

PHASE I DORMANCY TO BLOOM

1. DORMANCY - Are vines dead? Sleep, rest mode. Factors which govern:
 - a. Seasonal rainfall – not just amount (inches) of rain but how the rain was distributed over time.
 - b. Compare dry years; wet years. A wet year with concentrated heavy rain over 2 months versus one with lighter rains spread over 6 months.
 - c. Runoff to fill ponds; time when streams stop in spring.
 - d. Soil temperature
3. BUDBREAK –
4. GRAND PERIOD of GROWTH
 - a. Early April to mid May in Napa Valley; c. 6 weeks
 - b. 90% of canopy develops on the grapevines.

PHASE 2 BLOOM – a critical time

1. FLOWERING- after c. 6 weeks of rapid vegetative growth the tiny grape flowers start to unfold, and vine growth slackens. What might be the reason for this?
2. Pollination in *Vitis vinifera*. A perfect (monoclinous) flower, with both male and female parts in close proximity. Self pollination is not difficult. The next step is more involved.
3. Fertilization – requires the pollen tube to move down to the base of the pistil where the seeds are. This is temperature dependent: 70 to 80's is ideal. Below the minimum or above the maximum will not give good results – aborted ovaries.
4. The result for the fruit is called a good or poor “set,” A good set gives more berries (and wine) . The opposite is called a poor set or another term is shatter, in France coulure.
5. The single best determinant for a good, economical crop size is the weather at bloom time.
6. My experience: the bloom date of a vineyard block can be used as a good predictor for the harvest date.

Note: There are dioecious grapevines in which one vine has only male or female parts on its flowers i.e. unisexual vines. There are some in Napa Valley. Can we name some?