References – Monilinia fructigena

Aderhold R, Ruhland W, 1905. Arbeiten aus der Biologischen Abteilung fnr Land-u. Forstwirtschaft, Berlin, 4:427-444.

Angelov A, 1980. The effectiveness of breeding in fruit growing in Bulgaria. Ovoshcharstvo, 59:12-16.

Aytkhozhina N, 2005. First report of *Monilia fructigena* on small fruits in Kazakhstan. Phytopathology, 95:960.

Bancroft RD, 1995. The use of a surface coating to ameliorate the rate of spread of post-harvest fungal diseases of top fruit. International Biodeterioration & Biodegradation, 36:385-405.

Barsukova ON, Gryuner AM, 1986. Disease resistance of *Malus orientalis* and local Caucasian varieties. Sbornik Nauchnykh Trudov po Prikladnoi Botanike, Genetike i Selektsii, 101:89-94.

Barsukova ON, Tuz AS, 1985. Immunological characteristics of wild pear species. Mikologiya i Fitopatologiya, 19:142-148.

Batra LR, 1979. First authenticated North American record of *Monilinia fructigena*, with notes on related species. Mycotaxon, 8:476-484.

Batra LR, 1991. World species of *Monilinia* (Fungi): their ecology, biosystematics and control. Mycologia Memoir, 16:1-246.

Batra LR, Harada Y, 1986. A field record of apothecia of *Monilinia fructigena* in Japan and its significance. Mycologia, 78:913-917.

Bennett AH, Wells JM, 1976. Hydraircooling: a new precooling method with special application for waxed peaches. Journal of the American Society for Horticultural Science, 101:428-431.

Berrie AM, 1993. Progress towards integrated control of post harvest rots of Cox apples in the United Kingdom. Acta Horticulturae, No. 347:107-114.

Biosecurity New Zealand, 2006. Schedule of Notifiable Organisms 2006. Ministry of Agriculture and Forestry, Government of New Zealand. http://www.biosecurity.govt.nz/files/pests/schedule-notifiable-organisms.pdf

Bozhkova V, 1995. Susceptibility of myrobalan plum varieties and forms to brown rot. Rasteniev"dni Nauki, 32:253-254.

Byrde RJW, Willetts HJ, 1977. The brown rot fungi of fruit. Their biology and control. Oxford, United Kingdom: Pergamon Press, 171 pp.

CABI/EPPO, 2000. Monilinia fructigena. Distribution Maps of Plant Diseases, Map No. 22. Wallingford, United Kingdom: CAB International.

Cal Ade A, Sagasta EM, Melgarejo P, 1988. Antifungal substances produced by *Penicillium frequentans* and their relationship to the biocontrol of *Monilinia laxa*. Phytopathology, 78:888-893.

Cal Ade A, Sagasta EM, Melgarejo P, 1990. Biological control of peach twig blight (*Monilinia laxa*) with *Penicillium frequentans*. Plant Pathology, 39:612-618.

Canadian Food Inspection Agency, 2009. Pests Regulated by Canada. Government of Canada, Ottawa, Ontario. http://www.inspection.gc.ca/english/plaveg/protect/listpespare.shtml Accessed August 26, 2009.

Cantoni L, Bassi D, Tacconi M, 1996. Brown rot in stone fruits: aspects of biology and techniques of selection for resistance. Rivista di Frutticoltura e di Ortofloricoltura, 58:59-65.

Cimanowski J, Pietrzak B, 1991. Preliminary observations on the occurrence and control of brown rot (*Monilinia fructigena* Aderh. Ruhl. Honey) on apples. Prace Instytutu Sadownictwa i Kwiaciarstwa w Skierniewicach. Seria A, Prace DoSwiadczalne z Zakresu Sadownictwa, No. 30:79-87.

Corke ATK, Hunter T, Collins SA, 1975. Silver leaf in plums. In: Report of Long Ashton Research Station for 1974. Long Ashton, UK: Long Ashton Research Station, 131-132.

Cote MJ, Tardif MC, Meldrum AJ, 2004. Identification of *Monilinia fructigena*, *M. fructicola*, *M. laxa*, and *Monilia polystroma* on inoculated and naturally infected fruit using multiplex PCR. Plant Disease, 88:1219–1225.

Cotroneo A, Galliano A, Vittone F, Capello PF, 1998. Control trials against *Monilinia laxa* on peach in Piedmont. Informatore Agrario Supplemento, 54:16-18.

Daane KM, Dlott JW, Yokota GY, Johnson RS, Crisosto CH, Morgan DP, Michailides TJ, Ramirez HT, 1996. Influence of nitrogen fertilization on the susceptibility of nectarines to pathogens and pests. Rivista di Frutticoltura e di Ortofloricoltura, 58:41-45; [Translated and adapted from California Agriculture 49(4), (1995).].

DAFF, 2008. Diagnostic protocol for *Monilinia fructigena* (Apple Brown Rot). Department of Agriculture, Forestry and Fisheries, Australian Government. http://www.daff.gov.au/__data/assets/pdf_file/0016/1061332/diag-protocol-apple-brown.pdf

De Cal A, Melgarejo P, 1999. Effects of long-wave UV light on *Monilinia* growth and identification of species. Plant Disease, 83:62-65.

De Cal A, Larena I, Liñán M, Torres R, Lamarca N, Usall J, Domenichini P, Bellini A, De Eribe XO.; Melgarejo P, 2009. Population dynamics of *Epicoccum nigrum*, a biocontrol agent against brown rot in stone fruit. Journal of Applied Microbiology, 106:592-605.

Dudka IO, Heluta VP, Tykhonenko YY, Andrianova TV, Hayova VP, Prydiuk MP, Dzhagan VV, Isikov VP, 2004. Fungi of the Crimean Peninsula. Kiev, Ukraine: M.G. Kholodny Institute of Botany, National Academy of Sciences of Ukraine, 452 pp.

EPPO, 2006. PQR database (version 4.5). Paris, France: European and Mediterranean Plant Protection Organization. www.eppo.org.

Faivre-Amiot A, Geoffrion R, 1996. Monilioses des arbres et arbustes d'ornement. Phytoma, 481:42-44.

Falconi CJ, Mendgen K, 1994. Epiphytic fungi on apple leaves and their value for control of the postharvest pathogens *Botrytis cinerea*, *Monilinia fructigena* and *Penicillium expansum*. Zeitschrift für Pflanzenkrankheiten und Pflanzenschutz, 101:38-47.

Fulton CE, Brown AE, 1997. Use of SSU rDNA group-I intron to distinguish *Monilinia fructicola* from *M. laxa* and *M. fructigena*. FEMS Microbiology Letters, 157:307-312.

Fulton E, van Leeuwen GCM, Brown AE, 1999. Genetic variation among and within *Monilinia s*pecies causing brown rot of stone and pome fruits. European Journal of Plant Pathology, 105:495-500.

Gell I, Cubero J, Melgarejo P, 2007. Two different PCR approaches for universal diagnosis of brown rot and identification of *Monilinia* spp. in stone fruit trees. Journal of Applied Microbiology, 103:2629-2637.

Gilpatrick JD, 1982. Case study 2: *Venturia* of pome fruits and *Monilinia* of stone fruits. In: Dekker J, Georgopoulos SG, eds. Fungicide resistance in Crop Protection. Wageningen, Netherlands: Centre for Agricultural Publishing and Documentation, 195-206.

Grigorov IN, 1987. Results of breeding new peach cultivars in Bulgaria. Symposium papers on Fruit Growing; 60 years of horticultural research in Czechoslovakia, 185-187.

Grigortsevich LN, 1985. Disease resistance of apple varieties in intensive type plantations. Zaschita Rastenii, Minsk, 10:36-40.

Guijarro B, Melgarejo P, Torres R, Lamarca N, Usall J, De Cal, A,. 2007. Effects of different biological formulations of *Penicillium frequentans* on brown rot of peaches. Biological Control**,** 42:86-96.

Guo Y-L, 2005. Anamorphic fungi. In: Fungi of Northwestern China. Zhuang WY, ed. Ithaca, New York, USA; Mycotaxon, Ltd., 125-232.

Harada Y, 1977. Studies on the Japanese species of *Monilinia* (Sclerotiniaceae). Bulletin of the Faculty of Agriculture, Hirosaki University, No. 27:30-109.

Harada Y, 1998. Taxonomic studies of plant parasitic fungi on fruit trees and forest trees in Japan. Nippon Kingakukai Kaiho, 39:89-96.

Harrison TH, 1933. Brown rot of fruits and associated diseases of deciduous fruit trees. I. Journal and Proceedings of the Royal Society of New South Wales, 67:131-177.

Hirst JM, 1953. Changes in atmospheric spore contents: diurnal periodicity and the effects of weather. Transactions of the British Mycological Society, 36:375-393.

Holb, IJ, 2008. Monitoring conidial density of *Monilinia fructigena* in the air in relation to brown rot development in integrated and organic apple orchards. European Journal of Plant Pathology, 120:397-408.

Holb IJ, Scherm H, 2007. Temporal dynamics of brown rot in different apple management systems and importance of dropped fruit for disease development. *Phytopathology*, 97:1104–1111.

Holb IJ, Scherm H, 2008.. Quantitative relationships between different injury factors and development of brown rot caused by *Monilinia fructigena* in integrated and organic apple orchards. Phytopathology, 98:79-86.

Holst-Jensen A, Kohn LM, Jakobsen KS, Schumacher T, 1997. Molecular phylogeny and evolution of *Monilinia* (Sclerotiniaceae) based on coding and noncoding rDNA sequences. American Journal of Botany, 84:686-701.

Honey EE, 1928. The monilioid species of *Sclerotinia.* Mycologia, 20:127-157.

Honey EE, 1936. North American species of *Monilinia.* I. Occurrence, grouping, and life-histories. American Journal of Botany, 23:100-106.

Hughes KJD, Banksi JN, Rizvii RH, McNaughton J, Lane CR, Stevenson L, Cook RTA, 1998. Development of a simple ELISA for identification of *Monilinia fructicola*. International Congress of Plant Pathology. Edinburgh, United Kingdom: BSPP, 1998.

Ibragimov GR, Abbasov TF, 1976. The occurrence of the ascus state of *Monilia fructigena* (Schroet.) Honey and *M. cydoniae* (Schell.) Honey in Azerbaijan. Mikologiya i Fitopatologiya, 10:219-222.

Iliev P, Shchrkova I, 1979. Promising introduced varieties of plum. Ovoshcharstvo, 58:25-28.

Iliev P, Shchrkova I, Sturkova I, 1986. Cacansla Lepotica, a new early plum variety. Rastenievdni Nauki, 23:90-94.

IMI, 1990. Distribution Maps of Plant Diseases, No. **22**. Wallingford, United Kingdom: CAB International.

Ioos R, Frey P, 2000. Genomic variation within *Monilinia laxa*, *M. fructigena* and *M. fructicola*, and application to species identification by PCR. European Journal of Plant Pathology, 106:373–378.

Janitor A, Paulech C, 1978. Some remarks on the study of the effect of gamma irradiation on pathogenic fungi. Pathophysiology of plants. II. Collection of papers read at the 2nd seminar on the pathophysiology of plants. Acata Botanica Slovaka B, 2:251-261.

Jarvis WR, 1962. The dispersal of spores of *Botrytis cinerea* Fr. in a raspberry plantation. Transactions of the British Mycological Society, 45:549-559.

Kahn M, 1966. Substitution of light by indolyl-3 acetic acid in the sporulation of *Sclerotinia fructigena*. Nature (London), 212:640.

Kohn LM, 1979. A monographic revision of the genus *Sclerotinia*. Mycotaxon, 9:365-444.

Lack KJ, 1989. The spread of apple brown rot (*Monilinia fructigena*) by insects. Annals of Applied Biology, 115:221-227.

Lane CR, 2002. A synoptic key for differentiation of *Monilinia fructicola*, *M. fructigena and M. laxa*, based on examination of cultural characters. EPPO Bulletin, 32:489-493.

Larena I, Melgarejo P, 1996. Biological control of *Monilinia laxa* and *Fusarium oxysporum* f.sp. *lycopersici* by a lytic enzyme-producing *Penicillium purpurogenum*. Biological Control, 6:361-367.

Larena I, Torres R, De Cal A, Liñán M, Melgarejo P, Domenichini P, Bellini A, Mandrin JF, Lichou J, Ochoa de Eribe X, Usall J, 2006. Biological control of postharvest brown rot (*Monilinia* spp.) of peaches by field applications of *Epicoccum nigrum.* Biological Control, 32:305-310.

Mackie A, Eyres N, Kumar S, 2005. Brown rot *Monilinia fructigena*. Department of Agriculture and Food Factsheet, Government of Western Australia. http://www.agric.wa.gov.au/objtwr/imported_assets/content/pw/ph/dis/fn/fs2006_brownrot_amackie.pdf

Madrigal C, Pascual S, Melgarejo P, 1994. Biological control of peach twig blight (*Monilinia laxa*) with *Epicoccum nigrum*. Plant Pathology, 43:554-561.

Malvárez G, Rodríguez A, Aguilar C, Silveira AC, Silvera E, Burgueno J, Mondino P, 2004., *Monilinia fructicola* the only *Monilinia* species currently causing brown rot of peach (*Prunus persica*) in Uruguay. Fitopatología, 39:126-132.

Marcaki P, Petropoulou E, Mavroyannakis M, 1998. Investigation of the radiation effects on brown rot disease of Golden delicious apples, inoculated with the fungus *Monilinia fructigena*. Mycopathologia, 142:33-36.

Mari M, Iori R, Leoni O, Marchi A, 1993. In vitro activity of glucosinolate-derived isothiocyanates against postharvest fruit pathogens. Annals of Applied Biology, 123:155-164.

Mari M, Iori R, Leoni O, Marchi A, 1996. Bioassays of glucosinolate-derived isothiocyanates against postharvest pear pathogens. Plant Pathology, 45:753-760.

Marquenie D, Schenk A, Nicolai B, 1999. VCBT investigates non-chemical methods to increase the storage life of strawberries and sweet cherries. Fruitteelt-nieuws, 12:18-19.

McClure TT, 1958. Brown and Rhizopus rots of peaches as affected by hydrocooling, fungicides, and temperature. Phytopathology, 48:322-324.

Melgarejo P, De Cal A, Pascual, S, Larena, I, 1998. Biological control of post-harvest diseases of stone fruits: prospects and problems. In: Bertolini P, Sijmons ME, Guerzoni ME, Serra F, eds. Non Conventional Methods for the Control of Postharvest Disease and Microbiological Spoilage. Belgium: Directorate General Science, Research and Development, 65-70.

Mordue JEM, 1979a. *Sclerotinia fructigena*. CMI Descriptions of pathogenic fungi and bacteria, No. 617. Wallingford, UK: CAB International.

Mordue JEM, 1979b. *Sclerotinia laxa*. CMI Descriptions of Pathogenic Fungi and Bacteria, No. 619. Wallingford, UK: CAB International.

Mordue JEM, 1979c. *Sclerotinia fructicola*. CMI Descriptions of pathogenic fungi and bacteria, No. 616. Wallingford, UK: CAB International.

Murakami T, Takada N, Harada Y, Okuno T, Hashimoto M, 2007. Stimulation of the biosynthesis of the antibiotics lambertellols by the mycoparasitic fungus *Lambertella corni-maris* under the acidic conditions produced by its host fungus in vitro. Bioscience, Biotechnology, and Biochemistry, **7**1:1230-1235.

Nitransky S, 1986. Field tolerance of apricot cultivars to unfavourable factors in 1983. Vedecke Prace Vyskumneho Ustavu Ovocnych a Okrasnych Drevin v Bojniciach, 6:51-61.

Ogawa JM, English H, 1991. Diseases of Temperate Zone Tree Fruit and Nut Crops. Oakland, California, USA: University of California, Division of Agriculture and Natural Resources, 461 pp.

Ogawa JM, Manji BT, Schreader WR, 1975. *Monilinia* life cycle on sweet cherries and its control by overhead sprinkler fungicide applications. Plant Disease Reporter, 59:876-880.

Ogawa JM, Manji BT, Bostock RM, Canez VM, Bose EA, 1984. Detection and characterization of benomyl-resistant *Monilinia laxa* on apricots. Plant Disease, 68:29-31.

Pascual S, Magan N, Melgarejo P, 1996. Improved biological control of peach twig blight by physiological manipulation of *Epicoccum nigrum*. Brighton Crop Protection Conference: Pests & Diseases - 1996. Volume 1. Proceedings of an International Conference, Brighton, UK, 18-21 November, 1996, 411-412.

Pascual S, Magan N, Melgarejo P, 1998. Production of *Epicoccum nigrum* 282 for biocontrol of brown rot (*Monilinia laxa*). In: Bertolini P, Sijmons ME, Guerzoni ME, Serra F, eds. Non Conventional Methods for the Control of Postharvest Disease and Microbiological Spoilage. Belgium: Directorate General Science, Research and Development, 115-120.

Paunovic SA, Paunovic AS, 1996. Investigation of peach germplasm (*Prunus persica* ssp. *vulgaris* = vineyard peach) in situ in Yugoslavia. Acta Horticulturae, No. 374:201-207.

Penrose LJ, Tarran J, Wong A-L, 1976. First record of *Sclerotinia laxa* Aderh. & Ruhl. in New South Wales: differentiation from *S. fructicola* (Wint.) Rehm. by cultural characteristics and electrophoresis. Australian Journal of Agricultural Research, 27:547-556.

Petróczy M, Palkovics L, 2009. First report of *Monilia polystroma* on apple in Hungary. European Journal of Plant Pathology, 125: (in press – published online May 2, 2009).

Pusey PL, Hotchkiss MW, Dulmage HT, Baumgardner RA, Zehr EI, Reilly CC, Wilson CL, 1988. Pilot tests for commercial production and application of *Bacillus subtilis* (B-3) for postharvest control of peach brown rot. Plant Disease, 72:622-626.

Pusey PL, Wilson CL, 1984. Postharvest biological control of stone fruit brown rot by *Bacillus subtilis*. Plant Disease, 68:753-756.

Rekhviashvili LM, 1973. Varietal resistance and some resistance indices of fruit trees to *Monilia fructigena* in Georgia. Trudy NII Zashchity Rastenii Gruz SSR, 25:143-147.

Rekhviashvili L, 1975. The pathogenicity, specialization and the ways of infection of *Monilia fructigena* Pers. Trudy Nauchno-Issledovatel'skogo Instituta Zashchity Rastenii Gruz SSR, 27:162-165.

Reynaud L, 1997. Cherry orchard. Control of *Monilia*. Arboriculture Fruitiere, 506:23-25.

Richardson MJ, 1990. An Annotated List of Seed-borne Diseases. Fourth Edition. Zurich, Switzerland: International Seed Testing Association, 387 pp.

Roberts JW, Dunegan JC, 1932. Peach brown rot. United States. Department of Agriculture Technical Bulletin. No. 328, 1-59.

Rueegg J, Lauber HP, Siegtried W, Viret O, Hilber U, 1997. Experiences with anilinopyrimidines in Switzerland. Pesticide Outlook, 8:28-33.

Sharma RL, Kaul JL, 1988. Susceptibility of apples to brown rot in relation to qualitative characters. Indian Phytopathology, 41:410-415.

Sharma RL, Kaul JL, 1989a. Host range of brown rot fungi (*Monilinia* spp.) in India. Plant Disease Research, 4:177-178.

Sharma RL, Kaul JL, 1989b. Influence of light on growth and sporulation of *Monilinia* spp. Indian Journal of Mycology and Plant Pathology, 19:236-238.

Sharma RL, Kaul JL, 1989c. Incidence of brown rot (*Monilinia* spp.) of apple in Himachal Pradesh. Indian Journal of Mycology and Plant Pathology, 19:208-211.

Sharma RL, Kaul JL, 1990. Efficacy of hot water and carbendazim treatments in controlling brown rot of apple. Indian Journal of Mycology and Plant Pathology, 20:47-48.

Smith IM, Dunez J, Lelliott RA, Phillips DH, Archer SA, 1992. Handbook of plant diseases. [Manual de enfermedades de las plantas]. Madrid, Spain: Ediciones Mundi-Prensa.

Spiegel J, Stammler G, 2006. Baseline sensitivity of *Monilinia laxa* and *M. fructigena* to pyraclostrobin and boscalid. Journal of Plant Diseases and Protection, 113:199-206.

Tiryaki O, Aydin G, Gürer M, 1994. Post-harvest disease control of apple, quince, onion and peach, with radiation treatment. Journal of Turkish Phytopathology, 23:143-152.

Tzavella-Klonari K, 1985. Attack of hazel-nut fruits by the fungus *Monilia fructigena*. Annales de l'Institut Phytopathologique Benaki, 14:171-173.

USDA/APHIS, 2009. Regulated Plant Pest List. US Department of Agriculture, Animal and Plant Heath Inspection Service. Washington, D.C., USA. http://www.aphis.usda.gov/import_export/plants/plant_imports/downloads/RegulatedPestList.pdf Accessed August 26, 2009.

USDA/SMML, 2005. Nomenclature Fact Sheets. *Monilinia fructigena* and related brown fruit rots. Systematic Mycology and Microbiology Laboratory, Agricultural Research Service. USDA. Beltsville, Maryland, USA. http://nt.ars-grin.gov/sbmlweb/fungi/nomensheets.cfm

Van Leeuwen GCM, van Kesteren HA, 1998. Delineation of the three brown rot fungi of fruit crops (*Monilinia* spp.) on the basis of quantitative characteristics. Canadian Journal of Botany, 76:2042-2050.

Van Leeuwen GCM, Baayen RP, Holb IJ, Jeger MJ, 2002. Distinction of the Asiatic brown rot fungus *Monilia polystroma* sp. nov. from *M. fructigen.* Mycological Research, 106**:**444–451.

Vasilev V, 1975. The sour cherry cultivar Meteor. Ovoshcharstvo, 54:37-38.

Valiuskaite A, 2002. Micromycetes infecting stone fruit trees. Biologija, 1:18-21.

Vasudeva RS, 1930. Studies in the physiology of parasitism: XI. An analysis of the factors underlying specialization of parasitism, with special reference to the fungi *Botrytis allii* Munn, and *Monilia fructigena* Pers. Annals of Botany, 44:469-493.

Vucinic Z, 1994. Brown rot of fruit trees. Zastita Bilja, 45:5-17.

Wade GC, 1956. Investigations on brown rot of apricots caused by *Sclerotinia fructicola* (Wint.) Rehm. I. The occurrence of latent infection in fruit. Australian Journal of Agricultural Research, 7:516-526.

Wells JM, Bennett AH, 1975. Postharvest decay, weight loss, and fungicide residues on peaches hydro- or hydraircooled before or after waxing. Plant Disease Reporter, 59:931-935.

Wells JM, Bennett AH, 1976. Hydrocooling and hydraircooling with fungicides for reduction of postharvest decay of peaches. Phytopathology, 66:801-805.

Whetzel HH, 1945. A synopsis of the genera and species of the Sclerotiniaceae, a family of stromatic inoperculate Discomycetes. Mycologia, 37:648-714.

Wilcox WF, 1989. Influence of environment and inoculum density on the incidence of brown rot blossom blight of sour cherry. Phytopathology, 79:530-534.

Willetts HJ, Byrde RJW, Fielding AH, Wong A-L, 1977. The taxonomy of the brown rot fungi (*Monilinia* spp.) related to their extracellular cell wall-degrading enzymes. Journal of General Microbiology, 103:77-83.

Wiltshire S, 1920. The production of conidia in pure cultures by the brown rot fungus of apple. Reportof the Agricultural Horticultural Research Station Bristol, 1919:34-36.

Wormald H, 1954. The brown rot diseases of fruit trees. Technical Bulletin of the Ministry of Agriculture, No.3. London, UK: HMSO, 113 pp.

Xu X-M, Bertone C, Berrie A, 2007. Effects of wounding, fruit age and wetness duration on the development of cherry brown rot in the UK. Plant Pathology, 56:114-119.

Xu X-M, Guerin L, Robinson JD, 2001, Effects of temperature and relative humidity on conidial germination and viability, colonization and sporulation of *Monilinia fructigena.* Plant Pathology, 50:561–568.

Xu X-M, Robinson JD, 2000. Epidemiology of brown rot (*Monilinia fructigena*) on apple: infection of fruits by conidia. Plant Pathology, 49:201–206.

Xu X-M, Robinson JD, Berrie AM, Harris DC, 2001. Spatio-temporal dynamics of brown rot (*Monilinia fructigena*) on apple and pear. Plant Pathology, 50:569–578.

Zehr EI, 1982. Control of brown rot in peach orchards. Plant Disease, 66:1101–1105.

Zhang Y, Bodmer M, Ruegg J, 1991. Variation in sensitivity to sterol biosynthesis inhibitors (SBI) of different isolates of *Monilinia* species. Zeitschrift für Pflanzenkrankheiten und Pflanzenschutz, 98:317-322.