

Examining the Interaction of Auxin and the *tassel-less4 (tls4)* Mutant in Maize

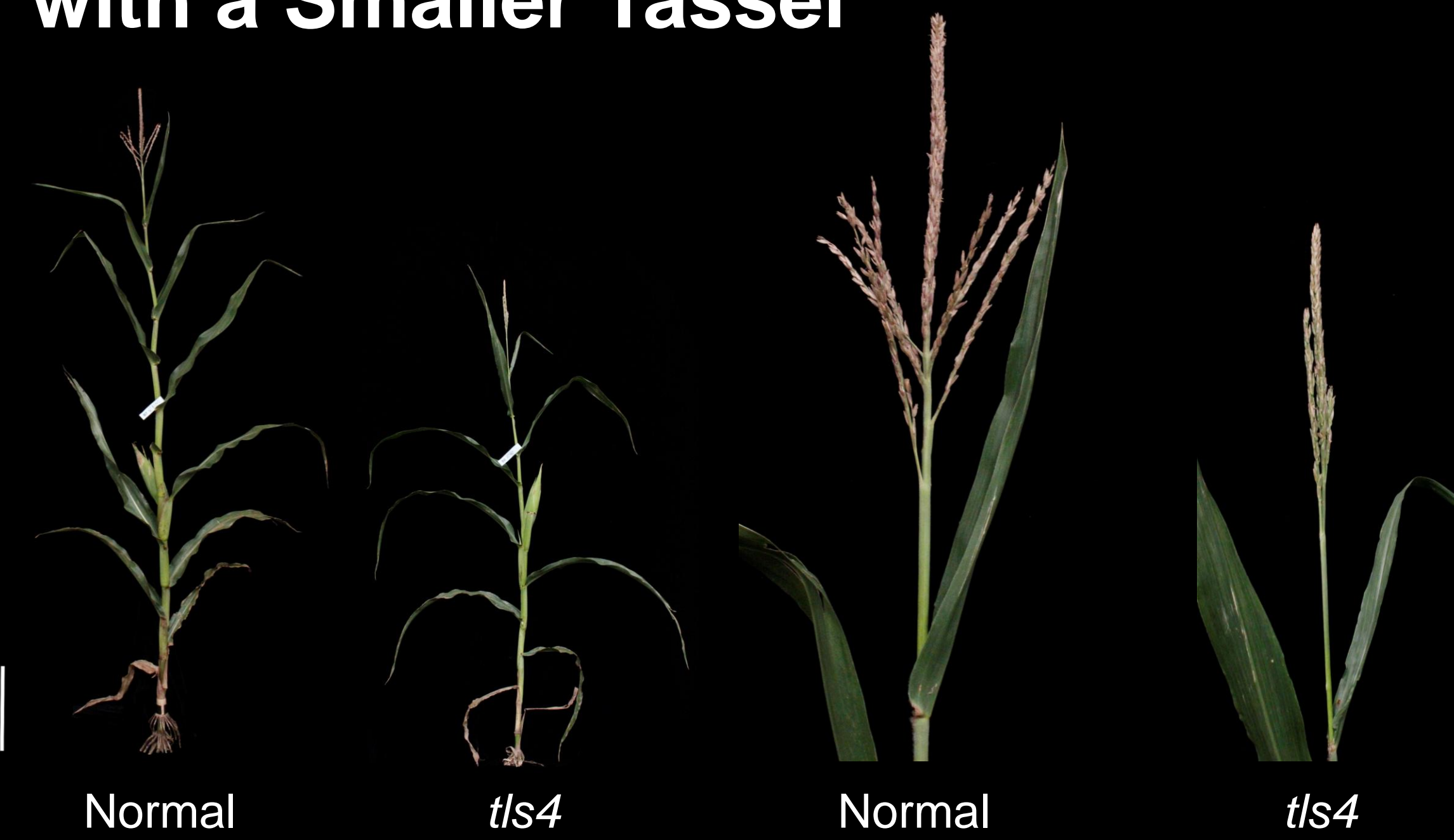


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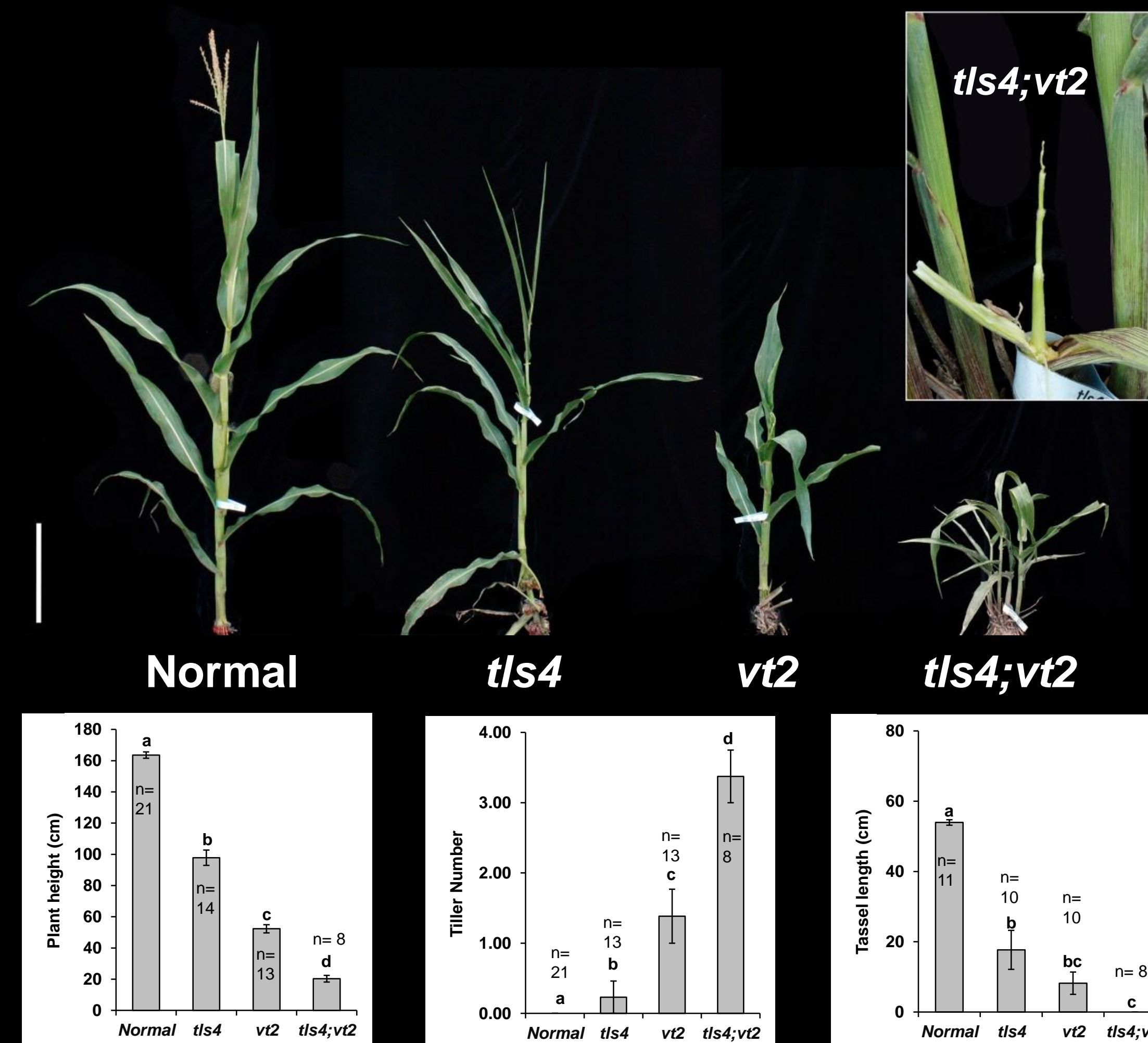


tassel-less4 is a Semi-dwarf Mutant with a Smaller Tassel



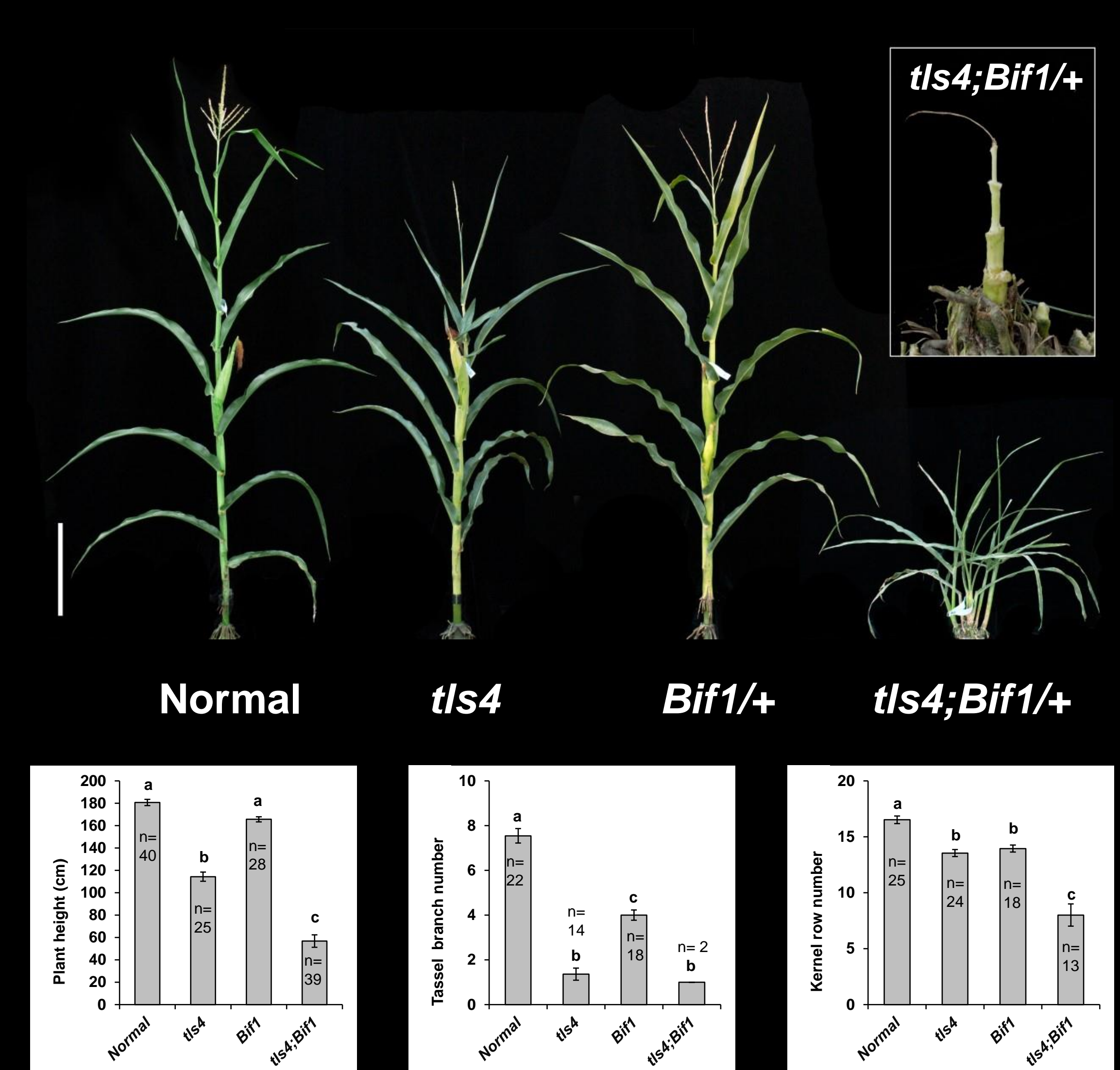
Normal *tls4* Normal *tls4*

tls4;vt2 Double Mutant Analysis



The *tls4;vt2* (*vanishing tassel2*) double mutant exhibits a severe loss of apical dominance and fails to transition from vegetative to reproductive growth.

tls4;Bif1 Double Mutant Analysis



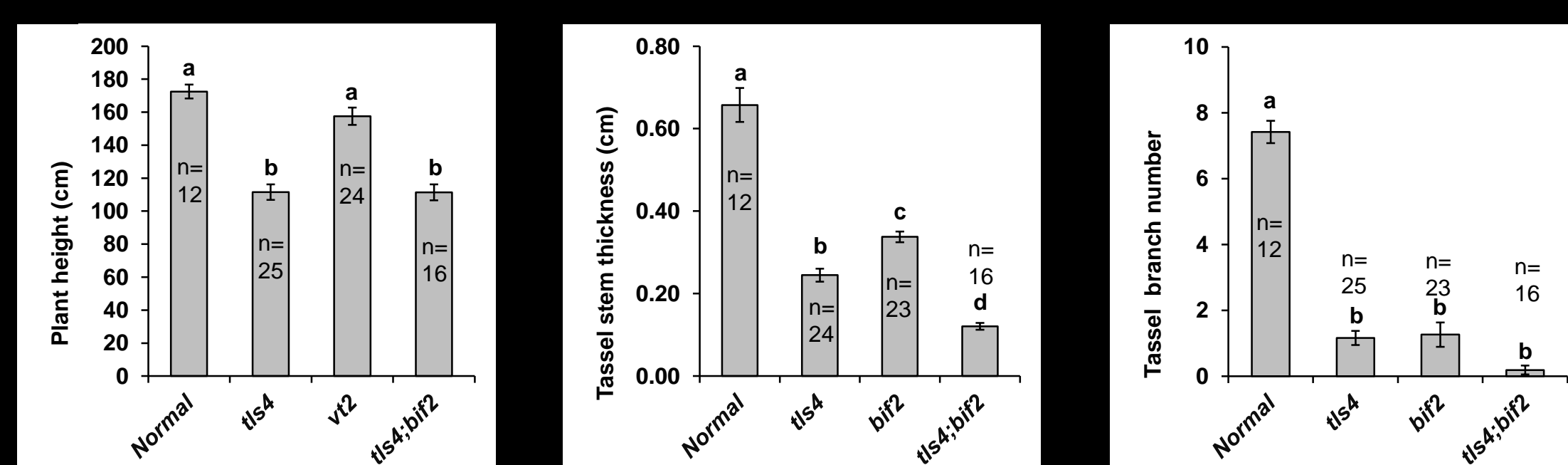
The *tls4;Bif1* (*Barren inflorescence1*) mutant has a severe vegetative phenotype with the double mutant having a bush like appearance. The double mutant's tassel phenotype is similar to *tls4* when it was present. The double mutant's ears have fewer kernel rows as well.

tls4;bif2 Double Mutant Analysis



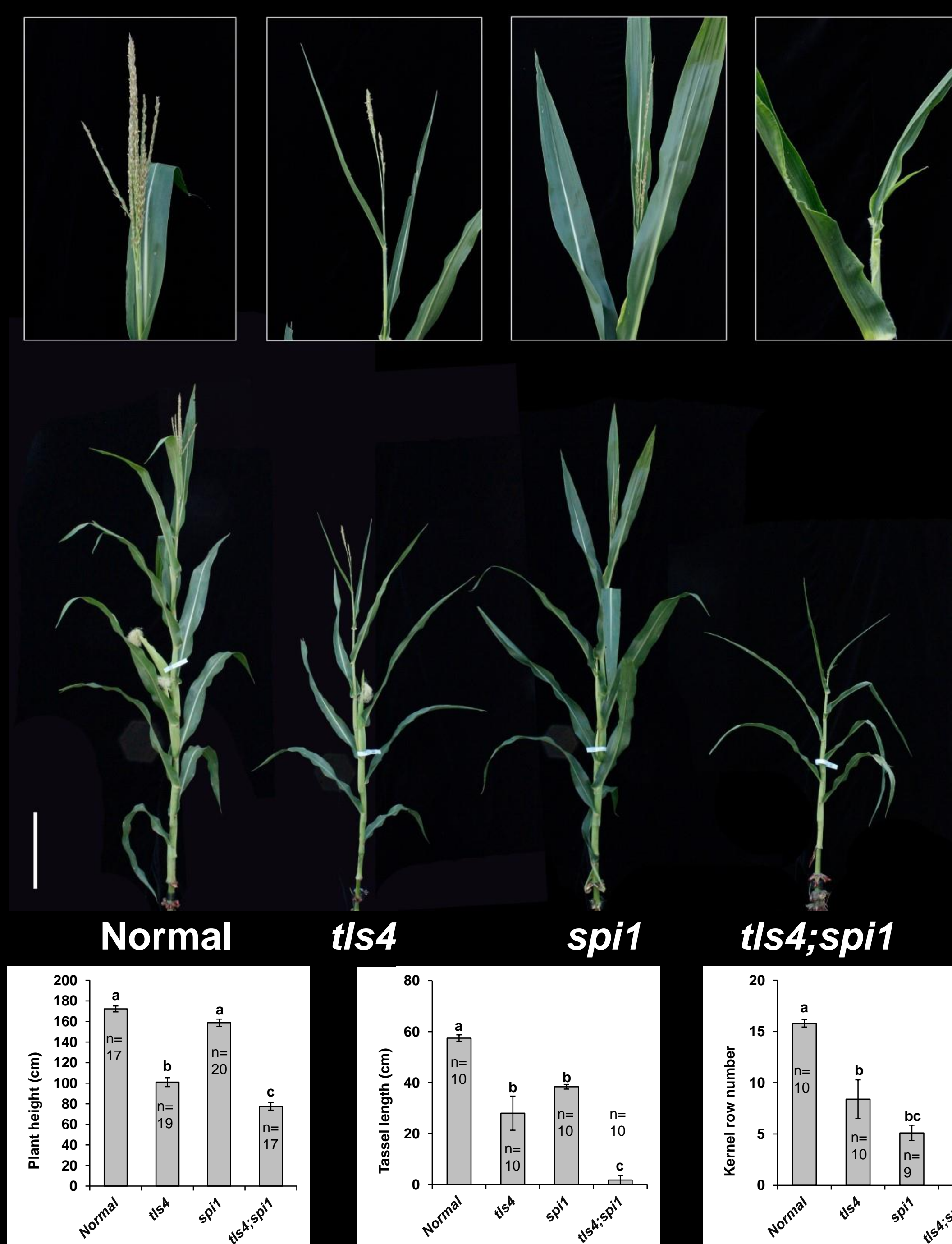
Normal *tls4* *bif2* *tls4;bif2*

Normal *tls4* *bif2* *tls4;bif2*



The *tls4;bif2* (*barren inflorescence2*) double mutant looks like *tls4* vegetatively but has a severe tassel phenotype with the double mutants only producing a whip like stem in the place of the tassel.

tls4;spi1 Double Mutant Analysis



The *tls4;spi1* (*sparse inflorescence1*) double mutant looks like *tls4* vegetatively but is slightly shorter and has drastically shorter tassel or does not produce a tassel at all.

Conclusion and Future Work

- The interactions with multiple auxin mutants including the auxin signaling mutant *Bif1*, the auxin biosynthesis mutants *vt2* and *spi1*, and the auxin transport mutant *bif2* provide compelling evidence that *tls4* is defective in the auxin pathway.
- Future work on this project will include:
 - Causative gene identification
 - RNA expression analysis

Acknowledgements



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