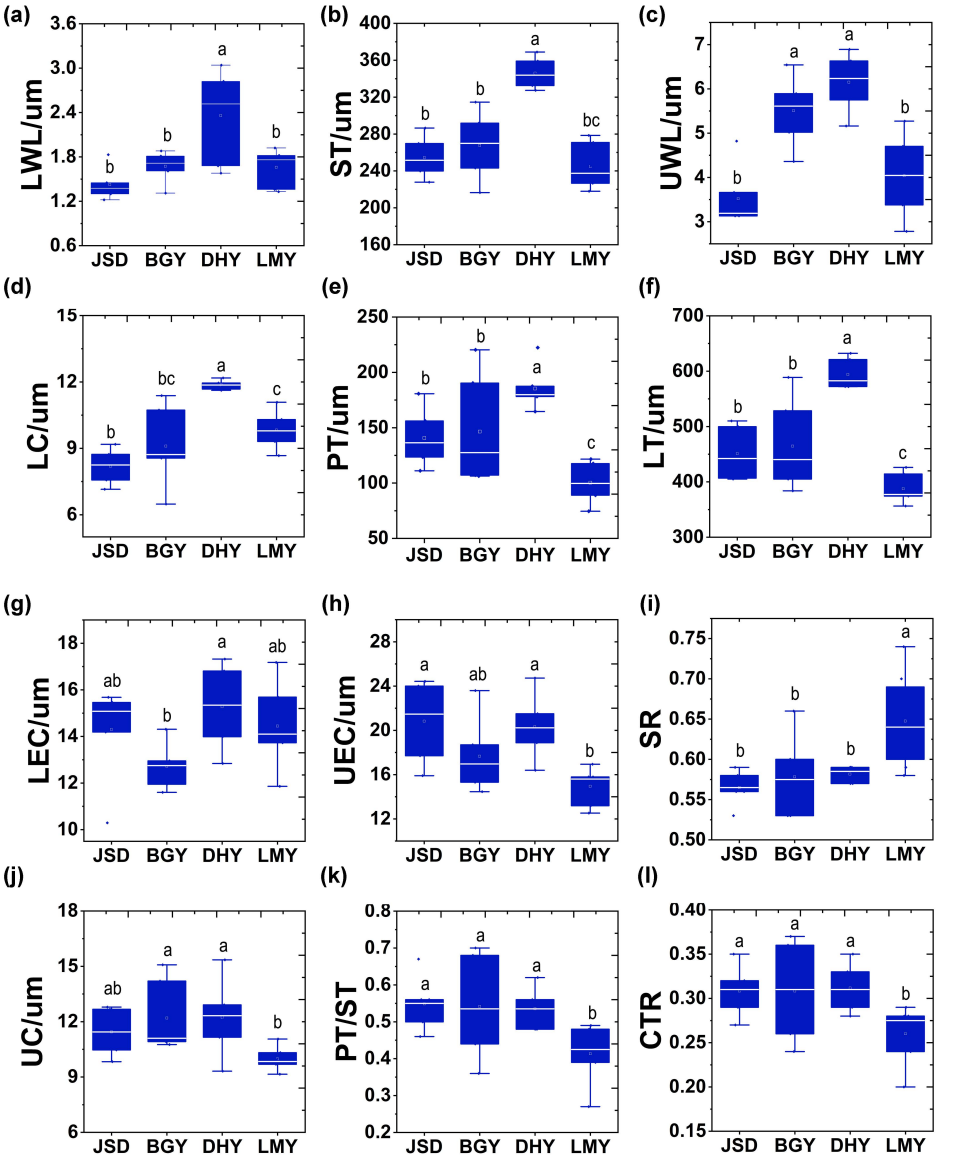
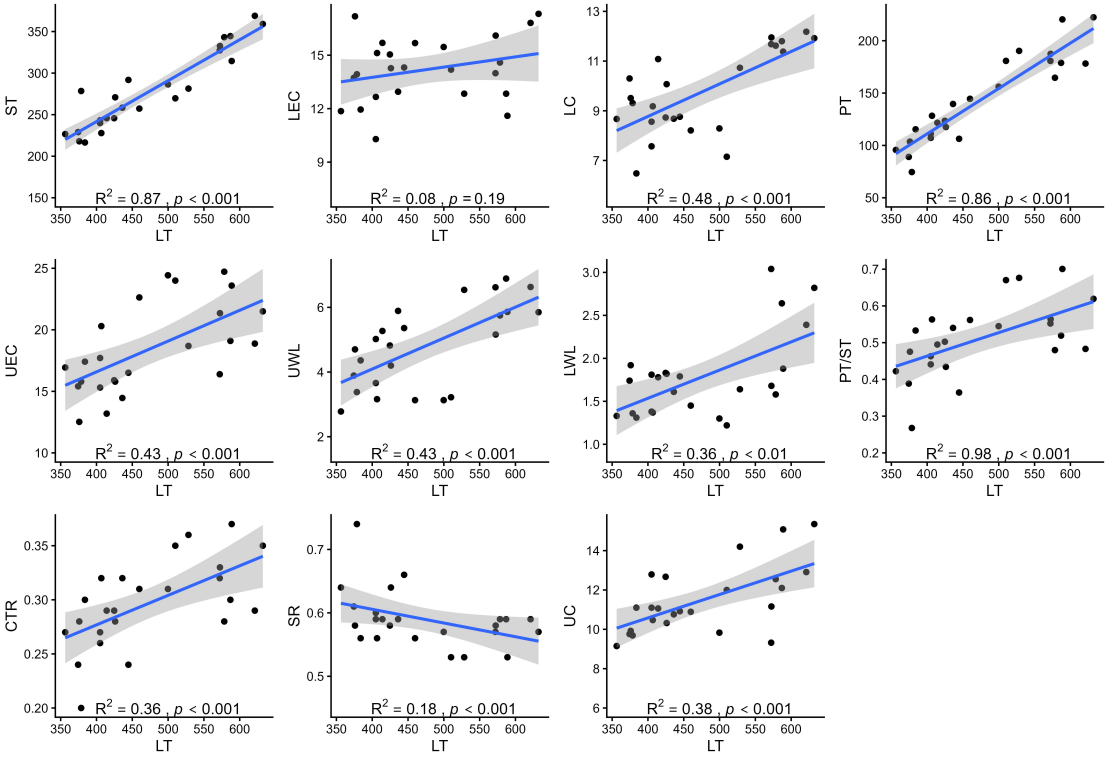
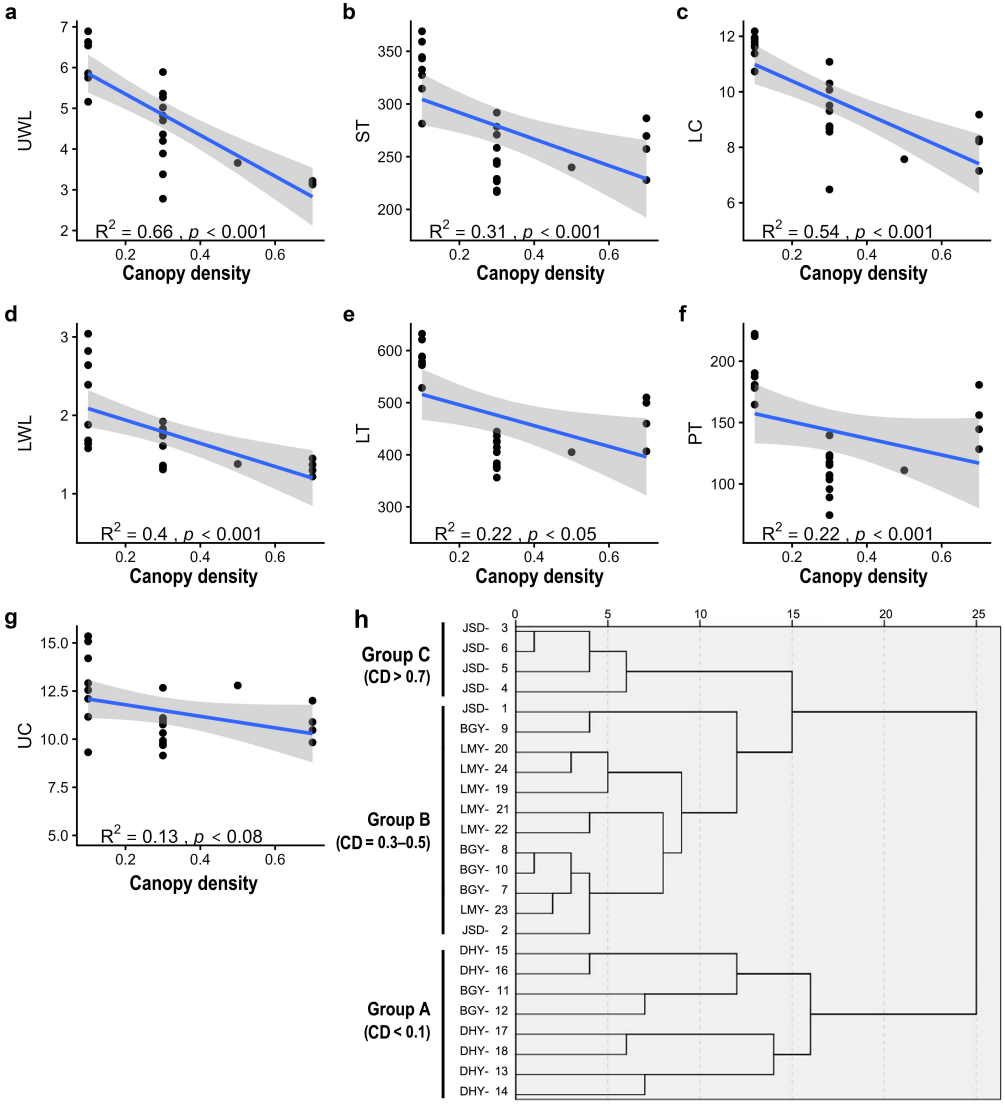


Supplementary Figure S1. Comparison of leaf traits in 4 islands. Comparison of LWL, ST, UWL, LC, PT, LT, LEC, UEC, SR, UC, PT/ST, and CTR. Differences in leaf functional traits between different geographical survey were tested using a one-way ANOVA. Lowercase letters above the box indicate a significant difference among ecosystems (Duncan multiple comparisons with two-sided test) ($p < 0.05$). Center line is the median. Box limits are the upper and lower quartiles. Whiskers are 1.5 times interquartile range.



Supplementary Figure S2. The relationship between Leaf thickness (LT) and the main leaf anatomical traits. Blue lines represent the fitted responses, with 95% confidence intervals shaded in gray.



Supplementary Figure S3. Canopy density (CD) explaining the leaf plasticity and variation coefficients in *E. emarginata*. (**a**) UWL (upper wax layer thickness). (**b**) ST (spongy tissue thickness). (**c**) LC (lower cuticle thickness); (**d**) LWL (lower wax layer thickness). (**e**) LT (leaf thickness). (**f**) PT (palisade tissue thickness). (**g**) UC (upper cuticle thickness). Blue lines represent the fitted responses, with 95% confidence intervals shaded in gray. (**h**) Results of the cluster analysis exhibited significant consistency with canopy density (multivariate regression analysis, p< 0.05-0.01). The nine leaf tissue anatomical traits of *E. emarginata* were subjected to cluster analysis following normalization by Z scores and grouping based on Euclidean distance.