

Bacterial diseases

Crown gall

Pathogen: *Agrobacterium tumefaciens*.

Hosts include: *Achillea*, *Anemone*, *Artemisia*, *Aster*, *Campanula*, *Coreopsis*, *Delphinium*, *Dianthus*, *Gaillardia*, *Geranium*, *Gypsophilia*, *Helianthus*, *Heuchera*, *Lathyrus*, *Nepeta*, *Oenothera*, *Penstemon*, *Phlox*, *Platycodon*, *Primula*, *Rudbeckia*, *Salvia*, *Scabiosa*, *Sedum* and *Stachys*.



A large gall on a dead stem of *Achillea*.

Symptoms: Galls form on stems and roots, restricting shoot or root growth.

Spread: This bacterium persists in soil; use of infested field soil can spread the disease. Moving infested plants also spreads disease. Cuttings taken from infected plants are likely to become infected.

Crown gall – *continued*

Management: Plants with galls should be removed and destroyed: they cannot be successfully treated. Infection usually occurs through wounds. Good sanitation is important during vegetative propagation. Effective biological control products are available and can be used to protect especially susceptible plants.