

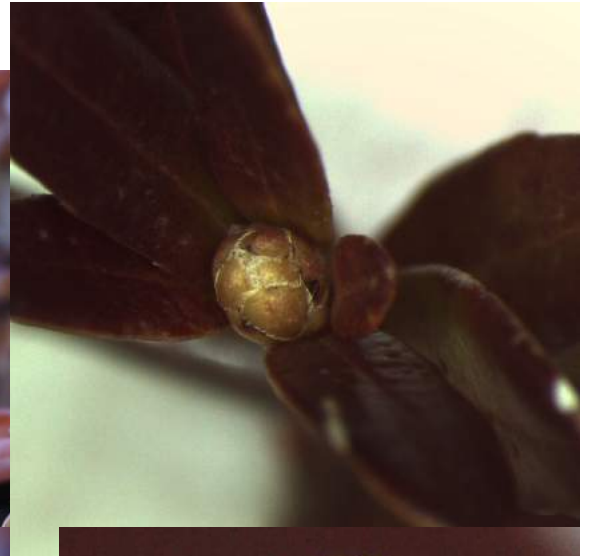
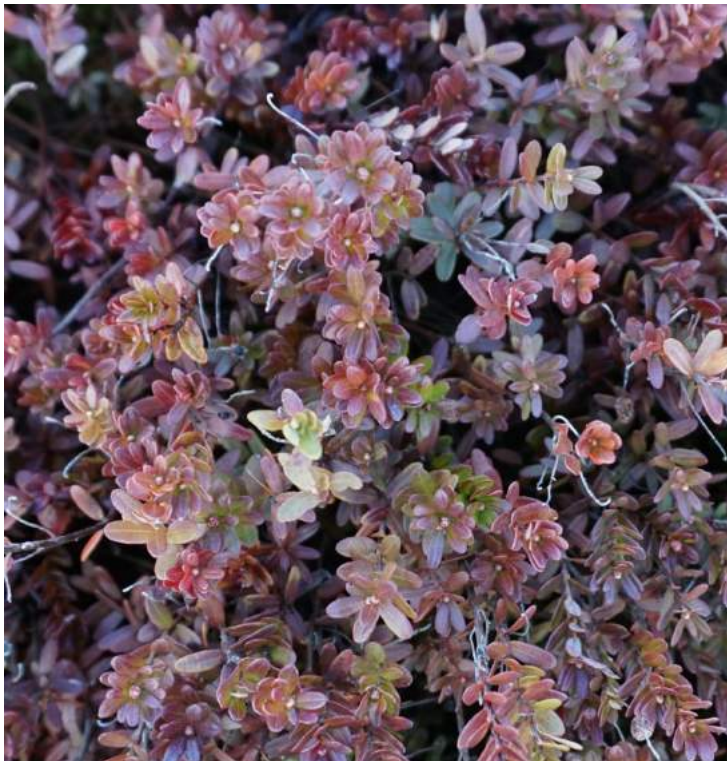
May 1, 2018

- ALWAYS check the tolerance at your bog [tolerance photos for all stages are shown at the end of this file].
- At Rosebrook Bog, Ben Lear are at **early** Bud Break (Cabbage Head Stage); Stevens, Early Black and Howes are at the Bud Swell Stage. At State Bog, stages for those varieties were similar. New cultivars were similar in appearance to Ben Lear.
- At the Bud Swell Stage, buds have begun to expand/enlarge and bud scales have begun to loosen or separate. At early Bud Break/Cabbage Head, the bud is visibly rounder and larger and is approaching 2 mm in diameter; it resembles a cabbage.
- Bud Swell Stage tolerances are 22°F for Early Black and Howes; and 25°F for Stevens. Cabbage Head tolerance for Ben Lear and new hybrids is 27°F.
- On-bog photos by Erika Saalau Rojas; close-ups by Carolyn DeMoranville.
- Next check is scheduled for May 4<sup>th</sup>.

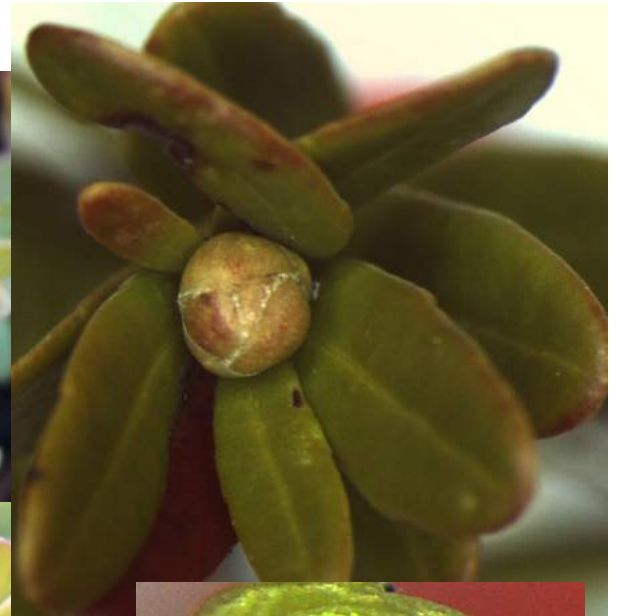
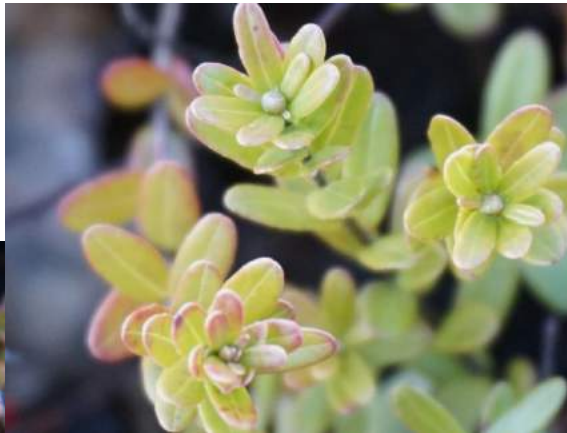
**Ben Lear**  
**27°F**



**Stevens**  
**25°F**

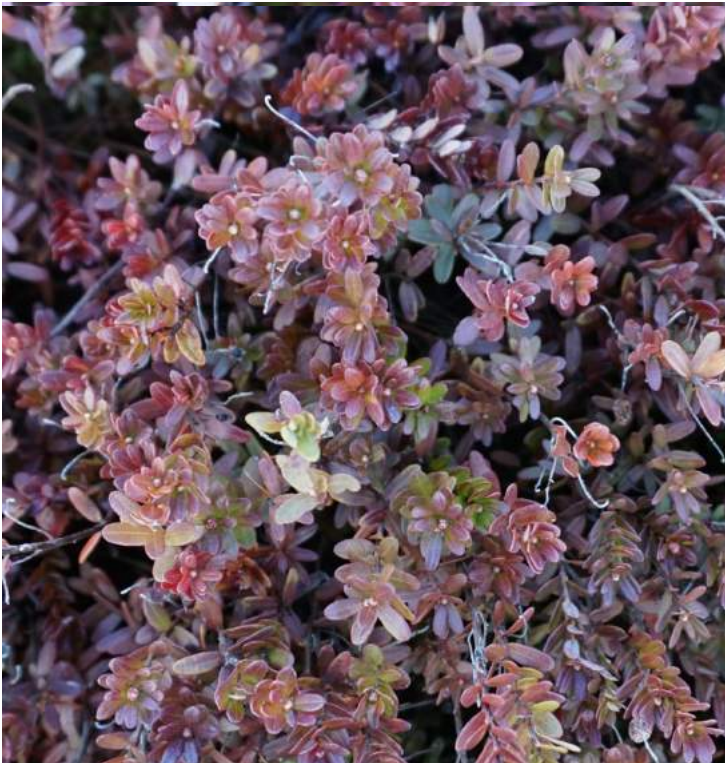


**Early Black**  
**22°F**



**Howes**

**22°F**



Additional bud photos May 1, 2018 All from State Bog

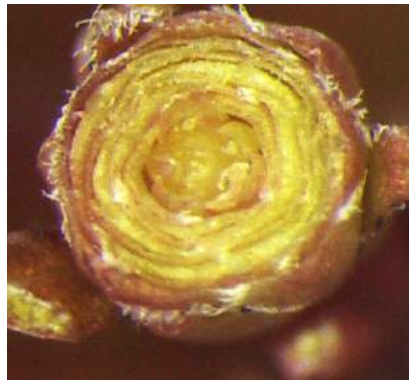
Early Black 22°F (bud swell)



Howes 22°F (bud swell)



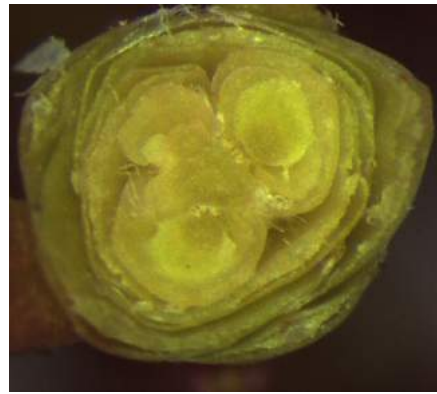
Stevens 25°F (bud swell)



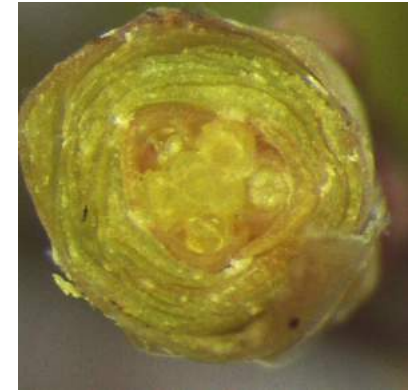
Bud scales on Early Black, Howes, and Stevens buds are loosening; buds have a 'lumpy' appearance but are small.

Additional bud photos from State Bog May 1, 2018 All are at **early** Bud Break (Cabbage Head)

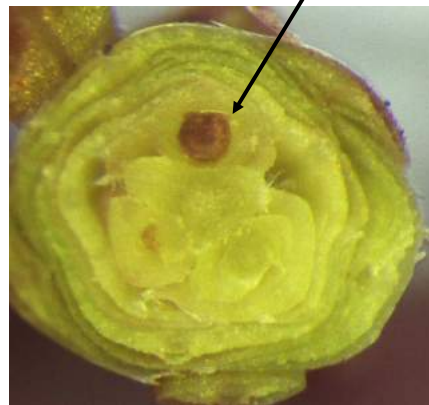
Ben Lear 27°F



Demoranville 27°F



Crimson Queen 27°F

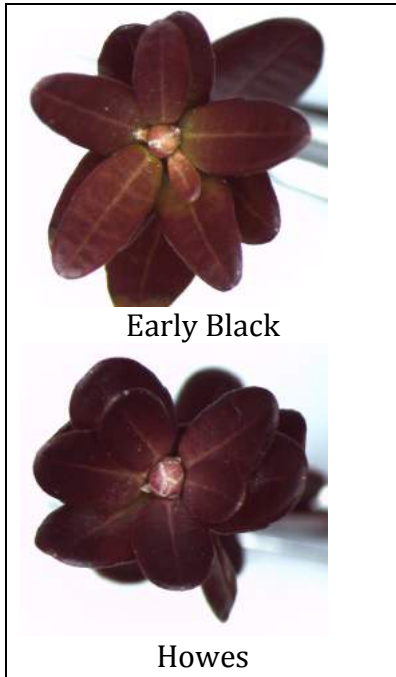


Minor damage

Mullica Queen 27°F



Spring Frost Tolerances - Early Black and Howes



Spring Dormant 18°F



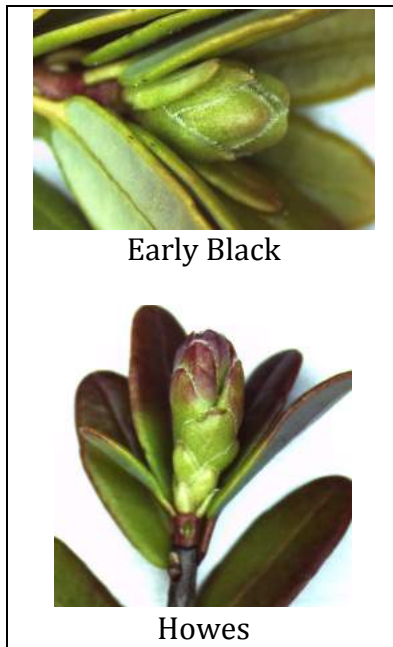
White Bud Stage 20°F



Bud Swell Stage 22°F



Cabbage Head Stage 25°F



Bud Elongation 27°F



29.5°F



Spring Frost Tolerances - Ben Lear and Stevens

Tolerances for large-budded hybrids are assumed to be similar to these. Crimson Queen, Mullica Queen, and Demoranville have been observed to develop in a similar timeline as Ben Lear.

