
Heterobasidion (Annosum) Identification Guide for Minnesota Forest Managers

By the Minnesota DNR Forest Health Unit



Photograph by Linda Williams, Wisconsin DNR

Are you in a pocket of dead pines adjacent to dying pines? Has the stand been thinned before? If so, look for conks of Heterobasidion.



Photograph by Russ Aszmann, Taylor County Forestry and Recreation

Look for conks on old stumps in the middle of the infection center. Conks are at or slightly under the duff layer. Young conks look like popcorn.



Look for conks on pine snags. Look for conks on dying pine and fir regeneration. Look right at or under the duff layer. Young conks look like popcorn.



Larger conks have a white margin. Pores on the underside look small and round or angular. Conks are leathery; not woody. Conks will grow around needles and twigs.

If you think you have found Heterobasidion, please contact your [local DNR forestry office](#).

Heterobasidion (Annosum) Look-alikes



Other root maladies can cause progressive mortality in pine plantations. Red pine pocket mortality and Armillaria are the common ones.



Like Heterobasidion, Armillaria will kill regeneration. Armillaria grows diagnostic white fans under root collar and stem bark.



The veiled polypore could be mistaken for the popcorn stage of *Heterobasidion*. It usually is present well above the duff layer.



Fungi other than *Heterobasidion* can grow close to the ground line. They are typically woodier and consistently conk-shaped. Most can grow well above the duff layer.



Pitch tubes made by red turpentine beetles could be mistaken for the popcorn stage of *Heterobasidion*. They are gummy or crumbly in texture. You will find them at and above the duff layer.