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## W289-A IPM QuickFacts Series: Fire Blight

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# Fire Blight

## *Erwinia amylovora*

### Host Plants

- Apple
- Cotoneaster
- Crabapple
- Hawthorn
- Mountain ash
- Pear
- Plum
- Pyracantha
- Quince
- Rose
- Serviceberry
- Spirea

### Introduction

Fire blight is a disease caused by the bacterium *Erwinia amylovora*. Fire blight can be a devastating disease in the landscape, nursery and fruit orchard.

### Pathogen and Disease Cycle

The bacteria overwinter in trunk and branch cankers formed from the previous season. Bacteria multiply in the spring when temperatures are above 65 degrees F and the weather is rainy or humid. The disease spreads by wind, rain, pruners, insects and other mechanical means. Entry into the plant is typically via natural openings in the flowers as well as through wounds and injuries on trees. Hail can greatly increase fire blight infection. Succulent tissue such as suckers can be penetrated by the bacteria and become infected.

### Monitoring

The first symptoms of this disease generally occur in late May when spring temperatures are warm and rainy periods have occurred. Look for a water-soaked appearance on leaves, followed by sudden wilting, shriveling and blackening of blossoms, tender shoots and young fruits. Use MARYBLYT or Cougarblight software to monitor weather conditions conducive to infection and to predict the risk of infection.





# Symptoms



Foliage first appears water-soaked, then wilts, blackens and remains attached to the affected branch. The most characteristic symptom is a brownish black “shepherd’s crook” appearance of the tips of twigs and foliage (below). Infected flowers turn black and die. Cankers appear on branches and the trunk (left).



## Integrated Pest Management

### CULTURAL CONTROL

Remove severely infected plants. Space and prune plants to promote air movement. Cankers on twigs and branches should be pruned during winter; the cut should be made through healthy wood 6 to 8 inches below the point of visible infection. Pruning tools should be sterilized with a disinfectant frequently to prevent spreading the bacterium (see Table 7 in Adkins et al. below). Trees should not be irrigated overhead during bloom. Avoid excess nitrogen fertilization and heavy pruning, which promotes succulent growth that is more susceptible to infection. Remove water sprouts that form on susceptible hosts, as they are especially susceptible to the pathogen.

### CHEMICAL CONTROL

Please refer to [http://eppserver.ag.utk.edu/redbook/sections/trees\\_flowers.htm](http://eppserver.ag.utk.edu/redbook/sections/trees_flowers.htm) for the most up-to-date recommendations.

## Resources

Photo credits: Amy Fulcher, University of Tennessee

Adkins, C., G. Armel, M. Chappell, J.H. Chong, S. Frank, A. Fulcher, F. Hale, K. Ivors, W. Klingeman III, A. LeBude, J. Neal, A. Senesac, S. White, and A. Windham. 2010. Pest management strategic plan for container and field-produced nursery crops in GA, KY, NC, SC, TN. A. Fulcher, ed.

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Bost, S. and A. Windham. 2002. Fire blight. University of Tennessee Extension publication SP277-R.

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