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THE PLANT DISEASE REPORTER

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THE PLANT DISEASE SURVEY

Division of Mycology and Disease Survey

BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING

AGRICULTURAL RESEARCH ADMINISTRATION

UNITED STATES DEPARTMENT OF AGRICULTURE

SUPPLEMENT 185

PRELIMINARY ESTIMATES OF ACREAGES OF CROP LANDS IN THE UNITED STATES
INFESTED WITH SOME ORGANISMS CAUSING PLANT DISEASES

Supplement 185

August 1, 1949

The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

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THE PLANT DISEASE SURVEY
DIVISION OF MYCOLOGY AND DISEASE SURVEY

Plant Industry Station

Beltsville, Maryland

PRELIMINARY ESTIMATES OF ACREAGES OF CROP LANDS IN THE UNITED STATES
INFESTED WITH SOME ORGANISMS CAUSING PLANT DISEASES

Compiled by Paul R. Miller and Nellie W. Nance
from reports of Collaborators of the Plant Disease Survey

Plant Disease Reporter
Supplement 185

August 1, 1949

FOREWORD

Last fall (1948) the Plant Disease Survey asked its Chief Collaborator in each State for an estimate of the area of crop land infested by various plant pathogenic organisms. There are obvious reasons why it is important to have such estimates, but the difficulty of obtaining them is equally clear.

Except, perhaps, locally and spasmodically or for special purposes, no attempt had been made to measure the area of infested land. This meant that, in most cases, the Collaborator had to base his estimate on what was known about loss to crops from these diseases in relation to the land potentially available for these crops. This would give a "working figure", which is all these preliminary estimates can claim to be.

On the other hand, both plant pathologists and industrial workers need the background that only some numerical statement, tentative though it may be, can supply. Effective soil treatments have been devised for nematode control, and it is likely that in the near future equally effective chemicals will be found to control at least some of the soil-borne fungi. It is vitally necessary that manufacturers should be able to gauge potential requirements, in order to plan in the beginning for economical production and distribution of different types of chemical treatments, instead of proceeding blindly in hit-or-miss fashion. Farmers also would benefit from realistically planned production, since it would enable manufacturers to set prices within ranges effective for everyday practical use, not merely for experimental trial or for exceptional purposes. Future evaluation of effectiveness and results of such treatments or other control measures depends on our present knowledge.

Although these are the most compelling reasons just now, there are others, e. g., as a starting-point to determine the amount and rapidity of spread, or as a basis for judging the effect of soil infestation on land values or on crop industries, or others. We cannot tell at present what will be the most important future use for such estimates, but we can put them on record now, while it is still possible to obtain them.

Twenty-eight States responded with some sort of estimate. In their replies, some Collaborators remarked that the request for definite statements of infested acreages furnished an opportunity and a reason for more concrete thought upon this subject than they had ever given it before.

Others, however, as always happens when estimates are asked for, wrote that they could give no figure reliable enough to be of any use. In many cases it is true that there is simply no information on which to base an estimate. In others, there is the personal feeling that no figure is useful unless it is exact. This feeling is to be respected, as leading to careful accurate work where exactness is required. But it does not allow for the times when even an incomplete estimate now is more useful than any number of exact measurements at some future time. If we always wait for exact figures on such a question as this one, we must expect to suffer from chronic standstill in much of our work.

There must be a starting point. Tentative estimates should not be misleading if their incompleteness is allowed for in any use that is made of them, and if they are used only where such estimates are truly appropriate.

It is as a starting-point only that we put these estimates on record. They will be subject to constant revision as information accumulates. It is our hope that somebody at some future time will be able to compile more complete and exact figures.

The results have been summarized in Tables and Maps giving the estimated acreage in the States reporting land potentially available for particular crops infested with some of the more widespread pathogenic soil-borne organisms.

It must be remembered that the Tables and Maps have been compiled from the reports received and refer only to the States cooperating. The figures for each State are based on the best information available to the Collaborator. In some States this information is more complete than in others. Obviously, the estimates often overlap, that is, the same land may be infested with more than one organism.

We cannot emphasize too strongly that these figures must, in practically all cases, be considered as tentative guesses, not as measure-

ments; as a foundation to build on; not for use where exact accuracy is required, but extremely useful as indicators.

To sum up, repeat, and stress again, these estimates are working tools, not a completed task.

We take this opportunity to thank those of our Collaborators who cooperated so fully in this difficult task. They bear the major part of the responsibility, but also, we fully believe, they will be glad to have had a part in such a useful project. All the credit is due to them. Their names are given below.

Those reporting:

ALABAMA

W. H. Greenleaf
Vernon G. Perry
A. L. Smith
Coyt Wilson

ARKANSAS

E. M. Cralley
Jos. P. Fulton
Curtis L. Mason
V. H. Young

CONNECTICUT

A. E. Dimond

DELAWARE

J. W. Heuberger

GEORGIA

Julian H. Miller

ILLINOIS

G. H. Boewe
M. B. Linn
L. R. Tehon

KANSAS

E. D. Hansing

KENTUCKY

W. D. Valleau

MAINE

D. Folsom

MARYLAND

C. E. Cox
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R. A. Jehle

MASSACHUSETTS

O. C. Boyd

MICHIGAN

D. Cation
J. H. Muncie
Ray Nelson
M. C. Strong

MINNESOTA

Carl J. Eide

MONTANA

H. E. Morris

NEVADA

O. F. Smith

NEW HAMPSHIRE

M. C. Richards

NEW JERSEY

C. M. Haenseler

NEW YORK

Charles Chupp

NORTH DAKOTA

W. E. Brentzel

OKLAHOMA

K. Starr Chester

PENNSYLVANIA

R. S. Kirby

RHODE ISLAND

Frank L. Howard

SOUTH DAKOTA

C. M. Nagel

TEXAS

A. A. Dunlap

VIRGINIA

S. A. Wingard

WEST VIRGINIA

C. F. Bishop

J. G. Leach

WISCONSIN

R. E. Vaughan

WYOMING

G. H. Starr

Tables and maps summarizing the reports follow.

Starred figures in the tables have been interpolated by the compilers, from the Collaborator's report and acreage given in the U. S. Department of Agriculture; Agricultural Statistics for 1947.

Table 1. Estimated potential acreage of crop land infested with Fusarium, in States reporting. These figures are estimates only, based on the best available information, but mostly tentative and incomplete; not to be used where exact accuracy is demanded. Data only for States furnishing estimates for this organism and the host named; from other States no estimate received. Not to be interpreted as a record of distribution.

State reporting	: Acreage affected	:	Remarks
<u>ALFALFA AND TIMOTHY</u>			
South Dakota	:	381,000	:
<u>ASPARAGUS</u>			
Massachusetts	:	1,000	:
<u>BARLEY</u>			
Illinois	:	23,000 ¹	: 231,300 acres average in 1929-38.
North Dakota	:	2,638,000	:
Wisconsin	:	25,000	: 50,000 acres affected earlier, Re-
	:		: sistant varieties caused decrease.
<u>BEAN</u>			
Arkansas	:	9,200	:
Connecticut	:	Trace	:
Illinois	:	17,900 ²	: This figure for 1948: for 1929-38 ²
	:		: it was 14,800 acres.
Kentucky	:	---	: Garden beans are commonly affected
	:		: by <u>Fusarium</u> root rot in farmers'
	:		: gardens all over the State.
	:		:
Maryland	:	5,000	:
Massachusetts	:	100	: More intensive cultivation of crop
	:		: has increased the affected acreage
	:		: 50 acres over earlier years.
Montana	:	20,000	:
New Jersey	:	4,000	: Increase from only traces earlier.
New York	:	---	: <u>Fusarium</u> dry root rot in the same
	:		: areas outlined for cabbage yellows.
	:		: Occurs in these areas whenever long
	:		: rotations with other crops are not
	:		: practiced. Has not changed much
	:		: for at least 30 years, except that
	:		: it has pushed farther south in the
	:		: western part of the State.

¹Acreage planted in 1947.

²Potential bean acreage affected. Estimated acreage planted in 1948
1,700; average 1929-38 1,570.

Table 1. (*Fusarium* acreage) continued.

State reporting	Acreage affected	Remarks
(Bean cont.)		
Oklahoma	65	5% of bean acreage
Pennsylvania	144	Loss 5% in 1932-39, 3% in 1940-45. Likely that less than 144 of the 4,800 acres affected
Rhode Island	0	
Texas	Trace	
Virginia	7,000	
West Virginia	25	
Wyoming	900	Has increased with continued crop- ping (irrigated farms primarily). Definitely worse in 1948 than in previous years.
<u>CABBAGE</u>		
Arkansas	---	No data; very little commercial crop.
Connecticut	200	
Georgia	---	In a few mountain counties
Illinois	1,500	Estimated acreage planted 3,000, 1948. Same as in 1929-38. All cultivated land in the State is infested with <u>Fusarium</u> .
Kansas	Over 75%	It is estimated that over 75% of land used for commercial cabbage pro- duction is infested with cabbage yellows <u>Fusarium</u> . Losses in recent years, however, have not been ser- ious, largely because of yellows- resistant varieties.
Kentucky	---	There has been some yellows in the Louisville area.
Maryland	500	
Massachusetts	100	Use of resistant varieties has re- duced the affected acreage from earlier 300
Michigan	250	Disinclination to use resistant var- ieties
Minnesota	200	Common near St. Paul and Minneapolis, but less common in Freeborn and Carlton Counties.
Montana	---	Present; of no economic importance
New Jersey	1,000	Some of the <u>Fusarium</u> problems are acute in specific areas where poor crop rotations are used. Widely distributed but only traces of injury result until

Table 1. (*Fusarium* acreage) continued.

State reporting	Acreage affected	Remarks
(Cabbage cont.):	:	:
New Jersey	:	: the population is built up through
(cont.):	:	: continuous cropping with a suscepti-
:	:	: ble crop.
:	:	:
New York	---	: About one-third of the cabbage acre-
:	:	: age of all the area in the western
:	:	: part of the State known as
:	:	: high-lime area. This extends from
:	:	: northern Chautauqua County east-
:	:	: ward, north of southeast Erie
:	:	: County, north of the lower half of
:	:	: Wyoming, Livingston, Ontario, and
:	:	: Seneca Counties. It also touches
:	:	: Yates, and just a trace of the
:	:	: northernmost part of Cortland
:	:	: County. The area from Syracuse
:	:	: east includes the Cherry Valley
:	:	: area or about 10 miles on each
:	:	: side of the Erie Canal, then down
:	:	: the Hudson on an equally wide
:	:	: area, then all of Long Island.
:	:	: One-third of this total area
:	:	: equals about one-fourth of the
:	:	: cabbage acreage of the entire
:	:	: State. This disease was not
:	:	: knowingly present upState before
:	:	: 1914.
North Dakota	100	:
Pennsylvania	1,000	: 1936-1940 loss 11%; 1942-48 loss 2%.
:	:	: More resistant varieties grown.
:	:	: 10,977 acres of cabbage grown in
:	:	: State.
Rhode Island	---	: Yellows in some years
Texas	Trace	:
Virginia	3,000	:
West Virginia	1,000	: Use of resistant varieties has re-
:	:	: duced the acreage from 25,000 in
:	:	: 1910.
<u>CANTALOUPE</u>		
Maryland	1,500	:
<u>CELERY</u>		
Connecticut	0	:

Table 1. (Fusarium acreage) continued.

State reporting	Acreage affected	Remarks
(Celery cont.)		
Illinois	---	No acreage data available. Celery acreage very small.
Massachusetts	100	
Michigan	2,000 - 3,000	
Minnesota	Trace	
Montana	0	
New Jersey	50	See cabbage
New York	2,275*	Present in all areas where celery is grown intensively. This includes probably half the total acreage of celery in the State. Most of the spread has occurred during the past 25 years.
Pennsylvania	5	Less than 1%; less than 5 infested acres out of the 550 grown.
Rhode Island	0	
Texas	0	
<u>CEREALS</u>		
Arkansas	25,180	
Illinois	13,445,000	100% in 1947. In 1929-38 15,209,700 acres (100%) affected.
Montana	4,500,000	<u>Fusarium</u> and <u>Helminthosporium</u>
North Dakota	10,000,000	Hard wheat 6,665,000 Barley 2,638,000 Corn 1,141,000
Pennsylvania	---	1 to 2% loss. Earlier 2 to 5% loss, mostly where no rotation. Rotation and seed treatment have reduced the loss.
South Dakota	8,709,000	Barley crop in particular -- the acreage is dwindling because of soil-borne diseases. Also includes winter wheat, spring wheat, durum wheat.
Texas	0	
Virginia	400,000	
Wyoming	100	10 to 20 years ago 200 acres. Continued cropping of dry land farms has reduced acreage planted.
<u>CORN</u>		
Illinois	8,696,000	8,949,500 in 1929-38. All cultivated land in the State infested with <u>Fusarium</u>
Kansas	3,154,000*	<u>Fusarium</u> pink rot (<u>F. moniliforme</u>)

Table 1. (Fusarium acreage) continued.

State reporting	Acreage affected	Remarks
(Corn cont.)		
North Dakota	---	See cereals
South Dakota	4,500,000	
Virginia	1,000,000	
Wisconsin	600,000	300,000 acres previously
<u>COTTON</u>		
Alabama	140,000	No evidence of increase in past 10 years
Arkansas	114,750	This figure is based on 5% of the total cotton acreage. We consider this figure as covering visibly affected fields but we think that every cotton field except those on newly broken land may have enough so that it could be found if the plants were carefully examined.
Georgia	2,000,000	Acreage probably increasing. <u>Fusarium</u> wilt of cotton is all over south Georgia and is in most of the sandy parts of north Georgia.
Illinois	4,000	All cultivated land in the State is infested with <u>Fusarium</u> . Acreage planted in 1947, 4,000; average 1934-43, 4,500.
Oklahoma	85,000	5% of cotton acreage
Texas	30,000	
Virginia	1,000	
<u>COWPEA</u>		
Arkansas	12,000	
Connecticut	0	
Georgia	---	Widespread in fields. Cowpea wilt is just as widespread as cotton wilt.
Illinois	55,000	This was total acreage planted, 1947. Average for 1929-38, planted and affected, 186,800. Soybeans have replaced large part of acreage.
Montana	0	
New Jersey	?	See cabbage.
Oklahoma	22,500	10% of acreage
Rhode Island	0	
Texas	1,000	
Virginia	6,000	

Table 1. (Fusarium acreage) continued.

State reporting	:	Acreage affected	:	Remarks
<u>FLAX</u>				
Kansas	:	25%	:	
Minnesota	:	1,500,000	:	Virtually all of the flax area is
	:		:	infested to some degree, but the
	:		:	use of resistant varieties and
	:		:	crop rotation minimizes its
	:		:	economic importance.
South Dakota	:	456,000	:	
<u>MUSKMELON</u>				
Michigan	:	100	:	
Minnesota	:	40-50	:	No drastic change in area affected.
	:		:	Resistant varieties are now grown.
	:		:	Fusarium wilt is common on musk-
	:		:	melons near Minneapolis and St.
	:		:	Paul, but the crop is grown on
	:		:	only a few acres.
New York	:	---	:	An area approximately 20 miles wide,
	:		:	along the Great Lakes, extending
	:		:	from Chautauqua County to Sodus
	:		:	Bay in Wayne County. There are
	:		:	several small islands of infec-
	:		:	tion in fields outside of this
	:		:	area, especially in Genesee,
	:		:	Ontario, and Albany Counties.
	:		:	This disease was first observed
	:		:	about 1917.
<u>OATS</u>				
Illinois	:	3,343,000	:	100% of planted acreage, 1947. All
	:		:	cultivated land in the State is
	:		:	infested with <u>Fusarium</u> . Average
	:		:	oat acreage 1929-38, 3,885,800
<u>OKRA, PEPPER, ETC.</u>				
Arkansas	:	100	:	
<u>ONION</u>				
Connecticut	:	300	:	Limited production as food crop.
Illinois	:		:	No acreage data available. Acre-
	:		:	age very small.
Massachusetts	:	800	:	Acreage affected at an earlier time
	:		:	was estimated at 1500. More pro-
	:		:	fitable crops have been substi-
	:		:	tuted.

Table 1. (Fusarium acreage) continued.

State reporting	Acreage affected	Remarks
(Onion cont.)		
Michigan	500	No data, possibly 500.
Montana	0	
New Hampshire	25	
New Jersey	2,000	Traces
New York	---	No real <u>Fusarium</u> trouble on this crop in the State. Certain bulb rots, but this is not primarily a soil problem.
Oklahoma	15	2% of acreage.
Pennsylvania	30	Less than 30 out of the 400 acres of onions in Pennsylvania infected. Loss trace to 5%.
Rhode Island	0	
Texas	0	
<u>PEA</u>		
Connecticut	500	Limits peas to early crop.
Delaware	3,000	All our pea acreage has root rot of one kind or another. 3,000 acres affected in 1938.
Illinois	17,900	This is acreage planted in 1947, 100% affected. All cultivated land in State infested with <u>Fusarium</u> . Average acreage for 1929-38 was 14,800.
Maine		Some found occasionally.
Maryland	5,000	
Massachusetts	500	No change from previous years.
Minnesota	100,000	Common wilt of peas would probably be present in all the canning pea area, but no susceptible varieties are grown. Near-wilt is less common.
Montana	34,000	
New Hampshire	100	No change from previous years.
New Jersey	1,000	
New York	---	True wilt rare in the State. A trace probably in all the intensive pea areas. Near-wilt very common and destructive. Appears in all pea fields where long rotations are not practiced. Probably much more general than it was 30 years ago.

Table 1. (*Fusarium* acreage) continued.

State reporting	Acreage affected	Remarks
(Pea cont.)		
Oklahoma	25	5% of acreage
Pennsylvania	2,000 to 3,000	17,500 acres of peas grown in Pennsylvania. Trace to 0.5% loss.
Rhode Island	0	
South Dakota		All garden areas affected.
Texas	0	
Virginia	2,000	
West Virginia	10	
Wisconsin	20,000	Resistant varieties have reduced the acreage from 80,000.
Wyoming	Trace	
<u>POTATO</u>		
Arkansas	Trace	
Connecticut	150	Seasonal, 2,000 acres affected in 1947.
Delaware	100	Acreage affected at an earlier time unknown. Constant cropping increases loss.
Illinois	11,000	Estimated planted acreage 1948. Average for 1929-38 was 46,900. Economic factors, e. g., change in marketing, etc., caused decrease in planting.
Maine	0	Though probably total acreage (200,000) has tuber rot <i>Fusaria</i> in some amount.
Maryland	5,000	
Massachusetts	100	No change from previous years. Use of resistant varieties.
Michigan	Local	No data on total area. Scattered local infestations.
Minnesota	Trace	Of no economic importance.
Montana	17,000	
New Jersey	25,000	Slightly more than 10 years ago. Undoubtedly present in large percentage of acreage but seldom cause of readily detected economic loss.
New York	Trace	Seems less common than it did 30 years ago. A trace is found in same area as cabbage <i>Fusarium</i> wilt.
North Dakota	1,300	Improved seed. 2,000 acres affected in 1930.

Table 1. (Fusarium acreage) continued.

State reporting	Acreage affected	Remarks
(Potato cont.)		
Oklahoma	1,300	: 5% of acreage
Pennsylvania	Trace	:
Rhode Island	2,000	: The weather conditions in 1948 made this disease our worst for potatoes, cut yields in some fields 50%
South Dakota	40,000	:
Texas	Trace	:
Virginia	10,000	:
West Virginia	2,100	:
Wisconsin	Trace	:
Wyoming	600	: 100 acres now out of potato production because of severity of <u>Fusarium</u> under dry land conditions.
<u>RYE</u>		
Illinois	57,000	: All of cultivated land in the State is infested with <u>Fusarium</u> . This is acreage planted in 1947. Average for 1929-38 was 85,700.
<u>SPINACH</u>		
Connecticut	0	:
Illinois	---	: No acreage data available. Acreage very small.
Maryland	200	:
Montana	0	:
New Jersey	100	: See cabbage
New York	200	: <u>Fusarium</u> wilt is present in about 200 acres in Nassau County on Long Island. This area probably was infested within the past 20 years.
Oklahoma	150	: 5%
Pennsylvania		: Some likely.
Rhode Island	0	:
Texas	0	:
<u>TOBACCO</u>		
Kentucky	---	: About 1/5 of the farmers who attended the 1948 field meetings at Lexington recognized <u>Fusarium</u> wilt of tobacco as a disease they had seen in their own plantings.

Table 1. (Fusarium acreage) continued.

State reporting	Acreage affected	Remarks
<u>SWEET CLOVER AND RED CLOVER</u>		
Illinois	1,500,000	Estimated acreage of land planted in red clover; no data available. All cultivated land in the State is infested with <u>Fusarium</u> .
South Dakota	20,000	Only sweet clover mentioned.
Texas	2,000	Sweet and red clover.
<u>SWEETPOTATO</u>		
Arkansas	2,600	Use of certified slips has reduced the acreage affected from 5,000.
Delaware	1,000	Earlier affected acreage 3,000--decrease in acreage of crop.
Georgia	Widespread	In most cultivated fields of South Georgia and also widespread in North Georgia, but there is rarely much of it in any one field.
Illinois	2,200	All of land planted; 2,200 acres in 1947, 6,100 acres average 1929-38.
Kansas	50%	The stem rot fungus (<u>F. batatatis</u>) is present in over 50% of ground used in Kansas for this crop but the disease has, during past few years, not caused much loss. The decreased loss is due partly because new land is used when available and to a large degree because of the practice of treating the sprouts which protect the plants against post-planting losses that occur through infection at the wounded ends. Such fungicides as Sperguson protect against such infection until the wound is healed.
Kentucky		Common in Louisville area.
Maryland	8,500	
Montana	0	
New Jersey	10,000	Less damage than 10 years ago. Better cultural practices have reduced percentage of infection in infested soils. Some of the

Table 1. (*Fusarium* acreage) continued.

State reporting	Acreage affected	Remarks
(Sweetpotato cont.)		
New Jersey (cont.)		<i>Fusarium</i> problems of sweetpotato are acute in specific areas where poor crop rotations are used. <i>Fusarium</i> infestations are very widely distributed but only traces of injury result until the population is built up through continuous cropping with a susceptible crop. Dr. Daines reports that "approximately 4% of sweetpotato acreage is lost due to <i>Fusarium</i> but practically all the acreage is slightly infested."
New York		Crop almost never grown. One instance of <i>Fusarium</i> wilt found on Long Island.
Oklahoma	500	5% of acreage
Pennsylvania	Trace	Trace-1% loss.
Texas	100	
Virginia	15,000	
<u>TOMATO.</u>		
Alabama	2,000	Total tomato acreage in State estimated at 13,000.
Arkansas	15,000	2,000 acres severe.
Connecticut		Rare
Delaware	1,000	No basis for earlier estimate. Constant cropping increased loss.
Georgia		Found in every old garden and out in the fields of a few counties in southeast Georgia that have been growing commercial tomatoes.
Illinois	4,000	Acreage planted 1947, 15,800; estimated acreage with disease, 4,000. Corresponding average for 1929-38, 11,800 and 2,000.
Kansas	50%	In recent years losses small, wilt resistant varieties used.
Kentucky		<i>Fusarium</i> wilt develops where tomatoes are grown in the same soil, nearly anywhere in the State except that it is rare in the central blue grass area.

Table 1. (*Fusarium* acreage) continued.

State reporting	Acreage affected	Remarks
(Tomato cont.)		
Maryland	40,000	
Massachusetts	200	Use of resistant varieties has reduced the affected acreage from 500.
Michigan	Local	Scattered local infestations. Resistant varieties now grown in infested areas.
Minnesota	0	
Montana		Present; it is of no economic importance.
Nevada		Occurs in home gardens.
New Jersey	1,000	See cabbage.
New York	---	About one-half the tomato acreage on Long Island, and a few fields in Chautauqua County. Rarely individual wilted plants are found in the area bordering Ontario and Erie Lakes. This area apparently has not changed, at least since 1912.
Oklahoma	300	10%
Pennsylvania	Trace	In field less than 400 infected acres out of 40,000 grown. In greenhouse over 10% of bed area.
Rhode Island	Trace	
Texas	50,000	
Virginia	25,000	
West Virginia	300	
Wisconsin	Trace	
Wyoming	Trace	Few tomatoes grown.
<u>WATERMELON</u>		
Alabama	5,000	Watermelons are moved to new land as fast as wilt appears. The infested acreage is thus on the increase each year.
Arkansas	420	
Georgia	---	Watermelon wilt has been found widespread in south Georgia but not as widely scattered in north Georgia.
Illinois	2,000	Estimated acreage planted 1948, 2,600; estimated acreage with disease, 2,000. Corresponding acreages, average 1929-38, 5,000 planted, 5,000 affected. <u>Fusarium</u>

Table 1. (*Fusarium* acreage) continued.

State reporting	Acreage affected	Remarks
(Watermelon cont.)		
Illinois (cont.):	:	: wilt mainly responsible for de-
:	:	: creased acreage. Some acres have
:	:	: almost abandoned watermelons.
Kansas	Trace	: Kansas has not had much trouble
:	:	: lately with watermelon wilt
:	:	: (<i>Fusarium niveum</i>) probably because
:	:	: this crop is usually grown only at
:	:	: long intervals on the same ground.
:	:	: Wilt has been known in past to be
:	:	: very serious in certain fields
:	:	: and growers no longer grow water-
:	:	: melons in such fields. Of the
:	:	: land that has been planted to
:	:	: watermelons in Kansas, an esti-
:	:	: mated 25% is infested with the
:	:	: wilt organism.
Kentucky	---	: Watermelons fail in the sandy soil
:	:	: along the Ohio River in the vicin-
:	:	: ity of Cincinnati and east and
:	:	: west.
Maryland	2,500	:
Minnesota	Trace	:
New Jersey	50	: See cabbage.
New York	Trace	: A trace observed on Long Island.
Oklahoma	2,000	: 10%
Pennsylvania	5	: Loss 3% in 1938-39. Not recorded in
:	:	: other years.
Rhode Island	0	:
South Dakota	2,000	:
Texas	20,000	:
Virginia	1,500	:
West Virginia	100	:
Wisconsin	50	: None found previously. Susceptible
:	:	: varieties have built up fungus.
<u>GENERAL</u>		
Illinois	:	: All cultivated land in the State is
:	:	: infested with <i>Fusarium</i> .
New Jersey	:	: See cabbage.
Rhode Island	:	: All cultivated soils in the State
:	:	: are infested. We have no concept
:	:	: of the damage done.

Figure 1. Estimated potential acreage, in States reporting, infested with Fusarium pathogenic to potato. These figures are estimates only, based on best available information, but mostly tentative and incomplete; not to be used where exact accuracy is demanded. Data only for States furnishing estimates for this host and organism. Not to be interpreted as a record of distribution.

Figure 2. Estimated potential acreage, in States reporting, infested with Fusarium pathogenic to tomato. These figures are estimates only, based on best available information, but mostly tentative and incomplete; not to be used where exact accuracy is demanded. Data only for States furnishing estimates for this host and organism. Not to be interpreted as a record of distribution.

Figure 3. Estimated potential acreage, in States reporting, infested with Fusarium pathogenic to watermelon. These figures are estimates only, based on best available information, but mostly tentative and incomplete; not to be used where exact accuracy is demanded. Data only for States furnishing estimates for this host and organism. Not to be interpreted as a record of distribution.

Table 2. Estimated potential acreage of crop land infested with Rhizoctonia, mostly R. solani, in States reporting. These figures are estimates only, based on the best available information, but mostly tentative and incomplete; not to be used where exact accuracy is demanded. Data only for States furnishing estimates for this organism and the host named; from other States no estimate received. Not to be interpreted as a record of distribution.

State reporting	: Acreage affected :	Remarks
<u>GENERAL</u>		
Arkansas	:	: <u>Rhizoctonia</u> no doubt present almost everywhere.
Georgia	:	: Not believed to be widespread. Found chiefly in old gardens and in all mountain valleys where potatoes are grown.
Illinois	:	: <u>Rhizoctonia</u> occurs in all cultivated soils of the State.
Kentucky	:	: Probably in all crop lands of State but recognized only occasionally, on potatoes, tobacco, and as common cause of damping-off.
Minnesota	:	: Can be found on practically all plants in all parts of State if looked for.
New Jersey	:	: Probably universally present in our field soils and on susceptible crops may cause noticeable injury to a few plants or to the crop as a whole under very special conditions. Losses are sometimes serious in plant beds under glass but acreage here is low. Soil treatment specifically for <u>Rhizoctonia</u> would not be warranted except in plant beds and greenhouses.
New York	:	: Present in all soils in the State, and on every cultivated and weed host. It becomes severe only when certain weather conditions (the correct combination not fully understood) are present, and crops are grown without rotation.

Table 2. (*Rhizoctonia* acreage) continued.

State reporting	Acreage affected	Remarks
<u>ALFALFA</u>		
Arkansas	Trace	
Illinois	521,000	Acreage planted in 1947, 521,000; average for 1934-43 was 477,000. <i>R. crocorum</i> occurs probably in all soils of the State, although occasionally found on alfalfa, it is not an important pathogen.
Kansas	0.1%	<i>R. crocorum</i>
Massachusetts	800	No change in acreage noted from previous years.
New Jersey	General	
Oklahoma	300,000	
Pennsylvania	---	316,951 acres of alfalfa, but acreage affected unknown.
South Dakota	381,000	Alfalfa and Timothy
Texas	0	
Virginia	10,000	
<u>BEAN</u>		
Illinois	1,700	Estimated acreage for 1948. Average for 1929-38 was 1,570. <i>Rhizoctonia</i> occurs in all cultivated soils of the State.
Maine		Some found occasionally.
Texas	1,000	
Wyoming	500	
<u>CABBAGE</u>		
Illinois	3,000	Estimated acreage planted for 1948. Average for 1929-38 was 2,335. Only affects seedlings. See general
Massachusetts	1,000	No change in acreage noted from previous years.
New Hampshire		Greenhouse problem only
New Jersey		Greenhouses only
Oklahoma	100	
Pennsylvania	5,000	Loss 1 to 2%. Likely present in 5,000 of the 10,977 acres grown in Pennsylvania.
Texas	100	
Virginia	3,000	
<u>CEREALS</u>		
Arkansas	Present	
New Jersey	Trace	
North Dakota	50,000	
Oklahoma	1,000,000	

Table 2. (Rhizoctonia acreage) continued.

State reporting	: Acreage affected	:	Remarks
(Cereals cont.):			
Pennsylvania	: Trace	:	Wheat 903,442 acres; oats 817,142 acres; barley 100,531 acres in the State.
Wisconsin	: Trace	:	
<u>COTTON</u>			
Alabama	: 500,000	:	
Arkansas	: 200,000	:	Probably present in 2,000,000 acres but generally slight damage.
Illinois	: 4,000	:	Acreage planted in 1947, 4,000. Average 1934-43, 4,500. See general.
Oklahoma	: 1,500,000	:	
Texas	: 5,000,000	:	
Virginia	: 20,000	:	
<u>COWPEA</u>			
Oklahoma	: 200,000	:	
Texas	: 5,000	:	
<u>FLAX</u>			
Minnesota	:	:	Of minor importance on flax. See general.
<u>GRASSES</u>			
Minnesota	:	:	Of minor importance on grasses. See general.
<u>LADINO CLOVER</u>			
Wisconsin	: 200	:	New crop
<u>LETTUCE</u>			
Massachusetts	: 2,000	:	Same as previously
<u>LEGUMES</u>			
Oklahoma	: 8,000	:	See also soybean and cowpea.
<u>PEANUTS.</u>			
Oklahoma	: 70,000	:	
Texas	: 1,000	:	
<u>PEAS</u>			
Illinois	: 17,900	:	See general. 17,900 acres planted in 1947; average 14,800 acres for 1929-38.
Maine	:	:	Some found occasionally.

Table 2.. (Rhizoctonia acreage) continued.

State reporting	Acreage affected	Remarks
(Peas cont.)		
Maryland	5,000	
Massachusetts	1,000	: Same as other years.
Montana	34,000	
North Dakota		: 7,000 acres in peas; no data as to acreage affected.
New Jersey	Scattered	: See general.
Oklahoma	500	
Pennsylvania	5,800	: Loss 1/2 to 1%. Scattered infection in at least 1/3 of Pennsylvania's 17,500 acres.
Virginia	1,000	
Wisconsin	Trace	
Wyoming	Slight	
POTATO		
Alabama	45,000	: No serious loss.
Arkansas	42,000	: Damage slight.
Connecticut	2,000	
Delaware	1,000	: Always has been infected since crop was grown.
Georgia	Local	: Chiefly in mountain counties and valleys and in gardens or where truck has been grown. Not widespread.
Illinois	11,000	: Estimated acreage for 1948. Average for 1929-38, 46,900. <u>R. solani</u> occurs probably in all soils of the State.
Kentucky	---	: See general.
Maine	200,000	: Estimated by chief certification inspector. Maximum infection = 75% of missing hills.
Maryland	25,000	
Massachusetts	22,000	: 15,000 acres affected in 1940. Increase in potato culture increased affected acreage.
Montana	17,000	
Nevada		: Occurs but affected acreage is not known.
New Hampshire	10,000 to 2,500	: All land in State where potatoes are grown; varies from 10,000 to 2,500 acres.
New Jersey		: Probably slightly less than 10 years ago. See general.
New York	---	: See general.
North Dakota	2,500	: 135,000 acres planted.
Oklahoma	25,000	
Pennsylvania	106,000	: Most soil infested. 1946-47 loss 7.5%, 1937-45, 2.5%. Wet springs 1946-47. Some in all of 106,000 acres of potatoes in Pennsylvania in 1948.

Table 2. (Rhizoctonia acreage) continued.

State reporting	Acreage affected	Remarks
(Potato cont.)		
Rhode Island	8,000	: Annually. Injury varies with edaphic factors during growing season.
South Dakota	40,000	:
Texas	1,000	:
Virginia	10,000	:
West Virginia	42,000	: Light infection mostly--not much change through year.
Wisconsin	86,000	: 196,000 affected previously. Different cropping practices used.
Wyoming	500	: Not a major trouble---potatoes planted late.
<u>SOYBEAN</u>		
Minnesota		: Of minor importance on soybeans. See general.
Oklahoma	10,000	:
<u>STRAWBERRY</u>		
Arkansas		: Present, severe only locally.
Illinois	3,000	: Estimated acreage for 1948. Average for 1929-38, 5,100. Many growers had larger acreages than they could care for profitably.
Maryland	100	:
Massachusetts	300	: 500 acres in 1940. High cost of production in recent years has decreased acreage grown.
New Hampshire	100	:
New Jersey		: Common in roots. See general.
Oklahoma	100	:
Texas	0	:
Virginia	3,000	:
Wyoming	---	: Slight
<u>SWEET CLOVER</u>		
Minnesota	---	: Is of minor importance on sweet clover. See general.
South Dakota	20,000	:
<u>TOBACCO</u>		
Kentucky	---	: See general.
Virginia	50,000	:
<u>TOMATO</u>		
Texas	20,000	:

Table 3. Estimated potential acreage of crop land infested with Sclerotinia sclerotiorum, in States reporting. These figures are estimates only, based on the best available information, but mostly tentative and incomplete; not to be used where exact accuracy is demanded. Data only for States furnishing estimates for this organism and the host named; from other States no estimate received. Not to be interpreted as a record of distribution.

State reporting	: Acreage affected :	Remarks :
<u>GENERAL</u>		
Alabama	:	: Found occasionally but no records
	:	: of any appreciable loss on any
	:	: crop from this fungus.
Arkansas	:	: Seldom seen except in traces.
Georgia	:	: Very rare according to observations.
Illinois	:	: This fungus is probably present in
	:	: most of our soils but, as far as
	:	: we know, has not caused any appreciable
	:	: loss in any of the crops.
Kentucky	:	: Would expect this fungus, because of
	:	: the method of spore production, to
	:	: be found anywhere. Actual damage
	:	: from the fungus is probably very
	:	: limited.
Maryland	:	: No estimate possible.
Minnesota	:	: Practically no economic importance.
New Hampshire	:	: May be present, but not seen on
	:	: other hosts than bean.
New Jersey	:	: Observations in table below apply
	:	: to field cultures. In plant beds
	:	: and in North Jersey where many acres
	:	: of vegetables are grown under glass,
	:	: <u>Sclerotinia</u> often causes such serious
	:	: losses that soil sterilization
	:	: is called for.
New York	:	: This organism is present in all soils
	:	: where cabbage, carrots, and celery
	:	: are grown continuously, or where
	:	: such crops as beans, clover, and
	:	: parsley are grown in especially
	:	: thick stands. It always is present
	:	: in certain greenhouse soils. When
	:	: resistant crops as cereals, grasses,
	:	: potatoes, beets, corn, onions, etc.,
	:	: are grown for several years, the
	:	: inoculum disappears until a series
	:	: of susceptible crops again are grown.
	:	: It has always been State-wide.

Table 3. (Sclerotinia acreage) continued.

State reporting	Acreage affected	Remarks
(General cont.)		
Rhode Island		: Drought in August-September caused
		: absence of disease in 1948, but
		: when rainfall is abundant this
		: fungus causes considerable damage.
		: Chief losses in common storage.
Texas		: Probably 500 acres for various hosts,
		: and 500 where tomatoes are grown.
West Virginia		: Not serious.
Wisconsin		: Rarely found.
<u>ALFALFA</u>		
Georgia		: In mountain counties.
South Dakota	381,000	:
<u>BEANS</u>		
Delaware	0	:
Massachusetts	500	: No change in affected acreage
		: through years.
Montana	1,000	:
New Hampshire	10	:
New Jersey	Trace	: See general.
New York		: See general.
Pennsylvania	Trace to 1%	: Only a trace infection in 4,800
		: acres of snap beans.
Rhode Island	0	: 10 acres potentially affected.
		: Drought August-September in 1948
		: caused absence of disease. See
		: general.
Virginia	6,000	:
West Virginia	Trace	:
Wyoming	500	: Increase from 250 acres previously.
		: Continued cropping caused gradual
		: spread in soil.
<u>CABBAGE</u>		
Delaware	0	:
Georgia	---	: Not widespread. Found near Athens.
Massachusetts	600	: No change in affected acreage.
Montana	None	:
New Jersey	---	: Occasional plants. See general.
New York	---	: See general.
Pennsylvania	Trace to 1%	:
Rhode Island	0	: 10 acres potentially affected.
		: None in 1948. See general.

Table 3. (Sclerotinia acreage) continued.

State reporting	: Acreage affected :	Remarks
<u>CARROT</u>		
Delaware	: None :	
Massachusetts	: 2,000 :	
Montana	: None :	
New Jersey	: --- :	: Occasional plants. See general.
New York	: --- :	: See general.
Pennsylvania	: :	: Records show trace to 2% loss.
Rhode Island	: 0 :	: 10 acres potentially affected. See general.
<u>CELERY</u>		
Connecticut	: 50 :	
Delaware	: 0 :	
Massachusetts	: --- :	: Of little importance on this host.
Montana	: 0 :	
New Jersey	: --- :	: Occasional plant. See general.
New York	: --- :	: See general.
Pennsylvania	: 250 :	: Loss 1 to 10%; 250 acres infested out of 550 in Pennsylvania. Losses higher previously; storing at lower temperature has reduced them.
Rhode Island	: 0 :	: None in 1948. See general. 5 acres of celery land potentially infested.
<u>RED CLOVER</u>		
Georgia	: --- :	: Found in mountain counties on clover.
New Jersey	: 100 :	: About 100 acres of red clover fields severely infected have been recorded.
New York	: --- :	: See general.
<u>LETTUCE</u>		
Georgia	: Not widespread :	: See general. Coastal Counties chiefly. Records on lettuce near Athens and in Glynn County and on the Islands off Brunswick.
Kentucky	: --- :	: Have seen it on lettuce in the Lexington area.
Minnesota	: --- :	: Occasionally destructive on head lettuce on a few acres in Northern Minnesota.
New Jersey	: 200 :	: See general. About 200 acres of lettuce soil severely infested have been recorded.

Table 3. (Sclerotinia acreage) continued.

State reporting	:	Acreage affected	:	Remarks
<u>PARSLEY</u>				
New York	:	---	:	See general.
<u>PEAS</u>				
Delaware	:	0	:	
Massachusetts	:		:	Of little importance on this host.
Montana	:	0	:	
New Jersey	:		:	Not observed.
Pennsylvania	:	0	:	No infection in the 17,500 acres of peas in Pennsylvania.
Texas	:	Trace	:	
Virginia	:	2,000	:	
Wyoming	:	Trace	:	
<u>POTATO</u>				
Maine	:	---	:	Some found occasionally.
<u>STRAWBERRY</u>				
Delaware	:	0	:	
Illinois	:	---	:	Very little. See general.
Massachusetts	:	---	:	Of little importance on this host.
Montana	:	0	:	
New Jersey	:		:	Not observed on strawberry. See general.
Pennsylvania	:	0	:	No infection in 2,200 acres in Pennsylvania.
Virginia	:	3,000	:	
<u>SUNFLOWER</u>				
Minnesota	:	---	:	Has been found on sunflower, but is of practically no economic importance.
North Dakota	:	500	:	Increased from traces earlier because sunflowers grown more extensively.
<u>SWEET CLOVER</u>				
South Dakota	:	20,000	:	
<u>TOMATO</u>				
Delaware	:	0	:	
Illinois	:		:	See general.
Massachusetts	:		:	Of little importance on this host.
Montana	:	0	:	
New Jersey	:	Trace	:	See general.
Oklahoma	:	Very minor	:	

Table 3. (Sclerotinia acreage) continued.

State reporting	: Acreage affected :	Remarks
(Tomato cont.)	:	:
Pennsylvania	: 10	: Only a trace; less than 10 acres out : of 40,000 grown in Pennsylvania.
Texas	: 500	:
West Virginia	: Trace	: Not a serious pest in this State.
Wisconsin	: Trace	: Rarely found in this State.

Table 4. Estimated potential acreage of crop land infested with Verticillium, in States reporting. These figures are estimates only, based on the best available information, but mostly tentative and incomplete; not to be used where exact accuracy is demanded. Data only for States furnishing estimates for this organism and the host named; from other States no estimate received. Not to be interpreted as a record of distribution.

State reporting	: Acreage affected :	Remarks
<u>GENERAL</u>		
Arkansas	:	: We believe that <u>Verticillium</u> is
	:	: generally present in most Arkansas
	:	: soils. We have found isolated in-
	:	: fections on several hosts. Inci-
	:	: dence varies tremendously with the
	:	: season.
Illinois	:	: All cultivated acreage in the State
	:	: infested.
Minnesota	:	: Can be found on potato, eggplant,
	:	: and tomato but does not seem to
	:	: be of economic importance.
Montana	:	: No information available.
New Jersey	:	: Indications are that fungus is very
	:	: widely distributed but no evidence
	:	: that it is causing appreciable
	:	: injury to any crop except eggplant.
	:	: See eggplant.
New York	:	: So far as is known all soils in New
	:	: York State contain <u>Verticillium</u> .
	:	: Apparently, however, the strains
	:	: are relatively dormant until cer-
	:	: tain crops are grown repeatedly
	:	: in the same soil. Most crops are
	:	: not affected unless the soil is
	:	: saturated continually with water
	:	: for a number of days. This is
	:	: true especially of crops like
	:	: potatoes and tomatoes. But black
	:	: raspberries and eggplant, which
	:	: are very susceptible, become in-
	:	: fected even in moderately dry
	:	: soil. Occurs on nearly every cul-
	:	: tivated and weed plant known.

Table 4. (Verticillium acreage) continued.

State reporting	: Acreage affected	:	Remarks
<u>(General cont.)</u>			
Texas	:	:	: Not a factor in crop production,
	:	:	: except in the case of cotton.
Wyoming	:	:	: As far as known, no soil infesta-
	:	:	: tion with <u>Verticillium</u> .
<u>CHRYSANTHEMUM</u>			
New Jersey	:	Trace	: See eggplant.
New York	:	---	: See general.
<u>COTTON</u>			
Alabama	:	500	:
Arkansas	:	159,335	: Great fluctuation due to weather.
	:	:	: We believe that <u>Verticillium</u> is
	:	:	: present in most Arkansas soils.
	:	:	: We have had it affect cotton in
	:	:	: northwest Arkansas soil never
	:	:	: before in cotton. The estimate
	:	:	: is based on 25% of the soils of
	:	:	: the Mississippi Delta in Arkansas
	:	:	: which are devoted to cotton --
	:	:	: 637,840 acres in 1946 in counties
	:	:	: touching the Mississippi. 25% of
	:	:	: this area will have some visible
	:	:	: indication of <u>Verticillium</u> wilt
	:	:	: on the average. The area where
	:	:	: the disease is really serious
	:	:	: would be much less.
Georgia	:	Trace	: Recent introduction; discovered
	:	:	: near Griffin and probably only
	:	:	: place where it occurs at present.
Illinois	:	4,000	: 4,000 acres planted in 1947; 4,500
	:	:	: average for 1934-43. All culti-
	:	:	: vated soils infested.
Oklahoma	:	8,000	: 0.5%
Texas	:	15,000	:
<u>EGGPLANT</u>			
Alabama	:	:	: Not reported on this plant in
	:	:	: Alabama.
Arkansas	:	:	: No data.
Connecticut	:	10	: 100%
Illinois	:	---	: No acreage data available.
Kentucky	:	---	: There has been some <u>Verticillium</u>
	:	:	: trouble on eggplant in the
	:	:	: Louisville vegetable growing area.
Massachusetts	:	200	:
Michigan	:	:	: No record.

Table 4. (*Verticillium* acreage) continued.

State reporting	Acreage affected	Remarks
(Eggplant cont.)		
Minnesota	Trace	: Can be found on eggplant but does not seem to be of economic importance.
New Hampshire	10	: Some <i>Verticillium</i> has been found on eggplant. Eggplant is grown only in home gardens in the southern part of the State, thus the number of infested areas may be many but the total average small.
New Jersey	800	: <i>Verticillium</i> on potatoes and tomatoes can be found in many plants by tissue culturing, indicating that the organism is very widely distributed but we have no evidence that <i>Verticillium</i> is causing appreciable injury on any crop except eggplant. <i>Verticillium</i> on eggplant is a major problem and we believe that approximately half of our 1700 acres of eggplant land is fairly heavily infested. <i>Verticillium</i> is so universally present as a soil fungus that we would probably have to admit that 100% of our soil is very lightly infested but only under certain cropping systems does the fungus cause any economic losses. Okra and eggplant finally become infected almost anywhere that these crops are planted year after year on the same farm.
New York	---	: See general.
Pennsylvania	60%	: Nearly all acreage having eggplants the previous year and half of the acreage for first year.
Rhode Island	---	: None seen this season; 5 acres affected at other times. Small acreage grown.
West Virginia	Trace	:
<u>ELM</u>		
Arkansas		: Seen on elm.

Table 4. (Verticillium acreage) continued.

State reporting	Acreage affected	Remarks
<u>FLOWERING PEACH</u>		
Arkansas	:	: Seen on flowering peach.
<u>OKRA</u>		
New Jersey	: Present	: Okra and eggplants finally become
	:	: infected almost anywhere that
	:	: these crops are planted year
	:	: after year on the same farm.
	:	: See eggplant.
<u>PEACH</u>		
New Jersey	: Trace	: See eggplant.
New York	:	: See general.
<u>PEPPER</u>		
Illinois	: 700	: 700 acres planted in 1947; 684 in
	:	: 1942. All cultivated acreage in-
	:	: fested. Increasing in severity
	:	: on pepper.
New York	: ---	: See general.
<u>PEPPERMINT AND SPEARMINT</u>		
Michigan	10,000 to 20,000	: Including abandoned sites. Un-
	:	: restricted exchange of planting
	:	: stock from infested soil has
	:	: spread it.
<u>POTATO</u>		
Alabama	:	: Not reported on this host.
Arkansas	:	: No data. See general.
Connecticut	: 0	:
Illinois	: 11,000	: 11,000 estimated planted in 1948;
	:	: average for 1929-38 was 46,900.
	:	: Economic factors, e.g., change in-
	:	: marketing, etc., caused decreased
	:	: acreage. See general.
Maine	: 20,000	: Estimate by chief certification in-
	:	: spector. Maximum for one field,
	:	: 35% dead plants.
Massachusetts	: 1,000	:
Michigan	: 50	: Severely affected. Scattered lightly
	:	: affected areas previously observed.
Minnesota	: Trace	: Can be found on potato but does not
	:	: seem to be of economic importance.
Nevada	: ---	: Occurs but affected acreage is not
	:	: known.

Table 4. (Verticillium acreage) continued.

State reporting	Acreage affected	Remarks
(Potato cont.)		
New Jersey	Present	: See eggplant.
New York	---	: See general.
Pennsylvania	Trace	: Only report we have, a trace in 1923.
Rhode Island	Trace	:
Texas	---	: Disease not a factor in crop production except cotton.
West Virginia	0	:
Wisconsin	Trace	: Very minor.
<u>PRIVET AND FLOWERS</u>		
Massachusetts	25	:
<u>RASPBERRY</u>		
Alabama	:	: Not reported on this plant in Alabama.
Arkansas	:	: No data.
Illinois	---	: No acreage data available. Very little on raspberry.
Maryland	100	:
Massachusetts	75	:
Michigan	---	: No records but present since specimens are received each season. No survey has been made.
New Jersey	Trace	: See eggplant.
New York	---	: See general.
North Dakota	100	:
Pennsylvania	200	: 10%. In 200 acres out of 2,474 acres of raspberries in Pennsylvania.
Rhode Island	0	:
<u>SNAPDRAGON</u>		
Michigan	:	: Occasionally reported in garden plantings.
<u>TOMATO</u>		
Alabama	:	: Not reported on this plant in Alabama.
Arkansas	:	: No data.
Connecticut	0	:
Delaware	500	: Seems to be on increase due to constant cropping.
Illinois	15,800	: Acreage planted in 1947. Average for 1936-45, 14,010. See general. No acreage changes in last 10 years.

Table 4. (Verticillium acreage) continued.

State reporting	Acreage affected	Remarks
(Tomato cont.)		
Massachusetts	300	
Michigan		No record.
Minnesota	Trace	Can be found on tomato but does not seem to be of economic importance.
Nevada	---	Occurs in home gardens.
New Jersey	Present	See eggplant.
New York	---	See general.
Pennsylvania	Trace	Almost none in field, mostly in greenhouse.
Rhode Island	---	None observed this year; 50 acres affected at other times. Depends on weather conditions. Severe some years.
Texas	---	Disease not a factor in crop production, except in case of cotton.
West Virginia	Trace	
Wisconsin	Trace	Very minor.
<u>MAPLE TREES</u>		
Rhode Island		Scattered but prevalent.

Table 5. Estimated potential acreage of crop land infested with Phymatotrichum omnivorum, in States reporting. These figures are estimates only, based on the best available information, but mostly tentative and incomplete; not to be used where exact accuracy is demanded. Data only for States furnishing estimates for this organism and the host named; from other States no estimate received. Not to be interpreted as a record of distribution.

State reporting	: Acreage affected	:	Remarks
<u>GENERAL</u>			
Arkansas	:	---	: Almost absent from the State but
	:		: is often present in small spots
	:		: in Red River and Little River
	:		: soils in Little River, Miller,
	:		: and Lafayette Counties. We con-
	:		: sider it distinctly minor. Less
	:		: than 435 acres of cotton land
	:		: affected; 100 acres estimated
	:		: for alfalfa.
Nevada	:	5,000	:
Oklahoma	:	600,000	: 2% of farm land.
Texas	:	1,300,000	:

Table 6. Estimated potential acreage of crop land infested with Heterodera marioni, in States reporting. These figures are estimates only, based on the best available information, but mostly tentative and incomplete; not to be used where exact accuracy is demanded. Data only for States furnishing estimates for this organism and the host named; from other States no estimate received. Not to be interpreted as a record of distribution.

State reporting	Acreage affected	Remarks
<u>GENERAL</u>		
Alabama	450,000	
Arkansas	863,500	15% of total cultivated acreage.
		Percentage of cultivated soil
		affected was formerly less, be-
		cause much clayey hill land not
		subject to root knot is now
		taken out of cultivation and in
		pasture.
Connecticut	---	Not common.
Georgia	---	Found in practically every garden
		and is widespread in fields in
		South Georgia and in most of the
		lighter soils of North Georgia.
Illinois	---	No data available.
Kansas	---	No data available. Occurs in south
		central and southeastern Kansas.
Kentucky	---	There are scattered small plots
		that are infested as the result
		of importations of tomato and
		cabbage plants from the South
		or use of plants from infested
		greenhouses. Total acreage is
		very small.
Maryland	10,000	
Minnesota	0	
Nevada	---	Generally distributed throughout
		State.
New Hampshire		Greenhouse problem only.
New Jersey		I believe it is Dr. Steiner's
		opinion that this nematode is
		universally present in New Jersey
		soils in slight traces. My esti-
		mates below are based on acreage
		that is sufficiently heavily in-
		fested to cause noticeable injury.

Table 6. (Heterodera acreage) continued.

State reporting	Acreage affected	Remarks
(General cont.)		
New Jersey		
(cont.):		: It causes appreciable damage in
		: plant beds and to greenhouse
		: vegetables and ornamentals.
New York	400	: Vegetable fields on upland.
	600	: Vegetable fields on muckland. Is
		: indigenous on weeds in this State.
		: It is held down by rotating or
		: fumigation, but doubtless is in-
		: creasing. Is reduced by cold
		: open winters and increases after
		: mild snowy ones.
	50	: Or 75% of vegetable greenhouse area.
	50	: Or 15% of floral greenhouse area.
		: Gradually on the increase in
		: greenhouses as it is never erad-
		: icated; only held down by steam-
		: ing, fumigating, rotating, and
		: changing soil.
North Dakota	---	: No records on this. Probably more
		: important than we suspect.
Oklahoma	200,000	: 10% of crop land.
Rhode Island	5	: Almost all greenhouses growing
		: tomatoes, cucumbers, gardenias,
		: and other warm temperature crops
		: are infested. Many greenhouses
		: have failed or changed their crops
		: because of this pest. None found
		: in field soils.
Texas	10,000,000	
Virginia	---	: Estimate 10,000 acres in home
		: vegetable gardens. See also
		: tomato, tobacco. General on
		: ornamental and vegetable seed-
		: lings in greenhouses.
West Virginia	---	: Primarily of importance in gardens
		: in southern west Virginia, in
		: Raleigh, Fayette, Mercer, Logan,
		: Lincoln, Boone, McDowell Counties.
		: Approximately 5% of the gardens
		: are affected; no accurate data on
		: total acreage.
Wisconsin	---	: Not found in field. Traces in old
		: greenhouses in Milwaukee area.
		: Tomato main crop affected.

Table 6. (Heterodera acreage) continued.

State reporting	: Acreage affected	:	Remarks
<u>CARROT</u>			
Massachusetts	: 50	:	In small areas near commerical
		:	vegetable and ornamental green-
		:	houses.
Michigan	: 250-500	:	
New Jersey	: ---	:	Occasional. See general.
Pennsylvania	: ---	:	Some.
<u>CELERY</u>			
Michigan	: 500	:	
New Jersey	: ---	:	In muck. See general.
Pennsylvania	: ---	:	Some.
<u>CUCURBITS</u>			
Delaware	: 200	:	Seems to be on increase.
Rhode Island	: ---	:	Greenhouses. See general.
<u>GARDENIA</u>			
Rhode Island	:	:	See general.
<u>HORSE RADISH</u>			
New Jersey	: ---	:	Occasional. See general.
<u>LIMA BEANS</u>			
Delaware	: 100	:	Seems to be of recent appearance.
New Jersey	: 1,000	:	Appreciable damage on possibly
		:	1,000 acres in Cape May County.
		:	See general.
<u>ONION</u>			
Michigan	: 500-750	:	
<u>PARSNIPS</u>			
New Jersey	:	:	Occasional. See general.
<u>PEANUT</u>			
Georgia	: ---	:	Last summer and this summer (1948)
		:	we have had what is apparently
		:	a new strain on peanuts in two
		:	or three southern counties.
		:	See general.
<u>PEONY</u>			
Michigan	: 250	:	

Table 6. (Heterodera acreage) continued.

State	:	Acreage affected	:	Remarks
reporting	:		:	
<u>PEPPER</u>				
New Jersey	:	---	:	Occasional. See general.
<u>POTATO</u>				
Maine	:	---	:	Some found rarely by Nematode
	:		:	Survey.
<u>SPINACH</u>				
New Jersey	:	---	:	In muck. See general.
<u>STRAWBERRY</u>				
Delaware	:	500	:	Has appeared recently since
	:		:	strawberries are grown on
	:		:	sandy soils.
Michigan	:	300	:	
<u>SUGAR BEETS</u>				
Montana	:		:	Present in a few fields.
<u>TOBACCO</u>				
Massachusetts	:	---	:	Undetermined amount of tobacco
	:		:	land infestation in southern
	:		:	towns.
Virginia	:	5,000	:	
<u>TOMATO</u>				
New Jersey	:	---	:	Few fields. See general.
Pennsylvania	:	---	:	Some.
Rhode Island	:		:	Greenhouse. See general.
Virginia	:	10,000	:	
Wisconsin	:	---	:	Traces in old greenhouses in
	:		:	Milwaukee area. Tomato main
	:		:	crop affected.

Table 7. Estimated potential acreage of crop land infested with nematodes other than the root-knot nematode, in States reporting. These figures are estimates only, based on the best available information, but mostly tentative and incomplete; not to be used where exact accuracy is demanded. Data only for States furnishing estimates for this organism and the host named; from other States no estimate received. Not to be interpreted as a record of distribution.

State reporting	: Acreage affected :	Remarks
<u>ALFALFA STEM NEMATODE (<i>Ditylenchus dipsaci</i>)</u>		
Nevada	: 10,000 :	
<u>ONION BULB NEMATODE (<i>Ditylenchus putrefaciens</i>)</u>		
New York	: 500 :	None in 1930. One crop system
	:	with no or inadequate rotation
	:	responsible for spread.
<u>SUGAR BEET NEMATODE (<i>Heterodera schachtii</i>)</u>		
Wyoming	: 50 :	
<u>MEADOW NEMATODE (<i>Pratylenchus pratensis</i>)</u>		
Maryland	: --- :	Known to be widely distributed
	:	on ornamentals but no acreage
	:	estimate possible.
Virginia	: 1,000,000 :	

Table 8. Estimated potential acreage of crop land infested with other organisms, in States reporting. These figures are estimates only, based on the best available information, but mostly tentative and incomplete; not to be used where exact accuracy is demanded. Data only for States furnishing estimates for this organism and the host named; from other States no estimate received. Not to be interpreted as a record of distribution.

State reporting	: Acreage affected	:	Remarks
<u>Actinomyces ipomoea</u>			
SWEET POTATO			
Kansas	:	50%	: Estimated 50% of land used for
	:		: sweet-potatoes in Kansas is in-
	:		: fested with the soil pox organism.
	:		: Severity of infection varies from
	:		: mere presence to amount because
	:		: of which growers no longer risk
	:		: planting in those fields. Much
	:		: otherwise good sweetpotato land
	:		: in Kansas is no longer used for
	:		: sweetpotatoes because of soil
	:		: pox infestation.
<u>Bacterium solanacearum</u>			
TOBACCO			
Virginia	:	2,000	:
TOMATO			
Virginia	:	500	:
<u>Corynebacterium insidiosum</u>			
ALFALFA			
Kansas	:	80%	: Based on the 1948 crop. However,
	:		: since alfalfa wilt remains alive
	:		: in the soil for several years,
	:		: it is possible that the land in-
	:		: fested with this bacterium would
	:		: be double or triple the acreage
	:		: of the crop grown in 1948.
<u>Diplodia zeae</u>			
CORN			
Kansas	:	75%	:

Table 8. (Other Organisms) continued.

State reporting	: Acreage affected :	Remarks
<u>Dry land root rot</u>		
<u>WHEAT</u>		
Kansas	: 30% :	
<u>Gibberella zeae</u>		
<u>CORN</u>		
Kansas	: 5% :	Ear and stalk rot.
<u>WHEAT</u>		
Kansas	: 3% :	Scab.
<u>Helminthosporium spp.</u>		
<u>BARLEY</u>		
Wisconsin	: 50,000 :	Formerly 10,000 acres estimated; increase due to susceptible varieties.
<u>CEREALS</u>		
Oklahoma	: 1,000,000 :	
<u>Helminthosporium victoriae</u>		
<u>OATS</u>		
Kansas	: 90% :	Although this disease did not occur in the State a few years ago, at present 90% of the acreage is in- fested with this fungus.
Wisconsin	: 150,000 :	Did not occur until recently. Vic- toria hybrids responsible.
<u>Milo disease</u>		
<u>SORGHUM</u>		
Kansas	: 80% :	
<u>Nigrospora spp.</u>		
<u>CORN</u>		
Kansas	: 20% :	Ear and cob rot.
<u>Ophiobolus graminis</u>		
<u>WHEAT</u>		
Kansas	: 25% :	
<u>Phytophthora sp.</u>		
<u>SWEETCLOVER</u>		
Kansas	: 30% :	<u>Phytophthora</u> root rot.

Table 8. (Other Organisms) continued.

State reporting	: Acreage affected	: Remarks
<u>Phytophthora nicotianae</u>		
TOBACCO		
Virginia	: 1,000	: None prior to 1937; introduced and spread since then.
<u>Sclerotium bataticola</u>		
CORN		
Illinois	: 8,696,000	: State-wide in distribution. Affects chiefly corn, and is of minor importance in the southern third of the State. 8,696,000 acres planted in 1947; average for 1929-38 was 8,949,500 acres of corn.
Kansas	: 80%	:
SORGHUM		
Kansas	: 80%	:
SOYBEAN		
Kansas	: 60%	:
<u>Sclerotium rolfsii</u>		
GENERAL		
Arkansas	: ---	: May cause serious injury in fields of potatoes, peppers, cucurbits, and garden flowers (possibly <u>S. delphinii</u> in the latter case). It may also be serious in sweetpotato beds. Causes as much loss as several of the organisms listed. More serious than the <u>Sclerotinia</u> .
<u>Sorosporium reilianum</u>		
SORGHUM		
Kansas	: 2%	: