

Supplementary Table S14. Comparison of model-predicted and experimentally observed rooting rates for model-ranked conditions within the tested experimental space.

Explant type	Culture period (d)	6-BA (mg·L⁻¹)	NAA (mg·L⁻¹)	Predicted rooting rate (%)	Observed rooting rate (%)	Absolute error (%)
Leaf	60	1.0	1.000	92.90	96.67 ± 3.33	3.77
Leaf	30	1.0	1.000	78.60	80.00 ± 5.77	1.40
Petiole	60	2.0	1.438	37.02	23.33 ± 12.02	13.69
Petiole	30	2.0	1.375	17.53	10.00 ± 10.10	7.53

Notes: Predicted rooting rates were generated using the optimized random forest model. For leaf explants, the highest-ranked rooting condition identified by the model corresponded to the best-performing treatment observed experimentally. Observed values are presented as mean ± standard error (SE) from three independent biological replicates (n = 3). Absolute error was calculated as the absolute difference between predicted and observed mean values. For petiole explants, comparisons were made using the experimentally tested hormone combinations closest to the model-ranked conditions; these comparisons therefore do not represent prospective validation of untested predictions.