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Report of the  
Cooperative White Pine Blister Rust Control Work  
in the town of  
Petersham, Massachusetts  
Season 1920

Professor R. T. Fisher, Trustee, (Representing Local Cooperators)  
Massachusetts Department of Agriculture  
United States Department of Agriculture  
Cooperating

OUTLINE

Introduction

Records of the disease and previous control work in  
Petersham

Control Work in 1920

Summary of Timber Types - Petersham 1920

General Summary

Recommendations

Appendix - Section Summary - Ribes Eradication 1920



Typical Stand of White Pine  
Petersham, Mass.

### Introduction

The following is a report of the work of destroying currants and gooseberries (Ribes) in the town of Petersham, in an attempt to prevent the possible spread of the disease, commonly known as the White Pine Blister Rust. This work was undertaken by the Massachusetts Department of Agriculture and the U. S. Department of Agriculture, in cooperation with the town and eleven property owners.

Records of the disease and previous control work in Petersham

In the year 1917, control areas were established in different sections of the state in towns where the Pines are particularly valuable. One such control area, or Ribes eradication area, was established in the central part of the state, comprising the towns of Athol, Barre, Dana, Petersham and Warwick. In these several towns, all cultivated Ribes were removed, as the first step toward securing a Ribes-free condition.

In Petersham, the number of cultivated bushes destroyed was as follows:

<u>Species</u>	<u>Infected</u>	<u>Not Infected</u>	<u>Total</u>
Red Currant	18	1297	1315
Black Currant	2	31	33
Gooseberries		120	120
Flowering Currants		72	72
Total	20	1520	1540

It will be noted, that infection was reported, but in a very slight amount, the number of infected bushes representing but 1% of the total number destroyed. In addition to the removal of these cultivated bushes, a slight amount of work was performed, in removing the wild species from certain woodland areas.

In 1918, an attempt was made to continue the work of eradicating the wild species, but only a very small part of the

town was examined. This work was carried on in the southern end of the town, near the Barre line, a part of the work being performed on a portion of the Harvard Forest; namely, in compartments 10 and 11 of the Slab City Tract.

<u>Area</u>	<u>Wild Gooseberries</u>	<u>Skunk</u>	<u>Cult.</u>	<u>Total</u>	<u>Total</u>	<u>Cost per</u>
<u>Examined</u>	<u>Red-Blk. Currants</u>	<u>Currants</u>	<u>Ribes</u>	<u>Ribes</u>	<u>Cost</u>	<u>Acre</u>
1095 acres	13,455	128,470	52	141,977	\$908.43	83¢

Infection was found in a few instances upon Ribes and one infected Pine was found, the first to be discovered in the town.

In 1919, through the interest of Professor R. T. Fisher, Director of the School of Forestry of Harvard University, the sum of \$500. was secured, with which to eradicate all Ribes, from upon and around the lands owned by the University, known as the Harvard Forest. The forest consists of about 1750 acres of land divided into three well defined tracts of 750;600; and 350 acres; situated respectively in the northeast, northwest and southeastern parts of the town.

In conjunction with the control work on the Harvard Forest, Mr. Chas. F. Choate, Jr. subscribed for similar work to be performed on his property, which is contiguous with a portion of the Slab City Tract of the Harvard property.

Upon this 1919 work as a whole, 2,879 acres of land were examined and 62,707 Ribes destroyed at a total cost of \$2,124,88.

A complete summary of the two projects, is given below:

Ribes Eradication Detail

<u>Project</u>	<u>Area</u>	<u>Wild Gooseberries</u>	<u>Skunk Currants</u>	<u>Wild Red-Blk Currants</u>	<u>Total Ribes</u>
Harvard	2474	10603	27670	2943	41216
Choate	403	9047	11824	620	21491
Total:	2877	19650	39494	3563	62707

Cost Detail

<u>Project</u>	<u>Local Cooperators</u>	<u>Mass. &amp; U.S. Dep't's. of Agriculture</u>	<u>Total Expenditures</u>
Harvard	402.30	1208.98	1611.28
Choate	125.00	388.60	513.60
Total:	527.30	1597.58	2124.88

Control Work in 1920

As a result of the cooperation on the part of the town and several of the most influential property owners, the total sum of \$1430 was made available for cooperative work this season. This amount was met by funds of the State and Federal Departments of Agriculture, in accordance with the local cooperative policy governing the work of combatting this disease.

This field work, under the direction of Mr. Sidney J. White, acting in the capacity of Supervisor, was started May 1 and discontinued October 9, a total of \$6241.57 being expended and 788,967 wild and 638 cultivated Ribes (Total 789,605) destroyed

during the progress of the work.

The usual crew method of eradication was employed, an advance scout supplementing the work of the crews by working in advance and locating Ribes habitats. This work of the scout was very instrumental in keeping down the costs. Another added feature of the control work was the use of a two-man crew to examine all roadside areas, stone-walls, fence rows, etc., and to destroy any cultivated bushes which were missed in the campaign of 1917.

Infection on Ribes was scattering and in one section (#12) was very abundant. In this section, a small area of infected pine was found, which explains the abundance of Ribes infection.

Ribes were particularly abundant in the town, acres and acres of skunk currants being encountered during the season. Gooseberries were also very plentiful and due to their scattered distribution were particularly difficult to eradicate.

In all, 14,812 acres of land were examined by the crews, this work practically completing the examination of the important pine sections in the town.

The total cost of the work, including Supervision, amounted to approximately 42¢ per acre, a remarkably low figure considering the number of Ribes pulled and results primarily from the use of the advance scout method of Ribes eradication.

### MAPPING

During the winter months, Mr. White was engaged in preparing a type map and pine estimate of the town, in anticipation of the control work. The object of this work was to secure data concerning the location and volume of Pine within the town and to correlate this data with the cost of protecting the pine from this disease.

An analysis of the area of the town by timber types, as secured on this survey is presented on the following page:

SUMMARY OF TYPE AREAS-PETERSHAM, MASS.

1 A	Mature Pine - Pure	1392	acres
1 B	Middle Aged Pine - Pure	2569	"
1 C	Young Pine - Pure	2163	"
11 A	Pine and Hardwoods	2569	"
11 B	Pine and Hemlock	113	"
111	Hardwoods	1037	"
111 Pc	Hardwoods and Young Pine	676	"
111 Pb	Hardwoods and Middle Aged Pine	137	"
1V	Brush	1602	"
1V Pc	Brush and Young Pine	6179	"
1V Pb	Brush and Middle Age Pine	335	"
1V S	Slash	866	"
V	Pasture Land	1578	"
V1	Cultivated Land	2915	"
V11	Swamps (not in other types)	312	"

Hemlock 113 acres

Pitch Pine 12 "

Ponds 362 "

Roads 39 "

Total Town Area 24969

SUMMARY

Ribes Eradication Detail

<u>Wild Gooseberries</u>	<u>Skunk Currants</u>	<u>Wild Red-Blk Currants</u>	<u>Cultivated Ribes</u>	<u>Total Ribes</u>
207,388	558,932	22,647	638	789,605

Cost Detail

<u>Wages</u>	<u>Expenses</u>	<u>Total</u>	<u>Cooperator</u>	<u>Account Mass. &amp; U.S. Dept. of Agriculture</u>	<u>Total</u>
Crew 5294.54	380.84	5676.38			
Super- vision 384.00	189.87	573.87			
<b>Total \$5678.54</b>	<b>\$570.71</b>	<b>\$6249.25</b>	<b>\$1429.79</b>	<b>\$4819.46</b>	<b>\$6249.25</b>

Recommendations

In order to permanently protect the native and planted White Pine in the town from the attack of this fungus disease, the following recommendations are offered:

(1) Additional funds should be provided next season, so that the few sections in the town that have never been scouted may be properly examined for Ribes and thus complete the entire town area.

(2) As several years have elapsed since the eradication work of 1917, the areas examined that year, should be re-examined in 1921.

(3) Subsequent periodic scout examinations should be made in order to eliminate seedlings and possible sprout growth developing

since the initial eradication in each section. This recommendation is particularly applicable to the work in Petersham, as skunk currants are prolific sprouters and conditions for Ribes reproduction are of the best.

(4) It is essential that the cultivation of currants and gooseberries in the town be abandoned.

Respectfully submitted,

136 State House,  
Boston, Mass.,  
November 15, 1920

C. C. Perry, Agent, Blister Rust  
Control Work in Massachusetts.

COOPERATIVE WHITE PINE BLISTER RUST CONTROL  
SUMMARY OF WORK IN PETERSHAM, MASS. - 1920.

BLOCK OR SECT. NO.	ACREAGE EXAMINED	EXPENDITURES BY SUB-PROJECTS					NUMBER RIBES DESTROYED				
		SUPER-VISION	PULLING RIBES	RAIN	CREW EXPENSES	TOTAL COSTS	WILD GOOSEBERRY	SKUNK CURRANT	WILD R-B CURRANT	CULT. RIBES	TOTAL RIBES
1	39	2.88	3.84		2.00	8.72			35		35
2	162	8.63	7.84		2.00	18.47			100		100
4	410	31.62	171.62	92.70	2.00	297.94	2405	29277	991		32673
5	1193	5.75	87.04	34.96	12.00	139.75	1471	71	802		2344
6	454	8.63	44.48	10.40		63.51	2603	216	591	72	3482
7	1943	34.50	550.28	85.04	14.00	683.82	19391	101039	4269	40	124739
8	796	17.25	267.80	109.36	14.00	408.41	11694	12151	337	3	24185
9	484		3.84			3.84			14		14
10	15		3.84			3.84	7		5		12
11	210	5.75	51.28		8.00	65.03	1286		95		1381
12	1664	73.62	1362.82	211.98	126.00	1774.42	73758	299490	6413		379661
13	227	2.88	49.04	3.52	8.00	63.44	197	7086	322		7605
14	42	2.87	2.52			5.39					0
15	55	5.75	10.08			15.83	5	16	38		59
16	63	1.75	9.76	1.92	4.00	17.43	65		20		85
18	169		7.84			7.84	962		67	12	1041
19	401	2.88	101.92		4.00	108.80	4360	13144	821		18325
20	242	14.37	174.92	42.24	22.00	253.53	8745	6166	671		15582
21	299		17.84	7.68	4.00	29.52	178	147	108	24	457
22	224	17.25	155.04	20.16		192.45	1500	36096	817	60	38473
23	881	54.64	537.04	58.28	26.00	675.96	24344	46303	1364	6	72017
24	39	5.75	9.68	6.80		22.23	217		178		395
25	35		8.00	5.12		13.12	462		198	40	700
26	447	13.50	99.76	22.08	4.00	139.34	7297	81	146	64	7588
27	842	10.63	156.88	61.50	30.50	259.51	9612	662	543	47	10864
28	87		2.56			2.56	10		43		53
29	49		6.04		2.00	8.04	80		100		180
30	96	5.75	14.32		4.00	24.07	135		163		298
31	1225	5.75	98.48	57.36	12.00	173.59	3871	631	1068		5570
38	841	31.62	229.84	38.96	24.00	324.42	16407	6329	693		23429
39	921	28.75	156.64	5.76	2.00	193.15	15610	27	1489	270	17396
44	19		4.00			4.00			25		25
45	211	5.75	8.00		2.00	15.75	241		66		307
46	27		3.84			3.84	475		55		530
MISC.		175.35			52.34	227.69					
TOTAL	14812	573.87	4418.72	875.82	380.84	6249.25	207388	558932	22647	638	789605