

Table S1. Full Boolean search query strings used for systematic database searches (PubMed, Web of Science-Core Collection, Scopus, and CABI).

Database	Full Query String
PubMed	<pre>(conifer*[tiab] OR spruce[tiab] OR pine[tiab] OR Picea[tiab] OR Pinus[tiab] OR Abies[tiab] OR fir[tiab] OR larch[tiab] OR Larix[tiab] OR "Douglas fir"[tiab] OR "Douglas-fir"[tiab] OR "Pseudotsuga menziesii"[tiab] OR cedar[tiab] OR Cedrus[tiab] OR hemlock[tiab] OR Tsuga[tiab] OR Thuja[tiab] OR Cryptomeria[tiab] OR gymnosperm*[tiab] OR "Norway spruce"[tiab] OR "Sitka spruce"[tiab] OR "Scots pine"[tiab] OR "lodgepole pine"[tiab] OR "Pinus sylvestris"[tiab] OR "Pinus radiata"[tiab] OR "Pinus taeda"[tiab] OR "Pinus strobus"[tiab] OR "Pinus pinaster"[tiab] OR "Pinus elliottii"[tiab] OR "Pinus contorta"[tiab] OR "Picea abies"[tiab] OR "Picea glauca"[tiab] OR "Picea mariana"[tiab] OR "Picea sitchensis"[tiab] OR "Picea rubens"[tiab] OR "Abies alba"[tiab] OR "Abies balsamea"[tiab] OR "Abies grandis"[tiab]) AND ("root rot"[tiab] OR "butt rot"[tiab] OR "stem rot"[tiab] OR "root disease"[tiab] OR "root decay"[tiab] OR "collar rot"[tiab] OR "damping-off"[tiab] OR "damping off"[tiab] OR "seedling blight"[tiab] OR "white rot"[tiab] OR "brown rot"[tiab] OR "wood decay"[tiab] OR Heterobasidion[tiab] OR "Heterobasidion annosum"[tiab] OR "Heterobasidion parviporum"[tiab] OR "Heterobasidion abietinum"[tiab] OR Phytophthora[tiab] OR Armillaria[tiab] OR Fusarium[tiab] OR Pythium[tiab] OR Rhizoctonia[tiab] OR Ganoderma[tiab] OR Leptographium[tiab] OR Neonectria[tiab] OR Ilyonectria[tiab] OR Diplodia[tiab] OR Ophiostoma[tiab] OR oomycete*[tiab] OR "soilborne pathogen"[tiab] OR "soil-borne pathogen"[tiab] OR "root pathogen"[tiab] OR "forest pathogen"[tiab] OR necrotrophic[tiab] OR Annosum[tiab]) AND (biocontrol[tiab] OR "biological control"[tiab] OR "microbial inoculat*[tiab] OR "co-inoculat*[tiab] OR coinoculat*[tiab] OR PGPR[tiab] OR "plant growth promoting rhizobacteri*[tiab] OR "plant growth-promoting rhizobacteri*[tiab] OR rhizobacteri*[tiab] OR GPFP[tiab] OR "plant growth-promoting fung*[tiab] OR "plant growth promoting fung*[tiab] OR mycorrhiz*[tiab] OR ectomycorrhiz*[tiab] OR "arbuscular mycorrhiz*[tiab] OR AMF[tiab] OR Trichoderma[tiab] OR Bacillus[tiab] OR Pseudomonas[tiab] OR Streptomyces[tiab] OR Paenibacillus[tiab] OR Clonostachys[tiab] OR Phlebiopsis[tiab] OR Suillus[tiab] OR Laccaria[tiab] OR Pisolithus[tiab] OR Rhizophagus[tiab] OR Glomus[tiab] OR Funneliformis[tiab] OR Mortierella[tiab] OR Serendipita[tiab] OR Piriformospora[tiab] OR Azospirillum[tiab] OR Burkholderia[tiab] OR Serratia[tiab] OR "microbial consortium"[tiab] OR "microbial consortia"[tiab] OR "synthetic communit*[tiab] OR SynCom*[tiab] OR "biocontrol agent*[tiab] OR antagoni*[tiab] OR "beneficial microb*[tiab] OR "beneficial fung*[tiab] OR endophyte*[tiab] OR "fungal endophyte*[tiab] OR "bacterial endophyte*[tiab] OR "rhizosphere microb*[tiab] OR "microbial inoculant*[tiab] OR "root coloniz*[tiab] OR "root colonisation"[tiab] OR elicit*[tiab] OR "volatile organic compound*[tiab] OR "mycoparasit*[tiab] OR antibiosis[tiab] OR siderophore*[tiab] OR "mycorrhiza helper"[tiab] OR "mycorrhizal helper"[tiab]) AND (transcriptom*[tiab] OR "gene expression"[tiab] OR "RNA-seq"[tiab] OR "RNA seq"[tiab] OR "differentially expressed"[tiab] OR</pre>

Database	Full Query String
	"next-generation sequencing"[tiab] OR NGS[tiab] OR "high-throughput sequencing"[tiab] OR "deep sequencing"[tiab] OR "defense response"[tiab] OR "defence response"[tiab] OR "induced resistance"[tiab] OR "induced systemic resistance"[tiab] OR ISR[tiab] OR SAR[tiab] OR "systemic acquired resistance"[tiab] OR "mycorrhiza-induced resistance"[tiab] OR "mycorrhizal induced resistance"[tiab] OR MIR[tiab] OR jasmonate[tiab] OR "jasmonic acid"[tiab] OR "methyl jasmonate"[tiab] OR MeJA[tiab] OR salicylate[tiab] OR "salicylic acid"[tiab] OR ethylene[tiab] OR "abscisic acid"[tiab] OR phytohormone[tiab] OR "hormone signaling"[tiab] OR "hormone signalling"[tiab] OR "hormone crosstalk"[tiab] OR "hormone cross-talk"[tiab] OR "signal transduction"[tiab] OR "pathogenesis-related"[tiab] OR "PR protein"[tiab] OR "PR gene"[tiab] OR priming[tiab] OR "defense priming"[tiab] OR "defence priming"[tiab] OR "epigenetic priming"[tiab] OR microarray[tiab] OR "gene regulation"[tiab] OR "transcription factor"[tiab] OR WRKY[tiab] OR MYB[tiab] OR "ethylene response factor"[tiab] OR ERF[tiab] OR "secondary metabolite"[tiab] OR terpene[tiab] OR monoterpene[tiab] OR diterpene[tiab] OR sesquiterpene[tiab] OR "terpene synthase"[tiab] OR oleoresin[tiab] OR "resin acid"[tiab] OR phenolic[tiab] OR stilbene[tiab] OR flavonoid[tiab] OR lignin[tiab] OR "reactive oxygen"[tiab] OR "oxidative burst"[tiab] OR ROS[tiab] OR chitinase[tiab] OR glucanase[tiab] OR "quantitative PCR"[tiab] OR "qRT-PCR"[tiab] OR "real-time PCR"[tiab] OR "expressed sequence tag"[tiab] OR "cDNA library"[tiab] OR proteom[tiab] OR metabolom[tiab] OR "volatile compound"[tiab])
Web of Science (WoS) - Core Collection	TS=((conifer* OR spruce OR pine OR Picea OR Pinus OR Abies OR fir OR larch OR Larix OR "Douglas fir" OR "Douglas-fir" OR "Pseudotsuga menziesii" OR cedar OR Cedrus OR hemlock OR Tsuga OR Thuja OR Cryptomeria OR gymnosperm* OR "Norway spruce" OR "Sitka spruce" OR "Scots pine" OR "lodgepole pine" OR "Pinus sylvestris" OR "Pinus radiata" OR "Pinus taeda" OR "Pinus strobus" OR "Pinus pinaster" OR "Pinus elliottii" OR "Pinus contorta" OR "Picea abies" OR "Picea glauca" OR "Picea mariana" OR "Picea sitchensis" OR "Picea rubens" OR "Abies alba" OR "Abies balsamea" OR "Abies grandis") AND ("root rot" OR "butt rot" OR "stem rot" OR "root disease" OR "root decay" OR "collar rot" OR "damping-off" OR "damping off" OR "seedling blight" OR "white rot" OR "brown rot" OR "wood decay" OR Heterobasidion OR "Heterobasidion annosum" OR "Heterobasidion parviporum" OR "Heterobasidion abietinum" OR Phytophthora OR Armillaria OR Fusarium OR Pythium OR Rhizoctonia OR Ganoderma OR Leptographium OR Neonectria OR Ilyonectria OR Diplodia OR Ophiostoma OR oomycete* OR "soilborne pathogen*" OR "soil-borne pathogen*" OR "root pathogen*" OR "forest pathogen*" OR necrotrophic OR Annosum) AND (biocontrol OR "biological control" OR "microbial inoculat*" OR "co-inoculat*" OR coinoculat* OR PGPR OR "plant growth promoting rhizobacteri*" OR "plant growth-promoting rhizobacteri*" OR rhizobacteri* OR PGPF OR "plant growth-promoting fung*" OR "plant growth promoting fung*" OR mycorrhiz* OR ectomycorrhiz* OR "arbuscular mycorrhiz*" OR AMF OR Trichoderma OR Bacillus OR Pseudomonas OR Streptomyces OR Paenibacillus OR Clonostachys OR Phlebiopsis OR Suillus OR Laccaria OR Pisolithus OR Rhizophagus OR Glomus OR Funneliformis OR Mortierella OR Serendipita OR Piriformospora OR Azospirillum OR Burkholderia OR Serratia OR "microbial consortium" OR "microbial consortia" OR

Database	Full Query String
	<pre> "synthetic communit*" OR SynCom* OR "biocontrol agent*" OR antagoni* OR "beneficial microb*" OR "beneficial fung*" OR endophyte* OR "fungal endophyte*" OR "bacterial endophyte*" OR "rhizosphere microb*" OR "microbial inoculant*" OR "root coloniz*" OR elicit* OR "volatile organic compound*" OR "mycoparasit*" OR antibiosis OR siderophore* OR "mycorrhiza helper*" OR "mycorrhizal helper*") AND (transcriptom* OR "gene expression" OR "RNA-seq" OR "RNA seq" OR "differentially expressed" OR "next-generation sequencing" OR NGS OR "high-throughput sequencing" OR "deep sequencing" OR "defense response*" OR "defence response*" OR "induced resistance" OR "induced systemic resistance" OR ISR OR SAR OR "systemic acquired resistance" OR "mycorrhiza-induced resistance" OR "mycorrhizal induced resistance" OR MIR OR jasmonate* OR "jasmonic acid" OR "methyl jasmonate" OR MeJA OR salicylate* OR "salicylic acid" OR ethylene OR "abscisic acid" OR phytohormone* OR "hormone signaling" OR "hormone signalling" OR "hormone crosstalk" OR "hormone cross-talk" OR "signal transduction" OR "pathogenesis-related" OR "PR protein*" OR "PR gene*" OR priming OR "defense priming" OR "defence priming" OR "epigenetic priming" OR microarray OR "gene regulation" OR "transcription factor*" OR WRKY OR MYB OR "ethylene response factor*" OR ERF OR "secondary metabolite*" OR terpene* OR monoterpene* OR diterpene* OR sesquiterpene* OR "terpene synthase*" OR oleoresin OR "resin acid*" OR phenolic* OR stilbene* OR flavonoid* OR lignin OR "reactive oxygen" OR "oxidative burst" OR ROS OR chitinase* OR glucanase* OR "quantitative PCR" OR "qRT-PCR" OR "real-time PCR" OR "expressed sequence tag*" OR "cDNA librar*" OR proteom* OR metabolom* OR "volatile compound*")) </pre>
Scopus	<pre> TITLE-ABS-KEY((conifer* OR spruce OR pine OR Picea OR Pinus OR Abies OR fir OR larch OR Larix OR "Douglas fir" OR "Douglas-fir" OR "Pseudotsuga menziesii" OR cedar OR Cedrus OR hemlock OR Tsuga OR Thuja OR Cryptomeria OR gymnosperm* OR "Norway spruce" OR "Sitka spruce" OR "Scots pine" OR "lodgepole pine" OR "Pinus sylvestris" OR "Pinus radiata" OR "Pinus taeda" OR "Pinus strobus" OR "Pinus pinaster" OR "Pinus elliottii" OR "Pinus contorta" OR "Picea abies" OR "Picea glauca" OR "Picea mariana" OR "Picea sitchensis" OR "Picea rubens" OR "Abies alba" OR "Abies balsamea" OR "Abies grandis") AND ("root rot" OR "butt rot" OR "stem rot" OR "root disease" OR "root decay" OR "collar rot" OR "damping-off" OR "damping off" OR "seedling blight" OR "white rot" OR "brown rot" OR "wood decay" OR "butt rot fungus" OR Heterobasidion OR "Heterobasidion annosum" OR "Heterobasidion parviporum" OR "Heterobasidion abietinum" OR Phytophthora OR Armillaria OR Fusarium OR Pythium OR Rhizoctonia OR Ganoderma OR Leptographium OR Neonectria OR Ilyonectria OR Diplodia OR Ophiostoma OR oomycete* OR "soilborne pathogen*" OR "soil-borne pathogen*" OR "root pathogen*" OR "forest pathogen*" OR necrotrophic OR Annosum) AND (biocontrol OR "biological control" OR "microbial inoculat*" OR "co-inoculat*" OR coinoculat* OR PGPR OR "plant growth promoting rhizobacteri*" OR "plant growth-promoting rhizobacteri*" OR rhizobacteri* OR PGPF OR "plant growth-promoting fung*" OR "plant growth promoting fung*" OR </pre>

Database	Full Query String
	<pre> mycorrhiz* OR ectomycorrhiz* OR "arbuscular mycorrhiz*" OR AMF OR Trichoderma OR Bacillus OR Pseudomonas OR Streptomyces OR Paenibacillus OR Clonostachys OR Phlebiopsis OR Suillus OR Laccaria OR Pisolithus OR Rhizophagus OR Glomus OR Funneliformis OR Mortierella OR Serendipita OR Piriiformospora OR Azospirillum OR Burkholderia OR Serratia OR "microbial consortium" OR "microbial consortia" OR "synthetic communit*" OR SynCom* OR "biocontrol agent*" OR antagoni* OR "beneficial microb*" OR "beneficial fung*" OR endophyte* OR "fungal endophyte*" OR "bacterial endophyte*" OR "rhizosphere microb*" OR "microbial inoculant*" OR "root coloniz*" OR elicit* OR "volatile organic compound*" OR "mycoparasit*" OR antibiosis OR siderophore* OR "mycorrhiza helper*" OR "mycorrhizal helper*") AND (transcriptom* OR "gene expression" OR "RNA-seq" OR "RNA seq" OR "differentially expressed" OR "next-generation sequencing" OR NGS OR "high-throughput sequencing" OR "deep sequencing" OR "defense response*" OR "defence response*" OR "induced resistance" OR "induced systemic resistance" OR ISR OR SAR OR "systemic acquired resistance" OR "mycorrhiza-induced resistance" OR "mycorrhizal induced resistance" OR MIR OR jasmonate* OR "jasmonic acid" OR "methyl jasmonate" OR MeJA OR salicylate* OR "salicylic acid" OR ethylene OR "abscisic acid" OR phytohormone* OR "hormone signaling" OR "hormone signalling" OR "hormone crosstalk" OR "hormone cross-talk" OR "signal transduction" OR "pathogenesis-related" OR "PR protein*" OR "PR gene*" OR priming OR "defense priming" OR "defence priming" OR "epigenetic priming" OR microarray OR "gene regulation" OR "transcription factor*" OR WRKY OR MYB OR "ethylene response factor*" OR ERF OR "secondary metabolite*" OR terpene* OR monoterpene* OR diterpene* OR sesquiterpene* OR "terpene synthase*" OR oleoresin OR "resin acid*" OR phenolic* OR stilbene* OR flavonoid* OR lignin OR "reactive oxygen" OR "oxidative burst" OR ROS OR chitinase* OR glucanase* OR "quantitative PCR" OR "qRT-PCR" OR "real-time PCR" OR "expressed sequence tag*" OR "cDNA librar*" OR proteom* OR metabolom* OR "volatile compound*")) </pre>
CABI	<pre> (conifer* OR spruce OR pine OR Picea OR Pinus OR Abies OR fir OR larch OR Larix OR "Douglas fir" OR "Douglas-fir" OR "Pseudotsuga menziesii" OR cedar OR Cedrus OR hemlock OR Tsuga OR Thuja OR Cryptomeria OR gymnosperm* OR "Norway spruce" OR "Sitka spruce" OR "Scots pine" OR "lodgepole pine" OR "Pinus sylvestris" OR "Pinus radiata" OR "Pinus taeda" OR "Pinus strobus" OR "Pinus pinaster" OR "Pinus elliottii" OR "Pinus contorta" OR "Picea abies" OR "Picea glauca" OR "Picea mariana" OR "Picea sitchensis" OR "Picea rubens" OR "Abies alba" OR "Abies balsamea" OR "Abies grandis" OR de:conifers OR de:"forest trees" OR de:gymnosperms OR de:Pinus OR de:Picea OR de:Abies OR de:Larix OR de:Cedrus OR de:Tsuga OR de:Thuja OR de:Cryptomeria OR de:"Pseudotsuga menziesii" OR de:"Pinus sylvestris" OR de:"Picea abies" OR de:"Pinus radiata" OR de:"Pinus contorta" OR de:"Pinus taeda" OR de:"Pinus pinaster" OR de:"Abies alba" OR de:"Abies balsamea") AND ("root rot" OR "butt rot" OR "stem rot" OR "root disease" OR "root decay" OR "collar rot" OR "damping-off" OR "damping off" OR "seedling blight" OR "white rot" OR "brown rot" OR "wood decay" OR Heterobasidion OR "Heterobasidion annosum" OR "Heterobasidion parviporum" OR </pre>

Database	Full Query String
	"Heterobasidion abietinum" OR Phytophthora OR Armillaria OR Fusarium OR Pythium OR Rhizoctonia OR Ganoderma OR Leptographium OR Neonectria OR Ilyonectria OR Diplodia OR Ophiostoma OR oomycete* OR "soilborne pathogen*" OR "soil-borne pathogen*" OR "root pathogen*" OR "forest pathogen*" OR necrotrophic OR Annosum OR de:"root rots" OR de:"root diseases" OR de:"plant pathogens" OR de:"wood decay fungi" OR de:"soilborne pathogens" OR de:"Heterobasidion annosum" OR de:"Heterobasidion parviporum" OR de:Phytophthora OR de:Armillaria OR de:Fusarium OR de:Pythium OR de:Rhizoctonia OR de:Ganoderma OR de:Leptographium OR de:oomycetes OR de:Neonectria OR de:Ophiostoma OR de:"damping-off" OR de:"fungal diseases of plants") AND (biocontrol OR "biological control" OR "microbial inoculat*" OR "co-inoculat*" OR coinoculat* OR PGPR OR "plant growth promoting rhizobacteri*" OR "plant growth-promoting rhizobacteri*" OR rhizobacteri* OR PGPF OR "plant growth-promoting fung*" OR "plant growth promoting fung*" OR mycorrhiz* OR ectomycorrhiz* OR "arbuscular mycorrhiz*" OR AMF OR Trichoderma OR Bacillus OR Pseudomonas OR Streptomyces OR Paenibacillus OR Clonostachys OR Phlebiopsis OR Suillus OR Laccaria OR Pisolithus OR Rhizophagus OR Glomus OR Funneliformis OR Mortierella OR Serendipita OR Piriformospora OR Azospirillum OR Burkholderia OR Serratia OR "microbial consortium" OR "microbial consortia" OR "synthetic communit*" OR SynCom* OR "biocontrol agent*" OR antagoni* OR "beneficial microb*" OR "beneficial fung*" OR endophyte* OR "fungal endophyte*" OR "bacterial endophyte*" OR "rhizosphere microb*" OR "microbial inoculant*" OR "root coloniz*" OR elicit* OR "volatile organic compound*" OR "mycoparasit*" OR antibiosis OR siderophore* OR "mycorrhiza helper*" OR "mycorrhizal helper*" OR de:"biological control" OR de:"biocontrol agents" OR de:"biological control agents" OR de:"microbial inoculants" OR de:"Phlebiopsis gigantea" OR de:mycorrhizas OR de:ectomycorrhizas OR de:"arbuscular mycorrhizas" OR de:"plant growth promoting rhizobacteria" OR de:endophytes OR de:Trichoderma OR de:Bacillus OR de:Pseudomonas OR de:Streptomyces OR de:Paenibacillus OR de:Clonostachys OR de:antagonism OR de:"rhizosphere bacteria" OR de:"rhizosphere fungi" OR de:Suillus OR de:Laccaria OR de:Pisolithus OR de:Rhizophagus OR de:Glomus OR de:Mortierella OR de:Azospirillum OR de:"mycorrhiza helper bacteria" OR de:"rhizosphere microorganisms") AND (transcriptom* OR "gene expression" OR "RNA-seq" OR "RNA seq" OR "differentially expressed" OR "next-generation sequencing" OR NGS OR "high-throughput sequencing" OR "deep sequencing" OR "defense response*" OR "defence response*" OR "induced resistance" OR "induced systemic resistance" OR ISR OR SAR OR "systemic acquired resistance" OR "mycorrhiza-induced resistance" OR "mycorrhizal induced resistance" OR MIR OR jasmonate* OR "jasmonic acid" OR "methyl jasmonate" OR MeJA OR salicylate* OR "salicylic acid" OR ethylene OR "abscisic acid" OR phytohormone* OR "hormone signaling" OR "hormone signalling" OR "hormone crosstalk" OR "hormone cross-talk" OR "signal transduction" OR "pathogenesis-related" OR "PR protein*" OR "PR gene*" OR priming OR "defense priming" OR "defence priming" OR "epigenetic priming" OR

Database	Full Query String
	microarray OR "gene regulation" OR "transcription factor*" OR WRKY OR MYB OR "ethylene response factor*" OR ERF OR "secondary metabolite*" OR terpene* OR monoterpene* OR diterpene* OR sesquiterpene* OR "terpene synthase*" OR oleoresin OR "resin acid*" OR phenolic* OR stilbene* OR flavonoid* OR lignin OR "reactive oxygen" OR "oxidative burst" OR ROS OR chitinase* OR glucanase* OR "quantitative PCR" OR "qRT-PCR" OR "real-time PCR" OR "expressed sequence tag*" OR "cDNA library*" OR proteom* OR metabolom* OR "volatile compound*" OR de:"gene expression" OR de:transcriptomics OR de:"defence mechanisms" OR de:"induced resistance" OR de:"systemic acquired resistance" OR de:"jasmonic acid" OR de:"salicylic acid" OR de:"plant hormones" OR de:"pathogenesis-related proteins" OR de:microarrays OR de:"gene expression regulation" OR de:"secondary metabolites" OR de:terpenes OR de:monoterpenes OR de:diterpenes OR de:"terpene synthase" OR de:phenols OR de:lignin OR de:stilbenes OR de:flavonoids OR de:"RNA sequencing" OR de:"disease resistance" OR de:metabolomics OR de:"transcription factors" OR de:chitinase OR de:glucanases OR de:ethylene OR de:"abscisic acid" OR de:"hormone signalling" OR de:"signal transduction")

Note: [tiab] = Title/Abstract field tag (PubMed); TS = Topic Search (WoS); TITLE-ABS-KEY = Title, Abstract, and Keywords field (Scopus); de: = Descriptor/thesaurus term (CABI). Asterisk (*) denotes a wildcard truncation operator.