Grapevine latent bud (winter bud) – the story of vine production (18 October 2018)

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Autumn-winter are next door, in the Northern Hemisphere.

The vines worked hard from spring to autumn for two aims: to produce 2018 yield & to prepare for the 2019 crop.

How?

On the winter canes (lignified shoots), latent buds have been formed and they bear the 2019 future primary shoots & crop. Looking inside the latent bud (winter bud), at least three bud primordia could be observed: one principal & two secondary buds.

Each principal bud will develop to form the vine's primary shoots which will grow in parallel to the pruning cane. If the primary bud dies (for example due to winter frost), the first secondary bud inside the latent bud will develop perpendicular to the cane. It is a convenient way to determine if a primary shoot is issued from the secondary bud. This primary shoot will be less fertile than if it had emerged from the principal bud.

Take home messages

- Climatic conditions & grapevine physiology (genotype x environment) from year N and N+1 matter for the year N+1 crop, in terms of cluster number per primary shoot, berry number/cluster & berry volume.

- Pruning has to be carefully considered-managed, respecting sap flow (xylem-phloem conduction), to ensure proper vine production & longevity.

(More in: Carbonneau et al., 2015, Dunod Edt).

(Figures from : A. Deloire, 2009. Grapevine Development, Wynland Magazine, Technical year book, 97-106.

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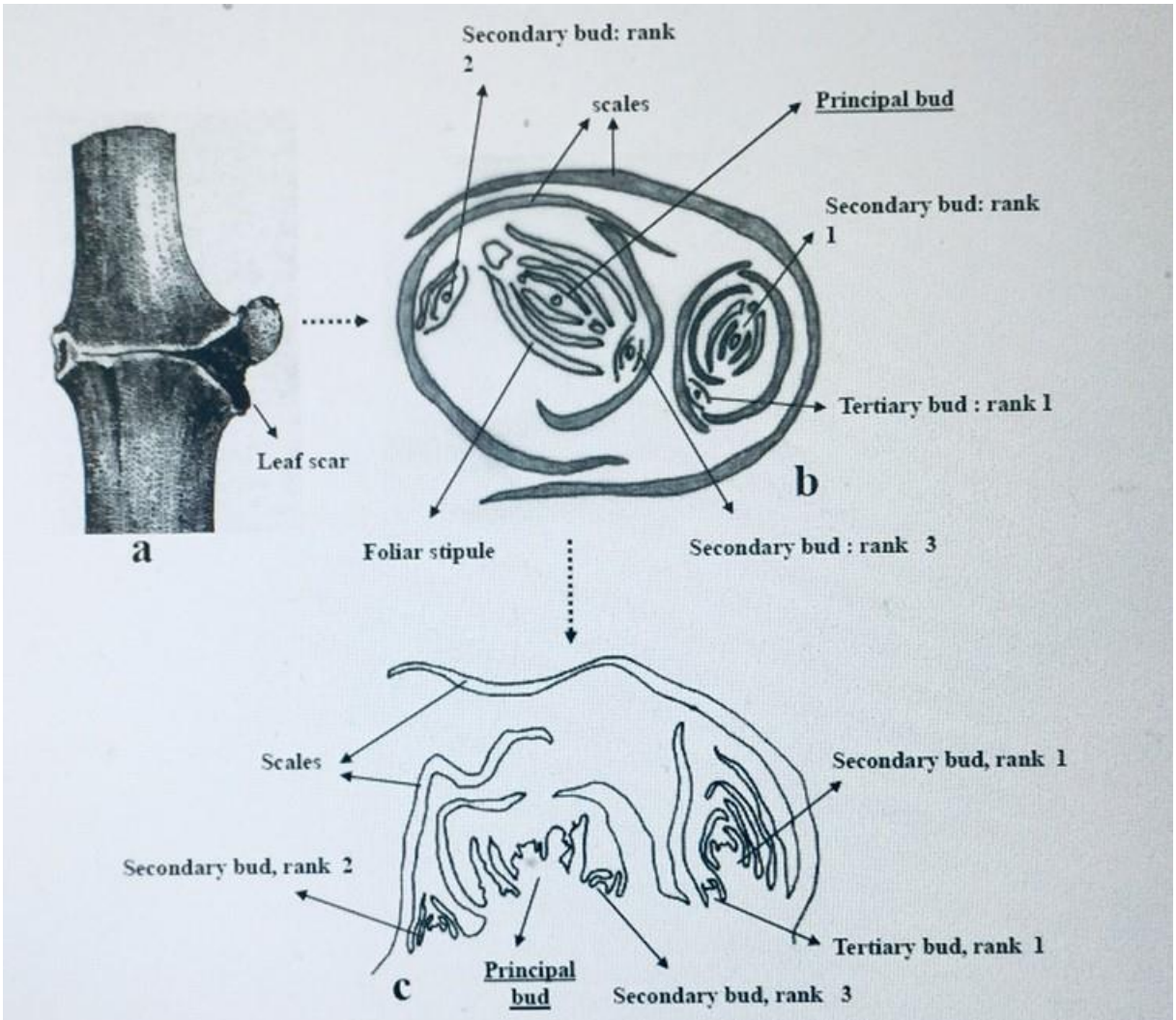

FIGURE 1A, B & C:
a) Morphology of the latent bud at the completion of its differentiation.
b) Transverse section of the latent vine bud.
c) Longitudinal section of the latent bud.

At the end of its vegetative cycle, in the northern hemisphere in August and in the southern hemisphere in February, the differentiation of the primordia from the leaves and inflorescences is complete. At this stage the future flowers are not yet differentiated. Their differentiation starts at the beginning of the following spring through the formation of floral meristems (sources A. Deloire, 1982; Carolus, 1970). Fertility is generally considered to be the average number of inflorescenses per bud. NB: Latent secondary and tertiary axils are represented on the same longitudinal plane, to facilitate understanding of the architecture of the latent bud; this is not actually the case.