

**PROJECT FULL TITLE:**  
**DEVELOPMENT OF A NEW DIAGNOSTIC TOOL USING DNA BARCODING TO IDENTIFY  
 QUARANTINE ORGANISMS IN SUPPORT OF PLANT HEALTH**

**GRANT AGREEMENT NO.: (226482)**

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**List of selected fungal Q-organisms and related species**

The following Q-organisms were selected from the combined EU Directive 2000/29/EC (8 May 2000) and EPPO (September 2008) lists:

<b>Q-organism name</b>	<b>Current status</b>
<i>Ceratocystis fagacearum</i>	EPPO A1 list
<i>Ceratocystis fimbriata</i> f. sp. <i>platani</i>	EPPO A2 & EU-2 lists
* <i>Ceratocystis virescens</i>	EU-1 list
<i>Cercoseptoria pini-densiflorae</i> (= <i>Pseudocercospora pini-densiflorae</i> , teleomorph: <i>Mycosphaerella gibsonii</i> )	EPPO A1 & EU-1 lists
<i>Cercospora angolensis</i> (= <i>Phaeoramularia angolensis</i> = <i>Pseudocercospora angolensis</i> )	EPPO A1 & EU-1 lists
<i>Melampsora farlowii</i>	EPPO A1 list
* <i>Melampsora medusae</i>	EPPO A2 list
<i>Monilinia fructicola</i>	EPPO A2 list
* <i>Mycosphaerella dearnessii</i> (anamorph: <i>Septoria acicola</i> )	EPPO A2 list
<i>Mycosphaerella larici-leptolepis</i> (correct name <i>Mycosphaerella larici-leptolepidis</i> ?)	EPPO A1 list
<i>Mycosphaerella populorum</i> (= <i>Davidiella populorum</i> , anamorph: <i>Septoria musiva</i> )	EPPO A1 list
<i>Puccinia pittieriana</i>	EPPO A1 & EU-1 lists
<i>Septoria lycopersici</i> var. <i>mailagutii</i> (= <i>Septoria malagutii</i> )	EPPO A1 list
<i>Thecaphora solani</i>	EPPO A1 & EU-1 lists
# <i>Alternaria alternata</i> (non-European pathogenic isolates, <i>A. mali</i> )	EPPO A1 list
## <i>Colletotrichum acutatum</i>	EU-2 list
### <i>Glomerella gossypii</i>	A2 list

\* These species were not included in the original proposal but are present on the lists so they are added now.

# *Alternaria alternata* is currently being barcoded as part of a UK Plant Health Division funded project at the University of Warwick the applicable data will be made available to the QBOL database. It will therefore be excluded from the work package for the purpose of QBOL.

## *Colletotrichum/Glomerella* is currently being barcoded as part of the Dutch FES programme at KNAW-CBS and the applicable data will be made available to the QBOL database. It will therefore be excluded from the work package for the purpose of QBOL.

The list of related species given below is mainly a subset as guideline and will be used to put the Q-organisms in their taxonomic context. Species that are very close or identical on ITS to the Q-organisms will be included in the multi-gene barcoding and for this additional isolates of these species will be included.

<b>Name of related species</b>	<b>Strain number(s)</b>
<i>Baudoinia compniacensis</i>	CBS 123031
<i>Capnobotryella renispora</i>	CBS 215.90
<i>Ceratocystis abietina</i>	CBS 125.89
<i>Ceratocystis adipose</i>	CBS 127.27, CBS 600.74, CBS 136.34
<i>Ceratocystis albifundus</i>	CBS 116323
<i>Ceratocystis allantospora</i>	CBS 185.86, CBS 184.86
<i>Ceratocystis ambrosia</i>	CBS 210.64
<i>Ceratocystis angusticollis</i>	CBS 186.86
<i>Ceratocystis arborea</i>	CBS 221.83
<i>Ceratocystis autographa</i>	CBS 282.79, CBS 670.75, CBS 190.79
<i>Ceratocystis bhutanensis</i>	CBS 112907, CBS 115772, CBS 114289
<i>Ceratocystis brunnea</i>	CBS 161.61
<i>Ceratocystis caryae</i>	CBS 115168, CBS 114716
<i>Ceratocystis coerulescens</i>	CBS 140.37, CBS 137.34, CBS 556.97
<i>Ceratocystis conicota</i>	CBS 127.89
<i>Ceratocystis coronata</i>	CBS 497.77
<i>Ceratocystis deltoideospora</i>	CBS 187.86
<i>Ceratocystis eucastaneae</i>	CBS 424.77
<i>Ceratocystis fimbriata</i>	CBS 114720, CBS 115174, CBS 114723, CBS 114718, CBS 114717, CBS 114725, CBS 115161, CBS 114722, CBS 115163, CBS 146.53, CBS 118126, CBS 117355, CBS 103.40, CBS 123.39, CBS 115167
<i>Ceratocystis grandicarpa</i>	CBS 250.88
<i>Ceratocystis introcitrina</i>	CBS 252.88
<i>Ceratocystis laricicola</i>	CBS 109263, CBS 109262, CBS 116863, CBS 100208, CBS 100207
<i>Ceratocystis major</i>	CBS 154.62, CBS 147.53, CBS 138.34
<i>Ceratocystis moniliformis</i>	CBS 204.90, CBS 116452, CBS 118242, CBS 118151, CBS 155.62
<i>Ceratocystis moniliformopsis</i>	CBS 115792, CBS 109441, CBS 109525
<i>Ceratocystis neglecta</i>	CBS 121349, CBS 121789
<i>Ceratocystis nothofagi</i>	CBS 455.83
<i>Ceratocystis obscura</i>	CBS 125.39
<i>Ceratocystis olivaceapini</i>	CBS 503.86, CBS 504.86
<i>Ceratocystis omanensis</i>	CBS 115787
<i>Ceratocystis paradoxa</i>	CBS 374.83, CBS 601.70, CBS 453.66, CBS 101054, CBS 116770
<i>Ceratocystis pinicola</i>	CBS 100201, CBS 100200, CBS 100199
<i>Ceratocystis pirilliformis</i>	CBS 118128
<i>Ceratocystis polonica</i>	CBS 228.83, CBS 133.38, CBS 109256, CBS 119237, CBS 100206
<i>Ceratocystis polychroma</i>	CBS 115778, CBS 115774, CBS 115776
<i>Ceratocystis prolifera</i>	CBS 251.88
<i>Ceratocystis radicularis</i>	CBS 114.47, CBS 146.59
<i>Ceratocystis resinifera</i>	CBS 100204, CBS 100203, CBS 100202
<i>Ceratocystis rufipenni</i>	CBS 100209
<i>Ceratocystis savannae</i>	CBS 121151, CBS 121022, CBS 121021
<i>Ceratocystis smalleyi</i>	CBS 114724
<i>Ceratocystis subannulata</i>	CBS 188.86

<i>Ceratocystis tenella</i>	CBS 189.86, CBS 190.86
<i>Ceratocystis torulosa</i>	CBS 117308
<i>Ceratocystis tribiliformis</i>	CBS 115866, CBS 115949
<i>Ceratocystis tsitsikammensis</i>	CBS 121020, CBS 121019, CBS 121018
<i>Ceratocystis variospora</i>	CBS 114714, CBS 114715, CBS 773.73
<i>Cercospora apii</i>	CBS 118712
<i>Cercospora beticola</i>	CBS 116456
<i>Cercospora zebrinae</i>	CBS 118790
<i>Cercosporella centaureicola</i>	CBS 120253
<i>Cercosporella virgaureae</i>	CBS 113304
<i>Cladosporium bruhnei</i> (teleomorph: <i>Davidiella allicina</i> )	CPC 12211
<i>Cladosporium cladosporioides</i> (teleomorph: <i>Davidiella</i> sp.)	CBS 673.69
<i>Cladosporium herbarum</i> (teleomorph: <i>Davidiella tassiana</i> )	CPC 12177
<i>Devriesia acadensis</i>	CBS 115874
<i>Devriesia shelburniensis</i>	CBS 115876
<i>Dissoconium aciculare</i>	CBS 204.89
<i>Dissoconium commune</i>	CPC 12397
<i>Dissoconium dekkeri</i>	CPC 13479
<i>Dothistroma pini</i>	CPC 116483
<i>Dothistroma septosporum</i>	CPC 12032
<i>Lecanosticta acicola</i>	CBS 871.95
<i>Monilinia baccarum</i>	<i>CBS 388.93</i>
<i>Monilinia cydoniae</i>	<i>CBS 150.22</i>
<i>Monilinia demissa</i>	<i>CBS 151.22</i>
<i>Monilinia fructigena</i>	<i>CBS 492.50, CBS 493.50, CBS 494.50, CBS 495.50, CBS 496.50, CBS 348.72, CBS 578.77, CBS 101502, CBS 101501, CBS 101500, CBS 101499, CBS 101504, CBS 231.57</i>
<i>Monilinia johnsonii</i>	<i>CBS 169.24</i>
<i>Monilinia laxa</i>	<i>CBS 101505, CBS 165.24, CBS 101503, CBS 132.21, CBS 488.50, CBS 202.25, CBS 298.31, CBS 299.31, CBS 333.47, CBS 489.50, CBS 101507, CBS 133.21, CBS 101506, CBS 122031, CBS 122536</i>
<i>Monilinia mespili</i>	<i>CBS 269.30, CBS 139.23</i>
<i>Monilinia padi</i>	<i>CBS 323.33</i>
<i>Monilinia seaveri</i>	<i>CBS 170.24</i>
<i>Mycosphaerella acaciigena</i>	CBS 112515
<i>Mycosphaerella endophytica</i>	CBS 114662
<i>Mycosphaerella heimii</i>	CBS 110682
<i>Mycosphaerella heimioides</i>	CBS 111190
<i>Mycosphaerella marksii</i>	CBS 110981
<i>Mycosphaerella parkii</i>	CBS 115608
<i>Passalora eucalypti</i>	CBS 111318
<i>Penidiella tasmaniensis</i>	CBS 114556
<i>Penidiella kurandae</i>	CBS 121715
<i>Phaeophleospora eugeniae</i>	CPC 15143
<i>Phaeophleospora eugeniicola</i>	CPC 2557
<i>Phaeophleospora stonei</i>	CPC 13330
<i>Phaeothecoidea intermedia</i>	CPC 13711
<i>Phaeothecoidea minutispora</i>	CPC 13710
<i>Pseudocercospora crousii</i>	CBS 119487
<i>Pseudocercospora humuli</i>	CPC 11315

<i>Pseudocercospora pseudoeucalyptorum</i>	CPC 12406
<i>Pseudocercospora tereticornis</i>	CPC 12960
<i>Pseudocercospora vitis</i>	CPC 11595
<i>Puccinia graminis</i>	>2 isolates
<i>Puccinia horiana</i>	>2 isolates
<i>Puccinia striiformis</i>	>2 isolates
<i>Ramichloridium apiculatum</i>	CBS 400.76
<i>Ramichloridium apiculatum</i>	CBS 156.59
<i>Ramularia endophylla</i> (teleomorph: <i>Mycosphaerella punctiformis</i> )	CBS 113265
<i>Ramularia pratensis</i> var. <i>pratensis</i>	CPC 11294
<i>Ramulispora sorghi</i>	CBS 110578
<i>Readeriella callista</i>	CPC 13615
<i>Readeriella mirabilis</i>	CPC 13611
<i>Schizothyrium pomi</i>	CBS 486.50
<i>Septoria apiicola</i>	CBS 400.54
<i>Septoria convolvuli</i>	CBS 102325
<i>Septoria cucubali</i>	CBS 102368
<i>Sonderhenia eucalypticola</i>	CPC 11252
<i>Teratosphaeria suberosa</i>	CPC 13093
<i>Teratosphaeria consideniana</i>	CPC 13032
<i>Teratosphaeria cryptica</i>	CPC 13839
<i>Teratosphaeria destructans</i>	CBS 111370
<i>Teratosphaeria eucalypti</i>	CPC 12552
<i>Teratosphaeria fibrillosa</i>	CPC 13960
<i>Teratosphaeria mexicana</i>	CBS 110502
<i>Teratosphaeria molleriana</i>	CPC 12232
<i>Teratosphaeria nubilosa</i>	CPC 13844
<i>Teratosphaeria protea-arboreae</i>	CPC 14963
<i>Teratosphaeria pseudosuberosa</i>	CPC 12085
<i>Teratosphaeria suttonii</i>	CPC 12218
<i>Zasmidium anthuriicola</i>	CBS 118742
<i>Zasmidium citri</i>	CPC 13467
<i>Zasmidium nabiacense</i>	CPC 12748

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