Peer-Review Report

Peer Review of “Relationship Between Seed Coat Color and Cytokinin Concentration in Efficiently Regenerating Leaf Lettuce Shoots: In Vitro Experimental Study”

Hamidreza Soufi

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JMIRx Bio 2026;4:e89399; doi: 10.2196/89399

Keywords: leaf lettuce; shoot regeneration efficiency; 6-benzylaminopurine; seed coat color; CIELAB color scale; flavonoid; BAP

This is the peer-review report for “Relationship Between Seed Coat Color and Cytokinin Concentration in Efficiently Regenerating Leaf Lettuce Shoots: In Vitro Experimental Study.”

Round 1 Review

Reviewer’s Comments on the Manuscript

The manuscript [1] presents a well-structured and novel study exploring the correlation between seed coat color and the optimal concentration of 6-benzylaminopurine (BAP) for shoot regeneration in leaf lettuce cultivars. The research is timely and addresses a significant challenge in plant tissue culture—genotypic variability in regeneration efficiency.

Strengths

The experimental design is solid, involving 6 cultivars with distinct seed coat colors.

The use of the CIELAB color scale adds objectivity to phenotypic assessments.

The identification of seed coat color as a potential morphological marker for shoot regeneration efficiency is innovative and potentially valuable for breeding and transformation programs.

Suggestions for Improvement

Language and clarity: While the scientific content is strong, the manuscript would benefit from careful language editing for grammar and fluency.

Statistical reporting: The statistical significance (eg, *P* values) is noted, but a more detailed description of the statistical models and effect sizes would enhance reproducibility.

Figures and tables: Ensure that all figures and tables referenced (eg, Figure 1, Table S1) are clearly labeled and formatted for clarity. Including a visual summary (graphical abstract) could further enhance impact.

Discussion depth: The discussion of mechanisms linking seed coat pigmentation to shoot regeneration could be expanded, possibly integrating flavonoid biosynthesis and tissue culture responsiveness more.

Conclusion: Consider sharpening the Conclusion to emphasize the practical applications of the findings, especially in the context of lettuce transformation systems.

Overall, this is a meaningful contribution to plant biotechnology literature and warrants publication after minor revisions.

Conflicts of Interest

None declared.

References

1. Kimura M, Yoshizumi T. Relationship between seed coat color and cytokinin concentration in efficiently regenerating leaf lettuce shoots: in vitro experimental study. JMIRx Bio. 2026;4:e70496. [doi: 10.2196/70496]

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