

BACTERIAL WILT

Causal agent: *Ralstonia solanacearum* (Syn. *Pseudomonas solanacearum*, *Burkholderia solanacearum*)

Relative Importance: Infection by *R. solanacearum* results in the rot of roots and the subsequent death of infected trees. Especially young trees less than one-year-old are susceptible, but mortality has been reported on trees of up to two years in age.

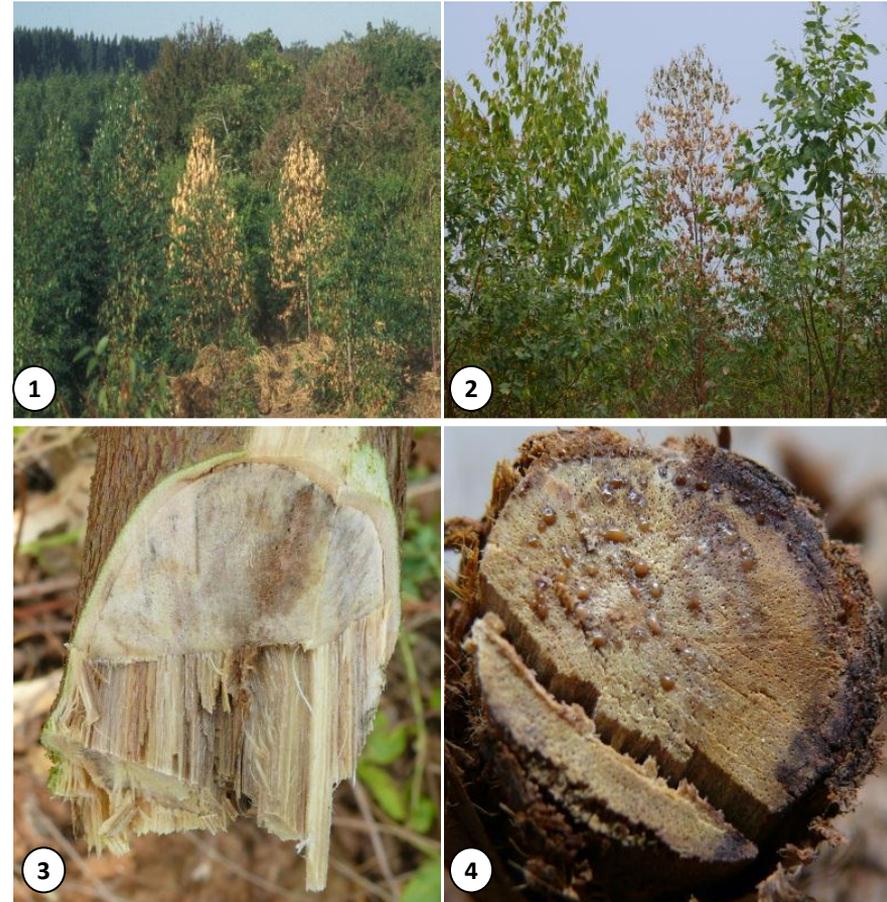
Geographic distribution: China, Australia, Brazil, Republic of Congo (Brazzaville), South Africa, Uganda.

Species range: Numerous *Eucalyptus* species including *E. grandis*, *E. pellita*, *E. urophylla*, GC and GU hybrids.

Symptoms and signs: General chlorosis, wilt and death of trees (Fig. 1, 2). The first symptoms usually become visible with the death of single branches in the lower canopy of trees. The roots of trees are rotten and bark in the region of the root collars may be cracked. The xylem of affected trees show discolouration in the form of brown to black "streaks" (Fig. 3). A creamy to white "bacterial ooze" often appears on the cut surfaces of infected trees (Fig. 4). This bacterial ooze can also be seen by placing the cut end of a branch, root or stem into a glass of clear water and waiting for a few minutes. Trees affected by this disease are often found in patches within a stand.

Biology: *R. solanacearum* is a soil borne, motile bacterium. It has been classified into different biovars and races. In Australia, China, Congo and South Africa Biovar 3 occurs, while in Brazil biovar 1 has been reported. Infection occurs through wounds in the roots and root collar area of trees. It has a wide host range and may survive in the soil on plant roots and debris for extended periods of time. Weed management to remove alternative hosts is an important practise in disease management.

Management: *R. solanacearum* may be spread by infected soil and plant material. Localised spread within a compartment is facilitated by water movement (water logging) and the movement of animals, humans and silvicultural equipment.



(1) and (2) Tree death caused by *R. solanacearum* infection, (3) Brown to blue lines in the wood of tree infected by *R. solanacearum*, (4) bacteria oozing from cut end of tree infected by *R. solanacearum*.