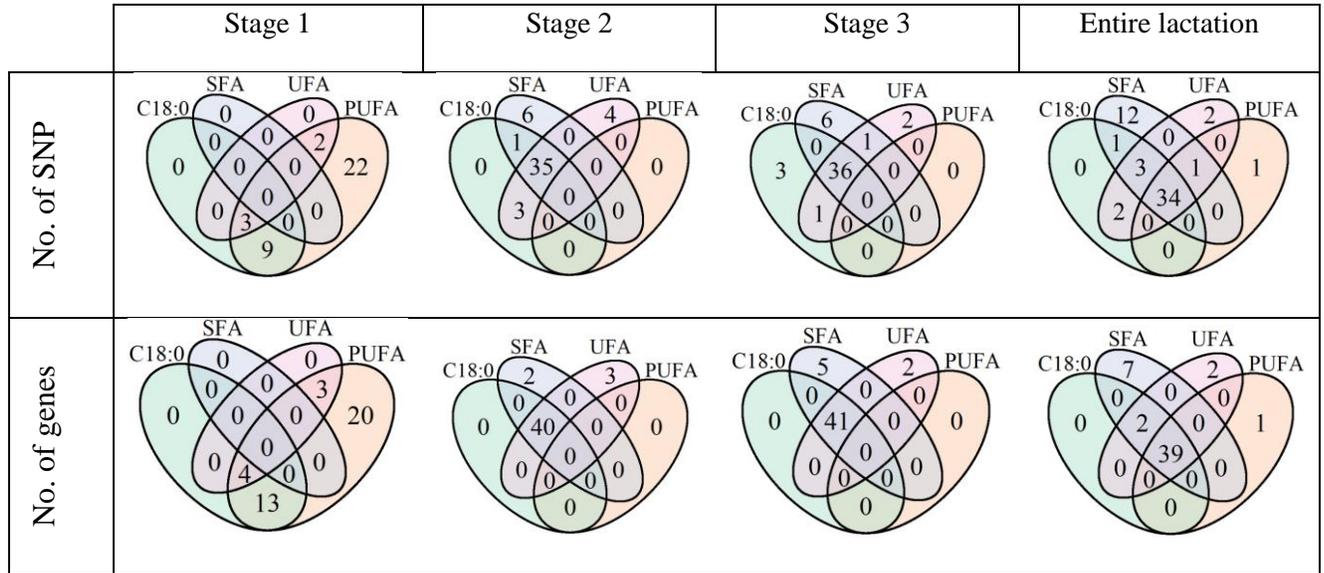
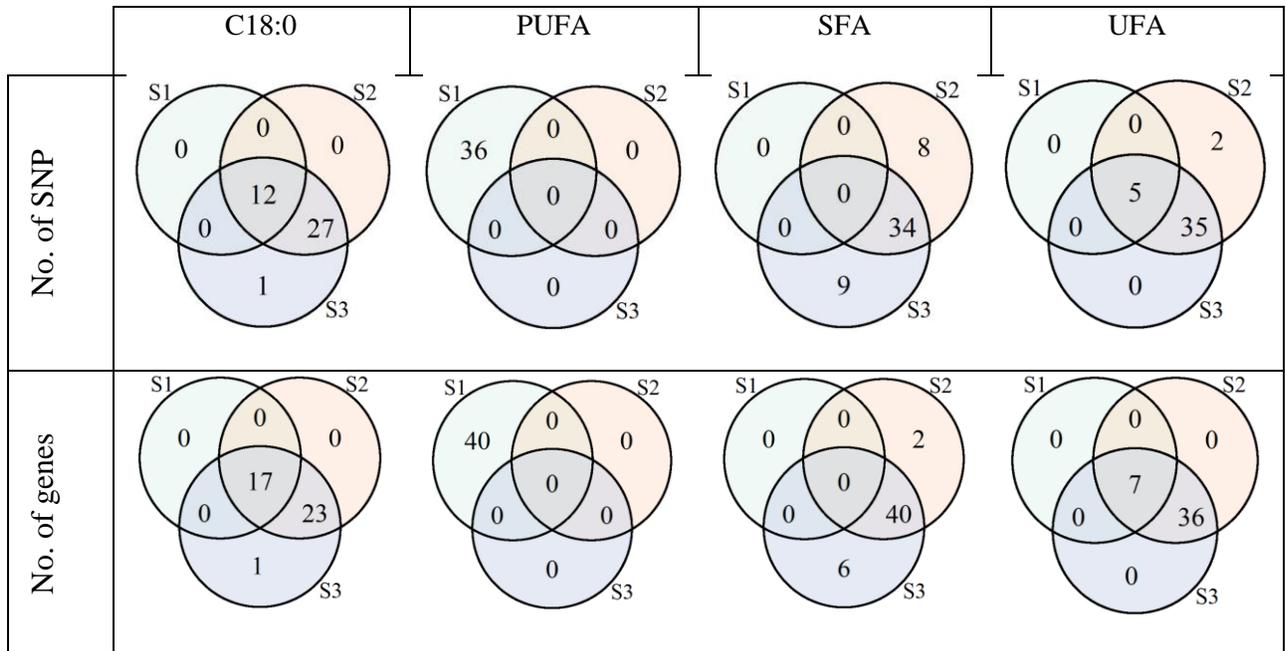


Figure S1. Manhattan plot of $-\log_{10} P$ -values of the tested SNP markers for C18:0 (A), poly-unsaturated fatty acids (B), saturated fatty acids (C) and unsaturated fatty acids (D) in different lactation stages under thermoneutral conditions (TNC), under heat stress conditions (HSC) and for heat stress response (HSR). The red dashed line is the significance threshold for the Bonferroni correction. Genomic estimated breeding values were used as pseudo-phenotypes.

A



B



C

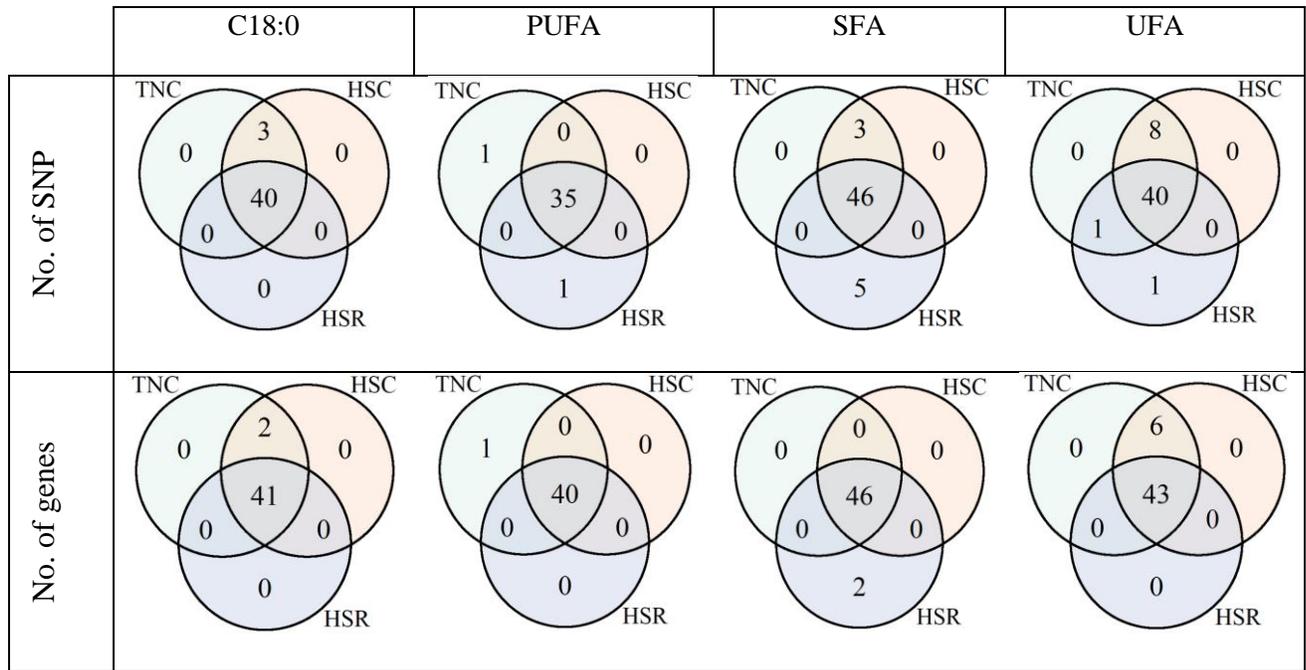


Figure S2. Venn diagrams for the number of significant SNP markers and genes associated with heat stress response overlapping across FA traits (**A**), associated with heat stress response for FA traits overlapping across lactation stages (**B**) and associated with FA traits overlapping across environmental conditions (**C**). Genomic estimated breeding values were used as pseudo-phenotypes. FA traits are C18:0, poly-unsaturated fatty acids (PUFA), saturated fatty acids (SFA) and unsaturated fatty acids (UFA). Lactation stages are the first (S1), the second (S2) and the third (S3) stages. Environmental conditions are thermoneutral conditions (TNC), heat stress conditions (HSC) and heat stress response (HSR).