



# Forest Health Note

## Douglas-fir Twig Weevil (*Cylindrocopturus fumissi*)

### Hosts:

Douglas-fir and true firs.

### Importance:

The Douglas-fir twig weevil is a pest of young open-grown Douglas-fir weakened by environmental stress or improper planting. In Christmas trees plantations, infestations can occur on the stubs of sheared twigs. Smaller Douglas-fir, such as 2-1 seedlings, are occasionally killed by twig weevil attack. Damage to the upper bole of sapling size trees can result in forking and poor form. Noble fir Christmas trees planted in the Willamette Valley are occasionally infested by this weevil.

**Damage to the upper bole of sapling size trees can result in forking and poor form.**

### Look For:

#### May – June

Twig weevil damage appears as a scattering of dying small branches on open grown trees or those at the edge of a stand (Figure 1). On sapling size trees weevil damage is concentrated on branches with two-year-old growth.



Figure 1: Twig weevil infested branches on a Douglas-fir located at the edge of a stand.

Damage to seedlings and young trees more frequently occurs on the main stem (Figure 2). Twig weevil infestations resemble that caused by winter damage, but weevil presence can be confirmed by splitting the dead stem tissue with a knife and locating larvae or an L-shaped pupation chamber in the xylem and pith (Figure 3).

#### June – August

Adult twig weevils are found on trees throughout the year, but are most

abundant from June through August (Figure 4). The weevil's small size, cryptic coloration, and habit of dropping off foliage when disturbed makes locating adults on branches difficult. Twig weevils can be sampled by shaking Douglas-fir foliage over a white drop cloth or insect net.



Figure 2: Typical terminal dieback associated with twig weevil damage to young trees.

#### August – June

Immature stages of the twig weevil are found in the tree's tissue from August to June of the following year. The legless white larvae can be observed by cutting open infested tree tissues.



Figure 3: L-shaped pupation chambers (approximately 6mm in length) are found by splitting damaged stems.



Figure 4: Douglas-fir twig weevils are 3mm in length and have dark brown bodies with white mottling.

### ***Infestation Characteristics:***

The twig weevil has a single generation each year and is normally present in very low numbers. Female weevils lay eggs on susceptible trees from mid-August to September. The appearance of stem damage from larval feeding varies with the degree of infestation. Lightly infested trees have scattered areas of necrotic bark. These necrotic patches have



Figure 5: Heavily infested trees are characterized by swellings in the vicinity of larval wounds.

a reddish-brown color that contrasts with healthy stem tissue. Heavily infested trees often have a swollen appearance in the vicinity of larval wounds (Figure 5). Weevil numbers increase dramatically during drought years on sites where trees suffer from prolonged periods of stress. Twig weevils occasionally infest recently planted 2-1 Douglas-fir seedlings in western Oregon. Infested seedlings are usually found to have been J-rooted during planting or have very poor root-to-shoot ratios.

Noble fir Christmas trees can develop Douglas-fir twig weevil infestations when growing on heavy waterlogged soils. The symptoms of infestation in noble fir include die-back of lateral branches and resin exudation on the outer bark (Figure 6).

### ***Control:***

#### *Natural*

Host resistance and high levels of larval parasites appear to be important natural factors reducing twig weevil

populations. In most cases, one-to-two years are required before natural control factors cause twig weevil populations to subside.



Figure 6: Larval feeding on noble fir stems is often associated with resin flow on the bark.

#### *Cultural*

Clipping and destroying infested branches before June, while immature weevil stages are still present, will aid in reducing weevil numbers.

#### *Insecticides*

No insecticide is registered for controlling Douglas-fir twig weevil on forestland or in ornamental plantings.

**Remember, when using pesticides, always read and follow the label.**

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