Regulatory Bulletin 107 July, 1953

Some Items of Interest to Kentucky Nurserymen

For the Year Ended June 30, 1953

By W. A. Price
and
Howard G. Tilson

Kentucky Agricultural Experiment Station
University of Kentucky
Lexington

Regulatory Bulletin 107

CONTENTS

SOME ITEMS OF INTEREST TO KENTUCKY NURSERYMEN, FOR THE YEAR ENDED JUNE 30, 1953

By W. A. Price and Howard G. Tilson

The Kentucky Nursery Inspection Law, since its enactment in 1926, has been revised and is herein reproduced as it appears upon the statute books.

KENTUCKY REVISED STATUTES-SECTIONS 249.010 to 249.990

249.010 DEFINITIONS. As used in this chapter, unless the context requires otherwise:

(1) "Commissioner" means the Commissioner of Agriculture, Labor and Statistics.

(2) "Department" means the Department of Agriculture, Labor and Statistics.

(3) "Director" means the Director of the Agricultural Experiment Station.

249.020 (1925a-1; 1925a-10) STATE ENTOMOLOGIST; ASSISTANT. (1) The Entomologist and botanist of the Agricultural Experiment Station shall be the State Entomologist.

(2) The State Entomologist shall serve without pay other than his salary as an officer of the Agricultural Experiment Station. He shall be paid his traveling expenses.

(3) The State Entomologist shall appoint a deputy entomologist and assistants.

249.030 (1925a-1; 1925a-10) ENTOMOLOGIST MAY MAKE RULES AND PUBLISH DATA. (1) The State Entomologist, with the advice and consent of the director and the commissioner, may prescribe, modify and enforce rules, regulations and orders needed to carry out KRS 249.020 to 249.100.

(2) The State Entomologist may publish bulletins, circulars and reports containing information concerning inspections, insects and plant diseases.

(3) The rules and regulations and publications shall be printed from time to time and furnished to interested persons.

249.040 (1925a-1) ESTABLISHMENT OF QUARANTINES. The State Entomologist shall, with the advice and consent of the director

and the commissioner, establish and maintain quarantines against the importation into this state, of any trees, plants and parts of plants, whether nursery-grown or not, from any state or from any county within the state, where such plants or parts of plants are known to be affected with dangerous insect pests or plant diseases. He shall designate in announcements of quarantine the area quarantined, whether it constitutes a part of this state or some other state.

249.050 (1925a-2) INSPECTION OF ARTICLES AND PREMISES: DISEASED PLANTS TO BE DESTROYED. Whenever the State Entomologist or his deputy has reason to believe or is credibly informed that at any place within the state there has been introduced, or offered for sale, trees, plants or parts of plants infected or infested with diseases or destructive pests that are likely to spread, he shall investigate the suspected articles and premises. If they are found so infested or infected, he shall notify the owner or possessor, in writing, of the nature of the infestation, specifying the insects or diseases that have been found, and demand that within a reasonable specified time the affected articles or premises be disinfected, or destroyed by fire, under the direction of the State Entomologist, his deputy or assistant, and at the expense of the owner or possessor.

249.060 (1925a-8) NURSERIES, DEALERS AND AGENTS TO BE LICENSED. (1) Every resident nursery or agency selling nursery stock in this state shall annually file credentials with the State Entomologist. If these credentials are satisfactory to the State Entomologist, the director and the commissioner, the State Entomologist shall, upon payment of a fee of five dollars by the nursery or agency, issue it a license authorizing it to do business in the state.

(2) Every nonresident nursery and every agent, dealer or seller of trees, representing nonresident nurseries or dealers shall annually file credentials with the State Entomologist. These credentials shall include the names of nurseries, nurserymen or other persons represented. If these credentials are satisfactory to the State Entomologist, the director and the commissioner, the State Entomologist shall issue the license.*

(3) Any person soliciting orders for or delivering trees or plants in this state shall carry with him a copy of his license from this state, which he shall show to prospective buyers, purchasers, county officials or agents of the State Entomologist on demand.

* Only resident nurserymen and dealers are required to pay the five dollar license fee.

249.070 (1925a-3; 1925a-4) ENTOMOLOGIST TO INSPECT NURSERIES AND ORDER DESTRUCTION OF PESTS: SHIPMENT OF AFFECTED STOCK PROHIBITED. (1) All nurseries where trees, vines, plants or other nursery stock are grown and offered for sale, shall be inspected by the State Entomologist or by his assistant, once each year. He shall notify the owners of such nurseries, in writing, of the presence of any San Jose scale or other dangerous pests on the stock of these nurseries, and shall also notify, in writing, the owner of any affected nursery stock to take such measures, on or before a certain day, for the destruction of insect or fungus enemies of nursery stock as have been shown to be effectual.

(2) The owner of the affected nursery shall, within the time specified, take such steps for the destruction of injurious insects or fungus enemies present, as will exterminate them.

(3) No person shall ship or deliver any such nursery stock affected with insects or fungus enemies, before treatment.

249.080 (1925a-5) ENTOMOLOGIST TO ISSUE CERTIFICATE FOR STOCK FREE FROM INSECTS AND FUNGUS. When the State Entomologist examines any trees, vines, plants or other nursery stock and finds the stock free from dangerously injurious insects and fungus enemies, he shall make out and deliver to the owner of the stock a certificate stating that he has inspected the stock and that he believes it to be free from dangerously injurious insects and fungus enemies. He shall keep in his office, for the information of anyone interested, copies of all valid certificates issued by him.

249.090 (1925a-6) SHIPMENTS TO BE ACCOMPANIED BY INSPECTION CERTIFICATES. Whenever a resident nurseryman or seller of trees, vines, plants or other nursery stock ships or delivers such goods, he shall send on each package so shipped or delivered a printed copy of the certificate issued to him by the State Entomologist, stating that the stock has been inspected as required by law and is believed to be free from dangerously injurious insect or fungus enemies.

249.100 (1925a-7) NONRESIDENTS TO FILE, AND IMPORTED PLANTS TO BEAR, INSPECTION CERTIFICATES. Every nonresident nurseryman or other person intending to ship into this state trees, plants or parts of plants, whether nursery-grown or not, shall file with the State Entomologist a copy of a valid certificate

from a state or United States Government inspector showing that the trees, plants or their parts have been inspected and that he is authorized to sell and ship or transport them. All packages of trees, plants or parts of plants shall bear a copy of a certificate of inspection from an official inspector. Transportation companies within the state shall notify the State Entomologist at once when any such trees or plants are received by them without a valid certificate. Nursery stock or other trees, plants or parts of plants shipped into this state in violation of a state or United States quarantine may be seized and destroyed or returned to the shipper at the expense of the owner or possessor.

249.200 (42g-1; 42g-2) JAPANESE BEETLE CONTROL. The State Entomologist shall adopt and carry out such measures as he deems advisable to protect crops from the ravages of the Japanese beetle (Popillia japonica). He may employ help, purchase materials and enforce such regulations as in his descretion are necessary to accomplish the purpose.

249.990 (42f-4; 200; 1923; 1925a-4; 1925a-9) PENALTIES. (1) Any person who violates any of the provisions of KRS 249.020 to 249.100 or hinders the carrying out of any of the provisions of those sections shall be fined not less than twenty-five dollars nor more than five hundred dollars.

(2) Any fine imposed for a violation of subsection (3) of KRS 249.070 may be recovered in the county in which the nursery is situated or the county to which the nursery stock is shipped.

SUMMARY OF REQUIREMENTS OF KENTUCKY NURSERY INSPECTION LAW

(1) It shall be unlawful to sell or offer for sale uninspected or uncertified nursery stock. A certificate of inspection indicates freedom from certain injurious insects and plant diseases but does not vouch for trueness to variety nor for grade and condition of any nursery stock.

(2) Growers of nursery stock, for sale or shipment, shall apply in writing before June 1st of each year to the State Entomologist, Kentucky Agricultural Experiment Station, Lexington, for inspection services.

(3) Every dealer in nursery stock shall secure a nursery dealer's permit. Before this is issued, however, he must furnish an affidavit that he will buy and sell only stock that is certified and will maintain

with the State Entomologist a correct and complete list of all sources from which he gets his stock. Landscape architects and tree movers who handle nursery stock are classified as dealers.

(4) Every person who solicits orders for nursery stock shall obtain and carry an agent's permit which is secured only upon request of the nurseryman or dealer to be represented.

(5) All packages or bundles of nursery stock shipped by common carrier must have attached a copy of the inspection certificate or permit.

(6) Certificates and permits may be revoked for cause.

(7) Fees shall be paid as follows: Inspection certificate $5; dealer's permit, $5. Agents' permits and nonresident nurserymen's certificates are furnished without cost. Fees shall accompany application. Application blanks may be obtained from the State Entomologist.

(8) Nonresident nurserymen shall file copies of their state certificates and secure nonresident permits. Every package of nursery stock coming into Kentucky shall have a valid inspection certificate attached to the package. Nonresident nurserymen, dealers, and agents shall carry their Kentucky permits when soliciting orders or delivering nursery stock in Kentucky.

(9) All certificates and permits automatically expire June 30 following date of issuance.

"NURSERY STOCK" DEFINED

Nursery stock includes all trees, shrubs, vines; roses, strawberry, raspberry, and blackberry plants; herbaceous perennial plants and roots; ornamental bulbs, corms, tubers, and rhizomes; and any part of the above groups of plants capable of disseminating injurious insects and plant diseases. For regulatory purposes the term "Nursery Stock" includes all plants which grow out of doors and live more than one year, whether nursery grown or native.

REQUIREMENTS FOR SHIPMENT OF NURSERY STOCK INTO OTHER STATES

A summary of the major requirements for shipping nursery stock into other states is given on the following page. It will be noted that most states require the out-of-state shipper to file a copy of his nursery inspection certificate with the proper administrative authority

before shipments are made. Only three states require filing fees, except under special conditions, that are noted in a table which follows.

Special shipping tags are required by the following states and will be furnished by them at a nominal cost to the shippers: Arkansas ($2 per 100 tags); Florida ($3.24 per 100 tags); Georgia ($1.00 per 100 tags); and New Mexico ($1.25 per 100 tags).

A special tag should be secured and attached to each bundle of nursery stock shipped to any of the four states listed.

State	State of origin certificate filed	Nurseryman's filing fee	Agent's fee	Special tag	Posted Bond
Alabama	Yes	Reciprocal	$1	No	None
Arizona	No	None	None	No	None
Arkansas	Yes	Reciprocal	$1	Yes	Reciprocal
California	No	None	None	No	None
Canada	Yes	None	None	Yes[1]	None
Colorado	Yes	None	None	No	None
Connecticut	No	None	None	No	None
Delaware	Yes	None	None	No	None
Florida	Yes	None	None	Yes	None
Georgia	Yes	Reciprocal	$1	Yes	$1000[2]
Idaho	Yes	$5 to $15	$1	No	$1000[2]
Illinois	Yes	None	None	No	None
Indiana	Yes	None	$1	No	None
Iowa	Yes	Reciprocal	None	No	None
Kansas	Yes	Reciprocal	None	No	None
Kentucky	Yes	None	None	No	None
Louisiana	No	None	None	No	None
Maine	Yes	None	None	No	None
Maryland	Yes	Reciprocal	None	No	None
Massachusetts	Yes	None	None	No	None
Michigan	Yes	$15 or Reciprocal[3]	$1	No	None
Minnesota	Yes	Reciprocal	Reciprocal	No	None
Mississippi	Yes	Reciprocal	None	No	None
Missouri	Yes	None	None	No	None
Montana	Yes	$5 to $25	$25	No	None
Nebraska	Yes	Reciprocal	$1	No	None
Nevada	No	None	None	No	None
New Hampshire	No	None	None	No	None
New Jersey	Yes	Reciprocal	None	No	None
New Mexico	Yes	$10	$25	Yes	None
New York	No	None	None	No	None
North Carolina	Yes	Reciprocal	None	No	$1000[4]
North Dakota	Yes	Reciprocal	None	No	None
Ohio	Yes	Reciprocal	$1	No	None
Oklahoma	Yes	Reciprocal	$1	No	None
Oregon	No	None	$1	No	None[4]
Pennsylvania	Yes	None	None	No	None
Rhode Island	Yes	None	None	No	None
South Carolina	Yes	None	None	No	None
South Dakota	Yes	Reciprocal	$1	No	None
Tennessee	Yes	Reciprocal	Reciprocal	No	$5000[4]
Texas	Yes	Reciprocal	None	No	None
Utah	Yes	$10[3]	None	No	None
Vermont	No	None	None	No	None
Virginia	No	Reciprocal	Reciprocal	No	None
Washington	No	Reciprocal	$1	No	None
West Virginia	Yes	None	$1	No	None
Wisconsin	Yes	None	None	No	None
Wyoming	Yes	Reciprocal	None	No	None

[1] Secure special permit and instruction from officer in charge before making shipment.
[2] Only for fruit-stock shippers.
[3] For nurserymen who operate through agents.
[4] For nurserymen who promise maintenance.

PLANT QUARANTINE OFFICIALS OF THE STATES, TERRITORIES, DISTRICT OF COLUMBIA, CANADA, AND MEXICO

Alabama	B. P. Livingston, Chief, Division of Plant Industry, State Department of Agriculture and Industries, P. O. Box 22D, Montgomery 1
Alaska	Hon. G. W. Gasser, Commissioner of Agriculture, Fairbanks
Arizona	J. L. E. Lauderdale, State Entomologist, P. O. Box 2006, Phoenix
Arkansas	Paul H. Millar, Chief Inspector, State Plant Board, Little Rock
California	A. P. Messenger, Chief, Bureau of Plant Quarantine, State Department of Agriculture, Sacramento 14
Canada	Dr. Robert Glen, Chief, Division of Entomology, Department of Agriculture, Ottawa, Ontario
Colorado	F. Herbert Gates, State Entomologist, Bureau of Plant and Insect Control, 20 State Museum, Denver 2
Conneticut	Nealy Turner, State Entomologist, Agricultural Experiment Station, Box 1106, New Haven 4
Delaware	W. R. Hickman, Nursery Inspector, State Board of Agriculture, Dover
District of Columbia	F. P. Hubert, Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, Washington 25
Florida	Ed. L. Ayers, Plant Commissioner, State Plant Board, Gainesville
Georgia	C. H. Alden, Director of Entomology, State Capitol, Atlanta 3
Hawaii	Wm. C. Look, Chief Plant Inspector, Board of Commissioners of Agriculture and Forestry, Honolulu
Idaho	Hon. D. A. Stubblefield, Commissioner State Department of Agriculture, Boise
Illinois	H. F. Seifert, Horticultural Inspection Supervisor, Room 300, Professional Arts Building, Glen Ellyn
Indiana	Frank N. Wallace, State Entomologist, State Department of Conservation, Indianapolis
Iowa	Dr. H. M. Harris, State Entomologist, Ames
Kansas, North	Dr. Herbert Knutson, State Entomologist, State College of Agriculture and Applied Science, Manhatten
South	Dr. Charles D. Michener, Entomologist, Entomological Commission of Kansas, Lawrence
Kentucky	Professor Walter A. Price, State Entomologist, College of Agriculture, University of Kentucky, Lexington
Louisiana	S. J. McCrory, State Entomologist, State Department of Agriculture and Immigration, Box 4153, Capitol Station, Baton Rouge
Maine	E. L. Newdick, Chief Division of Plant Industry, State Department of Agriculture, Augusta
Maryland	Dr. E. N. Cory, State Entomologist, University of Maryland, College Park

Massachusetts.	Quincy S. Lowry, Assistant Director, Division of Plant Pest Control and Fairs, 41 Tremont Street, Boston 8
Mexico.	Ing. Dario Arrieta, Director General of Agriculture, San Jacinto, D. F. Mexico
Michigan.	C. A. Boyer, Chief, Bureau of Plant Industry, State Department of Agriculture, Lansing 13
Minnesota.	T. L. Aamodt, Director, Bureau of Plant Industry, State Department of Agriculture, Dairy and Food, University Farm, St. Paul 1
Mississippi.	Dr. R. E. Hutchins, Entomologist, State Plant Board, State College
Missouri.	Julius R. Anderson, State Entomologist, State Department of Agriculture, Jefferson City
Montana.	R. O. Young, Chief, Division of Horticulture, State Department of Agriculture, Labor, and Industry, Missoula
Nebraska.	C. J. Walstrom, Entomologist, Bureau of Plant Industry, State Department of Agriculture and Inspection, Lincoln
Neveda.	George G. Schweis, Director, Division of Plant Industry, State Department of Agriculture, P. O. Box 1027, Reno
New Hampshire. . . .	Dr. J. G. Conklin, State Entomologist, Insect and Plant Disease Suppression and Control, State Department of Agriculture, Durham
New Jersey.	Harry B. Weiss, Chief, Bureau of Plant Industry, State Department of Agriculture, Trenton 8
New Mexico.	Professor R. F. Crawford, Deputy Inspector, College of Agriculture and Mechanic Arts, State College
New York.	H. B. Little, Director, Bureau of Plant Industry, State Department of Agriculture and Markets, Albany 1
North Carolina.	Dr. C. H. Brannon, State Entomologist, State Department of Agriculture, Raleigh
North Dakota.	Dr. R. L. Post, Chairman, Department of Entomology, North Dakota Agricultural College, Fargo
Ohio.	John Baringer, Chief, Division of Plant Industry, State Department of Agriculture, Columbus 15
Oklahoma.	Clyde A. Bower, Director, Division of Entomology and Plant Industry, State Department of Agriculture, Oklahoma City 5
Oregon.	Frank McKennon, Chief, Division of Plant Industry, State Department of Agriculture, Agricultural Building, Salem
Pennsylvania.	Dr. T. L. Guyton, Director, Bureau of Plant Industry, State Department of Agriculture, Harrisburg
Puerto Rico.	Luis A. Catoni, Director Plant Quarantine Service, Department of Agriculture and Commerce, San Juan
Rhode Island.	Alvin J. Lannon, Administrator, Division of Entomology and Plant Industry, State Department of Agriculture and Conservation, State House, Providence 2
South Carolina.	J. A. Berly, Entomologist, State Crop Pest Commission, Clemson

South Dakota. . . . . Frank M. Tietge, Director of Division of Plant Industry, Department of Agriculture, Pierre
Tennessee. . . . . Howard L. Bruer, State Entomologist, Department of Agriculture, Nashville
Texas. . . . . Charles Chapman, Chief, Division of Plant Quarantine, State Department of Agriculture, Austin
Utah. . . . . Earl Hutchings, State Entomologist, State Department of Agriculture, Salt Lake City
Vermont. . . . . John W. Scott, State Nursery Inspector, State Department of Agriculture, Montpelier.
Virginia. . . . . G. T. French, State Entomologist, State Department of Agriculture and Immigration, 1112 State Office Building, Richmond 19
Washington. . . . . William H. Shaw, Supervisor of Horticulture, State Department of Agriculture, Olympia
West Virginia. . . . . F. Waldo Craig, Entomologist, State Department of Agriculture, Charleston 5
Wisconsin. . . . . E. L. Chambers, State Entomologist, State Department of Agriculture, State Capitol, Madison 2
Wyoming. . . . . George B. Harston, State Entomologist, State Department of Agriculture, Powell

INTERSTATE SHIPMENT OF BARBERRY AND MAHONIA RESTRICTED

Federal Quarantine Number 38, on account of Black Stem Rust was ammended by the Secretary of Agriculture to become effective February 11, 1950. Among the important changes in regulations are: (1) the elimination of the requirement to place a special permit tag on each package of barberry, mahonia, or mahoberberis shipped interstate; (2) shipments of seeds and fruits of approved species and varieties are required to have special permit tags attached when going into any of the eradication states.

The requirements of Federal Quarantine Number 38 are summarized as follows: (1) The eradication states are: Colorado, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, North Dakota, Ohio, Pennsylvania, South Dakota, Virginia, Washington, West Virginia, Wisconsin, and Wyoming; (2) Barberry, mahonia, and mahoberberis, in any variety, can be shipped interstate (to any state) only under certificate issued by the Bureau of Entomology and Plant Quarantine; (3) Application for Federal certificate must be filed in duplicate, not later than May 15 each year, with the Bureau of Entomology and Plant Quarantine Division of Plant Disease Control Washington 25, D. C.; (4) Only species and varieties known to be rust resistant and approved by the Bureau will be acceptable for certification. Species and varieties not known to be resistant to rust cannot be shipped interstate and growers who have such rust susceptible species will be required to destroy them before permits to ship approved varieties are granted; (5) The following species and varieties of barberry, mahonia, and mahoberberis are designated as rust resistant:

Scientific Name	Common Name
Berberis arido-calida	
B. beaniana	Bean's Barberry
B. buxifolia	Magellan Barberry
B. buxifolia nana	Dwarf Magellan Barberry
B. calliantha	----------
B. candidula	Paleleaf Barberry
B. chenaulti	Chenault Barberry
B. circumserrata	Cutleaf Barberry
B. concinna	Dainty Barberry
B. darwini	Darwin Barberry
B. formosana	----------
B. franchetiana	----------
B. gagnepaini	Black Barberry
B. gilgiana	Wildfire Barberry
B. horvathi	----------
B. hybrido-gagnepaini	False Black Barberry
B. insignis	----------
B. julianae	Wintergreen Barberry
B. koreana	Korean Barberry
B. linearifolia var. Orange King	Jasperbells Barberry
B. lologensis	----------
B. mentorensis	Mentor Barberry
B. pallens	Pallid Barberry
B. potanini	Longspine Barberry
B. renton	----------
B. replicata	Curlleaf Barberry
B. sanguinea	Red-pedicel Barberry
B. sargentiana	Sargent Barberry
B. stenophylla	Rosemary Barberry
B. stenophylla diversifolia	----------
B. stenophylla irwini	Irwin Barberry
B. stenophylla nana compacta	Corallina Barberry
B. telomaica artisepala	----------
B. thunbergi D. C.	Japanese Barberry
B. thunbergi atropurpurea	Redleaf Japanese Barberry
B. thunbergi atropurea nana	----------
B. thunbergi erecta	Truehedge Columnberry
B. thunbergi "globe"	----------
B. thunbergi "golden"	----------
B. thunbergi maximowiczi	Coral Japanese Barberry
B. thunbergi minor	Box Barberry
B. thunbergi pluriflora	Flame Barberry
B. thunbergi "thornless"	----------
B. thunbergi "variegata"	----------
B. triacanthorphora	Threespine Barberry
B. verruculosa	Warty Barberry
B. virgatorum	----------
B. xanthoxylon hort	----------
Mahonia aquifolium	Oregongrape Mahonia
M. bealei	Leatherleaf Mahonia
M. compacta	----------
M. dictyota	Netvein Mahonia
M. fortunei	Chinese Mahonia
M. nervosa	Cascades Mahonia
M. pinnata	Cluster Mahonia
M. repens	Creeping Mahonia

PLANT IMPORTATION

Under provisions of Federal Quarantine Number 37 certain limitations are placed upon the importation of plants and seeds from foreign countries. Anyone wishing to import nursery, stock, plants, or seeds must first obtain a permit from the Bureau of Entomology and Plant Quarantine, 209 River Street, Hoboken, New Jersey. In applying for a permit to import plant material the following information is required: (a) The name and location of the producer from whom the plants or seeds are to be secured; (b) the name and adress of the person or firm to which the seeds or plants are to be shipped; (c) the number and genus of the plants or seeds for which the permit is desired.

All restricted plants imported under the conditions listed above are limited in size and age to the youngest and smallest which can be successfully freed from soil about their roots, transported to the United States, and established in this country with a reasonable degree of success. Certain classes of plants permitted entry under quarantine 37 are required to be grown by the importer under post entry inspection regulations. Such plants are not released to the trade until such time as their freedom from plant diseases and insect pests has been established. The plants are therefore grown for one or more years in a place where the state inspector may have access to them for inspection purposes, for such time as appears necessary. When their freedom from pests and diseases has been established, the plants under quarantine are released.

OAK WILT

A comparatively new disease, oak wilt (Whalara quercina Henry), is threatening all oaks in the midwest. The disease is caused by a fungus organism that can be identified by plant pathologists in one-to two-year old vascular tissue from infected trees.

Varieties of the red and black groups seem to become infected with oak wilt more readily than white and burr oats, although all species and varieties of oaks are susceptible to the disease.

The first symptoms in the red and black oaks are shown by the appearance of leaves on the upper branches. They show dull light green color and curl upward. Later the leaves may turn yellow or reddish brown before falling. All leaves may fall within a month after first symptoms occur. In white and burr oaks the disease develops more slowly, with one or more branches near the top showing disease symptoms first.

Spread of the disease from diseased to healthy trees within native stands of oaks can occur through natural root grafts or unions. It is not known to plant pathologists how the disease is spread from one locality to another.

Oak wilt is known to occur in Arkansas, Illinois, Indiana, Iowa, Kansas, Minnesota, Missouri, Nebraska, Ohio, Pennsylvania, and Wisconsin. Nurserymen, foresters, and all others interested in pre-

venting the loss of oaks should be on the alert for this trouble. Samples of twigs from oaks showing symptoms of the disease should be sent to the National Oak Wilt Research Committee, P.O. Box 373, Memphis, Tennessee.

Six twigs or branches about 6 to 8 inches long and 1/2 to 1 inch in diameter are best for laboratory examination. The twigs should be alive or just recently dead but not completely dry. Do not send leaves, dead branches or decayed wood. The twigs should be tied in a bundle, wrapped in paper so as to prevent excessive drying but should not be wrapped in wet moss or cotton. Labels should be attached in such a manner as to couple the laboratory report with the tree from which the twigs were taken.

One oak tree infected with oak wilt disease was found in Greenup county, Kentucky, during the summer of 1951. The diseased tree was destroyed, in approved manner, in order to prevent spread of trouble to healthy trees.

JAPANESE BEETLE

The 1951 inspection and trapping activities resulted in discovery of three areas in Kentucky that were infested with Japanese beetles. The infested areas are located in Jefferson, Greenup, Kenton and Campbell counties. The Jefferson county area covered approximately 300 acres, all within the city limits of Louisville. The Greenup county area included the small towns of Russell, West Russell, and Worthington. The Kenton-Campbell county area included several scattered spots along the Ohio river opposite the infested area north and east of Cincinnati. All places found to be infested were given a foliage application of DDT during July, 1951, in an effort to reduce the beetle population and prevent spread. No soil treatments were made during 1951. The inspection and trapping program in 1952 showed an extension of the known infestations.

Two DDT foliage sprays, totalling 1,500 gallons, were made to the infested areas in the above four counties. The first application was started June 25; the second one July 10. In addition to the foliage applications, a surface soil treatment was made on 435 acres in Louisville.

Plans for 1953 are to continue the foliage spraying of all known infested areas during the flight period of the beetle and to apply surface soil treatments where practical.

WHITE FRINGED BEETLES

Inspections of the survey type were continued in Kentucky during the summer of 1952 to determine if white-fringed beetles had become established. No beetles were found. This work was done by inspectors from the Bureau of Entomology and Plant Quarantine with the cooperation of the State Entomologist.

Three counties in Tennessee are known to support infestations of white-fringed beetles. By the continued practice of suppressive measures the infestation in Hamilton county, near Chattanooga, has been reduced, according to reports, until only a few scattered beetles could be found in 1952. No beetles were found in Tipton county in the same year. In Memphis (Shelby county) an additional 721 acres were found infested during 1952, bringing the total known infested land for the state of Tennessee to 2,881 acres.

In the infested states of Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina and South Carolina there were some additional acreage found during 1952 to be infested with white-fringed beetles. The rate of spread, however, according to reports, seemed to be decreasing.

Survey inspections have been conducted in Arkansas, Delaware, Illinois, Indiana, Kentucky, Maryland, Missouri, New Jersey, Ohio, Pennsylvania, Virginia and West Virginia with negative results.

ELM PHLOEM NECROSIS AND DUTCH ELM DISEASE

Elm pholem necrosis and Dutch elm disease have been found to occur in the state of Kentucky. Elm phloem necrosis has been by far the most destructive disease of elms yet known to Kentucky forests and landscape plantings. Dutch elm disease has been found in only a small number of elms in northern Kentucky, near Cincinnati, Ohio. Although no cure is known for these maladies, measures can be taken to protect healthy trees from infection.

Dutch elm disease or phloem necrosis should be suspected whenever elm foliage suddenly wilts and the dry, dead leaves adhere to the branches; or when the leaves of an entire branch, or the top, turn yellow and fall prematurely. To further identify the diseases, cut through the bark at ground level, or below, and pry the bark from the wood so the inner bark will show. If the inner bark surface isyellow or like butterscotch in color, phloem necrosis is indicated. If a portion of the inner bark is confined in a bottle or the closed hands for a few minutes a faint odor of wintergreen can be detected from phloem necrosis diseased bark.

To test for Dutch elm disease remove several small branches with wilted, yellow, or dying leaves. If the cross sections, where cuts are made, show several brown spots or discolorations in one or more annual rings of wood, the trouble is probably Dutch elm disease. For a positive identification cut four or five branches 1/2 inch in diameter and about six inches long, which contain discoloration of the annual rings. Wrap these specimens in wax paper to prevent drying, and mail, with a letter giving the senders name, address, and location of tree, to the Dutch Elm Disease Identification Laboratory, Bureau of Entomology and Plant Quarantine, 503 Main Street, East Orange, New Jersey.

Both diseases are spread by insects. Elm phloem necrosis is spread by a leafhopper (Scaphoidens luteolus). Dutch elm disease is spread by elm bark beetles, principally the smaller European elm bark beetle (Scolytus multistriatus).

Prevention of spread of these diseases to healthy trees is based upon the control of insect carriers. This can be accomplished by sprays containing DDT, provided they are correctly formulated, properly applied, and used at the right time. To control the carrier of elm phloem necrosis it is necessary to spray, thoroughly, all leaf surfaces. The first spray should be applied when elm leaves are full grown, usually May 15 to June 1 in Kentucky. The second spray should be applied when the new growth appears, usually one to two months later. Use formula A or B as given below, for both sprays, and dilute to make 200 gallons.

To control the insect which carries Dutch elm disease it is necessary to spray thoroughly all bark surfaces of the trees to be protected. Apply the first spray before the appearance of elm flowers or leaves. This period is usually the latter part of March for Kentucky. A second spray should be applied from 2 1/2 to 3 months after the first treatment. For first treatment use formula A or B diluted to make 100 gallons. If a mist blower is employed use formula C diluted to make 20 gallons. For second treatment use either formula at one half strength recommended for first treatment.

Formula A - Dissolve 16 pounds of technical DDT in a mixture of 2 1/2 gallons of Benzene and one gallon of Velsicol AR - 50. To this solution add 1 pint of Triton X - 100.

Formula B - Dissolve 16 pounds of technical DDT in 4 gallons of Xylene. To this add 1 pint of Triton X - 100.

Formula C - Dissolve 20 pounds of technical DDT in a mixture of 5 fallons of Xylene and 2 1/2 gallons of Acme white oil. To this solution add 1 1/2 pints of Triton X - 100.

If red spiders or spider mites build up to damaging populations, which will sometimes be the case after repeated treatments with DDT add 1/2 gallon of Acme white oil to each 100 gallons of formula A or B for foliage treatment.

EUROPEAN CHAFER (AMPHIMALLON MAJALIS, RAZOUM)

European chafer is another of the recently introduced insect pests of special concern to nurserymen. It is destructive in the larval stage only and the damage is done by the grubs, feeding on the roots of plants. The feeding is so similar to that of our ordinary white grubs and of Japanese beetle grubs that the problem of identification is difficult.

Inspection of Nursery Stock, 1952-53

Attention was called to some rather severe turf injury in sections of Newark, New Jersey in the spring of 1940. It was not until the spring of 1942 that positive identification was made of the species and this constitutes the first authentic record of the occurence of the species in North America. The European Chafer, is known to occur in several countries on the continent of Europe, and is reported to be especially destructive in some areas.

Since 1942 scouting work has been carried on by New York state agencies and the Bureau of Entomology and Plant Quarantine to determine the extent of the infested area. To date (February 1951) the only known infested area is in Wayne, Ontario, and Monroe Counties in New York state. The infested area in 1950 covered about 485 square miles.

Quarantine restrictions and soil treating requirements for nurseries infested with European chafer are similar to those infested with Japanese beetle or white-fringed beetle.

INSPECTION REQUIREMENTS FOR CERTAIN CLASSES OF NURSERY MATERIAL

Gladiolus Corms

Two inspections are required for certification of gladiolus corms. The first inspection is made during the blooming and the second inspection during storage after the corms have been cleaned.

Sweetpotato Plants

Some state laws establish the requirements that sweetpotato plants should be free from black rot, stem rot, and sweetpotato weevil before they are shipped into the respective states. Only sweet potatoes which are certified as free from sweetpotato weevil should be bedded. A request for inspection service. should be sent to the State Entomologist in advance of bedding time, giving approximate date of bedding and drawing of first plants.

Native or Collected Plants

There seems to be a growing demand for certain native or collected plants. Where it is desired to offer for sale this type of plant material the plants should be collected and "lined out' or "heeled in" and held for inspection. Notice should be forwarded to the State Entomologist giving the date when the plants will be ready for inspection and the location of the plant yard.

For general inspection requirements see "Summary of requirements of Kentucky Nursery Inspection Law" and "Nursery Stock" defined on previous pages.

Voluntary Certification

Plant certification requirements are not uniform throughout the forty-eight states. Some states require the inspeciton of greenhouse plants, bulbs, corms, rhizomes, and tubers, annual flowering plants, and garden vegetable plants, Kentucky does not require inspection on any of these plants or materials. Dealers can merchandise this material, under the provisions of the Kentucky Nursery law, without registering or obtaining a state permit. A grower, of any of the above mentioned plants, who wishes to ship to other states or who wishes to have inspection and certification for any other reason can have inspection in the usual manner, by applying to the State Entomologist. As in the case of required inspection, a fee of $5.00 is charged for voluntary inspection.

Strawberry Plants

Growers wishing to offer strawberry plants for sale should take into account the dual inspection requirements. Notice should be given to the State Entomologist by the Middle of April if inspection services are desired. The first inspection of strawberry plants is made during the blooming season. and the second inspection during late summer or early fall.

Raspberry Plants

Two inspections are required for certification of raspberry plants. These inspections are made during summer months and must be at least thirty days apart. Raspberry plant growers wishing inspection services should notify the State Entomologist by June first.

NURSERY DEALERS

Alberts Super Markets, Inc.	Cincinnati, O.
Alexander Landscape Service	Campbellsville
Bacon, J. and Sons	Louisville
Battaglia, John	Covington
Bezold, Tony	Newport
Bickers, Arnold	Lexington
Bunton Seed Company	Louisville
Byers and Franklin	Lexington
Cole, Julian B.	Henderson
Davis, Paul M.	Rose Hill, Va.
Doll, John V.	Louisville
Foster, W. P.	Chicago, Ill.
Germann, J. D.	McKeesport, Pa.
Goodlett, Virgel R.	Valley Station
Grant, W. T. Company	Louisville
Green, H. L. Company	Louisville
Green's Garden and Flower Shop	Covington
Haupt, Fred L. Florist	Louisville
Imogene's Flower Shop	Harlan
Ireland, J. F. Nursery Company	Onarga, Ill.
Jacobs, Robert W	Louisville
Karcher, Theodore B.	Louisville
Klopp, Maurice	Detriot, Mich.
Kress, S. H. Company	Ashland
Kress, S. H. Company	Hopkinsville
Kresge, S. S., Company	Louisville
Kresge, S. S., Company	Lexington
Kresge, S. S., Company	Paducah
Kresge, S. S., Company	Covington
Kresge, S. S., Company	Newport
Kresge, S. S., Company	Owensboro
Kresge, S. S., Company	Louisville
Kresge, S. S., Company	Louisville
Kresge, S. S., Company	Louisville
Kroger Company	Maysville
Kroger Company	Cynthiana
Kroger Company	Carlisle
Kroger Company	Flemingsburg
Kroger Company	Newport
Kroger Company	Ludlow
Kroger Company	Covington
Kroger Company	Dayton
Kroger Company	Ft. Thomas
Kroger Company	Elsmere
Kroger Company	Williamstown
Kroger Company	Mayfield
Kroger Company	Morganfield
Kroger Company	Marion
Kroger Company	Sturgis

Kroger Company	Benton
Kroger Company	Bardwell
Kroger Company	Clinton
Kroger Company	Paducah
Kroger Company	Murray
Kroger Company	Hopkinsville
Kroger Company	Covington
Kroger Company	Louisville
Kroger Company	Louisville
Kroger Company	Louisville
Kroger Company	Louisville
Kroger Company	Louisville
Kroger Company	Louisville
Kroger Company	Louisville
Kroger Company	Louisville
Kroger Company	Louisville
Kroger Company	Louisville
Kroger Company	Louisville
Kroger Company	Louisville
Kroger Company	Louisville
Kroger Company	Louisville
Kroger Company	Louisville
Kroger Company	Owenton
Kroger Company	Carrollton
Kroger Company	Owensboro
Kroger Company	Bardstown
Kroger Company	Elizabethtown
Kroger Company	Danville
Kroger Company	Somerset
Kroger Company	Frankfort
Kroger Company	Harrodsburg
Kroger Company	Lexington
Kroger Company	Winchester
Kroger Company	Lexington
Kroger Company	Lexington
Kroger Company	Lexington
Lang, George T.	Covington
Lose Brothers, Inc.	Louisville
Lymburner Nurseries, Inc.	Chamblee, Ga.
McCrory Stores Corp.,	Louisville
McCullough, J. Chas. Seed Company	Cincinnati
Meisburg, C. T.	Harrodsburg
Miles, H. C.	Pewee Valley
Montgomery Ward and Company	Mayfield
Newberry, J. J., Company	Owensboro
Newberry, J. J., Company	Henderson
Newberry, J. J., Company	Frankfort
Newberry, J. J., Company	Pineville
Newberry, J. J., Company	Richmond
Newberry, J. J., Company	Elizabethtown
Newberry, J. J., Company	Glasgow

Newberry, J. J., Company	Cynthiana
Newberry, J. J., Company	Somerset
Newberry, J. J., Company	Shelbyville
Newberry, J. J., Company	Versailles
Newberry, J. J., Company	Mayfield
Newberry, J. J., Company	Mt. Sterling
Newberry, J. J., Company	Paris
Newberry, J. J., Company	Winchester
Newberry, J. J., Company	Harlan
Newberry, J. J., Company	Hazard
Newberry, J. J., Company	Danville
Newberry, J. J., Company	Louisville
Newberry, J. J., Company	Corbin
Newberry, J. J., Company	Lawrenceburg
Newberry, J. J., Company	Harrodsburg
Ostrander, John O.	Louisville
Purcell's	Lexington
Renfrow, H. E.	Beaver Dam
Reid, L. B.	Hickory
Riesenberg, Anthony	Ft. Thomas
Riley, Louis, Jr.	Owensboro
Scott-Burr Stores Corp.,	Middlesboro
Scott-Burr Stores Corp.,	Hazard
Scott-Burr Stores Corp.,	Harlan
Sears Roebuck and Company	Covington
Sears Roebuck and Company	Lexington
Sears Roebuck and Company	Louisville
Sears Roebuck and Company	Owensboro
Shumway, R. H., Seedsman	Rockford, Ill,
Snyder, Ben, Inc.,	Louisville
Stoke, Louis, Jr.	Louisville
Stringer Bros. Nursery	Memphis, Tenn
Vanslyke, J. E.	Shelbyville
Wells, Russell and Lillian	Commiskey, Ind.
Wilson, Marjorie M. and Elizabeth M. Cosby	Frankfort
Woolworth, F. W., Company	Paducah
Woolworth, F. W., Company	Owensboro
Woolworth, F. W., Company	Henderson
Woolworth, F. W., Company	Bowling Green
Woolworth, F. W., Company	Hopkinsville
Woolworth, F. W., Company	Mayfield
Woolworth, F. W., Company	Madisonville
Woolworth, F. W., Company	Louisville
Woolworth, F. W., Company	Lexington
Woolworth, F. W., Company	Covington
Woolworth, F. W., Company	Newport
Woolworth, F. W., Company	Frankfort
Woolworth, F. W., Company	St. Matthews
Woolworth, F. W., Company	Louisville
Woolworth, F. W., Company	Richmond
Woolworth, F. W., Company	Danville
Woolworth, F. W., Company	Ashland
Woolworth, F. W., Company	Maysville
Woolworth, F. W., Company	Louisville
Woolworth, F. W., Company	Louisville

KENTUCKY NURSERYMEN WHO RECEIVED CERTIFICATES OF INSPECTION, 1952-53

NAME	ADDRESS	ACREAGE	KIND OF STOCK
Alberts Orchid Company	Louisville		Orchids
Ammon Nursery	Florence	2 acres	Ornamental
Arrow-Wood Nursery			
W. C. O'Conner	Warsaw	7 acres	Ornamental
Arterburn, Paul Nursery			
Mrs. Paul Arterburn	St. Matthews	5 acres	Ornamental
Barnett's Nursery			
Mrs. A. E. Barnett	Murray	1/4 acre	Ornamental
Barr and Leichhardt			
Nursery	Bowling Green	7 acres	Ornamental
Blue Gables Court	Carrollton	1 acre	Ornamental
Blue Star Nursery	Carlisle	6 acres	General
Cheatham, Mrs. Tracie	Danville	1/4 acre	Perennials
Chick's Nursery	Marion	2 acres	Ornamental
Chowning, Kelley	Lexington	2 acres	General
Clay Nursery	Clay	15 acres	General
Clyffty Evergreen Gardens	Catlettsburg	1 acre	Ornamental
Crume Nursery and Landscape			
Company			
T. C. Crume	Florence	60 acres	General
Dieterich, C. P. and Brother	Maysville	1 acre	Ornamental
Dixie View Nurseries			
A. L. Heger	Covington	50 acres	General
Donaldson Nursery	Sparta	5 acres	General
Dressman, J. A.	Covington		Bulbs
Durrett, Lydean	Louisville	1 acre	Ornamental
Fike Nurseries			
J. W. Fike	Hopkinsville	60 acres	General
Florence Nursery	Florence	5 acres	Ornamental
Gardiner, Boone Nurseries			
Dan Gardiner	Louisville	20 acres	General
Gramse Nursery	Paducah	5 acres	General
Green River Home Nursery	Robards	5 acres	General
Haag Nurseries	Jeffersontown	20 acres	General
Harville, A. M. Florist	Princeton	1 acre	Ornamental
Heitmeyer, Elmer	Maysville	3 acres	Ornamental
Higdon, Nursery	Mayfield	2 acres	Ornamental
Highbaugh Farms	Louisville	5 acres	General
Hillenmeyer Nurseries	Lexington	250 acres	General
Hill's Nursery	Warsaw	35 acres	General
Humphrey's Landscape Service	Mt. Sterling	10 acres	General
Johnston, Allie	Benton R. 1	5 acres	General
Klein Nursery and Florist	Crestwood	50 acres	General
Korfhage Nursery and Florist	Louisville	20 acres	General
Leeming Nursery	Louisville	5 acres	General
Lillard Nursery	Jeffersontown	15 acres	Ornamental
Martin's Nursery	Carrollton	25 acres	General
Metcalf Florist	Hopkinsville		Greenhouse
Mink's Nursery	London	3 acres	General
Montieth Nursery	Hebron	1/2 acre	Ornamental

Mt. Pleasant Gardens	Ft. Thomas	15 acres	General
Murdock Farms			
L. W. Murdock	Farmington	1/2 acre	Ornamental
Murray Nursery & Florist	Murray	1 acre	Ornamental
Nick's Nursery	Anchorage	20 acres	General
Otte, Clarence Nursery	Louisville	1 acre	Ornamental
Pack, H. V.	Carter	1/4 acre	Ornamental
Painter-Shevetto Nursery	Anchorage	5 acres	General
Perennial Farms	Louisville	3 acres	Ornamental
Peyton's Nursery	Hodgenville	2 acres	Ornamental
Pomona Nursery	Bowling Green	5 acres	General
Ray, Carl Company	St. Matthews	15 acres	General
Ray, W. E.	Bowling Green		African Violets
Reynolds Nursery	Bondville	15 acres	General
Rottgering Greenhouses	Paducah	2 acres	General
Sanders Brothers Nursery	Paducah	10 acres	General
Schmaus, Roy	Benton	4 acres	Ornamental
Schneidman Greenhouses	Paducah	10 acres	General
Shupe Nursery	Sedalia	2 acres	Ornamental
Sims Floral Company	Danville	2 acres	Ornamental
Singer Gardens	Stamping Ground	5 acres	Ornamental
Taylor, Truman	Waynesburg	1 acre	Strawberries
Todd County Nursery	Trenton	1 acre	Ornamental
Veeley's Nursery	Louisville	2 acres	Ornamental
Walker, Kingsley Company	Louisville	2 acres	Ornamental
Wallitsch Nurseries	Louisville	6 acres	Ornamental
Watkins, Leroy	Owensboro	4 acres	Ornamental
Wheeler's Nursery	Owensboro	2 acres	Ornamental
Wildwood Nursery	Ashland	1 acre	General
Willadean Nurseries	Sparta	60 acres	General
Wuerdman, John F.	Ashland	2 acres	Ornametall
Young, Mrs. Stella Monroe	Lexington		Ornamental

SUMMARY OF NURSERY INSPECTION - 1952-53

Inspections of growing stock	72
Inspections of fruit stock only	1
Inspections of bulbs, perennials, etc.	9
Inspections of greenhouses	3
Acres of growing stock	920
Acres of fruit stock only	50
Acres of bulbs, perennial, etc.	15.25
Kentucky growers certificates issued	72
Nonresident nurserymen's licenses issued	345
Nursery stock dealer's permits issued	159
Nonresident nursery agent's permits issued	60
Miles traveled by inspector	19,732
Number of counties visited	120

3M-7-53