Annotated Bibliography: Ribes Ecology and Pathology
Prepared by Brian W. Geils on Thursday, December 27, 2001

Anderson, O.C. 1939. A cytological study of resistance of Viking currant to infection by Cronartium ribicola. Phytopathology. 29:26–40.
Annotation: Resistance appears to be physiological rather than physical.
Keywords: Ribes, cytology, host resistance, white pine blister rust
Folder: Ribes Location: file

Brown, D.H. 1967. White pine blister rust survey in Montana and Wyoming 1966. Mimeographed report August 1967. Missoula, MT: U.S. Department of Agriculture, Forest Service, Northern Region, State and Private Forestry. 11 p.
Annotation: White pine and Ribes were examined in the Shoshone, Bighorn, Medicine Bow, Gallatin, and Custer National Forest; Yellowstone National Park; and the Wind River Indian Reservation.
Keywords: white pine blister rust, damage survey, limb rust, Ribes
Folder: Ribes, WPBR distribution Location: file

Buchanan, T.S.; Kimmey, J.W. 1938. Initial tests of the distance of spread to and intensity of infection on Pinus monticola by Cronartium ribicola from Ribes lacustre and R. viscosissimum. Journal of Agricultural Research. 56(1):9–30.
Annotation: For the purpose of securing more definite data on the capacity of the prickly currant (Ribes lacustre) and the of the sticky currant (R. viscosissimum) to spread damaging white-pine blister rust infection to western white pine, so-called ribes-to-pine studies were initiated. Under the test conditions equal footages of live stem of the sticky currant and the prickly current are capable of spread essentially equal infection to nearby white pine reproduction. Both ribes species were capable of spreading appreciable infection to pines for a distance of at least 150 feet.
Keywords: Ribes, white pine blister rust, disease spread, epidemiology
Folder: Ribes, WPBR distribution Location: pathology

Carter, J.L. 1988. Trees and shrubs of Colorado. Boulder, CO: Johnson Books: 46–47, 50–53.
Annotation: Keys and good illustrations.
Keywords: flora, Ribes
Folder: Ribes Location: Ribes Folder, shelf

Carter, J.L. 1997. Trees and shrubs of New Mexico Silver City, NM: Mimbres Publishing.
Annotation: Keys and good illustrations.
Keywords: flora, Ribes
Folder: Ribes Location: shelf, Ribes Folder

Caruthers, R.S. 1929. A scale for measuring areas of Ribes leaves. Phytopathology. 19:399–405.
Keywords: Ribes, sampling method
Folder: Ribes

Chumley, T.W.; Hartman, R.L. 2000. Rediscovery of Ribes niveum (Grossulariaceae) in Colorado. SIDA 19(2):407–410.
Annotation: Determination has been questioned.
Keywords: Ribes
Folder: Ribes Location: Ribes Folder

Clinton, G.P.; McCormick, F.A. 1924. Rust infection of leaves in petri dishes. Bulletin 260. New Haven: CN. Connecticut Agricultural Experiment Station: 465–501.

Annotation: Table 1. Results of inoculations of Ribes with Cronartium ribicola. Includes about 40 taxa of Ribes.
Keywords: resistance screening, Ribes, white pine blister rust, pinyon rust
Folder: Ribes Location: pathology

Colley, R.H. 1925. A biometric comparison of the urediniospores of Cronartium ribicola and Cronartium occidentale. Journal of Agricultural Research. 30(3):283–291.

Annotation: Table 2. Field series; means for 100 urediniospores measured; Cronartium occidentale. Lists host, locality, and date collected.
Keywords: pinyon rust, Ribes, white pine blister rust, distribution
Folder: Ribes Location: pathology

Correll, D.S.; Johnston, M.C. 1970. Ribes. in Manual of the vascular plants of Texas. Renner, TX: Texas Research Foundation: 720–723.

Annotation: Key and descriptions.
Keywords: flora, Ribes, id guide
Folder: Ribes Location: Ribes Folder

Correll, D.V.; Johnston, M.C. 1979. Manual of the Vascular Plants of Texas. Renner, TX: Texas Research Foundation.

Annotation: Treatment of Ribes includes curvatum, leptanthum, mescalerium, odoratum, and aureum.
Keywords: flora, Ribes
Folder: Ribes

Darrow, G.M.; Detwiler, S.B. 1929. Currants and gooseberries: Their culture and relationship to white-pine blister rust. Washington, DC: Farmers' Bulletin 1398. 43. p.

Annotation: Contents include regions where currant and gooseberries can be grown, cultivation directions, injurious insects, diseases, spray schedule for insects and diseases, duration of plantation, harvesting the crop, yields of fruit, varieties, ways of using the fruit, summary of the more important state laws relating to blister-rust control, and information concerning federal regulations.
Keywords: Ribes, white pine blister rust
Folder: Ribes Location: pathology

Davis, K.P.; Moss, V.D. 1940. Blister rust control in the management of western white pine. Stn. Pap. 3. Missoula, MT: U.S. Department of Agriculture, Forest Service, Northern Rocky Mountain Forest and Range Experiment Station. 34 p.

Annotation: Summary paper with illustrations and discussion of Ribes ecology but no references.
Keywords: western white pine, white pine blister rust, disease control, Ribes
Folder: Ribes Location: pathology

Dye, A.J.; Moir, W.H. 1997. Spruce-fir forest at its southern distribution in the Rocky Mountains, New Mexico. American Midland Naturalist. 97(1):133–146.

Abstract: Nine stands of spruce-fir ecosystems near Sierra Blanca Peak (3050-3350 m) in southern New Mexico are described. They vary from young, fire-initiated to old-growth stands, but belong the same association of Abies lasiocarpara / Sencio sanguisorboides, Ribes wolfii phase. Tree structure, ground flora and soil characteristics are given for each stand…

Annotation: Describes Ribes montigenum and Ribes wolfii as frequent and common under story plants.
Keywords: natural history, vegetation survey, Engelmann spruce, Ribes, subalpine fir, plant association
Folder: swbr, Ribes Location: file

Fracker, S.B.; Brischle, H.A. 1944. Measuring the local abundance of Ribes. Ecology. 25:283–303.
Annotation: Observations on the local distribution of ribes in 3 locations in northern Idaho and eastern Washington and in 2 locations in California are reported. The ribes in 4 locations were found to be distributed locally as if a contagious distribution were superimposed on a random "Poisson" distribution. [This statistical analysis of spatial pattern may be useful in developing a sampling design for ribes within a forest stand.]
Keywords: Ribes, sampling method, spatial pattern
Folder: Ribes Location: file

Goodding, L.N. 1926. Ribes of Oregon. Corvallis, OR: Oregon State University. 71 p.
Annotation: Keys, descriptions, and illustrations.
Keywords: Ribes, flora
Folder: Ribes Location: Ribes Folder

Goodrich, S.; Neese, E. 1986. Unita Basin flora. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Region: 269–270.
Annotation: Key and descriptions.
Keywords: flora, Ribes
Folder: Ribes Location: shelf, Ribes Folder

Hahn, G.G. 1928. The inoculation of Pacific Northwest Ribes with Cronartium ribicola and C. occidentale. Journal of Agricultural Research. 37(11):663–683.
Annotation: Table 2. Results of inoculating species of Ribes and Grossularia with Cronartium ribicola (16 taxa). Table 3. Results of inoculating species of Ribes and Grossularia with Cronartium occidentale (13 taxa). Practically all the northwestern Ribes species proved decidedly susceptible to Cronartium ribicola.
Keywords: resistance screening, Ribes, white pine blister rust, inoculation, pinyon rust
Folder: Ribes Location: pathology

Hahn, G.G. 1935. Immunity of Viking a Norwegian red currant to Cronartium ribicola and C. occidentale under greenhouse conditions. Circular 330. Washington, DC: U.S. Department of
Annotation: Test methods are described; included susceptible species/varieties.
Keywords: resistance screening, Ribes, white pine blister rust
Folder: Ribes Location: pathology

Hahn, G.G. 1938. Blister rust susceptibility studies of naturally pollinated seedlings of the immune Viking currant. Journal of Forestry. 36(8):737–747.
Abstract: Currants and gooseberries are known to be susceptible in general to white pine blister rust (Cronartium ribicola). Within recent years, however, two red currant garden varieties have been investigated extensively and proved to be immune…
Annotation: Some cross-pollinated seedlings were highly susceptible. In footnote suggests that most distinct differences between varieties are those found in the foliage on new shoots.
Keywords: resistance screening, Ribes, white pine blister rust
Folder: Ribes Location: pathology

Hahn, G.G. 1939. Susceptibility of seedlings of Ribes punctatum, an Andine current, to Cronartium ribicola. Phytopathology. 29(7):643–644.
Annotation: This tender evergreen species was very susceptible to infection. The writer observed vigorous plants growing under greenhouse conditions in Berkeley, CA.
Keywords: resistance screening, Ribes, white pine blister rust
Folder: Ribes Location: pathology

Hahn, G.G. 1943. Blister rust relations of cultivated species of red currants. Phytopathology.
Annotation: The identities of red currants in previous literature are not clear and numerous questions remain.
Keywords: resistance screening, Ribes, white pine blister rust
Folder: Ribes Location: pathology

Hahn, G.G. 1949. Immunity of Canadian black currant selections from blister rust. Phytopathology. 38(6):453–456.
Annotation: Selections of an Asiatic black currant group in an inoculation test appeared to be immune.
Keywords: host resistance, Ribes, white pine blister rust
Folder: Ribes Location: pathology

Harrington, H.D. 1954. Manual of the plants of Colorado. Denver, CO: Sage Books: 285–287.
Annotation: Key and descriptions.
Keywords: flora, Ribes
Folder: Ribes Location: Ribes Folder

Harris, J.L. 1999a. Evaluation of white pine blister rust disease on the Shoshone National Forest. Biological Evaluation R2-99-05. Golden, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Region, Renewable Resources. 11 p.
Abstract: White pine blister rust is a disease that is severely impacting many whitebark and limber pine stands of the northern Rocky Mountains. Whitebark pine has been described as a "keystone" species and its seed is used by several animals, especially by grizzlies, as a source for fat and protein. Limber pine has little timber market value, yet is an important tree species for biodiversity purposes. The disease was introduced to western North America and found in Yellowstone National Park in 1945. Region 2 Forest Health Management conducted a survey for the disease on the Shoshone National Forest and then later installed 13 permanent plots for long term monitoring of the sites. Low incidence levels of the disease were found during the survey. However, two areas of moderate to high infection levels were found. Tree data and rust damages were recorded during the survey and permanent plot installations. Data on Ribes species, the alternate host for the disease, and on pine regeneration were also noted on the permanent plots. Counts of the rust infections were made for each site. Less than 15% incidence levels of white pine blister rust disease were found on the Shoshone National Forest and in eastern Yellowstone National Park. Two sites on the Shoshone National Forest were classified with high disease levels of greater than 50% infection in host trees. Recommendations are to find whitebark pine trees resistant to the disease and promote their habitat and seed protection. Forest Health Management should continue to monitor the permanent plots.

Keywords: damage survey, white pine, white pine blister rust, whitebark pine
Folder: Ribes, WPBR distribution Location: file

Hayes, D.W.; Garrison, G.A. 1960. Key to important woody plants of eastern Oregon and Washington. Agric. Handb. 148. Washington, DC: U.S. Department of Agriculture. 223.
Annotation: Keys, descriptions, and illustrations.
Keywords: flora, Ribes
Folder: Ribes Location: Ribes Folder

Hitchcock, C.L.; Cronquist, A. 1973. Flora of the Pacific Northwest. Seattle, WA: University of Washington Press: 199–204.
Annotation: Key/descriptions and diagnostic illustrations.
Keywords: flora, Ribes
Folder: Ribes Location: shelf, Ribes Folder

Holmgren, P.K. 1997. Grossulariaceae, the currant or gooseberry family. in Cronquist, A.; Holmgren, N.H.; Holmgren, P.K., Intermountain Flora, vascular plants of the Intermountain West, U.S.A.; Vol. 3. Bronx, NY: New York Botanical Garden: 12–26.

Annotation: Excellent taxonomic treatment with illustrations.
Keywords: flora, Ribes
Folder: Ribes Location: Ribes Folder

Hummer, K.E.; Finn, C. 1999. Three-year update on Ribes susceptibility to white pine blister rust. Acta Hort. 505:403–408.

Abstract: Accession for 55 Ribes species were evaluated for presence of uredia of white pine blister rust (WPBR), Cronartium ribicola Fischer, during the fall of 1995, 1996, and 1997 after natural infection. Incidence varied by year, within taxonomic sections, and between and within species. The number of infected accessions was greatest in 1997, the autumn with the most precipitation. During this study, 36 species were observed to be infected with WPBR; 19 had no observable uredia. Some species may contain new sources of genes for developing additional rust-resistant commercial Ribes cultivars. For the cultivars, about 82% of the black currant (R. nigrum); about 27% of the red, white, and pink currants (R. rubrum); 15% of the gooseberries (R. uva-crispa and R. oxycanthoides); 13% of the black currant x gooseberry hybrids (R. x nidigroloaria) had uredia of C. ribicola. Further studies should be conducted to confirm WPBR resistance of cultivars and species thought artificial inoculation.

Keywords: Ribes, white pine blister rust, host resistance
Folder: Ribes Location: Ribes Folder

Hummer, K.E.; Sniezko, R. 2000. Introduction. In: Ribes, Pines, and White Pine Blister Rust. Corvallis: OR. 8–10 September 1999. HortTechnology. 10(3):514.

Annotation: The conference included a day and a half of extensive discussion plus field trips.
Keywords: Ribes, white pine, white pine blister rust
Folder: WPBR impact, Ribes Location: shelf

Hunt, R.S. 2000. White pine blister rust, root disease, and bears. Western Journal of Applied Forestry. 15(1):38–39.

Abstract: Prior to harvest, nine root disease sites lacked any Ribes spp., but after harvest six supported Ribes spp. Surveys indicated that Ribes spp. and other berry plants were in greater abundance in root disease areas than in adjacently harvested areas. Seed deposition by bears and periodic flourishing in root disease areas are likely contributors to forest seed banks, On one site the blister rust incidence in white pine was 98% in the root disease area and 27% in the adjacent non-root disease area. The presence of root disease should be used to rank an area for high potential to blister rust.

Keywords: associated animals, Ribes, root disease, white pine blister rust, wildlife habitat
Folder: WPBR impact, Ribes Location: file

Hunter, A.W.S. 1950. Small Fruits: Black currants. Pro. Rep. Cent. Exp. Farm, Ottawa 1934-48. p. 26–29.

Abstract: .
Annotation: Black currants which have the dominant Cr gene for wpbr resistance are described. Does not mention Cr gene but does describe horticultural aspects (self-unfruitful).
Keywords: Ribes
Folder: Ribes Location: file

Ivey, R.D. 1995. Flowering plants of New Mexico. Third Ed. Albuquerque, NM: Robert DeWitt Ivey.

Annotation: Illustrations and maps only.
Keywords: flora, Ribes
Folder: Ribes Location: Ribes Folder, shelf

Joy, E.L.; Chapman, C.M. 1936. Blister rust control work in Colorado and Wyoming, 1936. Mimeograph Report. Spokane, WA: U.S. Department of Agriculture, Bureau of Entomology and Plant Quarantine, Division of Plant Disease Control. 20 p.

Keywords: white pine blister rust
Folder: Ribes, WPBR distribution

Kearney, T.H.; Peebles, R.H. 1964. Arizona flora. Berkeley: CA: University of California Press: 368–371.

Annotation: Key and descriptions.
Keywords: flora, Ribes
Folder: Ribes Location: Ribes Folder

Kimmey, J.W. 1935. Susceptibility of principal Ribes of southern Oregon to white-pine blister rust. Journal of Forestry. 33:52–56.

Abstract: Effective planning of the control of the white-pine blister rust in the sugar pine forests of southern Oregon requires a knowledge of the susceptibility to the rust and capacity to produce pine-infecting spores of the ribes of that region, ribes being the alternate hosts for the causal fungus. To secure this information, over 300 plants of the principal ribes of southern Oregon (8 species, one of which has 2 varieties) were placed in an experimental garden on the Mt. Hood National Forest were they were tested under heavy rust-infection conditions. Results of the tests, conducted over a period of three years, show that all these species are congenial hosts for the rust and should be eradicated as a protective measure in those areas where it is desired to maintain sugar pine forests.

Annotation: Table 2. Summary of infection data from 1932 artificial inoculations; 10 taxa; lists percentages of infection.
Keywords: white pine blister rust, host resistance, Ribes, sugar pine
Folder: Ribes Location: file

Kimmey, J.W. 1938. Susceptibility of Ribes to Cronartium ribicola in the West. Journal of Forestry. 36:312–320.

Annotation: Table 2. Species and forms in order of their susceptibility to infection under conditions characterized by heavy infection (about 50 species and forms). Table 3. Species and forms in order of their telium-producing capacity under conditions characterized by heavy infection.
Keywords: resistance screening, Ribes, white pine blister rust, inoculation
Folder: Ribes Location: pathology

Kimmey, J.W. 1944. The seasonal development and the defoliating effect of Cronartium ribicola on naturally infected Ribes roezli and R. nevadense. Phytopathology. 35(6):406–416.

Annotation: There is greater variation in susceptibility between plants of R. rozli than for any other ribes species tested. The success or failure of the rust to infect pines during any year will depend largely on whether a rain of sufficient duration occurs before ribes defoliation, whether the defoliation be caused by heavy rust infection, drought and hot weather, or heavy frosts.
Keywords: resistance screening, Ribes, white pine blister rust
Folder: Ribes Location: pathology

Kimmey, J.W. 1946. Notes on visual differentiation of white pine blister rust from pinyon in the telial stage. Plant Disease Reporter. 30:59–61.

Keywords: pinyon pine, pinyon blister rust, morphology, white pine blister rust
Folder: Ribes

Kimmey, J.W.; Mielke, J.L. 1944. Susceptibility to white pine blister rust of Ribes cereum and some other Ribes associated with sugar pine in California. Journal of Forestry. 42(10):752–756.

Abstract: In controlling the white pine blister rust it is of basic importance to know the potential pine-infecting capability of the various species of ribes that occur in association with the pines to be protected. The study herein reported was conducted to determine this for certain control units in sugar pine stands of the California Sierras. A tentative susceptibility rating is given for the species tested.

Annotation: Ribes cereum is rated low in susceptibility but varied in capability to produce sporida which may be high under favorable conditions. Ribes tularenese is rated as medium; R. montigenum is rated as medium but lower that R. tularenese. The susceptibility of R. roezli varied greatly, southern populations being more susceptible than northern.

Keywords: resistance screening, Ribes, white pine blister rust
Folder: Ribes Location: pathology

Kimmey, J.W.; Wagener, W.W. 1961. Spread of white pine blister rust from Ribes to sugar pine in California and Oregon. Tech. Bull. 1251. Washington, DC: U.S. Department of Agriculture, Forest Service. 71 p.

Annotation: Rains become less frequent and the summer dry period more pronounced with decrease in latitude in the white and sugar pine regions of the Pacific slope. To provide an index of the pattern and distance of spread of white pine blister rust from principal Ribes hosts to sugar pine, field tests were conducted between 1935 and 1950 at two locations in southern Oregon and four in California. … Infections patterns from a single source of sporida in the sugar pine region are almost always irregular. Intensities expressed as cankers per foliage unit were variable, depending on the amount of viable rust at plot center and more particularly on the character and duration of the moist period permitting infection. …The number of favorable periods decrease with latitude. …Control will probably be achieved by fitting control measures to the local environment.

Keywords: sugar pine, white pine blister rust, epidemiology, pest hazard, dispersal gradient
Folder: cbr weather, Ribes, WPBR distribution Location: file, pathology

Lachmund, H.G. 1934c. Seasonal development of Ribes in relation to spread of Cronartium ribicola in the Pacific Northwest. Journal of Agricultural Research. 49(2):93–114.

Annotation: Young leaves are highly susceptible. Results indicate a higher average susceptibility for Ribes petiolare and R. inerme than for R. viscosissimum and R. lacustre.

Keywords: resistance screening, Ribes, white pine blister rust
Folder: Ribes Location: pathology

Lehr, J.H. 1978, A catalog of the Flora of Arizona. Phoenix, AZ: Desert Botanical Garden.

Annotation: Only have one page with names of Ribes.
Keywords: Ribes, flora
Folder: Ribes Location: Ribes Folder

Long. W.H. 1916. The aecial stage of Coleosporium ribicola. Mycologia. 8(6):309–311.

Annotation: On a recent field trip to Bear canyon, located in the Sandia Mountains about twelve miles from Albuquerque, NM, the writer found a Peridermium on the needles of pinyon.

Keywords: leaf rust, pinyon pine, Ribes, distribution
Folder: Ribes Location: pathology

Martin, W.C.; Hutchins, C.R. 1980. A flora of New Mexico. Vol. 1. Vaduz: J. Cramer: 878–885.

Annotation: Key, description, maps.
Keywords: flora, Ribes
Folder: Ribes Location: Ribes Folder

McDonald, G.I.; Andrews, D.S. 1981. Genetic interaction of Cronartium ribicola and Ribes hudsonianum var. petiolare. Forest Science. 27:758–763.
Keywords: white pine blister rust, population genetics, Ribes
Folder: Ribes

McDougall, W.B. 1973. Seed plants of northern Arizona. Flagstaff, AZ: Museum of Northern Arizona: 219–221.
Annotation: Key and descriptions.
Keywords: flora, Ribes
Folder: Ribes Location: Ribes Folder

McMinn, H.E. 1939. An illustrated manual of California shrubs. Berkeley, CA: University of California Press: 140–167.
Annotation: Keys, descriptions, and illustrations.
Keywords: flora, Ribes
Folder: Ribes Location: Ribes Folder

Mesler, M.R.; Sawyer, J.O., Jr. 1993. Grossulariaceae, gooseberry family. in Hickman, J.C., ed. Jepson manual: Higher plants of California. Berkeley, CA: University of California Press: 676–685.
Annotation: Key, descriptions, some illustrations.
Keywords: flora, Ribes
Folder: Ribes Location: Ribes Folder, shelf

Messinger, W.; Hummer, K.; Liston, A. 1999. Ribes (Grossulariaceae) phylogeny as indicated by restriction-site polymorphisms of PCR-amplified chloroplast DNA. Plant Systematics and Evolution. 217:185–195.
Abstract: We surveyed exemplars from all 12 infragenetic taxa of Ribes…to develop an explicate phylogenic hypothesis and to assess the validity of infrageneric classifications. Maximum parsimony analysis resolves sect. Ribes (red currents), sect. Berisia (European alpine currants), sect. Symphocalyx (golden currants), sect. Grossularia plus sect Grossularioides (true gooseberries and spiny currants), and Hesperia, Lobbia, and probably sect. Robsonia (west North American gooseberries) as well-supported monophylitic groups. The clade of sections Grossularioides and Grossularia is unexpected and suggests that subgenus Grossularia is not monophyletic. Alternatively, sect. Grossularioides may have acquired its cpDNA via hybridization and introgression. Sections Coreosoma (black currants) and Heritiera (dwarf currants) are apparently non monophyletic. Relationships among the well-supported lineages and other sampled taxa remain unresolved. Maximum likelihood analysis is consistent with the parsimony results.

Keywords: flora, Ribes
Folder: Ribes Location: file

Mielke, J.L. 1937. An example of the ability of Ribes lacustre to intensify Cronartium ribicola on Pinus monticola. Journal of Agricultural Research. 55(12):873–882.
Annotation: Four species of Ribes are of special importance in the control of white-pine blister rust in the western white pine region centering in northern Idaho. Numerically, the most prominent of these is the prickly currant (Ribes lacustre), which is the relatively very low in both susceptibility to rust and the production of telia. Results of the study indicate that Ribes lacustre constitutes a far greater menace than has been assumed.
Keywords: resistance screening, Ribes, white pine blister rust
Folder: Ribes Location: pathology

Mielke, J.L. 1943. White pine blister rust in western North America. School of Forestry Bulletin. 52. New Haven, CN: Yale Univ. 155 p.

Annotation: Origin of white pine blister rust. Introduction to North America. White pine of western North America. the rust on pine. The rust on ribes. Scouting for the rust. Early history of blister rust in the west. Spread of the rust by years (1910–1942). General aspect of spread. Disseminating agencies and spore stage involved. Possible limits of long-distance spread. Relation of weather to spread and intensification of the rust. Wavelike character of spread of the rust. Rate and direction of spread of the rust. Some relations of ribes species in the spread of the rust. Pinyon rust: its complication in spread of blister rust. Some biological factors unfavorable to development of the rust. Strains of white pine blister rust.

Keywords: western white pine, white pine blister rust, review
Folder: WPBR impact, Ribes, WPBR distribution Location: shelf

Mielke, J.L.; Childs, T.W.; Lachmund, H.G. 1937. Susceptibility to Cronartium ribicola of the four principal Ribes species found within the commercial range of Pinus monticola. Journal of Agricultural Research. 55(5):317–346.

Annotation: Ribes petiolare was found to be extremely susceptible; R. inerme is also highly susceptible; R. viscosissimum and R. lacustre are more resistant.

Keywords: resistance screening, Ribes, white pine blister rust
Folder: Ribes Location: pathology

Mielke, J.L.; Hansbrough, J.R. 1933. Susceptibility to blister rust of the two principal Ribes associates of sugar pine. Journal of Forestry. 31(1):29–33.

Abstract: The white pine blister rust has not yet been discovered in California–-the main range of sugar pine. Ribes (currants and gooseberries) are the alternate hosts of this important and destructive forest tree disease. There are two principal Ribes associates of the sugar pine…both are high in susceptibility.

Keywords: resistance screening, Ribes, white pine blister rust
Folder: Ribes Location: pathology

Miller, D.R. 1967. Factors used in the field when differentiating between white pine blister rust (Cronartium ribicola) and pinyon rust (Cronartium occidentale) growing on the leaves of Sierra gooseberry (Ribes roezli). White Pine Blister Rust Control 5270. San Francisco, CA: U.S. Department of Agriculture, Forest Service, Division Timber Management.

Annotation: White pine blister rust and pinyon rust are "look-alikes' when growing on the leaves of their Ribes host. The identifying characteristics of the two rust as found on R. roezli are not always applicable when they occur on other species of Ribes. Kimmey listed five characters: telial column of pinyon rust dense, even fur-like; mature but un-geminated telia of pinyon rust darker brown than white pine rust (if not germinated, both becoming dark with age); after germination, columns of pinyon rust fade to a lavender hue; white pine rust more frequently fails to produce telia after producing uredinia; and if infection is light, white pine rust produces few, scattered spots whereas spots produced by pinyon rust enlarge with expanding margins. Hardman developed a key base on presence, severity, morphology, and extent of necrosis. In other observations of species also found in Sacramento Mountains of New Mexico, R. cereum was observed to highly resistant to both species and R. inerme varied considerably in susceptibility.

Keywords: white pine blister rust, pinyon blister rust, id guide, Ribes
Folder: Ribes, WPBR distribution Location: file

Morris, M.S.; Schmautz, J.E.; Stickney, F.F. 1963. Winter field key to the native shrubs of Montana. Bull. 23. Bozeman, MT: Montana State University, Montana Forest and Conservation Station.

Annotation: Keys, descriptions, and illustrations.
Keywords: Ribes, flora
Folder: Ribes Location: Ribes Folder

Moss, V.D.; Wellner, C.A. 1953. Aiding blister rust control by silvicultural measures in the western white pine type. Circular 919. Washington, DC: U.S. Department of Agriculture. 32 p.

Annotation: Timber management can help control rust by hindering growth of Ribes. Clear-cutting, broadcast burning, and planting aids Ribes suppression and provides maximum yields. Discusses Ribes ecology and management with emphasis on Ribes viscosissimum, R. lacustre, R. inerme, and R. petiolare. Other Ribes are significant in some drainages.

Keywords: western white pine, white pine blister rust, disease control, silviculture, Ribes, resistance screening
Folder: Ribes, WPBR impact Location: file, pathology

Offord, H.R. 1966. Sequential sampling of Ribes populations in the control of white pine blister rust (Cronartium ribicola Fischer) in California. Res. Pap. PSW-36. Berkeley, CA: USDA Forest Service, Pacific Southwest Forest and Range Experiment Station. 14 p.

Abstract: Sequential sampling based on a negative binominal distribution of ribes populations required less than half the time taken by regular systematic line transect sampling in a comparison test. It gave the same control decision as the regular method in 9 of 13 field trials. A computer program that permits sequential plans to be built readily for other white pine regions is described.

Keywords: white pine blister rust, sampling method, Ribes
Folder: Ribes Location: pathology

Offord, H.R.; Quick, C.R.; Moss, V.D. 1944. Self-incompatibility in several species of Ribes in the western states. Journal of Agricultural Research. 68:65–71.

Annotation: In the spring of 1940 controlled pollination of 4 species of Ribes native to the western states was undertaken. These tests were made on R. roezelii, R. glutinosum, R. nevadense, and R. viscosissimum. Cross-pollination was successful; self-pollination failed to produce mature fruit. It can not be concluded that isolated bushed will never produce mature fruits under natural conditions but would become poorer as the number of bushes is reduced.

Keywords: Ribes
Folder: Ribes Location: Ribes Folder

Ostrofsky, W.D.; Rumpf, T.; Struble, D.; Bradbury, R. 1988. Incidence of white pine blister rust in Maine after 70 years of a Ribes eradication program. Plant Disease. 72:967–970.

Abstract: Effectiveness of a Ribes eradication program for control of white pine blister rust was evaluated by comparing the incidence of the disease in areas never treated for Ribes with areas from which Ribes were regularly eradicated over the past 70 years. White pine stands were sampled to determine the effect of treatment (whether or not Ribes were controlled), tree size class, and hazard rating on disease incidence. Disease incidence, as measured by the number of infected trees, is lower (3.8%) in areas treated for Ribes compared with areas with no treatment (9.1%). Rust incidence is lowest in reproduction stands, and highest in pole stands, Hazard zone ratings did not reflect disease levels. Survey results indicate that a significant reduction in the incidence of white pine blister rust on a statewide level has been achieved through the Ribes control effort.

Keywords: disease control, eastern white pine, Ribes, white pine blister rust
Folder: cbr weather, Ribes, WPBR impact Location: file

Patton, R.F.; Spear, R.N. 1989. Histopathology of colonization in leaf tissue of Castilleja, Pedicularis, Phaseolus, and Ribes species by Cronartium ribicola. Phytopathology. 79:539–547.

Abstract: The white pine blister rust fungus has been recognized as comprising two formae speciales, Cronartium ribicola f. sp. ribicola and C. ribicola f. sp. Pedicularis, each with different alternate hosts and different expressions of pathogenicity to some pine species. We observed interactions of a Wisconsin isolate of C. r. ribicola with a conventional alternate host, an alternate host commonly infected by the East Asian form (C. r. Pedicularis), and plants considered as nonhosts for our North American form. Leaf samples collected at different times after inoculation with urediniospores were examined by light microscopy for penetration and infection or colonization. In the conventional alternate host, Ribes nigrum, the fungus achieved an established infection through the formation of haustoria, which were first visible 6 days after inoculation. The development of typical symptoms and signs followed within 7-9 days after inoculation. In Pedicularis resupinata, the host for the East Asian form, penetration and early stages of colonization were similar to those stages in R. nigrum. Infection hyphae branched sparingly in the intercellular spaces and occasionally reached as far as the upper epidermis between 5 and 16 days after inoculation but did not develop further. Colonization in the native P. canadensis and the common bean, Phaseolus vulgaris, was similar to but slightly less extensive than in P. resupinata. Colonization in localized portions of leaves of some plants of Castilleja miniata was much more extensive than in the other nonhost species. In leaf sections taken 63 days after inoculation, intercellular space, in portions up to 2 mm long, was densely packed with profusely branched hyphae. Haustorial mother cells developed in all species, but no haustoria were formed in any species except R. nigrum. The results supported previous indications of a difference in pathogenicity between the two forms of C. ribicola. The surprising amount of colonization in C. miniata led to speculation about the possible presence of the East Asian form of the rust in the Pacific Northwest, or the possibility of adaptation of C. miniata as an alternate host for our North American form.

Keywords: white pine blister rust, histology, Ribes
Folder: Ribes Location: file

Pierson, R.K.; Buchanan, T.S. 1938. Age of susceptibility of Ribes petolare leaves to infection by aeciospores and urediospores of Cronartium ribicola. Phytopathology. 28(10):709–715.

Annotation: All plants and leaves of all ages became infected. The younger leaves were most susceptible; susceptibility remained high for 3 weeks and then decreased.
Keywords: resistance screening, Ribes, white pine blister rust
Folder: Ribes Location: pathology

Quick, C.R. 1954. Ecology of the Sierra Nevada gooseberry in relation to blister rust control. Circular 937. Washington, DC: U.S. Department of Agriculture. 30 p.

Annotation: The autecology of Ribes rozli has been studied in California for the last 20 years.
Keywords: Ribes, white pine blister rust
Folder: Ribes Location: pathology

Rehder, A.1940. Manual of cultivated trees and shrubs hardy in North America. New York: MacMillan Company: 293–311.

Annotation: Keys and descriptions; although somewhat dated includes many wild and cultivated taxa.
Keywords: flora, Ribes
Folder: Ribes Location: Ribes Folder

Smith, J.P.; Hoffman, J.T.; Sullivan, K.F.; Van Arsdel, E.P.; Vogler, D. 2000. First report of white pine blister rust in Nevada. Plant Disease. 84(5):594.

Abstract: White pine blister rust, caused by Cronartium ribicola Fisch., was found in 1997 infecting white pines (genus Pinus, subgenus Strobus) at two locations in the Carson Range of western Nevada…

Annotation: At Mt. Rose on whitebark pine. Near Genoa Park on western white pine. In September 1998 at Mt. Rose, observed aecia at peak, no telia on R. cereum, montigenum and nevadense, most cankers on wood formed 1978-79, oldest 1968, youngest 1980. In October 1998 at Babbitt Peak, observed fresh aeciospores, R. montigenum and cereum not infected, cankers on wood 1978-80. Rust not found at 10 other sites.

Keywords: distribution, white pine blister rust

Folder: Ribes, WPBR distribution Location: file

Snell, W.H. 1941a. The relation of cultivated red currants to the white pine blister rust in New York state. Journal of Forestry. 39(10):859–867.

Abstract: …The following paper shows that the literature generally agrees upon the low degree of susceptibility of red currants to the blister rust fungus and that it contains surprisingly few references to infection of white pine originating from these garden plants…

Annotation: Reviews several other papers and reports observations in New York.

Keywords: resistance screening, Ribes, white pine blister rust

Folder: Ribes Location: pathology

Snell, W.H. 1941b. Blister rust studies of three patches of red currants in New York. Phytopathology. 31(8):734–740.

Annotation: The present paper presents data obtained from a detailed study of 3 patches of red currants in the Adirondacks.

Keywords: resistance screening, Ribes, white pine blister rust

Folder: Ribes Location: pathology

Snell, W.H. 1942. The production of sporida of Cronartium ribicola on cultivated red currants in relations to infection of white pine. American Journal of Botany. 29:506–513.

Annotation: From a considerable body of data upon the number of leaves, total leaf area, number of telia, and number of sporidia per bush for cultivated red currants, it is shown that a garden row of red currants will produce a much small fraction of sporidia than produced by wild gooseberries and black currants, even under maximum infection conditions for the red currants.

Keywords: Ribes, white pine blister rust

Folder: Ribes Location: file

Spaulding, P. 1922. Investigations of the white-pine blister rust. Bulletin 957. Washington, DC: U.S. Department of Agriculture, Forest Service. 100 p.

Annotation: Origin and distribution of C. ribicola, hosts, life history, over wintering, important dates in the life history, control, literature cited are discussed. Table 1. Results of inoculation made on various species and horticultural varieties of Ribes, showing data on susceptibility in the greenhouse and out of doors on Block Island, RI.

Keywords: white pine blister rust, review, resistance screening, Ribes,

Folder: Ribes, WPBR impact Location: file, pathology

Spaulding, P. 1922a. Viability of telia of Cronartium ribicola in early winter. Phytopathology.
Annotation: Telia on green leaves (or recently frost-killed) germinated well; telia on dead (dry) leaves did not germinate. Ribes nigrum is far the most dangerous species because: (1) The plant is nearly maximum in height. (2) Its is maximum in vigor of growth. (3) It produces new growth throughout the season. (4) It produces new shoots and leaves to a maximum lateness in the season. (5) It produces a maximum area of leaf surface. (6) It is more susceptible than other species. (7) A maximum number of telia per unit of leaf area are produced on this host. (8) These telia are of maximum vigor in germination and production of sporidia. (9) the telia are of maximum longevity in the season. [Useful guide for identifying some of the factors involved in ranking the epidemiological importance of various ribes species.] Telia on ribes will remain alive in the winter and will germinate readily when the temperature rises above freezing, but it remains to be determined whether the pines are in condition to become infected.

Keywords: white pine blister rust, epidemiology
Folder: Ribes, WPBR distribution Location: pathology, Ribes Folder

Spaulding, P.; Gravatt, G.F. 1917. Inoculations on Ribes with Cronartium ribicola Fischer. Science. 46(1184):243–244.
Annotation: Lists successfully inoculated ribes (all tested); no ranking.
Keywords: host resistance, Ribes, white pine blister rust
Folder: Ribes Location: pathology

Spauling, P.; Gravett, G.F. 1917. Inoculations on Ribes with Cronartium ribicola Fischer. Science. 46(1184):243–244.
Keywords: Ribes, white pine blister rust
Folder: Ribes

Stewart, F.C.; Rankin, W.H. 1914. Does Cronartium ribicola over-winter on the currant? Bulletin 374. Geneva, NY: New York Agricultural Experiment Station. 53 p.
Annotation: Describes early history of the rust outbreak at Geneva (first in North America) Concludes that over-wintering occurs rarely, if at all.
Keywords: Ribes, white pine blister rust
Folder: Ribes, WPBR impact Location: pathology

Taylor, M.W. 1922. Potential sporidia production per unit in Cronartium ribicola. Phytopathology. 12:298–300.
Annotation: Actual counts of telial columns were made on 68 leaves of 12 species of Ribes. For each species, the average number of potential sporidia per square inch of leaf surface are given and the pattern of telial distribution is illustrated.
Keywords: white pine blister rust
Folder: Ribes Location: Ribes Folder

Toko, E.V.; Graham, D.A.; Carlson, C.E.; Ketcham, D.E. 1967. Effects of past Ribes eradication on controlling white pine blister rust in northern Idaho. Phytopathology. 57:1010.
Abstract: An evaluation was conducted to determine the incidence of white pine blister rust in western white pine stands with a history of Ribes eradication. Fifty-three stands ranging in age from 4 to 21 years were surveyed. The proportion of trees infected varied directly with age. Stands were found to have an average infection rate of 3% per year. Ribes populations within the stands and in protection zones around the stands were found to have little or no correlation with the annual infection rate. [entire article]
Keywords: western white pine, white pine blister rust, disease control, Ribes
Folder: Ribes, WPBR distribution

Van Arsdel, E.P.; D.A. Conklin, J.B. Popp, B.W. Geils. 1998. The distribution of white pine blister rust in the Sacramento Mountains of New Mexico. In: Jalkanen, R.; Crane, P.E.; Walla, J.A.; Aalto, T., eds. Proceedings 1st IUFRO Rusts of Forest Trees Working Party Conference; 1998, August 2–7; Saariselkä, Finland. Research Papers 712. Rovaniemi, Finland: Finnish Forest Research Institute: 275–283.

Abstract: White pine blister rust, Cronartium ribicola Fisher, was discovered by F.G. Hawksworth in 1990 on southwestern white pine, Pinus strobiformis Engelm., in the Sacramento Mountains near Cloudcroft, NM. Informal surveys that year by pathologists of the Southwestern Region and the Rocky Mountain Station showed that the rust had already spread throughout the Sacramento Mtns. Rust distribution within the Sacramento Mtns. reported here was determined from two plot series established by Conklin (1990-1997) with 41 to 52 trees in each plot, and by Van Arsdel and Popp (1996-1998) with 8 to 55 trees in each plot. Various site features including elevation, aspect, and Ribes species and abundance were noted for each plot. Trees have been observed from one to three times to determine the presence and location of rust cankers and the appearance of new infections. Data from both plot series indicated that the rust in the Sacramento Mtns. was increasing and was influenced by Ribes distribution, elevation, and topography. Rust incidence was greater where Ribes pinetorum Greene was abundant, where the rust had been present longer, and at higher elevations. Of the six species of Ribes reported in the area, only R. pinetorum and R. cereum Dougl. were common and widespread. Wherever the incidence of blister rust on pine was high, R. pinetorum bushes were present and rust incidence was greatest near these bushes. At lower elevations R. pinetorum was found on north slopes and in some canyon bottoms; it was widespread above 9,000 ft. (2953 m). Below about 8,500 ft. (2789 m) there was a local topographic effect upon the rust distribution and the position at the base of the slope was more favorable to rust. At higher elevations, for example above 9,000 ft. (2953M), rust was widespread and local topographic effects were not evident.

Keywords: distribution, SW white pine, white pine blister rust
Folder: swbr, Ribes Location: reprint, file

Van Arsdel, E.P.; Krebill, R.G. 1995. Climatic distribution of blister rusts on pinyon and white pines in the USA. In: Kaneko, S.; Katsuya, K.; Kakishima, M.; Ono, Y., eds. Proceedings 4th IUFRO Rust of Pines Working Party Conference; 1994 October 2-7; Tsukuba, Japan. Kukizaki, Japan: Forestry and Forest Products Research Institute, Forest Microbiology Section: 127-133.

Abstract: Surveys of the pinyon pine blister rust were made on pine May 1992, 1993, and 1994, and on Ribes in August of 1993. There was a zone without Ribes at the lowest (driest level) than a zone with Ribes but no rust. Above this zone various percentages of the pines were infected. The percentage of infected trees was found to be highest in a belt from 6300 to 6700 feet elevation on three Great Basin Mountain Ranges. Above 6700 feet there was less rust although there were abundant Ribes and numerous pines with good growth. The rust distribution seems to depend on spore transport as well as temperature and moisture distribution. The greatest concentration of infected trees seems to occur at the backflow recharge area of slope drainage winds where spores are carried in night breezes and the areas are cool and wet enough to favor rust infections.

Keywords: climate, pinyon pine, pinyon rust, white pine, white pine blister rust
Folder: Ribes, WPBR distribution Location: file, pathology

Van Bruggen, T. 1986. Grossulariaceae DC., the currant family. in McGregor, R.L.; Barkley, T.M., eds. Flora of the Great Plains: 352–356.

Annotation: Key and descriptions.
Keywords: flora, Ribes
Folder: Ribes Location: Ribes Folder

Vines, R.A. 1960. Trees, shrubs, and woody vines of the Southwest. Austin, TX: University of Texas Press.

Annotation: Descriptions and illustrations.
Keywords: flora, Ribes
Folder: Ribes Location: Ribes Folder

Weber, W.A. 1987. Colorado flora: Western slope. Boulder, CO: Colorado Associated University Press..
Annotation: Key/descriptions and some illustrations.
Keywords: flora, Ribes
Folder: Ribes Location: Ribes Folder, shelf

Weber, W.A. 1990. Colorado flora: Eastern slope. Niwat, CO: University Press of Colorado.
Annotation: Brief key/descriptions and some illustrations.
Keywords: flora, Ribes
Folder: Ribes Location: shelf, Ribes Folder

Welch, S.L.; Atwood, N.D.; Goodrich, S.; Higgins, L.C., eds. 1993. Ribes. in A Utah Flora, 2nd Edition. Provo. UT: Brigham Young University.
Keywords: flora, Ribes
Folder: Ribes Location: Ribes Folder

Note: Location (if not blank) indicates where the article is held---file=office filing cabinet, mistletoe=lab mistletoe reprint collection,
pathology=lab forest path collection.