Monitoring Bud Growth

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Time: March. Two separate data sets should be collected: one relatively early in the period of bud growth, and the other 1-2 weeks later (depending on the weather). Usually one data set will separate the earliest individuals from the majority, and the second will reveal the latest to move, as well as the rate at which growth is progressing in the rest.

Duration: It is best if the data for an orchard can be collected in one, or at most, two days. If the data set is collected over more than 1 day, record the starting and ending points on subsequent days.

Method: Record the rank of each tree using the following scale:

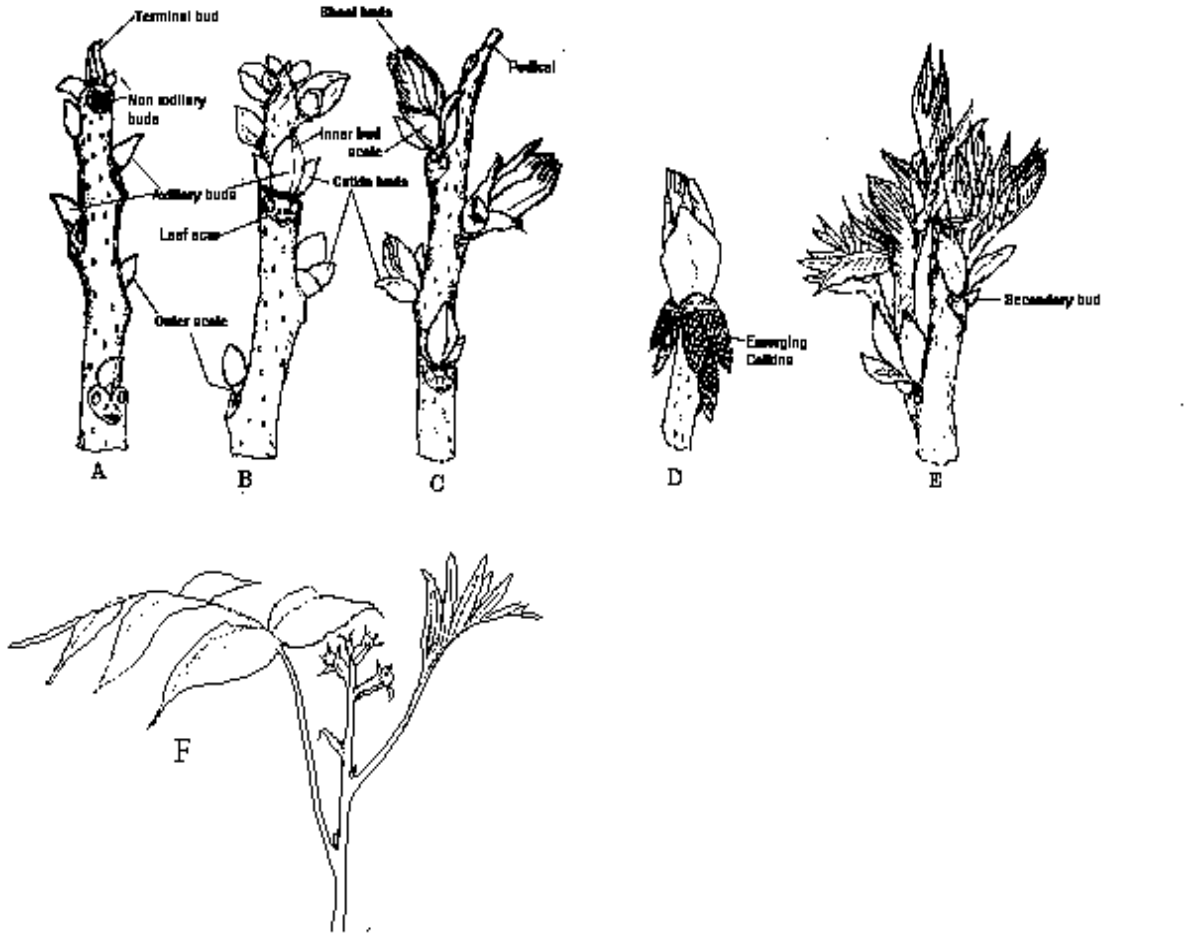
1=dormant, winter buds (A in Fig. below)

2= bud swell (outer scales will split and may fall, but inner scales still enclose the vegetative apex; B in Fig. below)

3=inner scale split (inner scales separate, revealing the growing shoot apex, with leaf primordia closely clumped together around the shoot axis. Catkins may be present. C & D in Fig. below).

4=leaf burst (leaf primordia unfold out from the shoot axis, leaflet primordia are clumped together; E in Fig. below).

5=leaflet expansion (leaflets separate from each other and begin to enlarge; F in Fig. below). The scale can be continued to 9 using the percentage of expansion relative to mature leaves (6=25, 7=50, 8=75, 9=100)



For small trees, rate each tree on the basis of the two most advanced buds. For large trees, rate each tree on the basis of the predominant bud stage in a specific target portion of the canopy. Bud growth often begins in the inner, lower canopy and progresses outward and upward in the tree. In some years, dramatic differences in the stage of bud growth are seen within an individual tree canopy. To distinguish the relative variability of bud growth within the tree, ratings of inner, lower canopy can be compared to ratings of the upper, outer canopy.