

Frost tolerances #6 - Spring 2016
May 3, 2016

On May 3, buds from the following cultivars were examined at Rosebrook Bog in Wareham: Early Black (EB), Howes (H), Ben Lear (BL), and Stevens (ST). In addition, uprights from BL, ST, Mullica Queen (MQ), Crimson Queen (CQ), Demoranville (DE), and Grygleski #1 (GH) were observed at State Bog on May 2nd. Based on internal and external appearance, all buds are at least at **cabbage head** stage while many have reached **elongation** stage.

At the **cabbage head** stage, tolerance for EB and H is 25°F; tolerance for BL and ST is 27°F. At **elongation** stage, tolerance for EB and H is 27°F; tolerance for BL and ST is 29.5°F. Based on appearance, new hybrids should be assumed to have the same tolerance as BL; this appears to be confirmed by lab experiments this spring in which DE, MQ, and CQ are responding similarly to BL.

Please note that cabbage head stage represents a progression from the bud swell bud stage: now buds that had gotten larger and rounder have expanded further to take on the appearance of small cabbages; there is a lumpy appearance due to opening of the bud scales. When looking down at the bud, the bud completely covers the base and part-way up the surrounding leaves. At elongation stage, the bud begin to push upward - this is easily seen if looking at the upright from a side view. The elongation stage can also be considered 'bud break'.

Note that buds are progressing slowly due to the persistent cold weather. However, based on previous research, once a cultivar reaches the 25°F tolerance, it should be presumed to have moved to the 27°F tolerance after 5-7 days regardless of external appearance; once at 27°F, tolerance advances to 29.5°F in an additional 5-7 days.

ALWAYS CHECK THE TOLERANCE ON YOUR BOGS.



EB cabbage head, 25°F, Rosebrook 5/3



EB early elongation, 27°F, Rosebrook 5/3
Very few buds had reached this stage.



H early cabbage head stage, 25°F,
Rosebrook 5/3 H have advanced very
slowly.



H at Rosebrook 5/3 Shows how slowly
the H are advancing - many still look red
and fairly tight.



BL early elongation stage, 29.5°F, State
Bog 5/2



BL early elongation stage, 29.5°F,
Rosebrook 5/3



ST early elongation stage, 29.5°F, State Bog 5/2 Note that this stage was not yet found at Rosebrook.



CQ early elongation stage, 29.5°F, State Bog 5/2



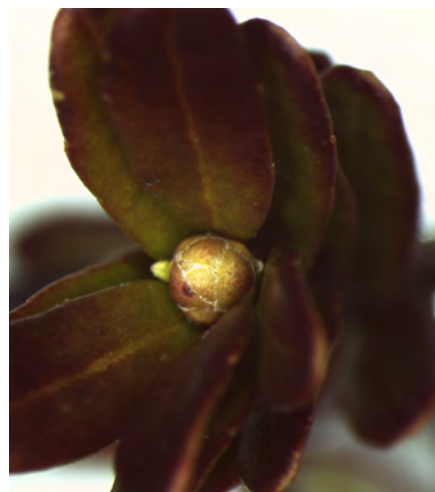
DE early elongation stage, 29.5°F, State Bog 5/2



MQ elongation stage, 29.5°F, State Bog 5/2



GH cabbage head stage, 27°F, State Bog 5/2



GH late cabbage head stage, 27°F, State Bog 5/2