

Bacterial Wilt *Ralstonia*

Bacterial wilt has been found for many years on food crops like potatoes and tomatoes and more recently on ornamentals including geranium, mandevilla and osteospermum. In 2015, *Ralstonia solanacearum* biovar 3 race 1 (not the select agent and quarantined pest which is race 2) was found infecting cut rose crops in the Netherlands. It was found in 15 rose companies including propagators and resulted in legal procedures in the EU. It has not been reported in the United States yet.

SYMPTOMS

Symptoms on roses are not very different than those on other plants. They include: stunting, leaf wilting and (chlorosis) yellowing, and eventually plant death (photos courtesy D.J. Norman). Examinations of the lower stem tissues by cutting across it lengthwise show vascular browning which is typical of many wilt disease regardless of their cause (fungal or bacterial). Lab diagnosis is absolutely critical since these are more or less the same symptoms as caused by Verticillium wilt. This rose strain (and also that found in osteospermum) can cause infections with no symptoms at all.

CONTROL

Cultural control would be based on limiting (or even eliminating) the chance of infected materials entering your facility. Be sure you know where any propagative material originates. Keep new cultivars separate from your primary

production for as long as possible. Scout everything that comes into your facility and check for any signs of yellowing or wilting weekly.



As with other diseases, tools must be disinfested

between plants to minimize spread of this bacterium and other pathogens. Heat can be used to kill the

bacterium on tools but is not usually practical in nurseries. Exposure to disinfestants including bleach and peroxide were effective when the right rate was used (10 min exposure).

Dr. D. J. Norman (Univ. of Florida) found that many bactericides slowed disease development but were unable to protect the plants from infection. When applied as a drench, potassium salts of phosphorous acid (K-Phite) were found to be effective in protecting plants from infection through the soil. Phosphorous acid apparently inhibits growth of the bacterium in the soil/potting medium. Other phosphorous-containing products like phosphorus pentoxide (P₂O₅) and phosphoric acid (H₃PO₄), were not able to protect plants from bacterial wilt infection.