**General information**

**Important missing data and absence of data are not the same thing.**

**Missing means that the information is unavailable and denoted by #N/A**

**For many features, the absence of one feature (no oospores) means that another feature (oospore wall) is not possible, this is denoted by NA, but there could be a better way to code this – for example the code S for sterile could be applied across all features for oospores**

**Species name**

Designated but undescribed species represented by ‘, recognised hybrids have an x before the species name.

**Phylogenetic clade**

1-11 (plus X for two species have not been assigned to a clade) – this could just be coded 12

**Phylogenetic sub-clade**

Most clades have well resolved sub-clades, some have been documented previously, some I have created because now there are additional species not in previous studies, where in previous study I have used the same letter

**Date**

Date of description, if a species was a variety or designated before described, the date given is the date of description, not the date it was recognised

**Sporangia Features**

**Papillate**

P=papillate

NP=non papillate

SP=semi papillate

**Proliferation**

External or lateral proliferation occurs when new secondary sporangia develop from the sporangiophore below primary sporangia

Internal proliferation occurs when secondary sporangia develop either inside primary sporangia (internal) or on a new sporangiophore that extends through the exit pore (extended)

P=proliferation

NP=no proliferation

**Sporangiophore form**

This is somewhat dependent on the type of proliferation, if no proliferation then often unbranched

CLS=close sympodium

CS=compound sympodial

UN=unbranched

SS=simple sympodial

DM=Downy mildew shape

IB=irregularly branched

**Caduceus**

The sporangiophores of caduceus sporangia break theoretically enabling the sporangia rather than zoospores to be dispersed. The part of the sporangiophore left attached to the sporangia is called the pedicel. This is seen as a common feature among aerial Phytophthora species.

C=Caduceus,

NC=non caduceus

**Pedicel length**

S=short (<5 um)

M=medium (5-20 um)

L=long (>20 um)

NA not caduceus therefore no pedicel

**Chlamydospores**

CH=chlamydospores present (even if rare)

NCH= no chlamydospores reported

**Hyphal swellings**

HS=Hyphal swellings (any shape)

NHS=no hyphal swellings

**Oospore Features**

**Oospores**

O=oospore formed

NO=no oospores formed

**Reproductive strategy**

S=sterile (in cluture)

HO=homothallic

HE=heterothallic

**Oogonial wall**

S=smooth

O=ornamented

SW=wavy wall

**Tapering base**

TB=tapering base

NTB=no tapering base

**Antheridial attachment**

P=paragynous

A=amphigynous

B=both amphigynous and paragynous

**Space between oospore and oogonial wall**

P=plerotic (no space)

A=aplerotic

SA=slighty aplerotic

B=both plerotic and aplerotic

**Oospore wall thickness**

Average wall thickness in uM

**Oospore wall index**

Proportion of the oospore volume taken up by the wall, the thicker the wall the higher the index. This is thought to be indication of greater resistance to desiccation

**Oospore wall index category**

L=<0.30

M=0.30-0.49

H=>0.50

**Temperature Features**

**Growth rate at optimal**

Growth rate in mm/day at optimal temperature

**Growth rate at optimal category**

S=slow (<5 mm/day)

M=medium (5-10)

F=fast (>10 mm/day)

**Temperature minimum**

Minimum temperature for growth

**Temperature optimum**

Optimal temperature for growth – this is often given as a range in that case we took the middle of the range. We did have a column of optimal range where optimal is >90% maximum growth, but this is missing for too many and has been excluded

**Temperature maximum**

Maximum temperature for growth. This is not the lethal temperature but the temperature where growth is still recorded

**Temperature profile**

This was determined based upon the optimal temperature. We did consider also setting limits within this for how low or high they could grow at, but felt that not all people had recorded this information

L=optimum below 22.5

M=optimum between 22.5 and 27.5

H=optimum above 27.5

**Temperature range**

This is the recorded range for growth and surprisingly varies a lot, a wide range could be indicative of potential adaptation in many environments

**Temperature range category**

L=narrow (range below 20)

M=moderate (range between 21 and 27)

W=wide (range above 27)