

Figure 1. Fruit production is tightly linked to flowering effort (A) Relative fruit production as a function of relative flowering effort: for each tree, fruits counted each year are divided by the maximum number of fruits it produced over the 8-year survey. Relative flowering effort is calculated the same way. (B) Same as (A), but each point is the annual mean value over a site. The selected models and the corresponding fitted line/curve were generated from the relative data (according to AIC criterion; STAR Methods). In the two panels, the green points correspond to the maximum annual fruiting value of each tree (A) or each site (B) over the 8-year survey. See also Table S1 (for statistical analysis) and Figure S2.

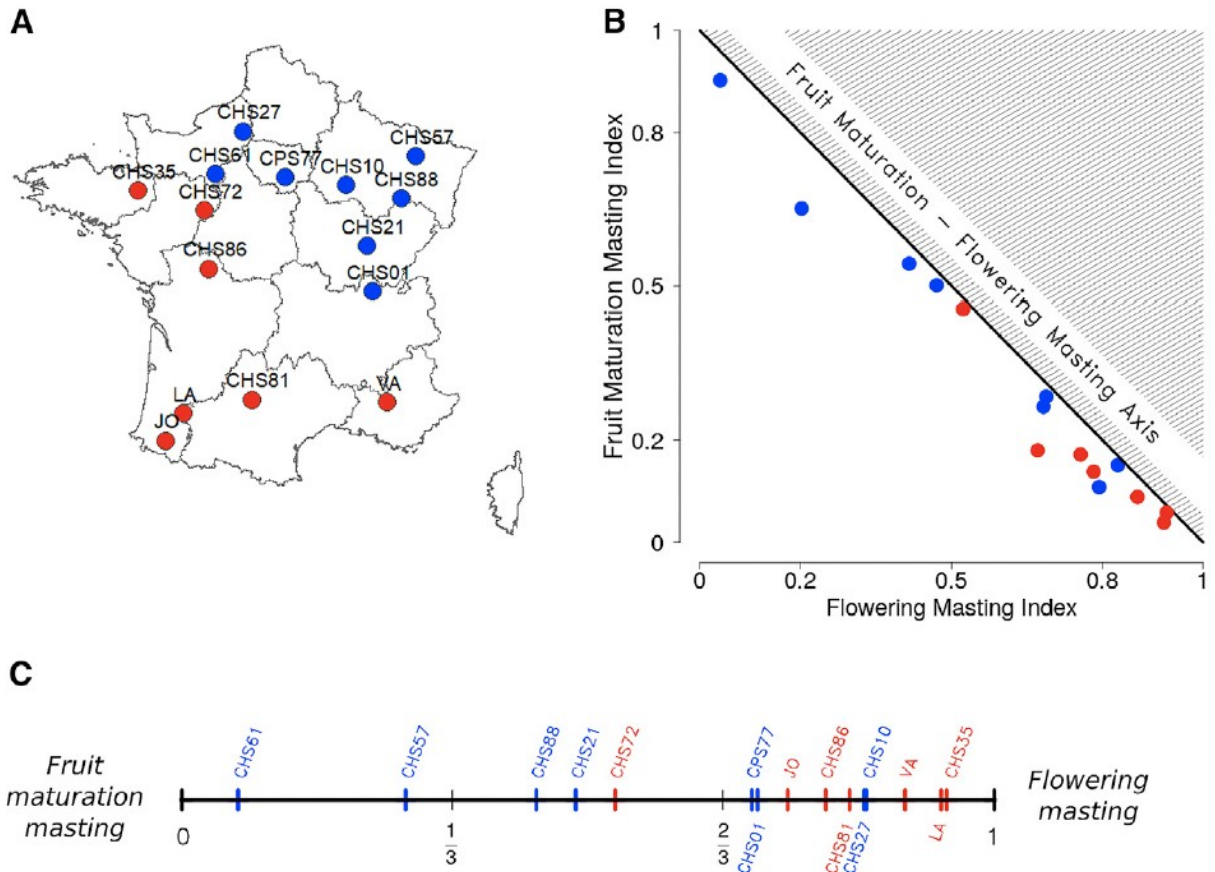


Figure 2. The flowering effort and the fruiting rate contribute unequally to fruit production dynamics in oak populations living in soft (red) or harsh (blue) climates (A). The 15 populations surveyed were split into “soft” (oceanic or Mediterranean) and “harsh” (semi-continental) climatic conditions according to whether average annual temperatures were mild or low and whether the temperature was rather steady or variable both within and between years (STAR Methods). (B) Relative contribution of flowering effort and fruiting rate to the fruit production dynamics. (C) The sites are positioned along the “fruit maturation-flowering masting” gradient, according to their orthogonal projection on the fruit maturation-flowering axis (B; STAR Methods). They distribute themselves between fruit production dynamics governed exclusively by fruiting rate (0) to exclusively by flowering dynamics (1). See also Figure S1.

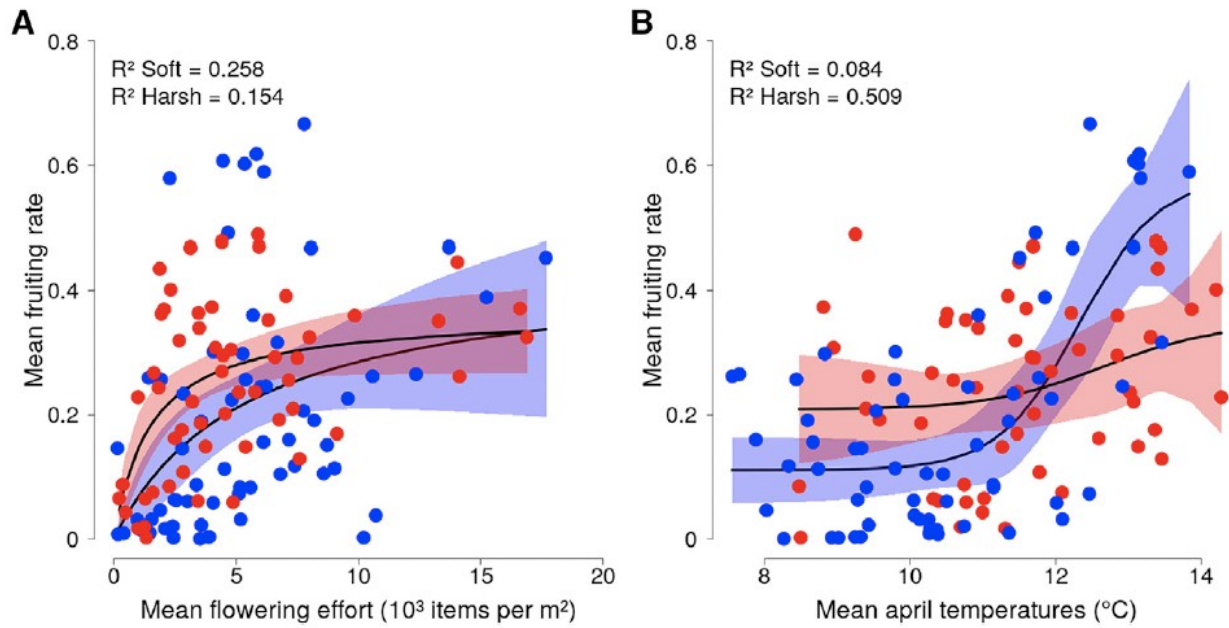


Figure 3. Fruiting rate, at the crossroads between the influence of April temperatures and flowering effort (A) Mean fruiting rate (mean fruit number/mean flowers number) as a function of the mean flowering effort per year and per site. (B) Mean fruiting rate per year and per site as a function of mean temperature measured at each site each year in April. The red and blue dots correspond to soft and harsh climate sites, respectively. See also Table S2.

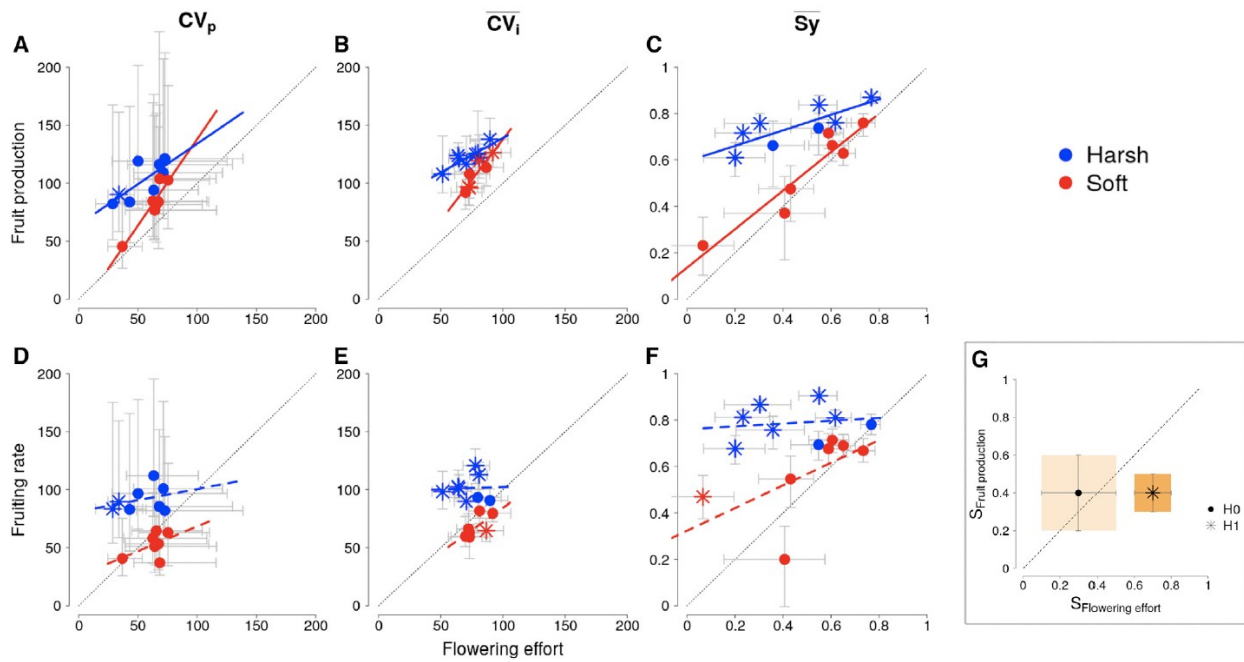


Figure 4. Relationship between masting statistics applied to fruit production and flowering intensity and to fruiting rate and flowering effort. The most synthetic statistic of masting corresponds to CV_p , which reflects the degree of interannual variability in flowering effort, fruiting rate, or fruiting production at the population level (A and D). Population-level variation (CV_p) depends on both the individual-level variability (CV_i , B and E) and the degree of synchrony between individuals (S_y , C and F). Black dotted lines correspond to the first bisector ($y = x$). Error bars are the 95% confidence intervals of the statistics computed by means of the bootstrapping method. Round and star-shaped dots indicate non-significant and significant departure from equality between the x and y statistics, respectively (i.e., whenever the bisector does [does not] overlap the confidence interval—see G for a fictional statistic S). Soft and harsh climate sites are illustrated in red and blue, respectively. Full lines are used whenever there is a significant difference in the slope and intercept between the two climatic groups; dotted lines represent when only the intercepts are significantly different (Table S3). See also Figures S3 and S4 and Tables S3 and S4.