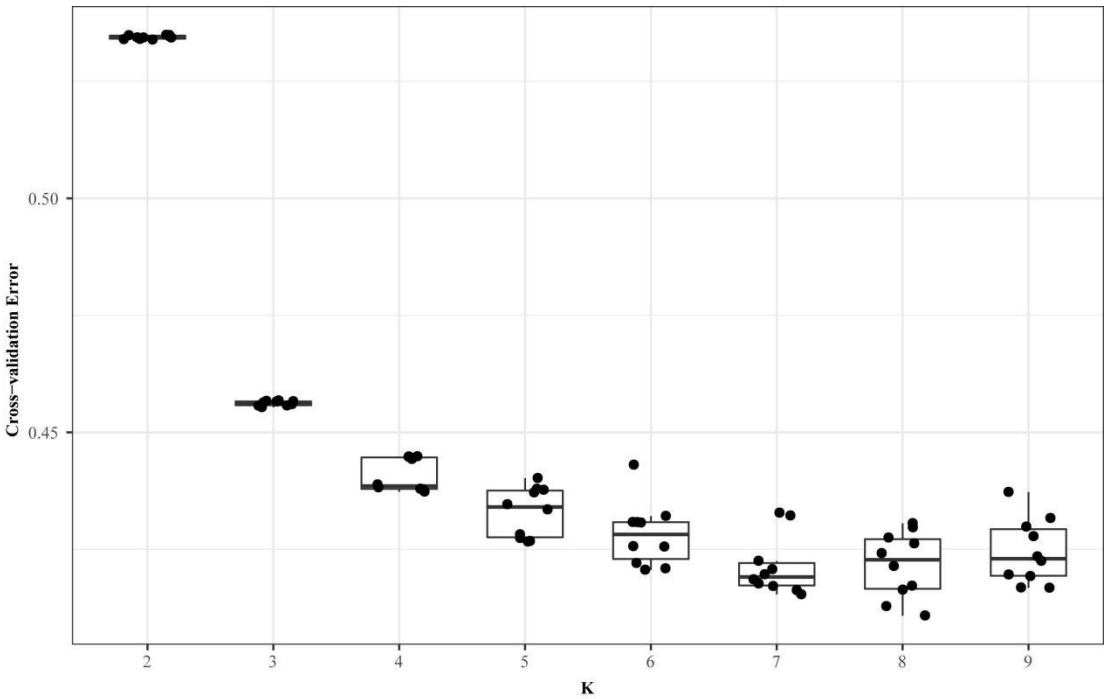


Supplementary Figure 1. Cross-validation (CV) error of ADMIXTURE analysis for K = 2–9. K = 7 yielded the minimum mean CV error; however, the improvement from K = 4 to K = 7 was marginal (Δ = 0.019), and K = 4 showed the highest run-to-run stability (CV sd = 0.003) and provided a biologically interpretable four-group solution (Wild I, Wild II, Cultivar I, Cultivar II). K = 4 was therefore selected as the primary solution for downstream analyses.