LETTER TO THE EDITOR

COMPREHENSIVE LIST OF NAMES OF PLANT PATHOGENIC BACTERIA, 1980-2007

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SUMMARY

The names of all plant pathogenic bacteria which have been effectively and validly published in terms of the International Code of Nomenclature of Bacteria and the Standards for Naming Pathovars are listed to provide an authoritative register of names for use by authors, journal editors and others who require access to currently correct nomenclature. Included are species, subspecies and pathovar names and details of type and pathotype strains reported from 1980 to 2007. An explanation of how to use this list is provided. In recent years the taxonomy of plant pathogenic bacteria has been extensively revised. For some taxa there are several valid synonyms. Unless otherwise stated, the most recently published name is used in this list as the reference name (in bold italic) to which all other synonyms are referred. This does not mean that the reference name is always to be preferred. A synonym, i.e., a previously published name for the same organism, may represent a classification considered by individual scientists or groups to give a more coherent taxonomy and may be used.

This list is presented by the International Society of Plant Pathology Committee on the Taxonomy of Plant Pathogenic Bacteria, Carolee T. Bull Convener.

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INTRODUCTION

The nomenclature of bacterial plant pathogens, like that of many other life forms, is constantly changing in response to new insights and our understanding of relationships among bacteria. For example, the taxonomy of the family *Enterobacteriaceae* has been extensively revised since the publication of the previous comprehensive List of Names of Plant Pathogenic Bacteria (Young *et al.*, 1996).

This document lists the names of all plant pathogenic bacteria that have been effectively and validly published according to the terms of the International Code of Nomenclature of Prokaryotes (referred to here simply as 'the Code' – previously the International Code of Nomenclature of Bacteria; Lapage *et al.*, 1992) and the Standards for Naming Pathovars ('the Standards'; Dye *et al.*, 1980), and their revisions (Young *et al.*, 1991a, 2001c). According to the Code, a proposed name is validly published if it was included in the Approved Lists of Bacterial Names (Skerman *et al.*, 1980) or when the name appears in *International Journal of Systematic and Evolutionary Microbiology* (IJSEM; previously the *International Journal of Systematic Bacteriology*) either as an original manuscript proposing the name or through listing on the Validation Lists. This document includes species, subspecies, and pathovar names validly published prior to 2008.

For some taxa there are several synonyms of both species and/or pathovar names. To avoid lengthy repetitions in this text, the most recently published synonym is used as the reference name (in ***bold italic***), to which all other synonyms are referred. This does not mean that the reference name (most recently published) has nomenclatural priority or is preferred. A synonym, i.e., a previously published name for the same organism, may represent a classification considered by individual scientists or groups to give a more coherent taxonomy

and may be used (Bull *et al.*, 2008; Young *et al.*, 1996; Young, 2008). However, newer taxonomic revisions, in many cases, represent an advancement in our understanding of the taxa being circumscribed.

Alternative synonyms are provided below their reference names, and are preceded by '=' and are in *italic*. For example, ***Burkholderia glumae*** is the most recent synonym of *Pseudomonas glumae* and is therefore listed in bold font under the genus ***Burkholderia***. The synonym, *Pseudomonas glumae,* appears under this listing and is preceded by '=' (not in bold font) as shown here:

Burkholderia glumae (Kurita and Tabei 1967) Urakami *et al.* 1994
= *Pseudomonas glumae* Kurita and Tabei 1967
ATCC 33617; CFBP 4900; ICMP 3655; LMG 2196; NCPPB 2981

The synonym, *Pseudomonas glumae,* is also listed under the genus *Pseudomonas,* although the species name*, Pseudomonas glumae*, is not listed in bold font. The reference name is referred to under the synonym in bold font as shown here:

Pseudomonas glumae Kurita and Tabei 1967
see ***Burkholderia glumae***

In most cases the type and/or pathotype strain is listed only under the reference name below the valid synonyms. In the example from above, the isolate designations for the type strain used by various collections is listed in connection with the reference name *B. glumae*.

Names published since 1980 that are not considered valid, either in terms of the Code or the Standards, have been included for completeness, with an explanatory note or reference. ***These names should not be used.*** Names that are not considered valid are in *italic*, enclosed in square brackets '[ ]' and are not in bold. All names that are not considered valid refer the reader to a valid name that may pertain to the organism in question. For example, *Erwinia nulandii* is not considered valid and is listed as follows:

[*Erwinia nulandii* Schuster *et al.* 1981] Brenner *et al.* (1994) refers.
see ***Erwinia persicina***

References to the literature used to establish priority of a name are given for each entry. The references in parentheses are for the first description of the bacterium and additional references indicate authors proposing subsequent changes in classification and nomenclature. For the species catalogued in the Approved Lists of Bacterial Names (Skerman *et al.*, 1980), only the citation to original publication is given. For species names published after 1980 and outside the IJSEM, the reference to which priority is to be given is the validating publication (the Validation Lists of the IJSEM. Please see discussion on priority of publication in Bull *et al.*, 2008). In the Reference section of this manuscript the validating publication is followed by the reference of the effective description. Apparent discrepancies between the publication dates of some species and their pathovars arise when priority for pathovar names is assigned according to the effective publication but authority for the species is assigned according to the validating publication in IJSEM. For example, priority for the species *Curtobacterium flaccumfaciens* should be assigned according the publication in IJSEM (Collins and Jones, 1984) but priority for the pathovar *Curtobacterium flaccumfaciens* pv. *betae* is given to the effective publication (Collins and Jones, 1983). For some entries there are annotations or additional citations to help explain nomenclatural issues. Citations followed by the term 'refers' indicates a citation that has significant information about the entry to which it refers.

New species combinations are sometimes proposed in publications without proposing the formal transfer of all the pathovars allocated to the species. The use of 'comb. nov.' in this document designates the new pathovar(s) combinations that follow from the proposed taxonomic change to the species.

Names that have been changed to accord with correct Latin usage (Trüper and de' Clari, 1997; 1998; Euzéby, 1998) are listed here as 'corrig.' Since these corrections were made, the Code has been amended to take account of the need for stability of names (De Vos and Trüper, 2000).

Pathotype strains that are unsuitable because they do not reflect the pathogenic or other characteristics given in the description of the pathovar (Young *et al.*, 1991a) are marked with an asterisk '*'. Where authentic strains of these pathovars have been identified, the International Society of Plant Pathology – Committee on the Taxonomy of Plant Pathogenic Bacteria (ISPP-CTPPB) has designated neopathotype strains.

It is the goal of the ISPP-CTPPB (http://www.isppweb.org/about_tppb.asp) to publish regular up-dates to the names listed in this document. To facilitate tracking of new names, an online submission form is available for authors to conveniently notify the ISPP-CTPPB convener of newly proposed names (http://www.isppweb.org/forms/tppb_new_names.htm). Notification of new names and submission of the validating published manuscript should be made through the website in a timely manner. Also, please contact the convenor of the ISPP-CTPPB by e-mail (Carolee.Bull@ARS.USDA.GOV) if you have any questions or comments.

Abbreviations of Culture Collections

ATCC American Type Culture Collection, Manassas, Box 1549, Virginia 20108, USA
CBS Centralbureau voor Schimmelcultures, Oosterstraat 1, 3740 AG Baarn, The Netherlands
CFBP Collection Française de Bactéries Phytopathogènes, UMR77 Pathologie Végétale, INRA, F-49070 Beaucouzé, France
DSMZ Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH, Mascheroder Weg 1b, 38124 Braunschweig, Germany
HAMBI HAMBI Culture Collection, Department of Applied Chemistry and Microbiology, Box 56, 00014 University of Helsinki, Finland
ICMP International Collection of Microorganisms from Plants, Landcare Research, Private Bag 92170, Auckland, New Zealand
KACC Korean Agricultural Culture Collection, National Institute of Agricultural Biotechnology, Suwon, Republic of Korea
LMG BCCM/LMG Bacteria Collection, Laboratory for Microbiology, Ghent University, K.L.Ledeganckstraat 35, B–9000 Gent, Belgium
MAFF Ministry of Agriculture, Forestry and Fisheries, Tsukuba, Ibaraki, Japan
NCPPB National Collection of Plant Pathogenic Bacteria, Food and Environment Research Agency, Department for Environment, Food and Rural Affairs, Sand Hutton, York, YO41 1LZ, England
NRRL Agricultural Research Service Culture Collection, Peoria, Illinois, USA

BACTERIAL NAMES

Acetobacter Beijerinck 1898
Acetobacter aceti (Pasteur 1864) Beijerinck 1898
ATCC 15973; ICMP 8807; LMG 1261
Acetobacter pasteurianus (Hansen 1879) Beijerinck and Folpmers 1916
= [*Pseudomonas pomi* Cole 1959] Dhanvantari *et al.* (1978) refers.
ATCC 33445; DSMZ 3509; LMG 1262
The type strain is not pathogenic

Acidovorax Willems *et al.* 1990 emend. Willems *et al.* 1992
Acidovorax anthurii Gardan *et al.* 2000
CFBP 3232; ICMP 13404; NCPPB 4104
Acidovorax avenae (Manns 1909) Willems *et al.* 1992
= *Pseudomonas avenae* Manns 1909
= *Pseudomonas avenae* subsp. *avenae* Manns 1909
= *Pseudomonas rubrilineans* (Lee *et al.* 1925) Stapp 1928
ATCC 19860; CFBP 2425; ICMP 3183; LMG 2117; NCPPB 1011
Acidovorax avenae* subsp. *avenae (Manns 1909) Willems *et al.* 1992
= *Pseudomonas avenae* Manns 1909
= *Pseudomonas avenae* subsp. *avenae* Manns 1909
= *Pseudomonas rubrilineans* (Lee *et al.* 1925) Stapp 1928
ATCC 19860; CFBP 2425; ICMP 3183; LMG 2117; NCPPB 1011
Acidovorax avenae* subsp. *cattleyae (Pavarino 1911) Willems *et al.* 1992
= *Pseudomonas cattleyae* (Pavarino 1911) Savulescu 1947
ATCC 33619; CFBP 2423; ICMP 2826; LMG 2364; NCPPB 961
Acidovorax avenae* subsp. *citrulli (Schaad *et al.* 1978) Willems *et al.* 1992
= *Pseudomonas pseudoalcaligenes* subsp. *citrulli* Schaad *et al.* 1978
= *Pseudomonas avenae* subsp. *citrulli* (Schaad *et al.* 1978) Hu *et al.* 1991
ATCC 29625; CFBP 4459; ICMP 7500; LMG 5376; NCPPB 3679
Acidovorax konjaci (Goto 1983b) Willems *et al.* 1992
= *Pseudomonas pseudoalcaligenes* subsp. *konjaci* Goto 1983b
= *Pseudomonas avenae* subsp. *konjaci* (Goto 1983b) Hu *et al.* 1991
ATCC 33996; CFBP 4460; ICMP 7733; LMG 5691; NCPPB 3698
Acidovorax valerianellae Gardan *et al.* 2003
CFBP 4730; ICMP 13406; NCPPB 4283

Agrobacterium Conn 1942
The genus *Agrobacterium* is represented by species that are indistinguishable from members of *Rhizobium* except that they are pathogenic, producing rhizogenic growths or oncogenic galls rather than symbiotic nodules (Young *et al.* 2001a, 2005).
see ***Rhizobium***
Agrobacterium larrymoorei Bouzar and Jones 2001
see ***Rhizobium larrymoorei***
Agrobacterium radiobacter (Beijerinck and van Delden 1902) Conn 1942
see ***Rhizobium radiobacter***
Agrobacterium rhizogenes (Riker *et al.* 1930) Conn 1942
see ***Rhizobium rhizogenes***
Agrobacterium rubi (Hildebrand 1940) Starr and Weiss 1943
see ***Rhizobium rubi***
Agrobacterium tumefaciens (Smith and Townsend 1907) Conn 1942
see ***Rhizobium radiobacter***
Agrobacterium vitis Ophel and Kerr 1990
see ***Rhizobium vitis***

Arthrobacter Conn and Dimmick 1947
Arthrobacter ilicis Collins *et al.* 1982
ATCC 14264; NCPPB 1228
A. ilicis is a validly named species, but the type strain has not been demonstrated to be a plant pathogen. *Curtobacterium flaccumfaciens* pv. *ilicis* has been proposed for the pathogen of American holly (*Ilex opaca* Ait.; Tindall 2008; Young *et al.* 2004b).
see ***Curtobacterium flaccumfaciens* pv. *ilicis***

Bacillus Cohn 1872

Bacillus megaterium De Bary 1884
Bacillus megaterium* pv. *cerealis Hosford 1982
ATCC 35075; ICMP 8877
Bacillus pumilus Meyer and Gottheill 1901
ATCC 7061; LMG 18928
The type strain is not pathogenic to plants.

Brenneria Hauben *et al.* 1999
Brenneria alni (Surico *et al.* 1996) Hauben *et al.* 1999
= *Erwinia alni* Surico *et al.* 1996
ATCC 700181; CFBP 3923; ICMP 12481; NCPPB 3934
Brenneria nigrifluens (Wilson *et al.* 1957) Hauben *et al.* 1999
= *Erwinia nigrifluens* Wilson *et al.* 1957
ATCC 13028; CFBP 4998; DSMZ 30175; ICMP 1578; LMG 2694; NCPPB 564
Brenneria paradisiaca (Fernandez-Borrero and Lopez-Duque 1970) Hauben *et al.* 1999
see ***Dickeya paradisiaca***
Brenneria quercina (Hildebrand and Schroth 1967) Hauben *et al.* 1999
= *Erwinia quercina* Hildebrand and Schroth 1967
ATCC 29281; CFBP 3617; DSMZ 4561; ICMP 1845; LMG 2724; NCPPB 1852
Brenneria rubrifaciens (Wilson *et al.* 1967) Hauben *et al.* 1999
= *Erwinia rubrifaciens* Wilson *et al.* 1967
ATCC 29291; CFBP 3619; ICMP 1915; LMG 2709; NCPPB 2020
Brenneria salicis (Day 1924) Hauben *et al.* 1999
= *Erwinia salicis* (Day 1924) Chester 1939
ATCC 15712; CFBP 802; DSMZ 30166; ICMP 1587; LMG 2698; NCPPB 447

Burkholderia Yabuuchi *et al.* 1993 emend. Gillis *et al.* 1995
Burkholderia andropogonis (Smith 1911) Gillis *et al.* 1995
= *Pseudomonas andropogonis* (Smith 1911) Stapp 1928
= *Pseudomonas woodsii* (Smith 1911) Stevens 1925
ATCC 23061; CFBP 2421; ICMP 2807; LMG 2129; NCPPB 934
Burkholderia caryophylli (Burkholder 1942) Yabuuchi *et al.* 1993
= *Pseudomonas caryophylli* (Burkholder 1942) Starr and Burkholder 1942
ATCC 25418; CFBP 2429; CFBP 3818; ICMP 512; LMG 2155; NCPPB 2151
Yabuuchi *et al.* (1992) proposed the new combination, *B. caryophylli*, but did not include the type strain in their investigation. Nevertheless, the epithet was validated (Yabuuchi *et al.* 1993) and the error was corrected by Gillis *et al.* (1995).
Burkholderia cepacia (Palleroni and Holmes 1981 *ex* Burkholder 1950) Yabuuchi *et al.* 1993
= *Pseudomonas cepacia* (*ex* Burkholder 1950) Palleroni and Holmes 1981
ATCC 25416; CFBP 2227; ICMP 5796; LMG 1222; NCPPB 2993
Burkholderia gladioli (Severini 1913) Yabuuchi *et al.* 1993
= *Pseudomonas gladioli* Severini 1913
ATCC 10248; CFBP 2427; ICMP 3950; LMG 2216; NCPPB 1891
Yabuuchi *et al.* (1992) proposed the new combination, *B. gladioli*, but did not include the type strain in their investigation. Nevertheless, the epithet was validated (Yabuuchi *et al.* 1993) and the error was corrected by Coenye *et al.* (1999, 2000).
Burkholderia gladioli* pv. *agaricicola (Lincoln *et al.* 1991) Young *et al.* 1996
= *Pseudomonas gladioli* pv. *agaricicola* Lincoln *et al.* 1991
ICMP 11096; NCPPB 3580
Burkholderia gladioli* pv. *alliicola (Burkholder 1942) Young *et al.* 1996
= *Pseudomonas gladioli* pv. *alliicola* (Burkholder 1942) Young *et al.* 1978
ATCC 19302; CFBP 2422; ICMP 2804; LMG 2121; NCPPB 947
Burkholderia gladioli* pv. *gladioli (Severini 1913) Yabuuchi *et al.* 1993
=*Pseudomonas gladioli* Severini 1913
= *Pseudomonas gladioli* pv. *gladioli* Severini 1913
ATCC 10248; CFBP 2427; ICMP 3950; LMG 2216; NCPPB 1891
Burkholderia glumae (Kurita and Tabei 1967) Urakami *et al.* 1994
= *Pseudomonas glumae* Kurita and Tabei 1967
ATCC 33617; CFBP 4900; ICMP 3655; LMG 2196; NCPPB 2981
Burkholderia plantarii (Azegami *et al.* 1987) Urakami *et al.* 1994
= *Pseudomonas plantarii* Azegami *et al.* 1987
ATCC 43733; CFBP 3573; ICMP 9424; LMG 9035; NCPPB 3590
Burkholderia solanacearum (Smith 1896) Yabuuchi *et al.* 1993
see ***Ralstonia solanacearum***

Clavibacter Davis *et al.* 1984
Clavibacter iranicus (Carlson and Vidaver 1982 *ex* Scharif 1961) Davis *et al.* 1984
see ***Rathayibacter iranicus***
Clavibacter michiganensis (Smith 1910) Davis *et al.* 1984
= *Corynebacterium michiganense* (Smith 1910) Jensen 1934
= *Corynebacterium michiganense* subsp. *michiganense* (Smith 1910) Jensen 1934
= *Corynebacterium michiganense* pv. *michiganense* (Smith 1910) Jensen 1934
CFBP 2352; ICMP 2550; LMG 7333; NCPPB 2979
Clavibacter michiganensis* subsp. *insidiosus (McCulloch 1925) Davis *et al.* 1984
= *Corynebacterium insidiosum* (McCulloch 1925) Jensen 1934
= *Corynebacterium michiganense* subsp. *insidiosum* (McCulloch 1925) Carlson and Vidaver 1982
= *Corynebacterium michiganense* pv. *insidiosum* (McCulloch 1925) Dye and Kemp 1977
CFBP 2404; ICMP 2621; LMG 3663; NCPPB 1109
Clavibacter michiganensis* subsp. *michiganensis (Smith 1910) Davis *et al.* 1984
= *Corynebacterium michiganense* (Smith 1910) Jensen 1934
= *Corynebacterium michiganense* subsp. *michiganense* (Smith 1910) Jensen 1934
= *Corynebacterium michiganense* pv. *michiganense* (Smith 1910) Jensen 1934
CFBP 2352; ICMP 2550; LMG 7333; NCPPB 2979
Clavibacter michiganensis* subsp. *nebraskensis (Vidaver and

Mandel 1974) Davis *et al.* 1984
= *Corynebacterium michiganense* pv. *nebraskense* (Vidaver and Mandel 1974) Dye and Kemp 1977
= *Corynebacterium michiganense* subsp. *nebraskense* (Vidaver and Mandel 1974) Carlson and Vidaver 1982
= *Corynebacterium nebraskense* Vidaver and Mandel 1974
ATCC 27794; CFBP 2405; ICMP 3298; LMG 3700; NCPPB 2581

Clavibacter michiganensis* subsp. *sepedonicus (Spieckermann and Kotthoff 1914) Davis *et al.* 1984
= *Corynebacterium michiganense* subsp. *sepedonicum* (Spieckermann and Kotthoff 1914) Carlson and Vidaver 1982
= *Corynebacterium michiganense* pv. *sepedonicum* (Spieckermann and Kotthoff 1914) Dye and Kemp 1977
= *Corynebacterium sepedonicum* (Spieckermann and Kotthoff 1914) Skaptason and Burkholder 1942
ATCC 33113; CFBP 2049; ICMP 2535; LMG 2889; NCPPB 2137

Clavibacter michiganensis* subsp. *tessellarius (Carlson and Vidaver 1982) Davis *et al.* 1984
= *Corynebacterium michiganense* subsp. *tessellarius* Carlson amd Vidaver 1982
ATCC 33566; CFBP 3496; ICMP 7221; LMG 7294; NCPPB 3664

Clavibacter rathayi (Smith 1913) Davis *et al.* 1984
see ***Rathayibacter rathayi***

Clavibacter toxicus Riley and Ophel 1992
See ***Rathayibacter toxicus***

Clavibacter tritici (Carlson and Vidaver 1982) Davis *et al.* 1984
see ***Rathayibacter tritici***

Clavibacter xyli Davis *et al.* 1984
see ***Leifsonia xyli***

Clavibacter xyli subsp. *cynodontis* Davis *et al.* 1984
see ***Leifsonia xyli* subsp. *cynodontis***

Clavibacter xyli subsp. *xyli* Davis *et al.* 1984
see ***Leifsonia xyli* subsp. *xyli***

Clostridium Prazmowski 1880

Clostridium puniceum Lund *et al.* 1981b
ATCC 43978; DSMZ 2619

Corynebacterium Lehmann and Neumann 1896

Corynebacterium betae Keyworth *et al.* 1956
see ***Curtobacterium flaccumfaciens* pv. *betae***

Corynebacterium beticola Abdou 1969 – Collins and Jones (1982) refers.
see ***Pantoea agglomerans***

Corynebacterium fascians (Tilford 1936) Dowson 1942
see ***Rhodococcus fascians***

Corynebacterium flaccumfaciens (Hedges 1922) Dowson 1942
see ***Curtobacterium flaccumfaciens***

Corynebacterium flaccumfaciens pv. *betae* (Keyworth *et al.* 1956) Dye and Kemp 1977
see ***Curtobacterium flaccumfaciens* pv. *betae***

Corynebacterium flaccumfaciens pv. *flaccumfaciens* (Hedges 1922) Dowson 1942
see ***Curtobacterium flaccumfaciens* pv. *flaccumfaciens***

Corynebacterium flaccumfaciens pv. *oortii* (Saaltink and Maas Geesteranus 1969) Dye and Kemp 1977
see ***Curtobacterium flaccumfaciens* pv. *oortii***

Corynebacterium flaccumfaciens pv. *poinsettiae* (Starr and Pirone 1942) Dye and Kemp 1977
see ***Curtobacterium flaccumfaciens* pv. *poinsettiae***

Corynebacterium flaccumfaciens subsp. *betae* (Keyworth *et al.* 1956) Carlson and Vidaver 1982
see ***Curtobacterium flaccumfaciens* pv. *betae***

Corynebacterium flaccumfaciens subsp. *flaccumfaciens* (Hedges 1922) Dowson 1942
see ***Curtobacterium flaccumfaciens* pv. *flaccumfaciens***

Corynebacterium flaccumfaciens subsp. *oortii* (Saaltink and Maas Geesteranus 1969) Carlson and Vidaver 1982
see ***Curtobacterium flaccumfaciens* pv. *oortii***

Corynebacterium flaccumfaciens subsp. *poinsettiae* (Starr and Pirone 1942) Carlson and Vidaver 1982
see ***Curtobacterium flaccumfaciens* pv. *poinsettiae***

Corynebacterium ilicis Mandel *et al.* 1961
see ***Curtobacterium flaccumfaciens* pv. *ilicis***

Corynebacterium insidiosum (McCulloch 1925) Jensen 1934
see ***Clavibacter michiganensis* subsp. *insidiosus***

Corynebacterium iranicum (*ex* Scharif 1961) Carlson and Vidaver 1982
see ***Rathayibacter iranicus***

Corynebacterium michiganense (Smith 1910) Jensen 1934
see ***Clavibacter michiganensis***

Corynebacterium michiganensis pv. *insidiosus* (McCulloch 1925) Dye and Kemp 1977
see ***Clavibacter michiganensis* subsp. *insidiosus***

Corynebacterium michiganensis pv. *iranicum* (Scharif 1961) Dye and Kemp 1977
see ***Rathayibacter iranicus***

Corynebacterium michiganense pv. *nebraskense* (Vidaver and Mandel 1974) Dye and Kemp 1977
see ***Clavibacter michiganensis* subsp. *nebraskensis***

Corynebacterium michiganense pv. *rathayi* (Smith 1913) Dye and Kemp 1977
see ***Rathayibacter rathayi***

Corynebacterium michiganense pv. sepedonicum (Spieckermann and Kotthoff 1914) Dye and Kemp 1977
see ***Clavibacter michiganensis* subsp. *sepedonicus***

Corynebacterium michiganense pv. *tritici* (Hutchinson 1917) Dye and Kemp 1977
see ***Rathayibacter tritici***

Corynebacterium michiganense subsp. *insidiosum* (McCulloch 1925) Carlson and Vidaver 1982
see ***Clavibacter michiganensis* subsp. *insidiosus***

Corynebacterium michiganense subsp. *michiganense* (Smith 1910) Jensen 1934
see ***Clavibacter michiganensis* subsp. *michiganensis***

Corynebacterium michiganense subsp. *nebraskense* (Vidaver and Mandel 1974) Carlson and Vidaver 1982
see ***Clavibacter michiganensis* subsp. *nebraskensis***

Corynebacterium michiganense subsp. *sepedonicum* (Spieckermann and Kotthoff 1914) Carlson and Vidaver 1982
see ***Clavibacter michiganensis* subsp. *sepedonicus***

Corynebacterium michiganense subsp. *tessellarius* Carlson and Vidaver 1982
see ***Clavibacter michiganensis* subsp. *tessellarius***

Corynebacterium nebraskense Vidaver and Mandel 1974
see ***Clavibacter michiganensis* subsp. *nebraskensis***

Corynebacterium oortii Saaltink and Maas Geesteranus 1969

see ***Curtobacterium flaccumfaciens* pv. *oortii***

Corynebacterium poinsettiae (Starr and Pirone 1942) Burkholder 1948b
see ***Curtobacterium flaccumfaciens* pv. *poinsettiae***

Corynebacterium rathayi (Smith 1913) Dowson 1942
see ***Rathayibacter rathayi***

Corynebacterium sepedonicum (Spieckermann and Kotthoff 1914) Skaptason and Burkholder 1942
see ***Clavibacter michiganensis* *subsp.* *sepedonicus***

Corynebacterium tritici (*ex* Hutchinson 1917) Carlson and Vidaver 1982
see ***Rathayibacter tritici***

Curtobacterium Yamada and Komagata 1972

Curtobacterium flaccumfaciens (Hedges 1922) Collins and Jones 1984
= *Corynebacterium flaccumfaciens* (Hedges 1922) Dowson 1942
ICMP 2584; LMG 3645; NCPPB 1446

Curtobacterium flaccumfaciens* pv. *betae (Keyworth *et al.* 1956) Collins and Jones 1983
= *Corynebacterium betae* Keyworth *et al.* 1956
= *Corynebacterium flaccumfaciens* pv. *betae* (Keyworth *et al.* 1956) Dye and Kemp 1977
= *Corynebacterium flaccumfaciens* subsp. *betae* (Keyworth *et al.* 1956) Carlson and Vidaver 1982
CFBP 2402; ICMP 2594; LMG 3596; NCPPB 374

Curtobacterium flaccumfaciens pv. flaccumfaciens (Hedges 1922) Collins and Jones 1983
= *Corynebacterium flaccumfaciens* pv. *flaccumfaciens* (Hedges 1922) Dowson 1942
= *Corynebacterium flaccumfaciens* subsp. *flaccumfaciens* (Hedges 1922) Dowson 1942
= *Corynebacterium flaccumfaciens* (Hedges 1922) Dowson 1942
ICMP 2584; LMG 3645; NCPPB 1446

Curtobacterium flaccumfaciens pv. ***ilicis*** (Mandel *et al.* 1961) Young *et al.* 2004b
= *Corynebacterium ilicis* Mandel *et al.* 1961
ICMP 2608; ICPB CI144

Curtobacterium flaccumfaciens* pv. *oortii (Saaltink and Maas Geesteranus 1969) Collins and Jones 1983
= *Corynebacterium flaccumfaciens* pv. *oortii* (Saaltink and Maas Geesteranus 1969) Dye and Kemp 1977
= *Corynebacterium flaccumfaciens* subsp. *oortii* (Saaltink and Maas Geesteranus 1969) Carlson and Vidaver 1982
= *Corynebacterium oortii* Saaltink and Maas Geesteranus 1969
ATCC 25283; CFBP 1384; ICMP 2632; LMG 3702; NCPPB 2113

Curtobacterium flaccumfaciens* pv. *poinsettiae (Starr and Pirone 1942) Collins and Jones 1983
= *Corynebacterium flaccumfaciens* pv. *poinsettiae* (Starr and Pirone 1942) Dye and Kemp 1977
= *Corynebacterium flaccumfaciens* subsp. *poinsettiae* (Starr and Pirone 1942) Carlson and Vidaver 1982
= *Corynebacterium poinsettiae* (Starr and Pirone 1942) Burkholder 1948b
ATCC 9682; CFBP 2403; ICMP 2566; LMG 3715; NCPPB 854

Dickeya Samson *et al.* 2005

Dickeya chrysanthemi (Burkholder *et al.* 1953) Samson *et al.* 2005
= *Erwinia chrysanthemi* Burkholder *et al.* 1953
= *Pectobacterium chrysanthemi* (Burkholder *et al.* 1953) Brenner *et al.* 1973 emend. Hauben *et al.* 1999
ATCC 11663; CFBP 2048; DSMZ 4610; ICMP 5703; LMG 2804; NCPPB 402

Dickeya chrysanthemi* pv. *chrysanthemi (Burkholder *et al.* 1953) Samson *et al.* 2005
= *Erwinia chrysanthemi* pv. *chrysanthemi* Burkholder *et al.* 1953
= *Pectobacterium chrysanthemi* pv. *chrysanthemi* (Burkholder *et al.* 1953) Brenner *et al.* 1973 emend. Hauben *et al.* 1999 – Young *et al.* (2004a) refers.
ATCC 11663; CFBP 2048; DSMZ 4610; ICMP 5703; LMG 2804; NCPPB 402

Dickeya chrysanthemi* pv. *parthenii (Starr 1947) comb. nov.
= *Erwinia chrysanthemi* pv. *parthenii* (Starr 1947) Dye 1978a
= *Pectobacterium chrysanthemi* pv. *parthenii* (Starr 1947) Young *et al.* 2004a
CFBP 1270; ICMP 1547; LMG 2486; NCPPB 516

Dickeya dadantii Samson *et al.* 2005
CFBP 1269; ICMP 1544; NCPPB 898

Dickeya dianthicola Samson *et al.* 2005
= *Erwinia chrysanthemi* pv. *dianthicola* (Hellmers 1958) Dickey 1979
= [*Erwinia chrysanthemi* pv. *dianthi* Alivizatos 1979] Young *et al.* (1991a) refers.
= *Pectobacterium chrysanthemi* pv. *dianthicola* (Hellmers 1958) Young *et al.* 2004a
CFBP 1200; ICMP 6427; LMG 2485; NCPPB 453

Dickeya dieffenbachiae Samson *et al.* 2005
= *Erwinia chrysanthemi* pv. *dieffenbachiae* (McFadden 1961) Dye 1978a
= *Erwinia dieffenbachiae* McFadden 1961
= *Pectobacterium chrysanthemi* pv. *dieffenbachiae* (McFadden 1961) Young *et al.* 2004a
CFBP 2051; DSMZ 18013; ICMP 1568; NCPPB 2976

Dickeya paradisiaca (Fernandez-Borrero and Lopez-Duque 1970) Samson *et al.* 2005
= *Erwinia paradisiaca* Fernandez-Borrero and Lopez-Duque 1970
= *Brenneria paradisiaca* (Fernandez-Borrero and Lopez-Duque 1970) Hauben *et al.* 1999
ATCC 33242; CFBP 4178; ICMP 6358; LMG 2542; NCPPB 2511
Erwinia chrysanthemi pv. *paradisiaca* (Victoria and Barros 1969) Dickey and Victoria 1980 has been shown to belong to *D. paradisiaca* (Samson *et al.* 2005). The pathotype strain for *Erwinia chrysanthemi* pv. *paradisiaca* is CFBP 3477; ICMP 2349; LMG 2545; LMG 6250 and is different from the type strain to which the name *Dickeya paradisiaca, Brenneria paradisiaca* and *Erwinia paradisiaca* were assigned.

Dickeya zeae Samson *et al.* 2005
= *Erwinia chrysanthemi* pv. *zeae* (Sabet 1954) Victoria *et al.* 1975
= *Pectobacterium chrysanthemi* pv. *zeae* (Sabet 1954) Young *et al.* 2004a
CFBP 2052; ICMP 5704; LMG 2505; NCPPB 2538

Enterobacter Hormaeche and Edwards 1960
Enterobacter agglomerans (Beijerinck 1888) Ewing and Fife 1972
see ***Pantoea agglomerans***
Enterobacter cancerogenus (Urosević 1966) Dickey and Zumoff 1988
= *Erwinia cancerogena* Urosević 1966
ATCC 33241; CFBP 4167; ICMP 5706; LMG 2693; NCPPB 2176
Enterobacter cloacae (Jordan 1890) Hormaeche and Edwards 1960
ATCC 13047; DSMZ 30054; LMG 2783
Enterobacter cloacae* subsp. *dissolvens (Rosen 1922) Hoffmann *et al.* 2005b
= *Enterobacter dissolvens* (Rosen 1922) Brenner *et al.* 1988
= *Erwinia dissolvens* (Rosen 1922) Burkholder 1948c
ATCC 23373; ICMP 1570; LMG 2683; NCPPB 1850
Pathogenicity of this species is doubtful (Bradbury 1986).
Enterobacter dissolvens (Rosen 1922) Brenner *et al.* 1988
see ***Enterobacter cloacae* subsp. *dissolvens***
Enterobacter nimipressuralis (Carter 1945) Brenner *et al.* 1988
= *Erwinia nimipressuralis* Carter 1945
Pathogenicity within this species is doubtful (Bradbury 1986).
ATCC 9912; ICMP 1577; LMG 10245; NCPPB 2045
Enterobacter pyrinus Chung *et al.* 1993
= [*Erwinia pirina* Chung *et al.* 1990] Young *et al*. (2004a) refers.
ATCC 49851; CFBP 4168; ICMP 12530; LMG 22970

Erwinia Winslow *et al.* 1920 emend. Hauben *et al.* 1999
Erwinia alni (Surico *et al.* 1996)
see ***Brenneria alni***
Erwinia amylovora (Burrill 1882) Winslow *et al.* 1920 emend. Hauben *et al.* 1999
ATCC 15580; CFBP 1232; DSMZ 30165; ICMP 1540; LMG 2024; NCPPB 683
[*Erwinia amylovora* pv. *pyri* Tanii 1983] Young *et al.* (1991a) refers.
Erwinia ananatis corrig. Serrano 1928
see ***Pantoea ananatis* pv. *ananatis***
Erwinia ananatis pv. *ananatis* Serrano 1928
see ***Pantoea ananatis* pv. *ananatis***
Erwinia ananas pv. *uredovora* (Pon *et al.* 1954) Dye 1978a
see ***Pantoea ananatis* pv. *uredovora***
Erwinia cacticida Alcorn *et al.* 1991
see ***Pectobacterium cacticida***
Erwinia cancerogena Urosević 1966
see ***Enterobacter cancerogenus***
[*Erwinia carnegieana* Standring 1942] Young *et al*. (2004a) refers.
= [*Pectobacterium carnegieana* (Standring 1942) Brenner *et al.* 1973]
Because there are anomalies between the description of the species and the characteristics of the type strain of *E. carnegieana*, which belongs in *Klebsiella pneumoniae*, a recommendation was made to reject this name (Alcorn and Orum 1988) which was not acted upon because the names will fall out of use because there is no longer an authentic type strain available (Wayne 1994).
Erwinia carotovora (Jones 1901) Bergey *et al.* 1923
see ***Pectobacterium carotovorum***
Erwinia carotovora pv. *atroseptica* (van Hall 1902) Dye 1978a
see ***Pectobacterium atrosepticum***
Erwinia carotovora pv. *carotovora* (Jones 1901) Bergey 1923
see ***Pectobacterium carotovorum* subsp. *carotovorum***
Erwinia carotovora subsp. *atroseptica* (van Hall 1902) Dye 1969
see ***Pectobacterium atrosepticum***
Erwinia carotovora subsp. *carotovora* (Jones 1901) Bergey *et al.* 1923
see ***Pectobacterium carotovorum* subsp. *carotovorum***
Erwinia carotovora subsp. *betavasculorum* Thomson *et al.* 1984
see ***Pectobacterium betavasculorum***
Erwinia carotovora subsp. *odorifera* Gallois *et al.* 1992
see ***Pectobacterium carotovorum* subsp. *odoriferum***
Erwinia carotovora subsp. wasabiae Goto and Matsumoto 1987
see ***Pectobacterium wasabiae***
Erwinia chrysanthemi Burkholder *et al.* 1953
see ***Dickeya chrysanthemi***
Erwinia chrysanthemi pv. *chrysanthemi* Burkholder *et al.* 1953
see ***Dickeya chrysanthemi pv. chrysanthemi***
Erwinia chrysanthemi pv. *dianthicola* (Hellmers 1958) Dickey 1979
see ***Dickeya dianthicola***
Erwinia chrysanthemi pv. *dieffenbachiae* (McFadden 1961) Dye 1978a
see ***Dickeya dieffenbachiae***
Erwinia chrysanthemi pv. *paradisiaca* (Victoria and Barros 1969) Dickey and Victoria 1980
see ***Dickeya paradisiaca***
Erwinia chrysanthemi pv. *parthenii* (Starr 1947) Dye 1978a
see ***Dickeya chrysanthemi* pv. *parthenii***
Erwinia chrysanthemi pv. *zeae* (Sabet 1954) Victoria *et al.* 1975
see ***Dickeya zeae***
Erwinia cypripedii (Hori 1911) Bergey *et al.* 1923
see ***Pectobacterium cypripedii***
Erwinia dissolvens (Rosen 1922) Burkholder 1948c
see ***Enterobacter cloacae* subsp. *dissolvens***
Erwinia herbicola (Löhnis 1911) Dye 1964
see ***Pantoea agglomerans***
Erwinia herbicola f. sp. *gypsophilae* (Brown 1934) Miller *et al.* 1981
see ***Pantoea agglomerans* pv. *gypsophilae***
Erwinia herbicola pv. *millettiae* (Kawakami and Yoshida 1920) Goto *et al.* 1980
see ***Pantoea agglomerans* pv. *millettiae***
Erwinia mallotivora Goto 1976 emend. Hauben *et al.* 1999
ATCC 29573; CFBP 2503; ICMP 5705; LMG 2708; NCPPB 2851
Erwinia millettiae (Kawakami and Yoshida 1920) Magrou 1937
see ***Pantoea agglomerans* pv. *millettiae***
Erwinia nigrifluens Wilson *et al.* 1957
see ***Brenneria nigrifluens***
Erwinia nimipressuralis Carter 1945
see ***Enterobacter nimipressuralis***
[*Erwinia nulandii* Schuster *et al.* 1981] Brenner *et al.* (1994) refers.

see ***Erwinia persicina***

Erwinia papayae Gardan *et al.* 2004
CFBP 5189; ICMP 14628; NCPPB 4294

Erwinia paradisiaca Fernández-Borrero and López-Duque 1970
see ***Dickeya paradisiaca***

[*Erwinia proteamaculans* (Paine and Stansfield 1919) Dye 1966]
see ***Serratia proteamaculans***

Erwinia persicina corrig. Hao *et al.* 1990
= [*Erwinia nulandii* Schuster *et al.* 1981] Brenner *et al.* (1994) refers.
ATCC 35998; CFBP 3622; ICMP 12532; LMG 11254; NCPPB 3774

[*Erwinia pirina* Chung *et al.* 1990] Young *et al*. (2004a) refers.
see ***Enterobacter pyrinus***

Erwinia psidii Rodrigues Neto *et al.* 1988
ATCC 49406; CFBP 3627; ICMP 8426; NCPPB 3555

Erwinia pyrifoliae Kim *et al.* 1999
CFBP 4172; DSMZ 12163; ICMP 14143

Erwinia quercina Hildebrand and Schroth 1967
see ***Brenneria quercina***

Erwinia rhapontici (Millard 1924) Burkholder 1948c emend. Hauben *et al.* 1999
= *Pectobacterium rhapontici* (Millard 1924) Patel and Kulkarni 1951b
ATCC 29283; CFBP 3163; DSMZ 4484; ICMP 1582; LMG 2688; NCPPB 1578

Erwinia rubrifaciens Wilson *et al.* 1967
see ***Brenneria rubrifaciens***

Erwinia salicis (Day 1924) Chester 1939
see ***Brenneria salicis***

Erwinia stewartii (Smith 1898) Dye 1963c
see ***Pantoea stewartii***

Erwinia tracheiphila (Smith 1895) Bergey *et al.* 1923 emend. Hauben *et al.* 1999
ATCC 33245; CFBP 2355; ICMP 5845; LMG 2707; LMG 2906; NCPPB 2452

Erwinia uredovora (Pon *et al.* 1954) Dye 1963a
see ***Pantoea ananatis* pv. *uredovora***

Ewingella Grimont *et al.* 1984

Ewingella americana Grimont *et al.* 1984
ATCC 33852; DSMZ 4580; LMG 7869; NCPPB 3905

Gluconobacter Asai 1935

Gluconobacter oxydans (Henneberg 1897) De Ley 1961
ATCC 19357; LMG 1408

Herbaspirillum Baldani *et al.* 1986

Herbaspirillum rubrisubalbicans (Christopher and Edgerton 1930) Baldani *et al.* 1996
= *Pseudomonas rubrisubalbicans* (Christopher and Edgerton 1930) Krasil'nikov 1949
ATCC 19308; CFBP 1202; ICMP 5777; LMG 2286; NCPPB 1027

Janthinobacterium De Ley *et al.* 1978

Janthinobacterium agaricidamnosum Lincoln *et al.* 1999
DSMZ 9628; ICMP 16941; NCPPB 3945

Leifsonia Evtushenko *et al.* 2000

Leifsonia cynodontis (Davis *et al.* 1984) Suzuki *et al.* 2000
ATCC 33973; ICMP 8790; LMG 7552
Suzuki *et al.* (2000) proposed that *L. cynodontis* supplant *L. xyli*, a name they considered to be not valid because they could not obtain a culture of the type strain. However, other strains of *L. xyli* were available as possible neotypes. *L. cynodontis* could be considered as a junior heterotypic synonym of *L. xyli*.

Leifsonia xyli (Davis *et al.* 1984) Evtushenko *et al.* 2000
= *Clavibacter xyli* Davis *et al.* 1984
ICMP 7127 (additional strains from ATCC, LMG, and NCPPB are no longer available)

Leifsonia xyli* subsp. *cynodontis (Davis *et al.* 1984) Evtushenko *et al.* 2000
= *Clavibacter xyli* subsp. *cynodontis* Davis *et al.* 1984
ATCC 33973, ICMP 8790, LMG 7552

Leifsonia xyli* subsp. *xyli (Davis *et al.* 1984) Evtushenko *et al.* 2000
= *Clavibacter xyli* subsp. *xyli* Davis *et al.* 1984
ICMP 7127 (additional strains from ATCC, LMG, and NCPPB are no longer available)

Nocardia Trevisan 1889

Nocardia vaccinii Demaree and Smith 1952
ATCC 11092; NCPPB 954

Pantoea Gavini *et al.* 1989

Pantoea agglomerans (Beijerinck 1888) Gavini *et al.* 1989
= *Corynebacterium beticola* Abdou 1969
= *Enterobacter agglomerans* (Beijerinck 1888) Ewing and Fife 1972
= *Erwinia herbicola* (Löhnis 1911) Dye 1964
ATCC 27155; CFBP 3845; ICMP 12534; LMG 1286

Pantoea agglomerans* pv. *gypsophilae (Brown 1934) comb. nov.
= *Erwinia herbicola* f.sp. *gypsophilae* (Brown 1934) Miller *et al.* 1981
= *Erwinia herbicola* pv. *gypsophilae* (Brown 1934) Miller *et al.* 1981
CFBP 4341; ICMP 12531; NCPPB 3091

Pantoea agglomerans* pv. *millettiae (Kawakami and Yoshida 1920) Young *et al.* 1996
= *Enterobacter agglomerans* pv. *millettiae* (Kawakami and Yoshida 1920) Young *et al.* 1996
= *Erwinia herbicola* pv. *millettiae* (Kawakami and Yoshida 1920) Goto *et al.* 1980
= *Erwinia millettiae* (Kawakami and Yoshida 1920) Magrou 1937
ATCC 33261; CFBP 3615; ICMP 6772; LMG 2660

Pantoea ananatis corrig. (Serrano 1928) Mergaert *et al.* 1993
= *Erwinia ananas* Serrano 1928
ATCC 33244; CFBP 3612; ICMP 1850; LMG 2665; NCPPB 1846

Pantoea ananatis* pv. *ananatis (Serrano 1928) Mergaert *et al.* 1993
= *Erwinia ananas* Serrano 1928
= *Erwinia ananas* pv *ananatis* (Serrano 1928) Dye 1978a
ATCC 33244; CFBP 3612; ICMP 1850; LMG 2665; NCPPB 1846

Pantoea ananatis* pv. *uredovora (Pon *et al.* 1954) Young *et al.* 1996

= *Erwinia uredovora* (Pon *et al.* 1954) Dye 1963a
= *Erwinia ananas* pv. *uredovora* (Pon *et al.* 1954) Dye 1978a
ATCC 19321; CFBP 3171; ICMP 351; LMG 2676; NCPPB 800

Pantoea stewartii (Smith 1898) Mergaert *et al.* 1993
ATCC 8199; CFBP 3167; ICMP 257; LMG 2715; NCPPB 2295

Pantoea stewartii* subsp. *indologenes Mergaert *et al.* 1993
CFBP 3614; ICMP 77; LMG 2632; NCPPB 2280
The type strain upon which this subspecies was based was previously identified as *Erwinia herbicola*, a non-pathogen (Dye 1969).

Pantoea stewartii* subsp. *stewartii (Smith 1898) Mergaert *et al.* 1993
= *Erwinia stewartii* (Smith 1898) Dye 1963c
ATCC 8199; CFBP 3167; ICMP 257; LMG 2715; NCPPB 2295

Pectobacterium (Waldee 1945) emend. Hauben *et al.* 1999

Pectobacterium atrosepticum (van Hall 1902) Gardan *et al.* 2003
= *Erwinia carotovora* subsp. *atroseptica* (van Hall 1902) Dye 1969
= *Erwinia carotovora* pv. *atroseptica* (van Hall 1902) Dye 1978a
= *Pectobacterium carotovorum* subsp. *atrosepticum* (van Hall 1902) Hauben *et al.* 1999
ATCC 33260; CFBP 1526; ICMP 1526; LMG 2386; NCPPB 549

Pectobacterium betavasculorum (Thomson *et al.* 1984) Gardan *et al.* 2003
= *Erwinia carotovora* subsp. *betavasculorum* Thomson *et al.* 1984
= *Pectobacterium carotovorum* subsp. *betavasculorum* (Thomson *et al.* 1984) Hauben *et al.* 1999
ATCC 43762; CFBP 1539; ICMP 4226; LMG 2464; LMG 2466; NCPPB 2795

Pectobacterium cacticida corrig. (Alcorn *et al.* 1991) Hauben *et al.* 1999
= *Erwinia cacticida* Alcorn *et al.* 1991
ATCC 49481; CFBP 3628; ICMP 11136; LMG 17936; NCPPB 3849

[*Pectobacterium carnegieana* (Standring 1942) Brenner *et al.* 1973]
see [*Erwinia carnegiana*]

Pectobacterium carotovorum (Jones 1901) Waldee 1945 emend. Gardan *et al.* 2003
= *Erwinia carotovora* (Jones 1901) Bergey *et al.* 1923
= *Pectobacterium carotovorum* (Jones 1901) Waldee 1945 emend. Hauben *et al.* 1999
ATCC 15713; CFBP 2046; ICMP 5702; LMG 2404; NCPPB 312

Pectobacterium carotovorum subsp. *atrosepticum* (van Hall 1902) Hauben *et al.* 1999
see ***Pectobacterium atrosepticum***

Pectobacterium carotovorum subsp. *betavasculorum* (Thomson *et al.* 1984) Hauben *et al.* 1999
see ***Pectobacterium betavasculorum***

[*Pectobacterium carotovorum* subsp. *brasiliensis* Duarte *et al.* 2001] Not yet validated in IJSEM.

Pectobacterium carotovorum* subsp. *carotovorum (Jones 1901) Hauben *et al.* 1999 emend. Gardan *et al.* 2003
= *Erwinia carotovora* subsp. *carotovora* (Jones 1901) Bergey *et al.* 1923
= *Erwinia carotovora* pv. *carotovora* (Jones 1901) Bergey *et al.* 1923
= *Erwinia carotovora* subsp. *carotovora* (Jones 1901) Bergey *et al.* 1923
ATCC 15713; CFBP 2046; ICMP 5702; LMG 2404; NCPPB 312

Pectobacterium carotovorum* subsp. *odoriferum (Gallois *et al.* 1992) Hauben *et al.* 1999 emend. Gardan *et al.* 2003
= *Erwinia carotovora* subsp. *odorifera* Gallois *et al.* 1992
CFBP 1878; ICMP 11533; NCPPB 3839

Pectobacterium carotovorum subsp. *wasabiae* (Goto and Matsumoto 1987) Hauben *et al.* 1999
see ***Pectobacterium wasabiae***

Pectobacterium chrysanthemi (Burkholder *et al.* 1953) Brenner *et al.* 1973 emend. Hauben *et al.* 1999
see ***Dickeya chrysanthemi***

Pectobacterium chrysanthemi pv. *chrysanthemi* (Burkholder *et al.* 1953) Brenner *et al.* 1973 emend. Hauben *et al.* 1999
see ***Dickeya chrysanthemi pv. chrysanthemi***

Pectobacterium chrysanthemi pv. *dianthicola* (Hellmers 1958) Young *et al.* 2004a
see ***Dickeya dianthicola***

Pectobacterium chrysanthemi pv. *dieffenbachiae* (McFadden 1961) Young *et al.* 2004a
see ***Dickeya dieffenbachiae***

Pectobacterium chrysanthemi pv. *parthenii* (Starr 1947) Young *et al.* 2004a
see ***Dickeya chrysanthemi pv. parthenii***

Pectobacterium chrysanthemi pv. *zeae* (Sabet 1954) Young *et al.* 2004a
see ***Dickeya zeae***

Pectobacterium cypripedii (Hori 1911) Brenner *et al.* 1973 emend. Hauben *et al.* 1999
= *Erwinia cypripedii* (Hori 1911) Bergey *et al.* 1923
ATCC 29267; CFBP 3613; ICMP 1591; LMG 2657; NCPPB 3004

Pectobacterium rhapontici (Millard 1924) Patel and Kulkarni 1951b
see ***Erwinia rhapontici***

Pectobacterium wasabiae (Goto and Matsumoto 1987) Gardan *et al.* 2003
= *Erwinia carotovora* subsp. *wasabiae* Goto and Matsumoto 1987
= *Pectobacterium carotovorum* subsp. *wasabiae* (Goto and Matsumoto 1987) Hauben *et al.* 1999
ATCC 43316; CFBP 3304; ICMP 9121; LMG 8404 = LMG 8444; NCPPB 3701

Pseudomonas Migula 1894

Pseudomonas agarici Young 1970
ATCC 25941; CFBP 2063; ICMP 2656; LMG 2112; NCPPB 2289

Pseudomonas amygdali Psallidas and Panagopoulos 1975
ATCC 33614; CFBP 3205; ICMP 3918; LMG 2123; LMG 13184; NCPPB 2607
Gardan *et al.* (1999) reported that the type strains of *Pseudomonas amygdali, Pseudomonas ficuserectae, Pseudo-*

monas meliae and *Pseudomonas savastanoi* are members of a single genomospecies (genomic group G2). If a formal proposal for unification of these species were made, *P. amygdali* would take priority because the others are later synonyms.

Pseudomonas andropogonis (Smith 1911) Stapp 1928
see ***Burkholderia andropogonis***

[*Pseudomonas andropogonis* pv. *andropogonis* (Smith 1911) Stapp 1928] Young *et al.* (1991a) refers.

[*Pseudomonas andropogonis* pv. *sojae* Stall and Kucharek 1982] Young *et al.* (1991a) refers.

[*Pseudomonas andropogonis* pv. *stizolobii* (Wolf 1920) Palleroni 1984] Young *et al.* (1991a) refers.

Pseudomonas asplenii (Ark and Tompkins 1946) Savulescu 1947
ATCC 23835; CFBP 3279; ICMP 3944; LMG 2137; NCPPB 1947

Pseudomonas avellanae Janse *et al.* 1997
= *Pseudomonas syringae* pv. *avellanae* Psallidas 1993
CFBP 4060; ICMP 9746; LMG 21662; NCPPB 3487

Pseudomonas avenae Manns 1909
see ***Acidovorax avenae***

Pseudomonas avenae subsp. *avenae* Manns 1909
see ***Acidovorax avenae*** subsp. ***avenae***

Pseudomonas avenae subsp. *citrulli* (Schaad *et al.* 1978) Hu *et al.* 1991
see ***Acidovorax avenae*** subsp. ***citrulli***

Pseudomonas avenae subsp. *konjaci* (Goto 1983b) Hu *et al.* 1991
see ***Acidovorax konjaci***

Pseudomonas beteli corrig. (Ragunathan 1928) S_vulescu 1947
ATCC 19861; CFBP 4337; ICMP 2820; LMG 978; NCPPB 323
This strain has been reported as a member of *Xanthomonas* (De Vos *et al.* 1985) or *Stenotrophomonas* (Anzai *et al.* 2000; Singer *et al.* 1994).

[*Pseudomonas blatchfordae* Schuster *et al.* 1980] Young *et al.* (1991a) refers.

Pseudomonas cannabina (*ex* Sutić and Dowson 1959) Gardan *et al.* 1999
= *Pseudomonas syringae* pv. *cannabina* (*ex* Sutić and Dowson 1959) Young *et al.* 1978
CFBP 2341; ICMP 2823; LMG 5096; NCPPB 1437

Pseudomonas caricapapayae Robbs 1956
ATCC 33615; CFBP 3204; ICMP 2855; LMG 2152; NCPPB 1873

Pseudomonas caryophylli (Burkholder 1942) Starr and Burkholder 1942
see ***Burkholderia caryophylli***

Pseudomonas cattleyae (Pavarino 1911) Savulescu 1947
see ***Acidovorax avenae*** **subsp.** ***cattleyae***

Pseudomonas cepacia (*ex* Burkholder 1950) Palleroni and Holmes 1981
see ***Burkholderia cepacia***

Pseudomonas cichorii (Swingle 1925) Stapp 1928
ATCC 10857; CFBP 2101; ICMP 5707; LMG 2162; NCPPB 943

Pseudomonas cissicola (Takimoto 1939) Burkholder 1948a
ATCC 33616; CFBP 2432; ICMP 8561; LMG 2167; NCPPB 2982
A strain incorrectly labeled as the type was identified as a member of *Agrobacterium* according to Goto (1992). The correct type strain, listed here, is a member of *Xanthomonas* (Anzai *et al.* 2000; Hu *et al.* 1997; Parkinson *et al.* 2009; Stead 1992; Takikawa 1990).

[*Pseudomonas coronafaciens* Schaad and Cunfer 1979]

Pseudomonas corrugata (*ex* Scarlett *et al.* 1978) Roberts and Scarlett 1981
ATCC 29736; CFBP 2431; ICMP 5819; LMG 2172; NCPPB 2445

Pseudomonas costantinii Munsch *et al.* 2002
CFBP 5705; HAMBI 2444

[*Pseudomonas dodoneae* Papdiwal 1980a] Young *et al.* (1991a) refers.

Pseudomonas ficuserectae Goto 1983c
ATCC 35104; CFBP 3224; ICMP 7848; LMG 5694; NCPPB 3693
see *Pseudomonas amygdali*

Pseudomonas flectens Johnson 1956
ATCC 12775; CFBP 3281; ICMP 745; NCPPB 539
This strain appears to be a member of the *Enterobactericeae* and not a species of *Pseudomonas* (Anzai *et al.* 2000; De Vos *et al.* 1985).

Pseudomonas fuscovaginae (*ex* Tanii *et al.* 1976) Miyajima *et al.* 1983
CFBP 2065; ICMP 5940; LMG 2158; NCPPB 3085

[*Pseudomonas gingeri* Preece and Wong 1982] Young *et al.* (1991a) refers

Pseudomonas gladioli Severini 1913
see ***Burkholderia gladioli***

Pseudomonas gladioli pv. *agaricicola* Lincoln *et al.* 1991
see ***Burkholderia gladioli*** **pv.** ***agaricicola***

Pseudomonas gladioli pv. *alliicola* (Burkholder 1942) Young *et al.* 1978
see ***Burkholderia gladioli*** **pv.** ***alliicola***

Pseudomonas gladioli pv. *gladioli* Severini 1913
see ***Burkholderia gladioli*** **pv.** ***gladioli***

Pseudomonas glumae Kurita and Tabei 1967
see ***Burkholderia glumae***

Pseudomonas hibiscicola Moniz 1963
ATCC 19867; ICMP 3945; LMG 980; NCPPB 1683
This strain has been reported as a member of *Xanthomonas* (Anzai *et al.* 2000; De Vos *et al.* 1985) and *Stenotrophomonas* (Singer *et al.* 1994).

Pseudomonas marginalis (Brown 1918) Stevens 1925
ATCC 10844; CFBP 1387; CFBP 3300; ICMP 3553; LMG 2215; NCPPB 667

Pseudomonas marginalis **pv.** ***alfalfae*** (Shinde and Lukezic 1974) Young *et al.* 1978
CFBP 2039; ICMP 5708; LMG 2214; NCPPB 2644

Pseudomonas marginalis **pv.** ***marginalis*** (Brown 1918) Stevens 1925
ATCC 10844; CFBP 1387; CFBP 3300; ICMP 3553; LMG 2215; NCPPB 667

Pseudomonas marginalis **pv.** ***pastinacae*** (Burkholder 1960) Young *et al.* 1978
ATCC 13889; CFBP 2038; ICMP 5709; LMG 2238; NCPPB 806

Pseudomonas mediterranea Catara *et al.* 2002
CFBP 5447; ICMP 14184

Pseudomonas meliae Ogimi 1981
ATCC 33050; CFBP 3225; ICMP 6289; LMG 2220; NCPPB 3033

see *Pseudomonas amygdali*

Pseudomonas palleroniana Gardan *et al.* 2002
CFBP 4389; ICMP 14253; NCPPB 4278

[*Pseudomonas pallidae* Papdiwal 1980b] Young *et al.* (1991a) refers.

Pseudomonas plantarii Azegami *et al.* 1987
see ***Burkholderia plantarii***

[*Pseudomonas pomi* Cole 1959] Dhanvantari *et al.* (1978) refers.
see ***Acetobacter pasteurianus***

Pseudomonas pseudoalcaligenes subsp. *citrulli* Schaad *et al.* 1978
see ***Acidovorax avenae* subsp. *citrulli***

Pseudomonas pseudoalcaligenes subsp. *konjaci* Goto 1983b
see ***Acidovorax konjaci***

Pseudomonas rubrilineans (Lee *et al.* 1925) Stapp 1928
see ***Acidovorax avenae* subsp. *avenae***

Pseudomonas rubrisubalbicans (Christopher and Edgerton 1930) Krasil'nikov 1949
see ***Herbaspirillum rubrisubalbicans***

Pseudomonas salomonii Gardan *et al.* 2002
CFBP 2022; DSMZ 16732; ICMP 14252; NCPPB 4277

Pseudomonas savastanoi (*ex* Smith 1908) Gardan *et al.* 1992
= *Pseudomonas syringae* subsp. *savastanoi* (*ex* Smith 1908) Janse 1982
ATCC 13522; CFBP 1670; ICMP 4352; LMG 2209; NCPPB 639
see *Pseudomonas amygdali*

Pseudomonas savastanoi* pv. *fraxini (Janse 1982) Young *et al.* 1996
= *Pseudomonas syringae* pv. *savastanoi* (Smith 1908) Young *et al.* 1978
= [*Pseudomonas syringae* subsp. *savastanoi* pv. *fraxini* Janse 1982] Young *et al.* (1991a) refers.
CFBP 5062; ICMP 7711

Pseudomonas savastanoi* pv. *glycinea (Coerper 1919) Gardan *et al.* 1992
= *Pseudomonas syringae* pv. *glycinea* (Coerper 1919) Young *et al.* 1978
CFBP 2214; ICMP 2189; LMG 5066; NCPPB 2411

Pseudomonas savastanoi* pv. *nerii (Janse 1982) Young *et al.* 1996
= *Pseudomonas syringae* pv. *savastanoi* (Smith 1908) Young *et al.* 1978
= [*Pseudomonas syringae* subsp. *savastanoi* pv. *nerii* Janse 1982] Young *et al.* (1991a) refers.
ICMP 16943; NCPPB 3278

Pseudomonas savastanoi* pv. *phaseolicola (Burkholder 1926) Gardan *et al.* 1992
= *Pseudomonas syringae* pv. *phaseolicola* (Burkholder 1926) Young *et al.* 1978
ATCC 19304; CFBP 1390; ICMP 2740; LMG 2245; NCPPB 52

Pseudomonas savastanoi* pv. *retacarpa Garcia de los Rios 1999
CFBP 5512; ICMP 16945; NCPPB 4050

Pseudomonas savastanoi* pv. *savastanoi (*ex* Smith 1908) Young *et al.* 1996
= *Pseudomonas syringae* pv. *savastanoi* (Smith 1908) Young *et al.* 1978
= [*Pseudomonas syringae* subsp. *savastanoi* pv. *oleae* Janse 1982] Young *et al.* (1991a) refers.
ATCC 13522; CFBP 1670; ICMP 4352; LMG 2209; NCPPB 639

Pseudomonas solanacearum (Smith 1896) Smith 1914
see ***Ralstonia solanacearum***

Pseudomonas syringae van Hall 1902
= *Pseudomonas syringae* pv. *panici* (Elliott 1923) Young *et al.* 1978
ATCC 19310; CFBP 1392; CFBP 4364; CFBP 4702; DSMZ 6693; ICMP 3023; LMG 1247; NCPPB 281

Pseudomonas syringae* pv. *aceris (Ark 1939) Young *et al.* 1978
ATCC 10853; CFBP 2339; ICMP 2802; LMG 2106; NCPPB 958

Pseudomonas syringae* pv. *actinidiae Takikawa *et al.* 1989; Scortichini *et al.* (2002) refers
CFBP 4909; ICMP 9617; NCPPB 3739

Pseudomonas syringae* pv. *aesculi (*ex* Durgapal and Singh 1980) Young *et al.* 1991a
CFBP 2894; ICMP 8947; NCPPB 3681

Pseudomonas syringae* pv. *alisalensis Cintas *et al.* 2002
ATCC BAA-566; CFBP 6866; ICMP 15200; NCPPB 4438

Pseudomonas syringae* pv. *antirrhini (Takimoto 1920) Young *et al.* 1978
CFBP 1620; ICMP 4303; LMG 5057; NCPPB 1817

Pseudomonas syringae* pv. *apii (Jagger 1921) Young *et al.* 1978
ATCC 9654; CFBP 2103; ICMP 2814; LMG 2132; NCPPB 1626

Pseudomonas syringae* pv. *aptata (Brown and Jamieson 1913) Young *et al.* 1978
CFBP 1617; ICMP 459; LMG 5059; NCPPB 871

Pseudomonas syringae* pv. *atrofaciens (McCulloch 1920) Young *et al.* 1978
CFBP 2213; ICMP 4394; LMG 5095; NCPPB 2612

Pseudomonas syringae* pv. *atropurpurea (Reddy and Godkin 1923) Young *et al.* 1978
CFBP 2340; ICMP 4457; LMG 5030; NCPPB 2397

Pseudomonas syringae pv. *avellanae* Psallidas 1993
Name proposed by Psallidas 1984 was not valid as described Young *et al.* 1991a
see ***Pseudomonas avellanae***

Pseudomonas syringae pv. avii Ménard *et al.* 2003
CFBP 3846; ICMP 14479; NCPPB 4290

Pseudomonas syringae* pv. *berberidis (Thornberry and Anderson 1931a) Young *et al.* 1978
CFBP 1727; ICMP 4116; LMG 2147; NCPPB 2724

Pseudomonas syringae pv. *cannabina* (Sutić and Dowson 1959) Young *et al.* 1978
see ***Pseudomonas cannabina***

Pseudomonas syringae* pv. *broussonetiae Takahashi *et al.* 1996
CFBP 5140; ICMP 13650

Pseudomonas syringae* pv. *castaneae Takanashi and Shimizu 1989
CFBP 4217; ICMP 9419

Pseudomonas syringae* pv. *cerasicola Kamiunten *et al.* 2000
CFBP 6109

Pseudomonas syringae* pv. *ciccaronei (Ercolani and Caldarola 1972) Young *et al.* 1978
CFBP 2342; ICMP 5710; LMG 5541; NCPPB 2355

Pseudomonas syringae* pv. *coriandricola Toben and Rudolph 1996
CFBP 5010; ICMP 12471; NCPPB 3781
The original proposal by Toben *et al.* 1994 was not valid

because no pathotype strain was proposed (Standard 17).

Pseudomonas syringae* pv. *coronafaciens (Elliott 1920) Young *et al.* 1978
CFBP 2216; ICMP 3113; LMG 5060; NCPPB 600

Pseudomonas syringae* pv. *coryli Scortichini *et al.* 2005
ICMP 17001; NCPPB 4273

Pseudomonas syringae* pv. *cunninghamiae He and Goto 1995
CFBP 4218; ICMP 11894

Pseudomonas syringae* pv. *daphniphylli Ogimi *et al.* 1990
ATCC 49211; CFBP 4219; ICMP 9757; NCPPB 3617

Pseudomonas syringae* pv. *delphinii (Smith 1904) Young *et al.* 1978
CFBP 2215; ICMP 529; LMG 5381; NCPPB 1879

Pseudomonas syringae* pv. *dendropanacis Ogimi *et al.* 1988a
ATCC 43298; CFBP 3226; ICMP 9150; NCPPB 3464

Pseudomonas syringae* pv. *dysoxyli (Hutchinson 1949) Young *et al.* 1978
ATCC 19863; CFBP 2356; ICMP 545; LMG 5062; NCPPB 225

Pseudomonas syringae* pv. *eriobotryae (Takimoto 1931) Young *et al.* 1978
CFBP 2343; ICMP 4455; LMG 2184; NCPPB 2331

[*Pseudomonas syringae* pv. *fici* Durgapal and Singh 1980] Young *et al.* (1991a) refers.

Pseudomonas syringae* pv. *garcae (do Amaral *et al.* 1956) Young *et al.* 1978
ATCC 19864; CFBP 1634; ICMP 4323; LMG 5064; NCPPB 588

Pseudomonas syringae pv. *glycinea* (Coerper 1919) Young *et al.* 1978
see ***Pseudomonas savastanoi* pv. *glycinea***

Pseudomonas syringae* pv. *helianthi (Kawamura 1934) Young *et al.* 1978
CFBP 2067; ICMP 4531; LMG 5067; NCPPB 2640

Pseudomonas syringae* pv. *hibisci (*ex* Jones *et al.* 1986) Young *et al.* 1991a
CFBP 2895; ICMP 9623; NCPPB 3682

Pseudomonas syringae pv. *japonica* (Mukoo 1955) Dye *et al.* 1980 – Young (1992) refers
see ***Pseudomonas syringae* pv. *syringae***

Pseudomonas syringae* pv. *lachrymans (Smith and Bryan 1915) Young *et al.* 1978
CFBP 6463; ICMP 3507; NCPPB 1436
Strain ATCC 7386; CFBP 2104; ICMP 3988; LMG 5070; NCPPB 537 was reported to be unsuitable as a pathotype strain of *P. syringae* pv. *lachrymans* (Gardan *et al.* 1999; Young *et al.* 1991a). The ISPP-CTPPB designated strain CFBP 6463; ICMP 3507; NCPPB 1436 as the neopathotype strain (Minutes, ISPP-CTPPB, Edinburgh, 2006)

Pseudomonas syringae* pv. *lapsa (Ark 1940) Young *et al.* 1978
CFBP 1731; ICMP 3947; LMG 2206; NCPPB 2096

Pseudomonas syringae* pv. *maculicola (McCulloch 1911) Young *et al.* 1978
CFBP 1657; ICMP 3935; LMG 5071; NCPPB 2039

Pseudomonas syringae* pv. *mellea (Johnson 1923) Young *et al.* 1978
CFBP 2344; ICMP 5711; LMG 5072; NCPPB 2356

Pseudomonas syringae* pv. *mori (Boyer and Lambert 1893) Young *et al.* 1978
ATCC 19873; CFBP 1642; ICMP 4331; LMG 5074; NCPPB 1034

Pseudomonas syringae* pv. *morsprunorum (Wormald 1931) Young *et al.* 1978
ATCC 19322*; CFBP 2351*; ICMP 5795*; LMG 5075*; NCPPB 2995*
This strain has been reported to be unsuitable as a pathotype (Young *et al.* 1991a). Here we designate strain CFBP 2116: ICMP 18416 based on the work of Gardan *et al.* (1999) and Menard *et al.* (2003) as the neopathotype strain and will become confirmed in two years from the date of publication of this list if the ISPP-CTPPB receives no objections.

Pseudomonas syringae* pv. *myricae Ogimi and Higuchi 1981
ATCC 33544; CFBP 2897; ICMP 7118; LMG 5668; NCPPB 3143

Pseudomonas syringae* pv. *oryzae (*ex* Kuwata 1985) Young *et al.* 1991a
CFBP 3228; ICMP 9088; LMG 10912; NCPPB 3683

Pseudomonas syringae pv. *panici* (Elliott 1923) Young *et al.* 1978 – Young and Fletcher (1994) refers.
see ***Pseudomonas syringae***

Pseudomonas syringae* pv. *papulans (Rose 1917) Dhanvantari 1977
CFBP 1754; ICMP 4048; LMG 5076; NCPPB 2848

Pseudomonas syringae* pv. *passiflorae (Reid 1938) Young *et al.* 1978
CFBP 2346; ICMP 129; LMG 5185; NCPPB 1387

Pseudomonas syringae* pv. *persicae (Prunier *et al.* 1970) Young *et al.* 1978
= *Pseudomonas morsprunorum* f.sp. *persicae* Prunier *et al.* 1970
CFBP 1573; ICMP 5846; LMG 5184; NCPPB 2761

Pseudomonas syringae pv. *phaseolicola* (Burkholder 1926) Young *et al.* 1978
see ***Pseudomonas savastanoi* pv. *phaseolicola***

Pseudomonas syringae* pv. *philadelphi Roberts 1985
CFBP 2898; ICMP 8903; NCPPB 3257
In Roberts 1985 the NCPPB strain number given for the pathotype was a typographical error. Strain SC053 was deposited as NCPPB 3257.

Pseudomonas syringae* pv. *photiniae Goto 1983a
CFBP 2899; ICMP 7840; NCPPB 3688

Pseudomonas syringae* pv. *pisi (Sackett 1916) Young *et al.* 1978
CFBP 2105; ICMP 2452; LMG 5079; NCPPB 2585

Pseudomonas syringae* pv. *porri Samson *et al.* 1998
CFBP 1908; ICMP 8961; NCPPB 3364
The proposal by Samson *et al.* (1981) was invalid – Young *et al.* (1991a) refers.

Pseudomonas syringae* pv. *primulae (Ark and Gardner 1936) Young *et al.* 1978
ATCC 19306; CFBP 1660; ICMP 3956; LMG 2252; NCPPB 133
This strain was reported to be unsuitable as a pathotype (Gardan *et al.* 1999).

[*Pseudomonas syringae* pv. *proteae* Moffett 1983] Young *et al.* (1991a) refers.

Pseudomonas syringae* pv. *rhaphiolepidis Ogimi *et al.* 1992
ATCC 49212; CFBP 4220; ICMP 9756; NCPPB 3618

Pseudomonas syringae* pv. *ribicola (Bohn and Maloit 1946) Young *et al.* 1978
ATCC 13456; CFBP 2348; ICMP 3882; LMG 2276; NCPPB 963

This strain was reported to be unsuitable as a pathotype strain (Gardan *et al.* 1999).

[*Pseudomonas syringae* pv. *ricini* Stancescu and Zurini 1986] Young *et al.* (1991a) refers.

Pseudomonas syringae pv. *savastanoi* (Smith 1908) Young *et al.* 1978
see ***Pseudomonas savastanoi* pv. *savastanoi***

Pseudomonas syringae* pv. *sesami (Malkoff 1906) Young *et al.* 1978
ATCC 19879; CFBP 1671; ICMP 763; LMG 2289; NCPPB 1016

Pseudomonas syringae* pv. *solidagae Sato *et al.* 2001
ICMP 16925; MAFF 810053

Pseudomonas syringae* pv. *spinaceae Ozaki *et al.* 1998
CFBP 5524; ICMP 16929; MAFF 211266

Pseudomonas syringae* pv. *striafaciens (Elliott 1927) Young *et al.* 1978
ATCC 10730*; CFBP 1674*; ICMP 3961*; LMG 2330*; NCPPB 1898*
This strain is avirulent and is unsuitable as a pathotype strain (Young *et al.* 1991a).

Pseudomonas syringae* pv. *syringae van Hall 1902
= *Pseudomonas syringae* pv. *japonica* (Mukoo 1955) Dye *et al.* 1980 – Young (1992) refers.
ATCC 19310; CFBP 1392; CFBP 4364; CFBP 4702; ICMP 3023; LMG 1247; NCPPB 281

Pseudomonas syringae* pv. *tabaci (Wolf and Foster 1917) Young *et al.* 1978
CFBP 2106; ICMP 2835; LMG 5393; NCPPB 1427

Pseudomonas syringae* pv. *tagetis (Hellmers 1955) Young *et al.* 1978
CFBP 1694; ICMP 4091; LMG 5090; NCPPB 2488

Pseudomonas syringae* pv. *theae (Hori 1915) Young *et al.* 1978
CFBP 2353; ICMP 3923; LMG 5092; NCPPB 2598
This strain was reported to be unsuitable as a pathotype strain (Gardan *et al.* 1999).

Pseudomonas syringae* pv. *tomato (Okabe 1933) Young *et al.* 1978
CFBP 2212; ICMP 2844; LMG 5093; NCPPB 1106

Pseudomonas syringae pv. *tremae* Ogimi *et al.* 1988b
see ***Pseudomonas tremae***

Pseudomonas syringae* pv. *ulmi (Sutić and Tesić 1958) Young *et al.* 1978
ATCC 19883; CFBP 1407; ICMP 3962; LMG 2349; NCPPB 632

Pseudomonas syringae* pv. *viburni (Thornberry and Anderson 1931b) Young *et al.* 1978
ATCC 13458; CFBP 1702; ICMP 3963; LMG 2351; NCPPB 1921

Pseudomonas syringae* pv. *zizaniae (*ex* Bowden and Percich 1983) Young *et al.* 1991a
ATCC 35023; CFBP 4117; ICMP 8921; NCPPB 3690

Pseudomonas syringae subsp. *savastanoi* (*ex* Smith 1908) Janse 1982
see ***Pseudomonas savastanoi* pv. *savastanoi***

[*Pseudomonas syringae* subsp. *savastanoi* pv. *fraxini* Janse 1982] Young *et al.* (1991a) refers.
see ***Pseudomonas savastanoi* pv. *fraxini***

[*Pseudomonas syringae* subsp. *savastanoi* pv. *myricae* (Ogimi and Higuchi 1981) Zhang and He 1991] This proposal was based on the examination of strains pathogenic to *Myrica rubra* L. [*sic*] without including the pathotype strain of *Pseudomonas syringae* pv. *myricae* Ogimi and Higuchi 1981.

[*Pseudomonas syringae* subsp. *savastanoi* pv. *nerii* Janse 1982] Young *et al.* (1991a) refers.
see ***Pseudomonas savastanoi* pv. *nerii***

[*Pseudomonas syringae* subsp. *savastanoi* pv. *oleae* Janse 1982] Young *et al.* (1991a) refers.
see ***Pseudomonas savastanoi* pv. *savastanoi***

Pseudomonas syzygii Roberts *et al.* 1990b
see ***Ralstonia syzygii***

Pseudomonas tolaasii Paine 1919
ATCC 33618; CFBP 2068; DSMZ 19342; ICMP 12833; LMG 2342; NCPPB 2192

Pseudomonas tremae Gardan *et al.* 1999
= *Pseudomonas syringae* pv. *tremae* Ogimi *et al.* 1988b
CFBP 3229; DSMZ 16744; ICMP 9151; NCPPB 3465

Pseudomonas viridiflava (Burkholder 1930) Dowson 1939
ATCC 13223; CFBP 2107; DSMZ 11124; ICMP 2848; LMG 2352; NCPPB 635

Pseudomonas woodsii (Smith 1911) Stevens 1925
see ***Burkholderia andropogonis***

Ralstonia Yabuuchi *et al.*1996

Ralstonia solanacearum (Smith 1896) Yabuuchi *et al.* 1996
= *Burkholderia solanacearum* (Smith 1896) Yabuuchi *et al.* 1993
= *Pseudomonas solanacearum* (Smith 1896) Smith 1914
ATCC 11696; CFBP 2047; DSMZ 9544; ICMP 5712; LMG 2299; NCPPB 325

Ralstonia syzygii (Roberts *et al.* 1990b) Vaneechoutte *et al.* 2004
= *Pseudomonas syzygii* Roberts *et al.* 1990b
ATCC 49543; LMG 10661; NCPPB 3446

Rathayibacter Zgurskaya *et al.* 1993

Rathayibacter iranicus (Carlson and Vidaver 1982 *ex* Scharif 1961) Zgurskaya *et al.* 1993
= *Clavibacter iranicus* (Carlson and Vidaver 1982 *ex* Scharif 1961) Davis *et al.* 1984
= *Corynebacterium iranicus* (Carlson and Vidaver 1982 *ex* Scharif 1961) Davis *et al.* 1984
= *Corynebacterium iranicum* (*ex* Scharif 1961) Carlson and Vidaver 1982
= *Corynebacterium michiganense* pv. *iranicum* (Scharif 1961) Dye and Kemp 1977
CFBP 807; ICMP 3496; LMG 3677; NCPPB 2253

Rathayibacter rathayi (Smith 1913) Zgurskaya *et al.* 1993
= *Clavibacter rathayi* (Smith 1913) Davis *et al.* 1984
= *Corynebacterium michiganense* pv. *rathayi* (Smith 1913) Dye and Kemp 1977
= *Corynebacterium rathayi* (Smith 1913) Dowson 1942
CFBP 2406; ICMP 2574; LMG 7288; NCPPB 2980

Rathayibacter toxicus (Riley and Ophel 1992) Sasaki *et al.* (1998)
=*Clavibacter toxicus* Riley and Ophel 1992
ATCC 49908; ICMP 9525; NCPPB 3552

Rathayibacter tritici (Carlson and Vidaver 1982 *ex* Hutchinson 1917) Zgurskaya *et al.* 1993
= *Clavibacter tritici* (*ex* Hutchinson 1917) Davis *et al.* 1984
= *Corynebacterium michiganense* pv. *tritici* (Hutchinson 1917) Dye and Kemp 1977

= *Corynebacterium tritici* (*ex* Hutchinson 1917) Carlson and Vidaver 1982
ATCC 11403; CFBP 1385; ICMP 2626; LMG 3728; NCPPB 1857

Rhizobacter Goto and Kuwata 1988
Rhizobacter dauci corrig. Goto and Kuwata 1988
ATCC 43778; ICMP 9400; LMG 9036

Rhizobium Frank 1889 emend. Young *et al.* 2001a
The nomenclature of plant pathogenic *Agrobacterium* species as discussed in Holmes and Roberts 1981, Bradbury 1986 and Young *et al.* 1992 is interpreted here for the species in *Rhizobium*. The pathogenic state of strains of *R. radiobacter* and *R. rhizogenes* as 'rhizogenic', 'tumourigenic', or 'saprophytic' forms, is expressed at an infrasubspecific level (Young *et al.* 2001a; Young *et al.* 2005).
Rhizobium larrymoorei (Bouzar and Jones 2001) Young 2004
= *Agrobacterium larrymoorei* Bouzar and Jones 2001
ATCC 51759; CFBP 5473; ICMP 14256; NCPPB 4096.
Rhizobium radiobacter (Beijerinck and van Delden 1902) Young *et al.* 2001a
= *Agrobacterium tumefaciens* (Smith and Townsend 1907) Conn 1942
= *Agrobacterium radiobacter* (Beijerinck and van Delden 1902) Conn 1942
ATCC 19358; CFBP 5522; ICMP 5785; LMG 140; NCPPB 3001
Rhizobium rhizogenes (Riker *et al.* 1930) Young *et al.* 2001a
= *Agrobacterium rhizogenes* (Riker *et al.* 1930) Conn 1942
ATCC 11325; CFBP 5520; DSMZ 30148; ICMP 5794; LMG 150; NCPPB 2991
Rhizobium rubi (Hildebrand 1940) Young *et al.* 2001a
= *Agrobacterium rubi* (Hildebrand 1940) Starr and Weiss 1943
ATCC 13335; CFBP 6448; CFBP 5509; ICMP 6428; LMG 17935; NCPPB 1854.
Rhizobium vitis (Ophel and Kerr 1990) Young *et al.* 2001a
= *Agrobacterium vitis* (Ophel and Kerr 1990)
ATCC 49767; CFBP 5523; ICMP 10752; LMG 8750; NCPPB 3554

[*Rhizomonas* van Bruggen *et al.* 1990] De Vos and Trüper (2000) refers.
see ***Sphingomonas***
[*Rhizomonas suberifaciens* van Bruggen *et al.* 1990] De Vos and Trüper (2000) refers.
see ***Sphingomonas suberifaciens***

Rhodococcus Zopf 1891
Rhodococcus fascians (Tilford 1936) Goodfellow 1984b
= *Corynebacterium fascians* (Tilford 1936) Dowson 1942
ATCC 12974; CFBP 2401; ICMP 5833; LMG 3623; NCPPB 3067

Samsonia Sutra *et al.* 2001
Samsonia erythrinae Sutra *et al.* 2001
CFBP 5236; ICMP 13937; NCPPB 4354

Serratia Bizio 1823
Serratia marcescens Bizio 1823
ATCC 13880, CFBP 4226, LMG 2792
It is not known if the type strain is pathogenic to plants (Bruton *et al.* 2003; Zhang *et al.* 2003).
Serratia proteamaculans (Paine and Stansfield 1919) Grimont *et al.* 1978
= *Erwinia proteamaculans* (Paine and Stansfield 1919) Dye 1966
ATCC 19323; ICMP 1724; NCPPB 245

Sphingomonas Yabuuchi *et al.* 1990b emend. Yabuuchi *et al.* 1999b
Sphingomonas melonis Buonaurio *et al.* 2002
DSMZ 14444; ICMP 16930; LMG 19484; NCPPB 4320
Sphingomonas suberifaciens (van Bruggen *et al.* 1990) Yabuuchi *et al.* 1999b
= [*Rhizomonas suberifaciens* van Bruggen *et al.* 1990] De Vos and Trüper (2000) refers.
ATCC 49355; ICMP 12535; NCPPB 3629

Spiroplasma Saglio *et al.* 1973
Spiroplasma citri Saglio *et al.* 1973
ATCC 27556; NCPPB 2647
Spiroplasma kunkelii Whitcomb *et al.* 1986
ATCC 29320
Spiroplasma phoeniceum Saillard *et al.* 1987
ATCC 43115

Streptomyces Waksman and Henrici 1943
Many *Streptomyces* spp. have been associated with scabbing of potato (Bradbury 1986) and with other plant disorders. Old reports of some of these associations were not authenticated in recent literature, although names were included in the Approved Lists and in a previous list (Young *et al.* 1996). The relationships between pathogenic strains and the population represented by the type of the species have not always been established. Only where recent records indicate that there is a presumption of a pathogenic association are names listed here.
Streptomyces acidiscabies Lambert and Loria 1989b
ATCC 49003; CFBP 4539; ICMP 12536; NCPPB 4072
Streptomyces albidoflavus (Rossi-Doria 1891) Waksman and Henrici 1948
ATCC 25422; ICMP 12537
Streptomyces candidus (*ex* Krasil'nikov 1941) Sveshnikova 1986
= [*Actinomyces candidus* Krasil'nikov 1941]
ATCC 19891; ICMP 12538; NCPPB 4094
Streptomyces caviscabies Goyer *et al.* 1996
ATCC 51928; NCPPB 4075
Streptomyces collinus Lindenbein 1952
ATCC 19743; ICMP 12539; NCPPB 4091
Streptomyces europaeiscabiei Bouchek-Mechiche *et al.* 2000
CFBP 4497; ICMP 13714; NCPPB 4039
Streptomyces intermedius (Krüger 1904) Waksman 1953
ATCC 3329; ICMP 12540: NCPPB 4092
Streptomyces ipomoeae (Person and Martin 1940) Waksman and Henrici 1948
ATCC 25462; ICMP 12541; NCPPB 4095
Streptomyces luridiscabiei Park *et al.* 2003
ICMP 16932; KACC 20252; LMG 21390
Streptomyces niveiscabiei Park *et al.* 2003
KACC 20254

Streptomyces puniciscabiei Park *et al.* 2003
ICMP 16933; KACC 20253; LMG 21391

Streptomyces reticuliscabei Bouchek-Mechiche *et al.* 2000
CFBP 4531; ICMP 13716; NCPPB 4041

Streptomyces scabiei corrig. (*ex* Thaxter 1892) Lambert and Loria 1989a
ATCC 49173; CFBP 4517; ICMP 12542; NCPPB 4066

Streptomyces setonii (Millard and Burr 1926) Waksman 1953
ATCC 25497; ICMP 12543

Streptomyces steliiscabiei Bouchek-Mechiche *et al.* 2000
CFBP 4521; ICMP 13715; NCPPB 4040

Streptomyces turgidiscabies Miyajima *et al.* 1998
ATCC 700248

Streptomyces wedmorensis (*ex* Millard and Burr 1926) Preobrazhenskaya 1986
ATCC 21239; ICMP 12544

Xanthomonas Dowson 1939

Xanthomonas albilineans (Ashby 1929) Dowson 1943
ATCC 33915; CFBP 2523; ICMP 196; LMG 494; NCPPB 2969

Xanthomonas alfalfae (*ex* Riker *et al.* 1935) Schaad *et al.* 2007
ATCC 11765; ICMP 15807; LMG 495; NCPPB 4412
The pathotype strain of *X. axonopodis* pv. *alfalfae* and *X. campestris* pv. *alfalfae* is CFBP 3836; ICMP 5718; LMG 497; NCPPB 2062 which is different than the type strain of *X. alfafae* and *X. alfalfae* subsp. *alfalfae* although they may be members of this species and subspecies.

Xanthomonas alfalfae **subsp. *alfalfae*** (*ex* Riker *et al.* 1935) Schaad *et al.* 2007
ATCC 11765; ICMP 15807; LMG 495; NCPPB 4412

Xanthomonas alfalfae **subsp. *citrumelonis*** Schaad *et al.* 2007
ATCC 49120; CFBP 3371; ICMP 15808; LMG 9325; NCPPB 4376
see [*Xanthomonas axonopodis* pv. *citrumelo*] and [*Xanthomonas campestris* pv. *citrumelo*]

Xanthomonas ampelina Panagopoulos 1969
see ***Xylophilus ampelinus***

Xanthomonas arboricola Vauterin *et al.* 1995
ATCC 49083; CFBP 2528; ICMP 35; LMG 747; NCPPB 411
Vauterin *et al.* (1995) chose the pathotype strain of *X. arboricola* pv. *juglandis* (= *X. campestris* pv. *junglandis*) as the type strain of the species without naming the species *X. juglandis*.

Xanthomonas arboricola **pv. *celebensis*** (Gäumann 1923) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *celebensis* (Gäumann 1923) Dye 1978b
ATCC 19045; CFBP 3523; ICMP 1488; LMG 677; NCPPB 1832

Xanthomonas arboricola **pv. *corylina*** (Miller *et al.* 1940) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *corylina* (Miller *et al.* 1940) Dye 1978b
ATCC 19313; CFBP 1159; ICMP 5726; LMG 689; NCPPB 935

Xanthomonas arboricola **pv. *fragariae*** Janse *et al.* 2001
CFBP 6771; ICMP 16935; LMG 19145; NCPPB 4409

Xanthomonas arboricola **pv. *juglandis*** (Pierce 1901) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *juglandis* (Pierce 1901) Dye 1978b
ATCC 49083; CFBP 2528; ICMP 35; LMG 747; NCPPB 411

[*Xanthomonas arboricola* pv. *poinsettiicola* Vauterin *et al.* 1995] Young *et al.* (1996) refers.
see ***Xanthomonas axonopodis*** **pv. *poinsettiicola*** and *Xanthomonas campestris* pv. *poinsettiicola*

Xanthomonas arboricola **pv. *populi*** (*ex* de Kam 1984) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *populi* (*ex* de Kam 1984) Young *et al.* 1991a
CFBP 3123; ICMP 8923; LMG 12141; NCPPB 4342

Xanthomonas arboricola **pv. *pruni*** (Smith 1903) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *pruni* (Smith 1903) Dye 1978b
ATCC 19316; CFBP 2535; ICMP 51; LMG 852; NCPPB 416

Xanthomonas axonopodis Starr and Garcés 1950
ATCC 19312; CFBP 4924; ICMP 50; LMG 982; NCPPB 457

Xanthomonas axonopodis pv. *alfalfae* (Riker *et al.* 1935) Vauterin *et al.* 1995
see ***Xanthomonas alfalfae***

[*Xanthomonas axonopodis* pv. *aurantifolii* (Gabriel *et al.* 1989) Vauterin *et al.* 1995] Young *et al.* (1991b) refers.
see ***Xanthomonas fuscans*** **subsp. *aurantifolii***

Xanthomonas axonopodis **pv. *allii*** (Kadota *et al.* 2000) Roumagnac *et al.* 2004
= *Xanthomonas campestris* pv. *allii* Kadota *et al.* 2000
CFBP 6107; ICMP 17031; MAFF 311173
Roumagnac *et al.* (2004) proposed a new pathotype strain because the FAME profile of the existing pathotype strain was atypical of the strains investigated. This did not disqualify the strain chosen by Kadota *et al.* (2000) as the nomenclatural type (listed here).

Xanthomonas axonopodis **pv. *axonopodis*** Starr and Garcés 1950
ATCC 19312; CFBP 4924; ICMP 50; LMG 982; NCPPB 457

Xanthomonas axonopodis **pv. *bauhiniae*** (Padhya *et al.* 1965a) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *bauhiniae* (Padhya *et al.* 1965a) Dye 1978b
ICMP 5720; LMG 548; NCPPB 1335

Xanthomonas axonopodis **pv. *begoniae*** (Takimoto 1934) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *begoniae* (Takimoto 1934) Dye 1978b
ATCC 49082; CFBP 2524; ICMP 194; LMG 7303; NCPPB 3003

Xanthomonas axonopodis **pv. *betlicola*** (Patel *et al.* 1951b) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *betlicola* (Patel *et al.* 1951b) Dye 1978b
ATCC 11677; ICMP 312; LMG 555; NCPPB 2972

Xanthomonas axonopodis **pv. *biophyti*** (Patel *et al.* 1969) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *biophyti* (Patel *et al.* 1969) Dye 1978b

ICMP 2780; LMG 556; NCPPB 2228

Xanthomonas axonopodis* pv. *cajani (Kulkarni *et al.* 1950) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *cajani* (Kulkarni *et al.* 1950) Dye 1978b
ATCC 11639; ICMP 444; LMG 558; NCPPB 573

[*Xanthomonas axonopodis* pv. *cassavae* Vauterin *et al.* 1995] Young *et al*. (1996) refers.
see ***Xanthomonas cassavae*** and *Xanthomonas campestris* pv. *cassavae*

Xanthomonas axonopodis* pv. *cassiae (Kulkarni *et al.* 1951) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *cassiae* (Kulkarni *et al.* 1951) Dye 1978b
ATCC 11638; ICMP 358; LMG 675; NCPPB 2973

Xanthomonas axonopodis pv. *citri* (Hasse 1915) Vauterin *et al.* 1995
see ***Xanthomonas citri***

[*Xanthomonas axonopodis* pv. *citrumelo* (Gabriel *et al.* 1989) Vauterin *et al.* 1995] Does not conform to Standard 5.
see ***Xanthomonas alfalfae* subsp. *citrumelonis***

Xanthomonas axonopodis* pv. *clitoriae (Pandit and Kulkarni 1979) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *clitoriae* (Pandit and Kulkarni 1979) Dye *et al.* 1980
ICMP 6574; LMG 9045; NCPPB 3092

Xanthomonas axonopodis* pv. *coracanae (Desai *et al.* 1965) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *coracanae* (Desai *et al.* 1965) Dye 1978b
ICMP 5724; LMG 686; NCPPB 1786

Xanthomonas axonopodis* pv. *cyamopsidis (Patel *et al.* 1953) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *cyamopsidis* (Patel *et al.* 1953) Dye 1978b
ICMP 616; LMG 691; NCPPB 637

Xanthomonas axonopodis* pv. *desmodii (Patel 1949) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *desmodii* (Patel 1949) Dye 1978b
ATCC 11640; ICMP 315; LMG 692; NCPPB 481

Xanthomonas axonopodis* pv. *desmodiigangetici (Patel and Moniz 1948) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *desmodiigangetici* (Patel and Moniz 1948) Dye 1978b
ATCC 11671; ICMP 577; LMG 693; NCPPB 577

Xanthomonas axonopodis* pv. *desmodiilaxiflori (Pant and Kulkarni 1976a) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *desmodiilaxiflori* Pant and Kulkarni 1976a
ICMP 6502; LMG 9046; NCPPB 3086

Xanthomonas axonopodis* pv. *desmodiirotundifolii (Desai and Shah 1960) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *desmodiirotundifolii* (Desai and Shah 1960) Dye 1978b
ICMP 168; LMG 694; NCPPB 885

Xanthomonas axonopodis* pv. *dieffenbachiae (McCulloch and Pirone 1939) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *dieffenbachiae* (McCulloch and Pirone 1939) Dye 1978b
CFBP 3133; ICMP 5727; LMG 695; NCPPB 1833

Xanthomonas axonopodis* pv. *erythrinae (Patel *et al.* 1952b) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *erythrinae* (Patel *et al.* 1952b) Dye 1978b
ATCC 11679; ICMP 446; LMG 698; NCPPB 578

Xanthomonas axonopodis* pv. *fascicularis (Patel and Kotasthane 1969b) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *fascicularis* (Patel and Kotasthane 1969b) Dye 1978b
ICMP 5731; LMG 9047; NCPPB 2230

Xanthomonas axonopodis* pv. *glycines (Nakano 1919) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *glycines* (Nakano 1919) Dye 1978b
ATCC 43911; CFBP 2526; ICMP 5732; LMG 712; NCPPB 554

Xanthomonas axonopodis* pv. *khayae (Sabet 1959) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *khayae* (Sabet 1959) Dye 1978b
ICMP 671; LMG 753; NCPPB 536

Xanthomonas axonopodis* pv. *lespedezae (Ayers *et al.* 1939) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *lespedezae* (Ayres *et al.* 1939) Dye 1978b
ATCC 13463; ICMP 439; LMG 757; NCPPB 993

Xanthomonas axonopodis* pv. *maculifoliigardeniae (Ark and Barrett 1946) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *maculifoliigardeniae* (Ark and Barrett 1946) Dye 1978b
CFBP 1155; ICMP 318; LMG 758; NCPPB 971

Xanthomonas axonopodis pv. *malvacearum* (Smith 1901) Vauterin *et al.* 1995
see ***Xanthomonas citri* subsp. *malvacearum***

Xanthomonas axonopodis* pv. *manihotis (Bondar 1915) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *manihotis* (Bondar 1915) Dye 1978b
ATCC 49073; ICMP 5741; LMG 773; LMG 784; NCPPB 1834

Xanthomonas axonopodis* pv. *martyniicola (Moniz and Patel 1958) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *martyniicola* (Moniz and Patel 1958) Dye 1978b
ICMP 82; LMG 9049; NCPPB 1148

Xanthomonas axonopodis* pv. *melhusii (Patel *et al.* 1952b) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *melhusii* (Patel *et al.* 1952b) Dye 1978b
ATCC 11644; ICMP 619; LMG 9050; NCPPB 994

Xanthomonas axonopodis* pv. *nakataecorchori (Padhya and Patel 1963b) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *nakataecorchori* (Padhya and Patel 1963b) Dye 1978b
ICMP 5742; LMG 786; NCPPB 1337

[*Xanthomonas axonopodis* pv. *passiflorae* (Pereira 1969) Gonçalves and Rosato 2000]
Does not conform to Standards 18.1 and 18.2.
see ***Xanthomonas campestris pv. passiflorae***

Xanthomonas axonopodis* pv. *patelii (Desai and Shah 1959) Vauterin *et al.* 1995

= *Xanthomonas campestris* pv. *patelii* (Desai and Shah 1959) Dye 1978b
ICMP 167; LMG 811; NCPPB 840

Xanthomonas axonopodis* pv. *pedalii (Patel and Jindal 1972) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *pedalii* (Patel and Jindal 1972) Dye 1978b
ICMP 3030; LMG 812; NCPPB 2368

Xanthomonas axonopodis* pv. *phaseoli (Smith 1897) Vauterin *et al.* 1995
= *Xanthomonas phaseoli* (*ex* Smith 1897) Gabriel *et al.* 1989
= *Xanthomonas campestris* pv. *phaseoli* (Smith 1897) Dye 1978b
ATCC 9563; CFBP 2534; ICMP 5834; LMG 7455; NCPPB 3035

[*Xanthomonas axonopodis* pv. *phaseoli* var. *fuscans* Vauterin *et al.* 1995] Young *et al*. (1996) refers.
see ***Xanthomonas fuscans***

Xanthomonas axonopodis* pv. *phyllanthi (Sabet *et al.* 1969) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *phyllanthi* (Sabet *et al.* 1969) Dye 1978b
ICMP 5745; LMG 844; NCPPB 2066

Xanthomonas axonopodis* pv. *physalidicola (Goto and Okabe 1958) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *physalidicola* (Goto and Okabe 1958) Dye 1978b
ATCC 49077; ICMP 586; LMG 845; NCPPB 761

Xanthomonas axonopodis* pv. *poinsettiicola (Patel *et al.* 1951a) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *pointsettiicola* (Patel *et al.* 1951a) Dye 1978b
ATCC 11643; ICMP 5779; LMG 849; NCPPB 581

Xanthomonas axonopodis* pv. *punicae (Hingorani and Singh 1959) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *punicae* (Hingorani and Singh 1959) Dye 1978b
ICMP 360; LMG 859; NCPPB 466

Xanthomonas axonopodis* pv. *rhynchosiae (Sabet *et al.* 1969) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *rhynchosiae* (Sabet *et al.* 1969) Dye 1978b
ICMP 5748; LMG 8021; NCPPB 1827

Xanthomonas axonopodis* pv. *ricini (Yoshii and Takimoto 1928) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *ricini* (Yoshii and Takimoto 1928) Dye 1978b
ATCC 19317; ICMP 5747; LMG 861; NCPPB 1063

Xanthomonas axonopodis* pv. *sesbaniae (Patel *et al.* 1952a) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *sesbaniae* (Patel *et al.* 1952a) Dye 1978b
ATCC 11675; ICMP 367; LMG 867; NCPPB 582

Xanthomonas axonopodis* pv. *tamarindi (Patel *et al.* 1951a) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *tamarindi* (Patel *et al.* 1951a) Dye 1978b
ATCC 11673; ICMP 572; LMG 955; NCPPB 584

Xanthomonas axonopodis* pv. *vasculorum (Cobb 1894) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *vasculorum* (Cobb 1894) Dye 1978b
ATCC 35938; CFBP 5823; ICMP 5757; LMG 901; NCPPB 796

[*Xanthomonas axonopodis* pv. *vesicatoria* Vauterin *et al.* 1995] Young *et al*. (1996) refers.
see ***Xanthomonas vesicatoria*** and *Xanthomonas campestris* pv. *vesicatoria*

Xanthomonas axonopodis* pv. *vignaeradiatae (Sabet *et al.* 1969) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *vignaeradiatae* (Sabet *et al.* 1969) Dye 1978b
ICMP 5759; LMG 936; NCPPB 2058

Xanthomonas axonopodis* pv. *vignicola (Burkholder 1944) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *vignicola* (Burkholder 1944) Dye 1978b
ATCC 11648; CFBP 7112; ICMP 333; LMG 8752; NCPPB 1838

Xanthomonas axonopodis* pv. *vitians (Brown 1918) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *vitians* (Brown 1918) Dye 1978b
ATCC 19320; CFBP 2538; ICMP 336; LMG 937; NCPPB 976
The pathotype strain may not have been representative (Young *et al.* 1996).

Xanthomonas bromi Vauterin *et al.* 1995
CFBP 1976; ICMP 12545; LMG 947; NCPPB 4343

Xanthomonas campestris (Pammel 1895) Dowson 1939
ATCC 33913; CFBP 2350; CFBP 5251; ICMP 13; LMG 568; NCPPB 528

The pathovars listed directly below are members of the species *X. campestris* as emended by Vauterin *et al.* (1995).

Xanthomonas campestris* pv. *aberrans (Knösel 1961) Dye 1978b
CFBP 6865; ICMP 4805; NCPPB 2986

Xanthomonas campestris* pv. *armoraciae (McCulloch 1929) Dye 1978b
CFBP 3838; ICMP 7; LMG 535; NCPPB 347

Xanthomonas campestris* pv. *barbareae (Burkholder 1941) Dye 1978b
ATCC 13460; CFBP 5825; ICMP 438; LMG 547; NCPPB 983

Xanthomonas campestris* pv. *campestris (Pammel 1895) Dowson 1939
ATCC 33913; CFBP 2350; CFBP 5251; ICMP 13; LMG 568; NCPPB 528

Xanthomonas campestris* pv. *incanae (Kendrick and Baker 1942) Dye 1978b
ATCC 13462; CFBP 2527; ICMP 574; LMG 7490; NCPPB 937

Xanthomonas campestris* pv. *plantaginis (Thornberry and Anderson 1937) Dye 1978b
ATCC 23382; ICMP 1028; LMG 848; NCPPB 1061

Xanthomonas campestris* pv. *raphani (White 1930) Dye 1978b
ATCC 49079; CFBP 5827; ICMP 1404; LMG 860; NCPPB 1946

Vauterin *et al.* (1995) examined many but not all pathovars

X. campestris. The pathovars listed below (through to *X. campestris* pv. *zinniae*) were not examined by Vauterin *et al.* (1995) nor reclassified by others since 1995 and therefore are *X. campestris sensu lato* and may not belong to the species as emended by Vauterin *et al.* (1995).

Xanthomonas campestris* pv. *alangii (Padhya and Patel 1962) Dye 1978b
ICMP 5717; LMG 470; NCPPB 1336

Xanthomonas campestris* pv. *amaranthicola (Patel *et al.* 1952c) Dye 1978b
ATCC 11645 ICMP 441; LMG 498; NCPPB 570

Xanthomonas campestris* pv. *amorphophalli (Jindal *et al.* 1972) Dye 1978b
ICMP 3033; LMG 499; NCPPB 2371

Xanthomonas campestris* pv. *aracearum (Berniac 1974) Dye 1978b
ICMP 5381; LMG 532; NCPPB 2832

Xanthomonas campestris* pv. *arecae (Rao and Mohan 1970) Dye 1978b
ICMP 5719; LMG 533; NCPPB 2649

Xanthomonas campestris* pv. *argemones (Srinivasan *et al.* 1961a) Dye 1978b
ICMP 1617; LMG 534; NCPPB 1593

Xanthomonas campestris* pv. *arracaciae (Pereira *et al.* 1971) Dye 1978b
ICMP 3158; LMG 536; NCPPB 2436

Xanthomonas campestris* pv. *asclepiadis Flynn and Vidaver 1995
ICMP 1007; NCPPB 4013
The name as proposed by Heise and Vidaver (1990) was invalid because the proposal did not designate a pathotype strain (Standard 17, 2).

Xanthomonas campestris* pv. *azadirachtae (Desai *et al.* 1966) Dye 1978b
ICMP 3102; LMG 543; NCPPB 2388

Xanthomonas campestris* pv. *badrii (Patel *et al.* 1950) Dye 1978b
ATCC 11672; ICMP 571; LMG 546; NCPPB 571

Xanthomonas campestris* pv. *betae Robbs *et al.* 1981
CFBP 5852; ICMP 8917; LMG 9040; NCPPB 2592

Xanthomonas campestris* pv. *bilvae Chakravarti *et al.* 1984
CFBP 3136; ICMP 8918; NCPPB 3213

Xanthomonas campestris* pv. *blepharidis (Srinivasan and Patel 1956) Dye 1978b
ATCC 17995; ICMP 5722; LMG 557; NCPPB 1757

Xanthomonas campestris* pv. *boerhaaviae (Mathur *et al.* 1964) Bradbury 1986
ICMP 9423; LMG 9041; NCPPB 1612

Xanthomonas campestris* pv. *brunneivaginae (Luo *et al.* 1988) Young *et al.* 1996
ICMP 9991; NCPPB 4344

Xanthomonas campestris* pv. *cannabis Severin 1978
ICMP 6570; LMG 9042; NCPPB 2877

Xanthomonas campestris* pv. *cannae Easwaramurthy *et al.* 1984
ICMP 8306; LMG 9043; NCPPB 4345

Xanthomonas campestris* pv. *carissae (Moniz *et al.* 1964) Dye 1978b
ICMP 3034; LMG 669; NCPPB 2373

Xanthomonas campestris* pv. *centellae Basnyat and Kulkarni 1979
ICMP 6746; LMG 9044; NCPPB 3245

Xanthomonas campestris* pv. *clerodendri (Patel *et al.* 1952a) Dye 1978b
ATCC 11676; ICMP 445; LMG 684; NCPPB 575

Xanthomonas campestris* pv. *convolvuli (Nagarkoti *et al.* 1973) Dye 1978b
ICMP 5380; LMG 685; NCPPB 2498

[*Xanthomonas campestris* pv. *cordiae* Robbs *et al.* 1983] Young *et al.* (1996) refers.

Xanthomonas campestris* pv. *coriandri (Srinivasan *et al.* 1961b) Dye 1978b
ATCC 17996; ICMP 5725; LMG 687; NCPPB 1758

Xanthomonas campestris* pv. *daturae (Jain *et al.* 1975) Bradbury 1986
ICMP 12546; NCPPB 2932

Xanthomonas campestris* pv. *durantae (Srinivasan and Patel 1957) Dye 1978b
ICMP 5728; LMG 696; NCPPB 1456

Xanthomonas campestris* pv. *esculenti (Rangaswami and Easwaran 1962) Dye 1978b
CFBP 5857; ICMP 5729; LMG 699; NCPPB 2190

Xanthomonas campestris* pv. *eucalypti (Truman 1974) Dye 1978b
ICMP 5382; LMG 700; NCPPB 2337

Xanthomonas campestris* pv. *euphorbiae (Sabet *et al.* 1969) Dye 1978b
ICMP 5730; LMG 863; NCPPB 1828

Xanthomonas campestris* pv. *fici (Cavara 1905) Dye 1978b
ICMP 3036; LMG 701; NCPPB 2372

[*Xanthomonas campestris* pv. *fragariae* Kijima *et al.* 1989] Does not conform to Standard 17.

Xanthomonas campestris* pv. *guizotiae (Yirgou 1964) Dye 1978b
ICMP 5734; LMG 731; NCPPB 1932

Xanthomonas campestris* pv. *gummisudans (McCulloch 1924) Dye 1978b
ICMP 5780; LMG 732; NCPPB 2182

Xanthomonas campestris* pv. *heliotropii (Sabet *et al.* 1969) Dye 1978b
ICMP 5778; LMG 735; NCPPB 2057

Xanthomonas campestris* pv. *ionidii (Padhya and Patel 1963a) Dye 1978b
ICMP 5736; LMG 744; NCPPB 1334

Xanthomonas campestris* pv. *lantanae (Srinivasan and Patel 1957) Dye 1978b
ICMP 5737; LMG 754; NCPPB 1455

Xanthomonas campestris* pv. *laureliae (Dye 1963b) Dye 1978b
ICMP 84; LMG 755; NCPPB 1155

Xanthomonas campestris* pv. *lawsoniae (Patel *et al.* 1951a) Dye 1978b
ATCC 11674; ICMP 319; LMG 756; NCPPB 579

Xanthomonas campestris* pv. *leeana (Patel and Kotasthane 1969a) Dye 1978b
ICMP 5738; LMG 9048; NCPPB 2229

Xanthomonas campestris* pv. *leersiae (*ex* Fang *et al.* 1957) Young *et al.* 1991a
ICMP 8788; NCPPB 4346

Xanthomonas campestris* pv. *malloti Goto 1993
ATCC 51262; ICMP 11536; NCPPB 4347

Xanthomonas campestris* pv. *mangiferaeindicae (Patel *et al.* 1948) Robbs *et al.* 1974

ATCC 11637; CFBP 1716; ICMP 5740; LMG 941; NCPPB 490

Xanthomonas campestris* pv. *merremiae (Pant and Kulkarni 1976b) Dye *et al.* 1980
ICMP 6747; LMG 9051; NCPPB 3114

Xanthomonas campestris* pv. *mirabilis (*ex* Durgapal and Trivedi 1976) Young *et al.* 1991a
ICMP 8949; NCPPB 4348

Xanthomonas campestris* pv. *mori Maji *et al.* 1998
ICMP 13199

Xanthomonas campestris* pv. *musacearum (Yirgou and Bradbury 1968) Dye 1978b
ATCC 49084; CFBP 7123; ICMP 2870; LMG 785; NCPPB 2005

Xanthomonas campestris* pv. *nigromaculans (Takimoto 1927) Dye 1978b
ATCC 23390; ICMP 80; LMG 787; NCPPB 1935

Xanthomonas campestris* pv. *obscurae Chand and Singh 1994
NCPPB 3759; ICMP 12547
In Chand and Singh (1994) the NCPPB strain number given for the pathotype was a typographical error.

Xanthomonas campestris* pv. *olitorii (Sabet 1957) Dye 1978b
ICMP 359; LMG 9052; NCPPB 464

Xanthomonas campestris* pv. *papavericola (Bryan and McWhorter 1930) Dye 1978b
ATCC 14179; ICMP 220; LMG 809; NCPPB 2970

Xanthomonas campestris* pv. *parthenii Chand *et al.* 1995
NCPPB 3888; ICMP 12476

Xanthomonas campestris* pv. *paulliniae Robbs *et al.* 1982
CFBP 5862; ICMP 8919; LMG 9053; NCPPB 3079

Xanthomonas campestris* pv. *pennamericanum Qhobela and Claflin 1988
ATCC 49152; ICMP 9627; NCPPB 4349

Xanthomonas campestris* pv. *phormiicola (Takimoto 1933) Dye 1978b
ICMP 4294; LMG 702; NCPPB 2983

Xanthomonas campestris* pv. *physalidis (Srinivasan *et al.* 1962) Dye 1978b
ATCC 17994; ICMP 5746; LMG 846; NCPPB 1756

Xanthomonas campestris* pv. *sesami (Sabet and Dowson 1960) Dye 1978b
ICMP 621; LMG 865; NCPPB 631

Xanthomonas campestris* pv. *spermacoces (Srinivasan and Patel 1956) Dye 1978b
ATCC 17998; ICMP 5751; LMG 868; NCPPB 1760

Xanthomonas campestris* pv. *syngonii Dickey and Zumoff 1987
CFBP 3451; ICMP 9154; LMG 9055; NCPPB 3586

Xanthomonas campestris* pv. *tardicrescens (McCulloch 1937) Dye 1978b
ICMP 4295; LMG 9056; NCPPB 2984

Xanthomonas campestris* pv. *thespesiae Patil and Kulkarni 1981
ICMP 7466; LMG 9057; NCPPB 4404

Xanthomonas campestris* pv. *thirumalacharii (Padhya and Patel 1964) Dye 1978b
ATCC 23577; ICMP 5852; LMG 872; NCPPB 1452

Xanthomonas campestris* pv. *tribuli (Srinivasan and Patel 1956) Dye 1978b
ICMP 5753; LMG 873; NCPPB 1454

Xanthomonas campestris* pv. *trichodesmae (Patel *et al.* 1952b) Dye 1978b
ATCC 11678; ICMP 5754; LMG 874; NCPPB 585

Xanthomonas campestris* pv. *uppalii (Patel 1948) Dye 1978b
ATCC 11641; ICMP 5756; LMG 893; NCPPB 586

Xanthomonas campestris* pv. *vernoniae (Patel *et al.* 1968) Dye 1978b
ICMP 5758; LMG 9058; NCPPB 1787

Xanthomonas campestris* pv. *viegasii Robbs *et al.* 1989
CFBP 5866; ICMP 9261; NCPPB 4351

[*Xanthomonas campestris* pv. *vignaeunguiculatae* Patel and Jindal 1982] Young *et al.* (1991a) refers.

Xanthomonas campestris* pv. *viticola (Nayudu 1972) Dye 1978b
ICMP 3867; LMG 965; NCPPB 2475

Xanthomonas campestris* pv. *vitiscarnosae (Moniz and Patel 1958) Dye 1978b
ICMP 90; LMG 939; NCPPB 1149

Xanthomonas campestris* pv. *vitistrifoliae (Padhya *et al.* 1965b) Dye 1978b
ICMP 5761; LMG 940; NCPPB 1451

Xanthomonas campestris* pv. *vitiswoodrowii (Patel and Kulkarni 1951a) Dye 1978b
ATCC 11636; ICMP 3965; LMG 954; NCPPB 1014

Xanthomonas campestris* pv. *zantedeschiae (Joubert and Truter 1972) Dye 1978b
ICMP 2372; LMG 9059; NCPPB 2978

Xanthomonas campestris* pv. *zingibericola (Ren and Fang 1981) Bradbury 1986
ICMP 8787; LMG 9060; NCPPB 4352

Xanthomonas campestris* pv. *zinniae (Hopkins and Dowson 1949) Dye 1978b
CFBP 4477; ICMP 5762; LMG 8692; NCPPB 2439

The remaining pathovars of *Xanthomonas campestris* listed below were examined by Vauterin *et al.* (1995) or others later and were proposed as members of species other than *X. campestris* as indicated by the reference names in bold.

Xanthomonas campestris pv. *alfalfae* (Riker *et al.* 1935) Dye 1978b
see ***Xanthomonas axonopodis* pv. *alfalfae***

Xanthomonas campestris pv. *allii* Kadota *et al.* 2000
see ***Xanthomonas axonopodis* pv. *allii***

Xanthomonas campestris pv. *arrhenatheri* Egli and Schmidt 1982
see ***Xanthomonas translucens* pv. *arrhenatheri***

[*Xanthomonas campestris* pv. *aurantifolii* Gabriel *et al.* 1989] Young *et al.* (1991b) refers.
see ***Xanthomonas fuscans* subsp. *aurantifolii***

Xanthomonas campestris pv. *bauhiniae* (Padhya *et al.* 1965a) Dye 1978b
see ***Xanthomonas axonopodis* pv. *bauhiniae***

Xanthomonas campestris pv. *begoniae* (Takimoto 1934) Dye 1978b
see ***Xanthomonas axonopodis* pv. *begoniae***

Xanthomonas campestris pv. *betlicola* (Patel *et al.* 1951b) Dye 1978b
see ***Xanthomonas axonopodis* pv. *betlicola***

Xanthomonas campestris pv. *biophyti* (Patel *et al.* 1969) Dye 1978b
see ***Xanthomonas axonopodis* pv. *biophyti***

Xanthomonas campestris pv. *cajani* (Kulkarni *et al.* 1950) Dye 1978b

see ***Xanthomonas axonopodis*** **pv. *cajani***

Xanthomonas campestris pv. *carotae* (Kendrick 1934) Dye 1978b
see ***Xanthomonas hortorum*** **pv. *carotae***

Xanthomonas campestris pv. *cassavae* (Wiehe and Dowson 1953) Maraite and Weyns 1979
X. campestris pv. *cassavae* is represented by two phenetically and genomically distinct bacterial populations (Vauterin *et al*. 1995). The pathotype and related strains are referred to *X. cassavae*. The other strains are referred to *X. axonopodis*.
see ***Xanthomonas cassavae***

X*anthomonas campestris* pv. *cassiae* (Kulkarni *et al.* 1951) Dye 1978b
see ***Xanthomonas axonopodis*** **pv. *cassiae***

Xanthomonas campestris pv. *celebensis* (Gäumann 1923) Dye 1978b
see ***Xanthomonas arboricola*** **pv. *celebensis***

Xanthomonas campestris pv. *cerealis* (Hagborg 1942) Dye 1978b
see ***Xanthomonas translucens*** **pv. *cerealis***

Xanthomonas campestris pv. *citri* (Hasse 1915) Dye 1978b
see ***Xanthomonas axonopodis*** **pv. *citri***

[*Xanthomonas campestris* pv. *citrumelo* Gabriel *et al.* 1989] Young *et al.* (1991b) refers.
see ***Xanthomonas alfalfae*** **subsp. *citrumelonis***

Xanthomonas campestris pv. *clitoriae* (Pandit and Kulkarni 1979) Dye *et al.* 1980
see ***Xanthomonas axonopodis*** **pv. *clitoriae***

Xanthomonas campestris pv. *coracanae* (Desai *et al.* 1965) Dye 1978b
see ***Xanthomonas axonopodis*** **pv. *coracanae***

Xanthomonas campestris pv. *corylina* (Miller *et al.* 1940) Dye 1978b
see ***Xanthomonas arboricola*** **pv. *corylina***

Xanthomonas campestris pv. *cucurbitae* (Bryan 1926) Dye 1978b
see ***Xanthomonas cucurbitae***

Xanthomonas campestris pv. *cyamopsidis* (Patel *et al.* 1953) Dye 1978b
see ***Xanthomonas axonopodis*** **pv. *cyamopsidis***

Xanthomonas campestris pv. *desmodii* (Patel 1949) Dye 1978b
see ***Xanthomonas axonopodis*** **pv. *desmodii***

Xanthomonas campestris pv. *desmodiigangetici* (Patel and Moniz 1948) Dye 1978b
see ***Xanthomonas axonopodis*** **pv. *desmodiigangetici***

Xanthomonas campestris pv. *desmodiilaxiflori* Pant and Kulkarni 1976a
see ***Xanthomonas axonopodis*** **pv. *desmodiilaxiflori***

Xanthomonas campestris pv. *desmodiirotundifolii* (Desai and Shah 1960) Dye 1978b
see ***Xanthomonas axonopodis*** **pv. *desmodiirotundifolii***

Xanthomonas campestris pv. *dieffenbachiae* (McCulloch and Pirone 1939) Dye 1978b
see ***Xanthomonas axonopodis*** **pv. *dieffenbachiae***

Xanthomonas campestris pv. *erythrinae* (Patel *et al.* 1952b) Dye 1978b
see ***Xanthomonas axonopodis*** **pv. *erythrinae***

Xanthomonas campestris pv. *fascicularis* (Patel and Kotasthane 1969b) Dye 1978b
see ***Xanthomonas axonopodis*** **pv. *fascicularis***

Xanthomonas campestris pv. *glycines* (Nakano 1919) Dye 1978b
see ***Xanthomonas axonopodis*** **pv. *glycines***

Xanthomonas campestris pv. *graminis* (Egli *et al.* 1975) Dye 1978b
see ***Xanthomonas translucens*** **pv. *graminis***

Xanthomonas campestris pv. *hederae* (Arnaud 1920) Dye 1978b
see ***Xanthomonas hortorum*** **pv. *hederae***

Xanthomonas campestris pv. *holcicola* (Elliott 1930) Dye 1978b
see ***Xanthomonas vasicola*** **pv. *holcicola***

[*Xanthomonas campestris* pv. *hordei* (Hagborg 1942) Dye 1978b] Bradbury (1986) refers.
see ***Xanthomonas translucens*** **pv. *translucens***

Xanthomonas campestris pv. *hyacinthi* (Wakker 1883) Dye 1978b
see ***Xanthomonas hyacinthi***

Xanthomonas campestris pv. *juglandis* (Pierce 1901) Dye 1978b
see ***Xanthomonas arboricola*** **pv. *juglandis***

Xanthomonas campestris pv. *khayae* (Sabet 1959) Dye 1978b
see ***Xanthomonas axonopodis*** **pv. *khayae***

Xanthomonas campestris pv. *lespedezae* (Ayres *et al.* 1939) Dye 1978b
see ***Xanthomonas axonopodis*** **pv. *lespedezae***

Xanthomonas campestris pv. *maculifoliigardeniae* (Ark and Barrett 1946) Dye 1978b
see ***Xanthomonas axonopodis*** **pv. *maculifoliigardeniae***

Xanthomonas campestris pv. *malvacearum* (Smith 1901) Dye 1978b
see ***Xanthomonas citri*** **subsp. *malvacearum***

Xanthomonas campestris pv. *manihotis* (Bondar 1915) Dye 1978b
see ***Xanthomonas axonopodis*** **pv. *manihotis***

Xanthomonas campestris pv. *martyniicola* (Moniz and Patel 1958) Dye 1978b
see ***Xanthomonas axonopodis*** **pv. *martyniicola***

Xanthomonas campestris pv. *melhusii* (Patel *et al.* 1952b) Dye 1978b
see ***Xanthomonas axonopodis*** **pv. *melhusii***

Xanthomonas campestris pv. *melonis* Neto *et al.* 1984
see ***Xanthomonas melonis***

Xanthomonas campestris pv. *nakataecorchori* (Padhya and Patel 1963b) Dye 1978b
see ***Xanthomonas axonopodis*** **pv. *nakataecorchori***

Xanthomonas campestris pv. *oryzae* (Ishiyama 1922) Dye 1978b
see ***Xanthomonas oryzae*** **pv. *oryzae***

Xanthomonas campestris pv. *oryzicola* (Fang *et al.* 1957) Dye 1978b
see ***Xanthomonas oryzae*** **pv. *oryzicola***

Xanthomonas campestris **pv. *passiflorae*** (Pereira 1969) Dye 1978b
see [*Xanthomonas axonopodis* pv. *passiflorae*]
ICMP 3151; LMG 810; NCPPB 2346

Xanthomonas campestris pv. *patelii* (Desai and Shah 1959) Dye 1978b
see ***Xanthomonas axonopodis*** **pv. *patelii***

Xanthomonas campestris pv. *pedalii* (Patel and Jindal 1972) Dye 1978b

see ***Xanthomonas axonopodis*** **pv. *pedalii***

Xa *a* *ca* pv. *a* (Brown 1923) Dye 1978b

see ***Xanthomonas hortorum*** **pv. *pelargonii***

Xa *a* *ca* pv. *a* (Smith 1897) Dye 1978b

see ***Xanthomonas axonopodis*** **pv. *phaseoli***

[*Xa* *a* *ca* pv. *a* var. *ca* Vauterin *a*. 1995] Young *a*. (1996) refers.

see ***Xanthomonas fuscans***

Xa *a* *ca* pv. Egli and Schmidt 1982

see ***Xanthomonas translucens*** **pv. *phlei***

Xa *a* *ca* pv. *a* (Wallin and Reddy 1945) Dye 1978b

see ***Xanthomonas translucens*** pv. ***phleipratensis***

Xa *a* *ca* pv. *a* (Sabet *a*. 1969) Dye 1978b

see ***Xanthomonas axonopodis*** **pv. *phyllanthi***

Xa *a* *ca* pv. *a* *c* *a* (Goto and Okabe 1958) Dye 1978b

see ***Xanthomonas axonopodis*** **pv. *physalidicola***

Xa *a* *ca* pv. (Goto and Okabe 1958) Dye 1978b

see ***Xanthomonas pisi***

Xa *a* *ca* pv. *a* Egli and Schmidt 1982

see ***Xanthomonas translucens*** **pv. *poae***

Xa *a* *ca* pv. *c* *a* (Patel *a*. 1951a) Dye 1978b

X. ca pv. *c* *a* is represented by three phenetically and genomically distinct bacterial populations (Vauterin *a*. 1995). The pathotype strain is referred to *X. a* pv. *c* *a*. Other strains are referred to *X. a* *b* *c* *a* or *X. c* *a*.

see ***Xanthomonas axonopodis*** **pv. *poinsettiicola***

Xa *a* *ca* pv. (de Kam 1984) Young *a*. 1991a

see ***Xanthomonas arboricola*** **pv. *populi***

Xa *a* *ca* pv. (Smith 1903) Dye 1978b

see ***Xanthomonas arboricola*** **pv. *pruni***

Xa *a* *ca* pv. *ca* (Hingorani and Singh 1959) Dye 1978b

see ***Xanthomonas axonopodis*** **pv. *punicae***

Xa *a* *ca* pv. *c* *a* (Sabet *a*. 1969) Dye 1978b

see ***Xanthomonas axonopodis*** **pv. *rhynchosiae***

Xa *a* *ca* pv. *c* (Yoshii and Takimoto 1928) Dye 1978b

see ***Xanthomonas axonopodis*** **pv. *ricini***

Xa *a* *ca* pv. *ca* (Reddy *a*. 1924) Dye 1978b

see ***Xanthomonas translucens*** **pv. *secalis***

Xa *a* *ca* pv. *ba* *a* (Patel *a*. 1952a) Dye 1978b

see ***Xanthomonas axonopodis*** **pv. *sesbaniae***

Xa *a* *ca* pv. *a* *a* (Patel *a*. 1951a) Dye 1978b

see ***Xanthomonas axonopodis*** **pv. *tamarindi***

Xa *a* *ca* pv. *a* *a* *ac* (Niederhauser 1943) Dye 1978b

see ***Xanthomonas hortorum*** **pv. *taraxaci***

Xa *a* *ca* pv. *c* *a* Uehara *a*. 1980

see ***Xanthomonas theicola***

Xa *a* *ca* pv. *a* *c* (Jones *a*. 1917) Dye 1978b

see ***Xanthomonas translucens*** **pv. *translucens***

Xa *a* *ca* pv. *a* (Smith *a*. 1919) Dye 1978b

see ***Xanthomonas translucens*** **pv. *undulosa***

Xa *a* *ca* pv. *a* *c* (Cobb 1894) Dye 1978b

X. ca pv. *a* *c* is represented by two phenetically and genomically distinct bacterial populations (Vauterin *a*. 1995). The pathotype and related strains are referred to *X. a* pv. *a* *c* . The other strains are referred to *X. a* *c* *a*.

see ***Xanthomonas axonopodis*** **pv. *vasculorum***

Xa *a* *ca* pv. *ca* *a* (Doidge 1920) Dye 1978b

X. ca pv. *ca* *a* is represented by several phenetically and genomically distinct bacterial populations (Jones *a*. 2004; Stall *a*. 1994, Vauterin *a*. 1995). The pathotype of *X. ca* pv. *ca* *a* (Doidge 1920) Dye 1978b and related strains are referred to *X. ca* *a*.

see ***Xanthomonas euvesicatoria***, ***Xanthomonas gardneri,*** ***Xanthomonas perforans*** and ***Xanthomonas vesicatoria***

Xa *a* *ca* pv. *a* *a* *a* *a* (Sabet *a*. 1969) Dye 1978b

see ***Xanthomonas axonopodis*** **pv. *vignaeradiatae***

Xa *a* *ca* pv. *c* *a* (Burkholder 1944) Dye 1978b

see ***Xanthomonas axonopodis*** **pv. *vignicola***

Xa *a* *ca* pv. *a* (Brown 1918) Dye 1978b

X. ca pv. *a* is represented by two phenetically and genomically distinct bacterial populations (Vauterin *a*. 1995). The pathotype was transferred to *Xa* *a* *a* pv. *a* , but the fact that this single strain differs uniquely from the other strains from lettuce (*Lac* - *ca* *a* *a* L.) suggests that it may have been mis-labelled, or may have been inappropriately selected as the pathotype strain. All other strains are referred to *X.* .

see ***Xanthomonas axonopodis*** pv. ***vitians***

Xanthomonas cassavae (Wiehe and Dowson 1953) Vauterin *a*. 1995

= *Xa* *a* *ca* pv. *ca* *a* *a* (Wiehe and Dowson 1953) Maraite and Weyns 1979

CFBP 4642; ICMP 204; LMG 673; NCPPB 101

[*Xa* *a* *c* Papdiwal 1981] Young *a*. (1991a) refers.

Xanthomonas citri (Hasse 1915) Gabriel *a*. 1989

= *Xa* *a* *a* pv. *c* (Hasse 1915) Vauterin *a*. 1995

= *Xa* *a* *ca* pv. *c* (Hasse 1915) Dye 1978b

ATCC 49118; ICMP 15804; LMG 9322; NCPPB 4375

The pathotype strain of *X. a* pv. *c* and *X. ca* pv. *c* is CFBP 2525; ICMP 24; NCPPB 409 which is different than the type strain of *X. c* although they may be members of this species.

Xanthomonas citri **subsp. *citri*** (Hasse 1915) Gabriel *a*. 1989

= *Xa* *a* *a* pv. *c* (Hasse 1915) Vauterin *a*. 1995

= *Xanthomonas campestris* pv. *citri* (Hasse 1915) Dye 1978b
ATCC 49118; ICMP 15804; LMG 9322; NCPPB 4375
The pathotype strain of *X. axonopodis* pv. *citri* and *X. campestris* pv. *citri* is CFBP 2525; ICMP 24; LMG 682; NCPPB 409 which is different than the type strain of *X. citri* subsp. *citri* although they may be members of this species.

Xanthomonas citri* subsp. *malvacearum (*ex* Smith 1901) Schaad *et al.* 2007
= *Xanthomonas axonopodis* pv. *malvacearum* (Smith 1901) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *malvacearum* (Smith 1901) Dye 1978b
ATCC 9924; ICMP 217; LMG 11726; NCPPB 4403
Schaad *et al.* 2007 designated ATCC 9924=ICMP 217=LMG 785 as the type strain of the subspecies *Xanthomonas citri* subsp. *malvacearum*. However, strain LMG 785 is a pathotype strain of *Xanthomonas campestris* pv. *musacearum* (Yirgou and Bradbury 1968) Dye 1978b. LMG lists LMG 11726 as equivalent to ICMP 217 and ATCC 9924 and as the type strain of this subspecies. Schaad *et al.* 2007 choose a strain other than the type strain of *X. axonopodis* pv. *malvacearum* and *X. campestris* pv. *malvacearum* (CFBP 2530; ICMP 5739; LMG 761; NCPPB 633) to serve as the type strain of this subspecies.

Xanthomonas codiaei Vauterin *et al.* 1995
CFBP 4690; ICMP 9513; LMG 8678; NCPPB 4350
see note for *Xanthomonas campestris* pv. *poinsettiicola*

Xanthomonas cucurbitae (*ex* Bryan 1926) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *cucurbitae* (Bryan 1926) Dye 1978b
CFBP 2542; ICMP 2299; LMG 690; NCPPB 2597

Xanthomonas cynarae Trébaol *et al.* 2000
CFBP 4188; ICMP16775; NCPPB 4356

Xanthomonas euvesicatoria Jones *et al.* 2006
ATCC 11633; CFBP 6864; ICMP 98; ICMP 109; NCPPB 2968

[*Xanthomonas exitiosa* Schaad *et al.* 2000] Young *et al.* (2001b) refers.
see ***Xanthomonas vesicatoria***

Xanthomonas fragariae Kennedy and King 1962
ATCC 33239; CFBP 2157; ICMP 5715; LMG 708; NCPPB 1469

Xanthomonas fuscans Schaad *et al.* 2007
ATCC 19315; CFBP 6165; ICMP 239; LMG 826; NCPPB 381

Xanthomonas fuscans* subsp. *aurantifolii Schaad *et al.* 2007
CFBP 2901; ICMP 15806; LMG 9179; NCPPB 3236
see [*Xanthomonas axonopodis* pv. *aurantifolii*] and [*Xanthomonas campestris* pv. *aurantifolii*]

Xanthomonas fuscans* subsp. *fuscans Schaad *et al.* 2007
ATCC 19315; ICMP 239; LMG 826; NCPPB 381

Xanthomonas gardneri (*ex* Sutić 1957) Jones *et al.* 2006
ATCC 19865; ICMP16689; LMG 962; NCPPB 881

Xanthomonas hortorum Vauterin *et al.* 1995
CFBP 4925; ICMP 453; LMG 733; NCPPB 939
Vauterin *et al.* (1995) chose the pathotype strain of *X. hortorum* pv. *hederae* as the type strain of this species.

Xanthomonas hortorum* pv. *carotae (Kendrick 1934) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *carotae* (Kendrick 1934) Dye 1978b
CFBP 4997*; ICMP 5723*; LMG 8646*; NCPPB 1422*
This strain has been reported to be unsuitable as a pathotype (Young *et al.* 1991a).

Xanthomonas hortorum* pv. *hederae (Arnaud 1920) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *hederae* (Arnaud 1920) Dye 1978b
CFBP 4925; ICMP 453; LMG 733; NCPPB 939

Xanthomonas hortorum* pv. *pelargonii (Brown 1923) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *pelargonii* (Brown 1923) Dye 1978b
CFBP 2533; ICMP 4321; LMG 7314; NCPPB 2985

Xanthomonas hortorum* pv. *taraxaci (Niederhauser 1943) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *taraxaci* (Niederhauser 1943) Dye 1978b
ATCC 19318; CFBP 410; ICMP 579; LMG 870; NCPPB 940

[*Xanthomonas hortorum* pv. *vitians* Vauterin *et al.* 1995] Young *et al.* (1996) refers.
see ***Xanthomonas axonopodis* pv. *vitians*** and *Xanthomonas campestris* pv. *vitians*

Xanthomonas hyacinthi (*ex* Wakker 1883) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *hyacinthi* (Wakker 1883) Dye 1978b
ATCC 19314; CFBP 1156; ICMP 189; LMG 739; NCPPB 599

[*Xanthomonas hederae* (Arnaud 1920) Schaad *et al.* 2000] Young *et al.* (1996; 2001b) refer.
see ***Xanthomonas hortorum* pv. *hederae***

[*Xanthomonas juglandis* (Pierce 1901) Schaad *et al.* 2000] Young *et al.* (1996; 2001b) refer.
see ***Xanthomonas arboricola* pv. *juglandis***

Xanthomonas melonis Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *melonis* Neto *et al.* 1984
CFBP 4644; ICMP 8682; LMG 8670; NCPPB 3434

Xanthomonas oryzae (*ex* Ishiyama 1922) Swings *et al.* 1990
ATCC 35933; CFBP 2532; ICMP 3125; LMG 5047; NCPPB 3002

Xanthomonas oryzae* pv. *oryzae (Ishiyama 1922) Swings *et al.* 1990
= *Xanthomonas campestris* pv. *oryzae* (Ishiyama 1922) Dye 1978b
ATCC 35933; CFBP 2532; ICMP 3125; LMG 5047; NCPPB 3002

Xanthomonas oryzae* pv. *oryzicola (Fang *et al.* 1957) Swings *et al.* 1990
= *Xanthomonas campestris* pv. *oryzicola* (Fang *et al.* 1957) Dye 1978b
ATCC 49072, CFBP 2286; ICMP 5743; LMG 797; NCPPB 1585

Xanthomonas phaseoli (*ex* Smith 1897) Gabriel *et al.* 1989
see ***Xanthomonas axonopodis* pv. *phaseoli***

Xanthomonas perforans Jones *et al.* 2006
ATCC BAA-983; ICMP 16690; NCPPB 4321

Xanthomonas pisi (*ex* Goto and Okabe 1958) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *pisi* (Goto and Okabe 1958)

Dye 1978b
ATCC 35936; CFBP 4643; ICMP 570; LMG 847; NCPPB 762
[*Xanthomonas phyllovora* Schaad *et al.* 2000] Young *et al.* (1996; 2001b) refer.

Xanthomonas populi (*ex* Ridé 1958) van den Mooter and Swings 1990
ATCC 51165; CFBP 1817; ICMP 5816; LMG 5743; NCPPB 2959
Ridé and Ridé (1992) revived the name in IJSB, but van den Mooter and Swings 1990 has priority.

Xanthomonas sacchari Vauterin *et al.* 1995
CFBP 4641; ICMP 16916; LMG 471; NCPPB 4341
[*Xanthomonas smithii* Schaad *et al.* 2005] Schaad *et al.* (2006) refers.
see ***Xanthomonas citri*** **subsp.** ***malvacearum***
[*Xanthomonas smithii* subsp. *smithii* Schaad *et al.* 2005] Schaad *et al.* (2006) refers.
see ***Xanthomonas citri*** **subsp.** ***malvacearum***
[*Xanthomonas smithii* subsp. *citri* (Gabriel *et al.* 1989) Schaad *et al.* 2005] Schaad *et al.* (2006) refers.
see ***Xanthomonas citri***

Xanthomonas theicola (Uehara *et al.* 1980) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *theicola* Uehara *et al.* 1980
CFBP 4691; ICMP 6774; LMG 8684; NCPPB 4353

Xanthomonas translucens (*ex* Jones *et al.* 1917) Vauterin *et al.* 1995
= [*Xanthomonas campestris* pv. *hordei* (Hagborg 1942) Dye 1978b]
ATCC 19319; CFBP 2054; ICMP 5752; LMG 876; NCPPB 973

Xanthomonas translucens **pv.** ***arrhenatheri*** (Egli and Schmidt 1982) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *arrhenatheri* Egli and Schmidt 1982
ATCC 33803 CFBP 2056; ICMP 7727; LMG 727; NCPPB 3229

Xanthomonas translucens **pv.** ***cerealis*** (Hagborg 1942) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *cerealis* (Hagborg 1942) Dye 1978b
CFBP 2541; ICMP 1409; LMG 679; NCPPB 1944

Xanthomonas translucens **pv.** ***graminis*** (Egli *et al.* 1975) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *graminis* (Egli *et al.* 1975) Dye 1978b
ATCC 29091; CFBP 2053; ICMP 5733; LMG 726; NCPPB 2700
[*Xanthomonas translucens* pv. *hordei* (Egli *et al.* 1975) Vauterin *et al.* 1995] Bradbury (1986) refers.

Xanthomonas translucens **pv.** ***phlei*** (Egli and Schmidt 1982) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *phlei* Egli and Schmidt 1982
ATCC 33805; CFBP 2062; ICMP 7725; LMG 730; NCPPB 3231

Xanthomonas translucens **pv.** ***phleipratensis*** (Wallin and Reddy 1945) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *phleipratensis* (Wallin and Reddy 1945) Dye 1978b
CFBP 2540; ICMP 5744; LMG 843; NCPPB 1837

Xanthomonas translucens **pv.** ***poae*** (Egli and Schmidt 1982) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *poae* Egli and Schmidt 1982
ATCC 33804; CFBP 2057; ICMP 7726; LMG 728; NCPPB 3230

Xanthomonas translucens **pv.** ***secalis*** (Reddy *et al.* 1924) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *secalis* (Reddy *et al.* 1924) Dye 1978b
CFBP 2539; ICMP 5749; LMG 883; NCPPB 2822

Xanthomonas translucens **pv.** ***translucens*** (Jones *et al.* 1917) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *translucens* (Jones *et al.* 1917) Dye 1978b
ATCC 19319; CFBP 2054; ICMP 5752; LMG 876; NCPPB 973

Xanthomonas translucens **pv.** ***undulosa*** (Smith *et al.* 1919) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *undulosa* (Smith *et al.* 1919) Dye 1978b
ATCC 35935; CFBP 2055; ICMP 5755; LMG 892; NCPPB 2821

Xanthomonas vasicola Vauterin *et al.* 1995
CFBP 2543; ICMP 3103; LMG 736; NCPPB 2417
Vauterin *et al.* (1995) chose the pathotype strain of *X. vasicola* pv. *holcicola* as the type strain of this species.

Xanthomonas vasicola **pv.** ***holcicola*** (Elliott 1930) Vauterin *et al.* 1995
CFBP 2543; ICMP 3103; LMG 736; NCPPB 2417
[*Xanthomonas vasicola* pv. *vasculorum* Vauterin *et al.* 1995] Young *et al.* (1996) refers.
see ***Xanthomonas axonopodis*** **pv.** ***vasculorum*** and *Xanthomonas campestris* pv. *vasculorum*

Xanthomonas vesicatoria (*ex* Doidge 1920) Vauterin *et al.* 1995
= *Xanthomonas campestris* pv. *vesicatoria* (Doidge 1920) Dye 1978b
ATCC 35937; CFBP 2537; ICMP 63; LMG 911; NCPPB 422
see *Xanthomonas campestris* pv. *vesicatoria*

Xylella Wells *et al.* 1987

Xylella fastidiosa Wells *et al.* 1987
ATCC 35879; ICMP 15197; LMG 17159; NCPPB 4473

Xylella fastidiosa **subsp.** ***fastidiosa*** Wells *et al.* 1987
= [*X. fastidiosa* subsp. *piercei* Schaad *et al.* 2004a]
ATCC 35879; ICMP 15197; LMG 17159; NCPPB 4473

Xylella fastidiosa **subsp.** ***multiplex*** Schaad *et al.* 2009
ATCC 35871; ICPB 50039; NCPPB 4431
[*Xylella fastidiosa* subsp. *piercei* Schaad *et al.* 2004a]
The type strain designated for this subspecies is the type strain of the species and therefore the name *X. fastidiosa* subsp. *fastidiosa* takes priority (Schaad *et al.* 2004b).
see ***Xylella fastidiosa*** **subsp.** ***fastidiosa***
[*Xylella fastidiosa* subsp. *pauca*] Schaad *et al.* 2004a
Cultures of the types strain have not been deposited in at least two publicly accessible service collections in two countries as required by the Code (Rule 30).

Xylophilus Willems *et al.* 1987

Xylophilus ampelinus (Panagopoulos 1969) Willems *et al.* 1987

= *Xanthomonas ampelina* Panagopoulos 1969
ATCC 33914; CFBP 1192; CFBP 3674; ICMP 8920; LMG 5856; NCPPB 2217

'***Candidatus*' Plant Pathogenic Bacteria**
'***Candidatus* Liberibacter'** Jagoueix *et al.* 1994
'***Candidatus* Liberibacter africanus**' Jagoueix *et al.* 1994
'***Candidatus* Liberibacter africanus subsp. capensis**' Garnier *et al.* 2000
'*Candidatus* Liberibacter americanus' Teixeira *et al.* 2005
'***Candidatus* Liberibacter asiaticus**' Jagoueix *et al.* 1994

'***Candidatus* Phlomobacter**' Zreik *et al.* 1998
'***Candidatus* Phlomobacter fragariae**' Zreik *et al.* 1998

'***Candidatus* Phytoplasma'** IRPCM Phytoplasma/Spiroplasma Working Team-Phytoplasma Taxonomy Group 2004
'***Candidatus* Phytoplasma allocasuarinae**' Marcone *et al.* 2004a
'*Candidatus* Phytoplasma americanum' Lee *et al.* 2006
'***Candidatus* Phytoplasma asteris**' Lee *et al.* 2004a
'***Candidatus* Phytoplasma aurantifolia**' Zreik *et al.* 1995
'***Candidatus* Phytoplasma australasia**' White *et al.* 1998
'***Candidatus* Phytoplasma australiense**' Davis *et al.* 1997
'***Candidatus* Phytoplasma brasiliense**' Montano *et al.* 2001
'*Candidatus* Phytoplasma caricae' Arocha *et al.* 2005
'***Candidatus* Phytoplasma castaneae**' Jung *et al.* 2002
'***Candidatus* Phytoplasma cynodontis**' Marcone *et al.* 2004b
'*Candidatus* Phytoplasma fragariae' Valiunas *et al.* 2006
'***Candidatus* Phytoplasma fraxini**' Griffiths *et al.* 1999
'*Candidatus* Phytoplasma graminis' Arocha *et al.* 2005
'***Candidatus* Phytoplasma japonicum**' Sawayanagi *et al.* 1999
'*Candidatus* Phytoplasma lycopersici' Arocha *et al.* 2007
'***Candidatus* Phytoplasma mali**' Seemüller and Schneider 2004
'***Candidatus* Phytoplasma oryzae**' Jung *et al.* 2003b
'***Candidatus* Phytoplasma phoenicium**' Verdin *et al.* 2003
'*Candidatus* Phytoplasma pini' Schneider *et al.* 2005
'***Candidatus* Phytoplasma prunorum**' Seemüller and Schneider 2004
'***Candidatus* Phytoplasma pyri**' Seemüller and Schneider 2004
'***Candidatus* Phytoplasma rhamni**' Marcone *et al.* 2004a
'***Candidatus* Phytoplasma spartii**' Marcone *et al.* 2004a
'***Candidatus* Phytoplasma trifolii**' Hiruki and Wang 2004
'***Candidatus* Phytoplasma ulmi**' Lee *et al.* 2004b
'***Candidatus* Phytoplasma ziziphi**' Jung *et al.* 2003a

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