

Frost tolerances #4 - Spring 2016
April 22, 2016

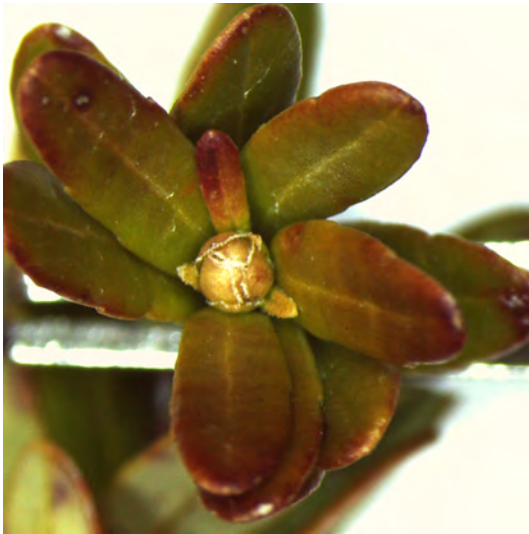
On April 22, buds from the following cultivars were examined at Rosebrook Bog in Wareham and at State Bog: Early Black (EB), Howes (H), Ben Lear (BL), and Stevens (ST). In addition, uprights from Mullica Queen (MQ), Crimson Queen (CQ), Demoranville (DE), and Grygleski #1 (GH) were observed at State Bog. Based on internal and external appearance, some buds of all cultivars have moved past the **white bud** stage to the **bud swell** stage.

At the **bud swell** stage, tolerance for EB and H is 22°F; tolerance for BL and ST is 25°F. Based on appearance, new hybrids should be assumed to have the same tolerance as BL.

Please note that the bud swell stage represents a progression from the white bud stage in which the buds appear more noticeably round and on close examination, show some loosening or parting of the bud scales (the leaf-like structures that form the bud surface). When looking down at the bud, the bud covers the base of the surrounding leaves. However, the bud has not yet achieved the cabbage-like appearance and size of the cabbage head stage.

Until April 13th, State Bog irrigation was run when temperatures reached 21°F. Since that date our action temperature has been 23°F. Examination of cut buds on April 19 showed no damage in any of the 8 cultivars examined. All buds had lost internal red coloration with the exception of Howes (some red areas remained). See the last page for cut bud photos.

ALWAYS CHECK THE TOLERANCE ON YOUR BOGS.



EB bud swell, 22°F, State Bog 4/22
Note - loose bud scales, round appearance so that base of leaves is hidden.



EB bud swell, 22°F, Rosebrook 4/22



H bud swell stage, 22°F, State Bog
4/22 Appears not quite as advanced
as Rosebrook (right)



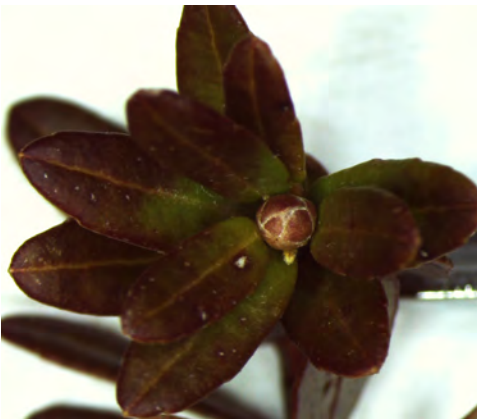
H bud swell stage, 22°F, Rosebrook
4/22



BL early bud swell stage, 25°F, State
Bog 4/22



BL bud swell stage, 25°F, Rosebrook
4/22



ST bud swell, 25°F, State Bog 4/22



ST bud swell, 25°F, Rosebrook 4/22



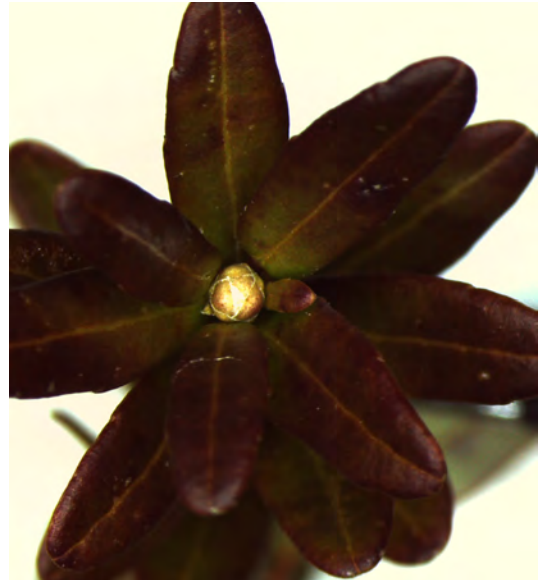
CQ , bud swell, 25°F, State Bog 4/22



MQ , bud swell, 25°F, State Bog 4/22



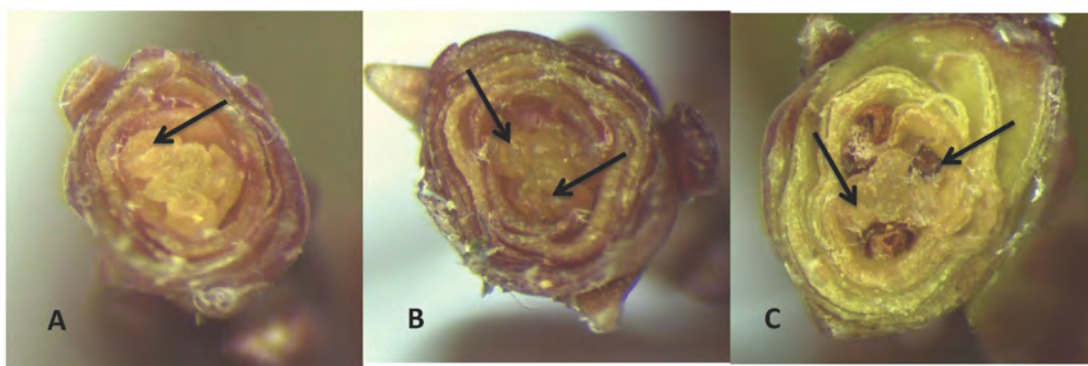
DE , bud swell, 25°F, State Bog 4/22



GH , early bud swell, 25°F, State Bog 4/22



These images were taken at Rosebrook Bog on 4/13, 4/19 and 4/22/16. Note that on 4/22 the buds of Howes and Ben Lear have begun to expand and become rounded - this is the bud swell stage, 22°F for Howes (and Early Black) and 25°F for Ben Lear (and Stevens). The Stevens in the 4/22 image still appear to be at white bud stage (22°F tolerance) but examples of bud swell (25°F tolerance) were seen in the field.



Images of cut buds from late March. Arrows point to flower initials. A = Ben Lear, no damage; B = Mullica Queen, no damage; C = Crimson Queen with 3 damaged flower initials. Note that internal structures of Mullica Queen are dormant red while those of Ben Lear have greened.