Bloom Observations

The accompanying data (Table 2) lists the various stages and dates for the spring of 2014. It includes a little over 200 apple and pear varieties. Additionally we added a body of developed and wild plant species to act as a phenological aid. Growers can use the blooming dates to correspond with wild and cultivated species in their environment, as a more accurate measure than published dates in most literature.

The most noticeable outcome of bloom observation, for us, was the overwhelming overlap in flowering amongst varieties. This came as a surprise. The bloom period in the orchard generally occurred during an 18 day period, from the 23rd of May to the 10th of June. A slight extension of this, of approximately 5 days, was the result of occasional new blooms in several cultivars, almost exclusively at tips in spur/tip varieties. The majority of blooming, however, took place from …..

Bloom timing enters the conversation when choosing varieties for cold climates. Frost during bloom-time can of course be problematic. Not only can cold weather lead to bloom mortality or damage, but pollinators tend not to be present during cold or inclement weather. Generally it is assumed that later blooming varieties can escape frosts, and this is sometimes true. Earlier bloom, however may be pollinated and move beyond the most sensitive phases before poor weather appears on the later end. A good way to mitigate these issues is to have a wider range of bloom times. This can be established with early, mid and late blooming cultivars, as well as having varieties that themselves have a succession of bloom times. For instance, trees that set fruit on both spurs and tips tend to flower at different times, with the tips in general opening later. Long bloom periods were noted with some cultivars, not in the extent to which a particular bloom was open and viable, but rather in the succession of blooms. Although this manifested itself commonly with spur vs tip bloom timing, in some instances flowers were opening at different locations throughout a particular tree in a period of a week or weeks.

Separate lists have additionally been compiled for first bloom, full bloom, and petal fall. Please note that some important notes (nuances) have been excluded that may prove useful to some growers. In this case, browsing the master bloom list (table 2) is advised. Also, note the following aspects to these additional bloom lists:

First Bloom – This corresponds to the first day a king bloom opened, generally with no lateral blooms opening.

Full Bloom – More general. These are dates at which at least some of the lateral blooms have opened in addition to king blossoms. It varies in percentage, but efforts were made to place this date where 25% minimum of the blooms were open and all blooms remain viable.

Petal Fall – Date at which petal fall has at least begun. Generally this indicates flowers are no longer viable. There were many instances when a very small amount of later and new blooms were present (tertiary bloom), but not to any significant degree. This latter phenomenon was more pronounced in 2014 than average.

Accompanying Data Sheets for Bloom

Master Sheet (table 2) : This includes all data collected in the 2014 growing season regarding bloom. In addition to the pollination period, other stages were recorded to be helpful in considering cold susceptibility at various stages of growth. Also, some comments are included as nuanced information concerning the bloom stage or other related factors. When a percentage is given, it pertains to the stage it accompanies (for example 40% beside the date in the "King" column indicates that percentage of king blossoms are open, but no lateral flowers have opened; where 40% accompanies a date in the "Full Bloom" column, that percentage of all flowers is in bloom). Gaps appear in the data for some cultivars. This Master Sheet is a compilation of all data for the period, and is not intended as a "quick guide". It serves instead as a more extensive body of information for growers seeking some additional information on bloom time. The following data sheets (tables 3,4 and 5) were created as sorted lists for quick assessment of bloom stages amongst cultivars:

First Bloom (table 3) : This lists varieties according to the date of first bloom, beginning with the earliest. This period includes king bloom only.

Full Bloom (table 4) : This lists varieties according to the general blooming period, from earliest to latest. Dates refer to the time when a significant amount of lateral blossoms were fully open. Degree of full bloom varied somewhat, from 25% total blossoms open, to 100%, but best efforts were made to list dates with at least half of the total number of blooms open and viable. Notations related to percentages can be referred to in the Master Sheet (table 2).

Petal Fall (table 5) : This lists varieties according to date at which petal fall has begun in earnest. It is arranged earliest to latest. The period should be considered as a time when only light pollination possibility exists. It does include some variability, some varieties being at the beginning quarter of petal fall, and some varieties at nearly total drop. Blooms which have lost their petals can be expected to have passed the stage of pollination viability. A percentage of cultivars have a small number of late blooms, often even after near complete petal fall. Often these are at tips of spur/tip varieties, with some exceptions. Additional notation regarding this period can be viewed in the Master Sheet (table 2).

Data Collection : The trees in the sampling were visited every two days during a one month period, from 5/20 to 6/12 during the 2104 growing season. Collection was done via notebook and audio recording devices. Observations were recorded for all blooming varieties, but not all stages were recorded for all. Once the information was recorded to database as the Master Sheet, the list was recompiled in the sub-lists to aid growers (tables 3, 4 and 5).

Varieties in Study Known to be Ineffective Pollenizers (due to polyploidy) :

Arkansas Black
Ashmead's Kernel
Baldwin
Blenheim Orange
Bramley's Seedling
Bulmer's Norman
Canada Reinette
Fall Pippin
Gravenstein
Hibernal
Jonagold
Karmijn de Sonneville
Orleans Reinette
Ribston Pippin
Roxbury Russet
Spigold
Stark
Tomkins King
Transcendent
Washington Strawberry
Westland
Zabergau Reinette

Tight pink

loose pink/cluster

Open king

75% bloom

Full bloom