

Interstate Restrictions on Movement of *Ribes* Germplasm

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Abstract

Movement of *Ribes* germplasm in the United States is restricted by federal and state regulations because of diseases and other pests. Foreign *Ribes* importation is restricted (Title 7 Agriculture CFR 319.37, The plant protection and quarantine programs for the United States) because of the presence of black currant reversion agent, a pathogen not found in the United States. Domestic *Ribes* are prohibited in some states because *Ribes* acts as an alternate host for white pine blister rust. This paper summarizes the state restrictions on the interstate movement of domestic *Ribes* and was prepared by surveying each of the 50 state departments of agriculture by phone. The present state restrictions are summarized and contacts for each of the state departments of agriculture are listed. Regulations change as new laws are enacted so it is highly recommended that the agencies be contacted for specific situations. As of January 1990, 10 states prohibit or require written permission for domestic *Ribes* entry; 4 states prohibit *Ribes nigrum* L. but may allow other *Ribes* to enter; 13 require nursery or phytosanitary certification for any *Ribes*; 23 either have no restriction or do not enforce the restriction.

Production of currants and gooseberries in the United States is increasing. Plants in the genus *Ribes* are subject to stringent regulations and quarantines by federal and state governments. People who work with and transport *Ribes* should be aware of and abide by these regulations. The black currant reversion pathogen is not present in the United States. Entry of *Ribes nigrum* is prohibited (i.e., *Ribes* can only enter through National Plant Germplasm Quarantine Center) from foreign locations where this pathogen has been reported (USDA/APHIS, 1980). This strict regulation

strives to prevent this exotic disease from entering the United States. The primary problem in interstate movement of domestic *Ribes* concerns white pine blister rust. *Ribes* sp. are obligate alternate hosts for the causal agent, a fungus called *Cronartium ribicola* (Fisch). Since the discovery of this Asian rust fungus in North America (Stewart, 1906), many states legally declared *Ribes* to be a hazard, danger, or nuisance. Eradication programs for native *Ribes* were instituted and prohibitions against *Ribes* importation were strictly enforced. The eradication program in Oregon, for example, began about 1920, through the USDA Bureau of Plant Industry, Office of Blister Rust Control (Gooding, 1926). Agrios (1988) estimated that this serious disease causes an annual growth loss and mortality of more than 200 million cubic feet of white pine lumber in the United States. Several studies have assessed the impact of *Ribes* eradication on white pine blister rust control. O'Brien and Miller (1977) concluded that the destruction of *Ribes* was ineffective for regional control of the disease. However, Ostrojsky et al. (1988) concluded that the *Ribes* eradication program significantly reduced the number of infected trees in Maine. Those states with commercial 5-needle white pine industries continue to prohibit *Ribes* entry and eradicate native *Ribes* stands.

To determine the state restrictions on *Ribes* importation for this report,

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Table 1. State restrictions on movement of domestic *Ribes*.

State	Phone Numbers of State Dept. of Agriculture	Contact Name	<i>Ribes</i> Restriction
Alabama	(205) 261-2656	Guy W. Karr	NC ¹ stating pest free.
Alaska	(907) 745-7200	Frank Mielkey	None
Arizona	(602) 542-4373	Dr. Ivan J. Shields	NC stating nematode free; AZ inspection.
Arkansas	(501) 225-1598	Gerald King	NC
California	(916) 445-8314	Bill Callison	None
Colorado	(303) 866-2383	Robert I. Sullivan	None
Connecticut	(203) 789-7236	Louis A. Magnarelli	None
Delaware	(302) 736-4811	Linda T. Bradley	Prohibited; contact Delaware DA ² for specific control area regulations.
Florida	(904) 372-3505	Dr. S. A. Alfieri	NC stating free of brown garden snail.
Georgia	(404) 656-3641	Tom Kowalski	None
Hawaii	(808) 548-7175	Larry Nakahara	None
Idaho	(208) 334-2590	Dr. Rogelio R. Vega	None
Illinois	(312) 990-8256	Stanley E. Smity	None
Indiana	(317) 232-4120	Robert Waltz	None
Iowa	(515) 281-5861	Carl Carlson	None
Kansas	(913) 296-3016	Tom Sims	None
Kentucky	(606) 257-7450	Dr. B. C. Pass	None
Louisiana	(504) 925-3770	John W. Impson	NC
Maine	(207) 289-3891	Terry Bourgoin	Prohibited; contact Maine DA for specific control area regulations.
Maryland	(301) 841-5870	Dr. Charles Puffinberger	NC
Massachusetts	(617) 727-3031	Peter C. Kuzmiski	Written permit from Massachusetts DA.
Michigan	(517) 373-1087	John Dreves	Black currants prohibited; other <i>Ribes</i> may not be restricted.
Minnesota	(612) 296-8619	Steven Shimek	None. Recent repeal (1987) of previous white pine blister rust restriction.
Mississippi	(601) 325-3390	Jack D. Coley	NC stating free of brown garden snail.
Missouri	(314) 751-2462	Rayford O. Thompson	NC
Montana	(406) 444-3730	Oran Roy Bjornson	NC stating free of white pine blister rust.
Nebraska	(402) 471-2394	Stephen V. Johnson	None
Nevada	(702) 789-0180	P. C. Martinelli	None
New Hampshire	(603) 271-2561	S. W. Thewke	Written permission required from New Hampshire DA.
New Jersey	(609) 292-5440	Carl Schulz	Prohibited; contact NJDA for the latest regulations.
New Mexico	(505) 646-3207	Carol Sutherland	None
New York	(518) 457-2087	Ronald O. Barret	Prohibited; written permission can be obtained to bring <i>Ribes</i> into some areas.
North Carolina	(919) 733-6930	Dr. W. A. Dickerson	Prohibited.
North Dakota	(701) 224-4765	William J. Brandvik	None
Ohio	(614) 866-6361	Brian Peach	Black currants are prohibited except for approved cultivars, such as Consort, Crusader, Coronet, which are resistant to White Pine Blister Rust.
Oklahoma	(405) 521-3864	A. L. Bonner	None
Oregon	(503) 378-6458	R. Obermire	None
Pennsylvania	(717) 787-4843	Dale Stehr	<i>Ribes</i> restrictions exist but are not enforced. Contact state plant pathologist for details.
Rhode Island	(401) 277-2781	John Lawrence III	Written permission required from Rhode Island DA.
South Carolina	(803) 656-3006	H. B. Jackson	Prohibited.
South Dakota	(605) 773-3724	Jim Krsnak	None
Tennessee	(615) 360-0130	Paula Lewis	NC
Texas	(512) 463-7476	Alvin Ashorn	None
Utah	(801) 538-7100	Edward J. Bianco	None
Vermont	(802) 828-2431	John Turnel	Written permit required from Vermont DA.
Virginia	(804) 786-3515	Donald H. Kludy	Black currant prohibited; other <i>Ribes</i> may enter.
Washington	(206) 586-5306	Robert O. Rebhan	NC
West Virginia	(304) 348-2212	Dr. Charles C. Coffman	NC stating free of brown garden snail.
Wisconsin	(608) 266-9413	Mrs. Tetzlaff	Black Currant prohibited; rest no restriction.
Wyoming	(307) 777-6583	Jim Bigelow	NC

1. NC = Nursery or Phytosanitary Certification from the issuing state is required.

2. DA = Department of Agriculture.

each state department of agriculture or forestry was surveyed by telephone from September 1989 to January 1990. Administrators, plant pathologists, and other officers were asked what restrictions exist in their state concerning interstate movement of domestic *Ribes*. The phone numbers, contacts for each state, and their responses are listed in Table 1. Many of the contacts sent copies of their state regulations concerning *Ribes*. A summary of regulations that we received specific to *Ribes* is listed in Table 2.

As of January 1990, 10 states either prohibit *Ribes* importation or require written permission from their state department of agriculture prior to admission of domestic *Ribes*. In addition 4 states, Michigan, Ohio, Virginia, and

Wisconsin prohibit entry of *Ribes nigrum* although some other *Ribes* may enter without restriction. Ohio is slightly different in that it allows entry of white pine blister rust resistant black currant cultivars in addition to other *Ribes* sp.

Nursery or phytosanitary certification for incoming *Ribes* plants is required by 13 states. Some of these states require a statement that the *Ribes* is free of white pine blister rust; others are concerned about the absence of other pests such as brown garden snail. Twenty-two states have no specific regulation concerning *Ribes* transport. One other, Pennsylvania, has "The Pennsylvania White Pine Blister Rust Act of 1933," but this regulation is not presently enforced.

Table 2. State *Ribes* regulation specifics.

State	Title or Code of Regulation	Year Enacted
Delaware	Rules and Regulations for the control and suppressions of the white pine blister rust—Department Order Number 13, Sections I-IV.	1972
Maine	White Pine Blister Rust, Title 12, MSRA 1979, Section 8305.	1979
Massachusetts	Section 27, Chapter 128, General laws, State of Massachusetts: Information relative to the shipment of <i>Ribes</i> (Currant and gooseberry plants) into the State of Massachusetts.	1970 (Supersedes 1952 Memorandum)
Michigan	White pine blister rust, Act No. 313, Public Acts of 1929.	1929
Minnesota	Plant and Animal Pest Control, 18.431-436. White Pine Blister Rust Regulation. Repealed 1987, C109 S13	1987
Mississippi	Brown Garden Snail Regulation, Rule 36.	1971
New Hampshire	State of New Hampshire Department of Agriculture, Insect and Plant Disease Suppression and Control. Pine Blister Rust Quarantine, Chapter 238 of the Revised Laws, Quarantine Notice No. 1, Chapter 223 White Pine Blister.	1948 Amendments 1961, 1979
New Jersey	An order to regulate the movement into and within New Jersey of five-leaved pines (<i>Pinus</i>) and currant and gooseberry plants (<i>Ribes</i> and <i>Grossulana</i> sp.) including cultivated or wild or ornamental sorts (with proposed additions). Chapter 19—Sale and Distribution of Plants and Plant Material.	1949 (Under Revision 1990)
New York	Regulations on currants, gooseberries, and White Pine. (Section 57-A of the Conservation Law).	1950
North Carolina	Agriculture and Plant Industry TO2:48A.0400, Section .0400—White Pine Blister Rust.	1975
Ohio	AG 71-85.01, Suppression and Control of the White Pine Blister Rust Disease.	1978
Pennsylvania	The Pennsylvania White Pine Blister Rust Act of 1933, Section 1-5.	1933
South Carolina	Regulations governing the importation into the State of South Carolina of all five-leaved pines, currants, and gooseberries because of White Pine Blister rust. By South Carolina State Crop Pest Commission.	1985 (Revised)
Vermont	Vermont Statutes annotated Title Ten Sec. 1740, (Forest Pest Control Act of 1955) White Pine Blister Rust Control.	1955
Virginia	Virginia Department of Agriculture and Consumer Services, VR 115-04-15, Rules and regulations relating to the Virginia plants and plant products inspection law, Statute Authority 3.1-188.35 of the Code of Virginia, Section 4. European Black Currant Plants.	1986
Wisconsin	Wisconsin Administrative Code, Chapter AG 25, White Pine Blister Rust, AG 25.0 to 25.08.	1966 (Under Revision 1990)

In that these restrictions change as new laws are enacted, the state department of agriculture or forestry should be recontacted to determine the latest regulations that are in effect. Several state laws concerning *Ribes* are under reconsideration or revision in 1990. New Jersey's revisions are retaining strict control. Wisconsin may repeal their regulation. These tables are presented as guidelines in an effort to make the reader more aware of regulations concerning *Ribes* germplasm movement.

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Performance and Improvement of Lychee Cultivars: A Review

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Abstract

The lychee (*Litchi chinensis* Sonn.) is native to southern China where it has been cultivated for thousands of years and undergone intensive selection. The main cultivars in China include Wai Chee, Souey Tung and Haak Yip. In other countries, the lychee industries are generally based on only a few cultivars, which are nearly all of Chinese origin, e.g. Haak Yip in Taiwan; Tai So and Wai Chee in Thailand; Tai So in South Africa, Mauritius, Malagasy Republic and Reunion; Tai So and Brewster in Hawaii and Florida; and Tai So, Bengal (from India), Kwai May Pink and Wai Chee in Australia. The only exceptions are in India and in southern Thailand, where local seedling selections of Chinese cultivars are exploited. Seedling cultivars developed in the last 50 years which are becoming increasingly important include Sah Keng (Taiwan), Kaimana (Hawaii) and Salathiel (Australia).

Lychee cultivars differ greatly in vegetative flushing patterns, flowering, yields and fruit quality. Opportunities

exist for improving lychee productivity by selecting seedlings from controlled pollination to combine superior characteristics of individual cultivars and possibly closely related members of the *Sapindaceae* family.

The lychee (*Litchi chinensis* Sonn.) which belongs to the *Sapindaceae* or soapberry family originated in southern China and possibly in northern Vietnam and the Malay Peninsula. Lychee trees grow wild in abundance on Hainan Island near northern Vietnam mainly at an elevation of 600-800 m, and below 500 m in hilly areas in Leizhou Peninsula, in the west of Guangdong and the east of Guangxi. The natural distribution of wild lychee is from south of Shiwan Mountains, Liu Wan Mountains, Yunkai Mountains

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