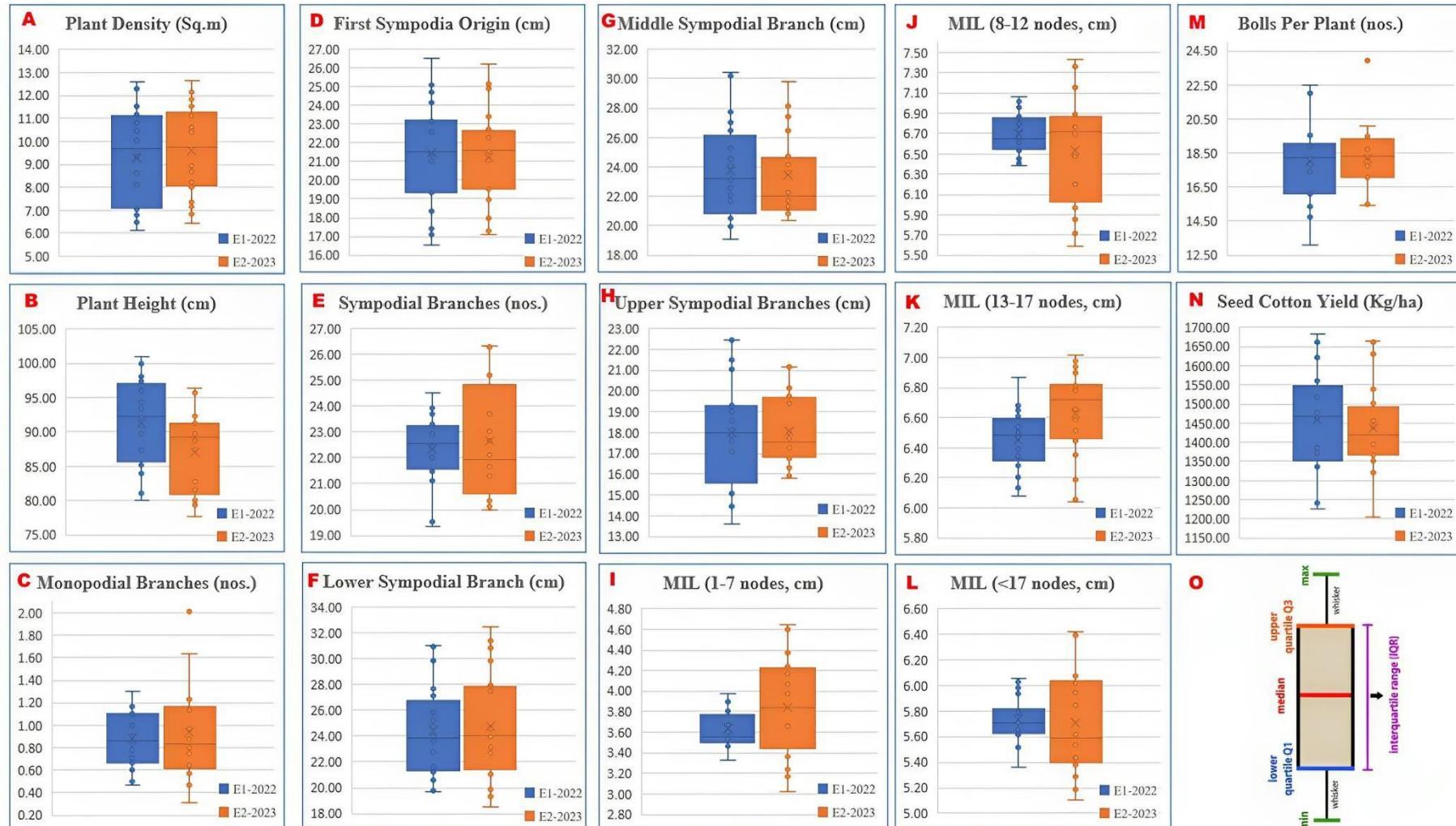


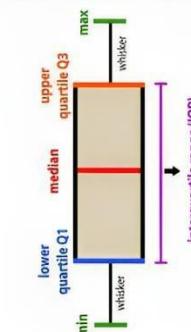
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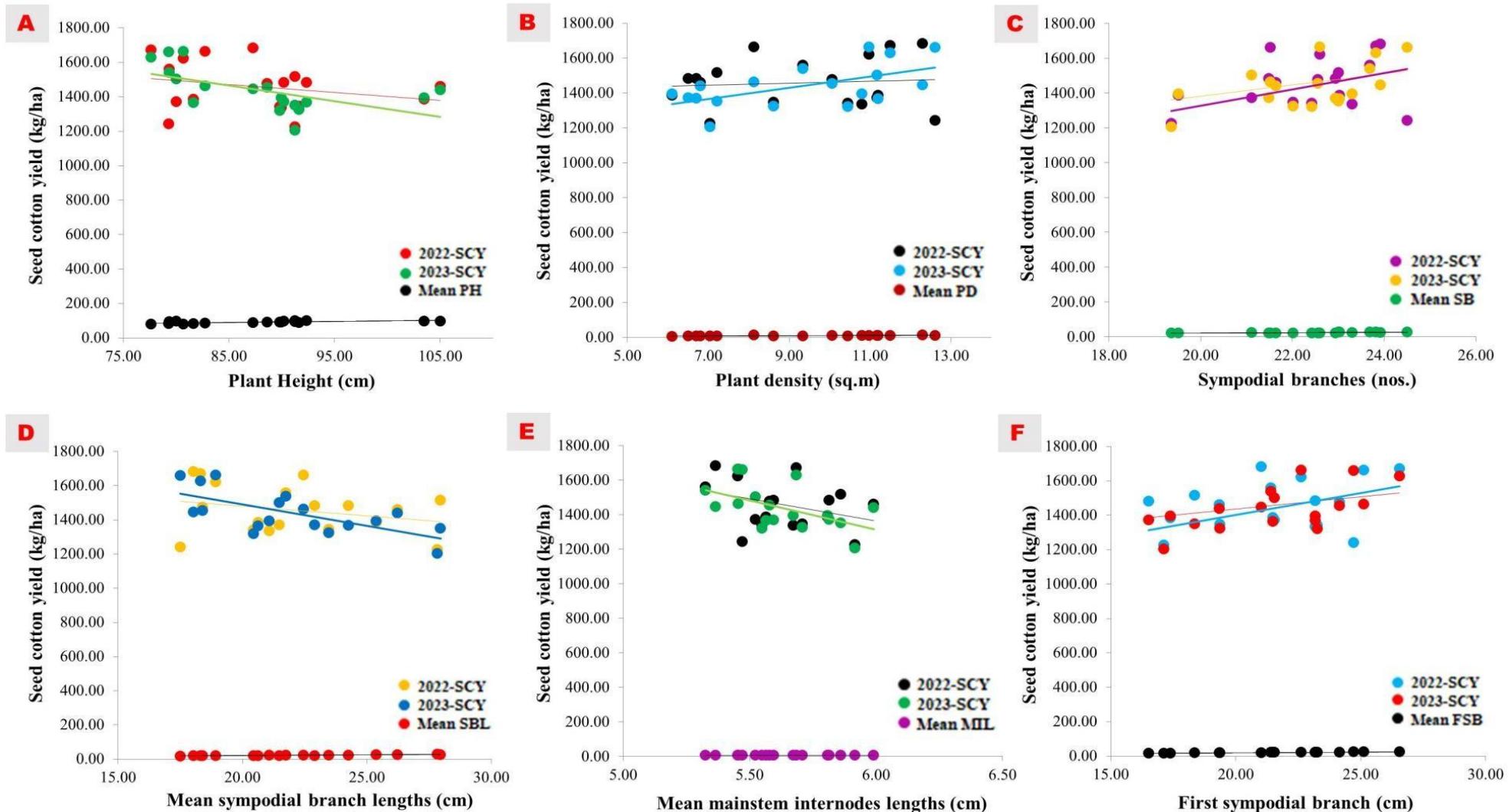


2

3 **Supplementary Fig. S1.** The box and whisker plots compare the trait performance of cotton cultivars in two environments, E1 and E2 (A-N). These  
 4 plots effectively display the distribution, variability and central tendency of the trait data for each environment (O), facilitating a comprehensive  
 5 analysis of trait performance across the two growing seasons.

6





7 **Supplementary Fig. S2.** Scatter-plots represent the correlation between mean of different compact plant architecture traits (A-F) and seed cotton yield  
8 in two distinct environments, E1-Kharif-2022 and E2-Summer-2023.