Stem Damages

Fir and Spruce Canker

Leucostoma kunzei (Fr.) Munk [Anamorph: Leucocytospora kunzei (Sacc.) Z. Urba]
Valsa abietis Fr. [Anamorph: Cytospora abietis Sacc.]

Hosts— Valsa abietis: True firs and Douglas-fir are most often attacked although western hemlock and western redcedar are occasional hosts. Leucostoma kunzei: Spruce and Douglas-fir.

Distribution— Range of hosts.

Damage— Branch and stem cankers are produced. Branches are quickly girdled and killed as are tops of seedlings. Stem cankers occasionally girdle and kill saplings, seldom larger trees.

Identification— Flagged branches and dead tops of seedlings and saplings are usually the most obvious symptoms (figs. 44, 46 and 47). Sunken bark with dead cambium underlying is the result of the canker. If the edge of the canker is cut with a knife, an abrupt margin is observed between the green, live bark and the brown, dead bark (figs. 44 and 46). Slight resin flow is often present at the canker margin and the bark within the cankered area often appears discolored (fig. 45). Sporulation is seldom observed. Orange tendrils of asexual spores exude from microscopic fruiting bodies (pycnidia) embedded in the the bark at canker margins. Even less common are the sexual fruiting bodies (perithecia) which form at canker margins.

Similar damages— Hail can result in wounds similar to small cankers but usually do not girdle and kill branches. Hail wounds can become infected by Leucostoma or Valsa. Animals chew bark from branches and stems. Deer and elk rubbing, and bear clawing are also confused with cankers but leave tooth marks, scratches, or strips of loose bark.

References— See full guide.

Figure 44. Fir and spruce cankers are easily diagnosed by cutting away the bark. An abrupt margin is seen between dead and live cambium.

Figure 45. Valsa and Leucostoma occasionally cause cankers on large stems.
Stem Damages

Figure 46. Canker progressing from a branch into the stem.

Figure 47. Fir and spruce cankers are usually on branches, causing flagging.