

**Figure S6**: Sensitivity analysis of coherence between simulated chronology and standard (red) and residual chronologies (orange) and in estimates of the start of the growing season (black). Each chart shows response of correlation coefficient between simulated and observed chronologies and mean residual of estimated date of growing season onset to variation of specific parameter, while other parameters remained fixed. Only logical values of parameters were tested (e.g.,  $M_4 \ge M_3$ ). Blue vertical lines depict the finally selected parameter values.