:	:	:	:	:
Me.	-	-	8.	171	-	-	2.	43	10.	23.4+
N. H.	t	+	10.	148	2.	3	1.	15	11.2+	166+
Vt.	1.	18	7.	123	2.	3	1.	18	9.2+	162+
Mass.	1.	41	7.	286	5.	20	t	+	10.	408+
R. I.	.5:	2	3.	11	1.	4	2.	7	7.5+	28+
Conn.	.5:	13	3.	81	1.	27	2.	54	6.5+	175+
N. Y.	1.	636	5.	3,180	-	-	5.	3,180	12.5+	7,950
N. J.	.5:	23	5.	232	.5:	23	2.	93	11.	510+
Pa.	2.	553	6.	1,660	-	-	2.	553	13.5	3,736
Del.	t	+	5.	57	4.	46	2.	23	11.	126+
Md.	1.	38	3.5:	131	.5:	19	-	-	11.5+	433+
Va.	t	+	4.	742	-	-	5.	927	18.	3,338+
W. Va.	t	+	8.	691	-	-	5.	432	19.	1,642+
N. C.	5.	693	10.	1,386	-	-	2.	277	43.	5,960
S. C.	5.	114	5.	114	-	-	2.	46	35.	798
Ga.	5.	114	5.	114	-	-	3.	69	23.	526+
Ohio	.5:	75	5.	745	-	-	3.	447	11.5+	1,714+
Ind.	0	0	3.	199	-	-	2.	133	8.2+	545+
Ill.	t	+	8.	604	-	-	5.	377	18.2+	1,373+
Mich.	1.	185	8.	1,483	-	-	2.	371	11.	2,039+
Wis.	10.	451	7.	315	-	-	2.	90	19.	856+
Minn.	5.	88	8.	140	1.	18	2.	35	17.	299+
Iowa	2.	103	4.	205	3.	154	5.	256	14.	718+
Mo.	.5:	31	5.	314	.5:	31	5.	314	19.	1,192+
N. D.	2.	+	2.	+	-	-	1.	+	5.	+
S. D.	*-	-	15.	58	1.	4	1.	4	17.	66+
Nebr.	t	+	5.	44	1.	9	5.	44	15.	132+
Kans.	t	+	7.	101	1.	14	3.	44	21.	304+
Ky.	t	+	10.	850	-	-	3.	255	32.	2,720+
Tenn.	t	+	20.	1,894	-	-	2.	189	44.	4,167+
Ala.	8.	140	3.-	52	-	-	2.	35	28.	490
Miss.	8.	13	1.5:	2	-	-	2.	3	22.	35
La.	-	-	-	-	-	-	-	-	-	-
Texas	2.	8	0	0	-	-	3.	12	11.	45+
Okla.	t	+	5.	33	-	-	3.	20	17.	112+
Ark.	1.	43	2.	86	-	-	5.	216	16.	689
Mont.	2.	24	2.	24	-	-	t	+	4.	48+
Wyo.	-	-	-	-	5.	+	-	-	5.	+
Colo.	-	-	-	-	5.	145	-	-	5.	145+
N. Mex.	t	+	-	-	12.	77	-	-	12.	77+
Ariz.	10.	12	-	-	5.	6	-	-	15.	18
Utah	*-	-	0	0	5.	48	*-	-	5.	48
Nev.	1.	+	0	0	4.	+	-	-	5.	+
Ida.	2.	81	.5:	20	-	-	8.	325	10.5	426
Wash.	t	+	.2:	30	.8:	119	9.	1,342	10.	1,491+
Ore.	.5:	21	15.	623	-	-	5.	207	20.5+	851+
Calif.	1.	67	.5:	33	-	-	9.	604	10.5+	704+
U. S.	1.2:	3,587	6.	16,982	3:	770	3.8:	11,060	16.5	47,474

Estimated percentage reduction in yield of tomatoes due to Septoria blight (Septoria lycopersici), Fusarium wilt (Fusarium lycopersici), bacterial wilt (Bacillus solanacearum), early blight (Macrosporium solani), and other diseases, 1920. (Production figures not available.)

Estimated percentage reduction in yield due to disease.						
State	Septoria blight	Fusarium wilt	Bacterial wilt	Early blight	Other diseases	All diseases
Me.	=	0	0	0	1.	1.
N. H.	-	0	0	*0	1.	1.
Vt.	-	0	0	0	1.	1.
Mass.	t	*0	0	t	2.	2. +
R. I.	t	0	0	t	2.	2. +
Conn.	t	0	0	t	2.	2. +
N. Y.	7	t	0	7	4.	5.4+
N. J.	8.	t	0	3.	5.	16. +
Pa.	1.	1.	0.	3.	4.	9.
Del.	10.	5.	0.	1.	5.	21.
Md.	40.	7.	0.	5	4.	51.5
Va.	30.	1.	t	1.	11.	43. +
W. Va.	5.	t	0.	1.	5.	11. +
N. C.	10.	5.	5.	1.	4.	25.
S. C.	5.	10.	4.	-	6.	25.
Ga.	1.	65.	2.	-	10.	78.
Fla.	t	5.	5.	20.	10.	40. +
Ohio	4.	10.	0.	5.	15.	34.
Ind.	4.	2.	0.	2	12.	18.2
Ill.	5.	2.	0.	5	10.	17.5
Mich.	3.	*0	0.	5	5.	8.5
Wis.	t	*0	0.	t	4.	4. +
Minn.	t	0	0.	0	5.	5. +
Iowa	5.	t	0.	t	14.	19. +
Mo.	5.	5.	-	-	8.	13.
N. D.	t	t	0.	0	t	+.
S. D.	t	0	0.	0	-	+.
Nebr.	1.	-	0.	0	-	1.
Kans.	5.	1.	0.	0	1.	7.
Ky.	15.	5.	0.	0	5.	25.
Tenn.	10.	10.	0.	2.	2.	24.
Ala.	2.	20.	1.	3.	15.	41.
Miss.	3.	15.	1.	5.	15.	39.
La.	t	25.	2.	10.	10.	47. +
Texas	3.	1.	t	2.	7.	15. +
Okla.	3.	2.	t	-	4.	8. +
Ark.	5.	3.	1.	-	5.	14.
Mont.	0.	0	0.	-	-	-
Wyo.	0.	0	0.	-	-	-
Colo.	t	-	0.	-	-	-
N. Mex.	0	-	0.	-	-	+
Ariz.	0	-	5.	-	-	-
Utah	0	-	0.	-	10.	15.
Nev.	0	-	0.	-	-	-
Ida.	0	0	0.	0	8.	8.
Wash.	0	0	0.	0	30.	30.
Ore.	0	0	0.	0	13.	13.
Calif.	-	3.	0	-	11.	11.