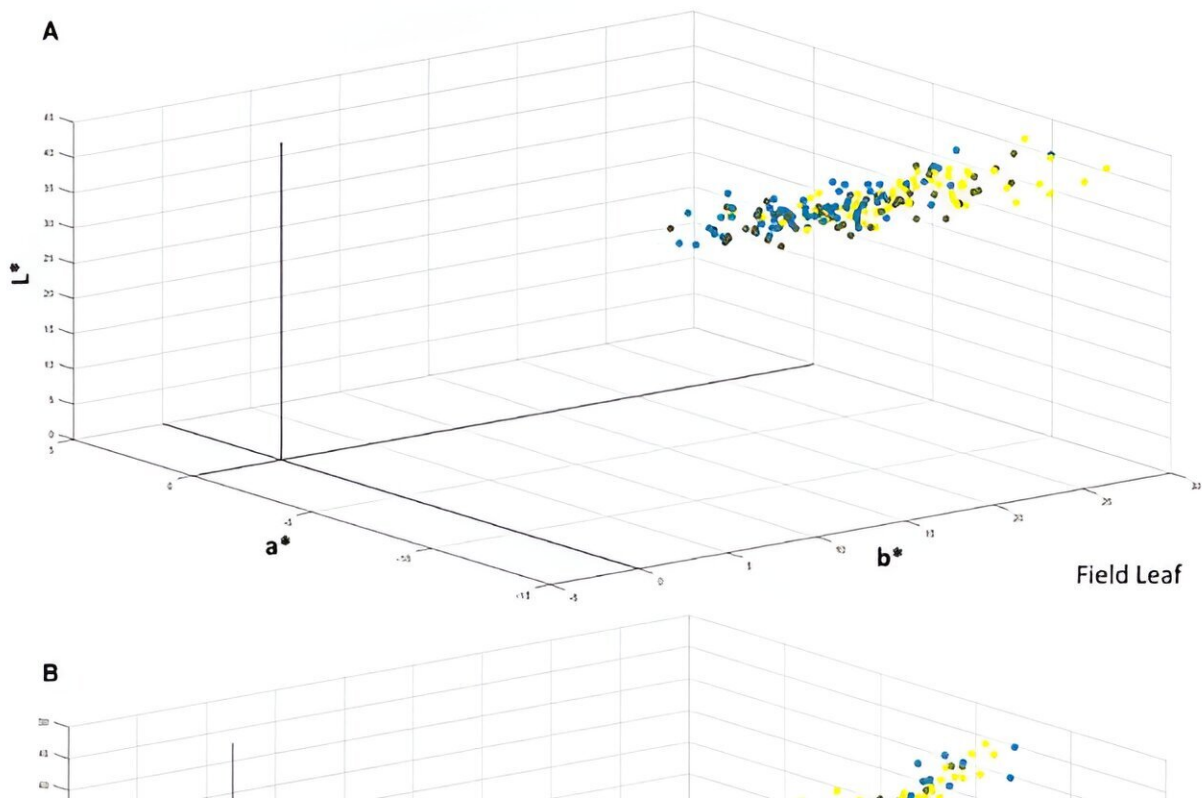


Snap bean panel reveals variability in leaf, pod color phenotypes

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Three-dimensional plot of $L^*a^*b^*$ color data for leaves of accessions in the Snap Bean Association Panel snap bean diversity panel obtained in Oregon State University greenhouse and field locations near Corvallis, OR, USA. (A) Leaves of field (65 accessions) and (B) greenhouse (376 accessions) with the three leaf positions. Dots represent individual accession color averages [blue: first (lower) leaf position, green: second (middle) leaf position, yellow: third (upper) leaf position]. L^* = lightness; a^* = red (+) and green (-); b^* = blue (-) and yellow (+). Credit: *J. Amer. Soc. Hort. Sci.* (2023). DOI: 10.21273/JASHS05326-23

A new study led by researchers from Oregon State University explores the significance of vegetable color in consumer choices and agricultural production, focusing on snap beans. The color of snap bean pods, influenced by various compounds, plays a crucial role in commercial appeal and phytonutrient content. The study, conducted over a span of two years, sheds new light on the genetic diversity present within snap beans, providing insights that could revolutionize breeding programs and enhance crop resilience.

The work is [published](#) in the journal *J. Amer. Soc. Hort. Sci.*.

The study employed advanced genomic techniques to analyze the phenotypic diversity of snap beans within the Association Panel. This panel, which includes a diverse array of snap bean varieties, served as the focal point for understanding the genetic basis of leaf and pod coloration.

Contrary to previous assumptions of limited diversity in snap bean coloration, the study uncovered a wide spectrum of phenotypic variation, ranging from vibrant greens to deep purples and reds in both leaves and pods. This discovery not only highlights the untapped genetic reservoir within snap beans but also underscores the potential for leveraging this diversity in breeding programs to develop novel varieties with enhanced nutritional content and aesthetic appeal.

The implications of this research extend beyond the realm of agricultural science, offering insights into broader issues such as [food security](#), biodiversity conservation, and sustainable agriculture. As global challenges such as [climate change](#) and [population growth](#) continue to exert pressure on food production systems, the identification and utilization of genetic diversity within crop species are increasingly vital

for ensuring resilient and sustainable food supplies.

Moving forward, the research team plans to further clarify the genetic mechanisms underlying the observed phenotypic variability and explore strategies for integrating this diversity into breeding programs aimed at developing snap bean varieties with enhanced nutritional quality, [disease resistance](#), and environmental adaptability.

More information: Burcu Celebioglu et al, Phenotypic Variability for Leaf and Pod Color within the Snap Bean Association Panel, *J. Amer. Soc. Hort. Sci.* (2023). [DOI: 10.21273/JASHS05326-23](https://doi.org/10.21273/JASHS05326-23)

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