



Bloom Date Project

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The Bloom Date Project is an attempt to clarify what is known and more importantly, do not know about the blooming pattern of peonies. For the peony buyer, it would be better if nurseries had a common bloom period classification system. Currently, buyers will sometimes find the same cultivar classified as mid-season in one catalogue and early in another. This problem carries over to peony books and other literature, which causes confusion for prospective purchasers of these plants. By collecting data over a long period of time and in several different locations, this project attempts to make available the information required to put in place a common bloom period classification system.

Description

In the past peony bloom dates have been collected by many people. Prior to this project, there have been two major attempts at collecting/consolidating and publishing data over a large number of cultivars. To this we can add the body of information published in nursery catalogues.

The Miller Data

Rev Floyd Miller collected bloom dates for 200 cultivars at Fergus Falls, Minnesota from 1963 to 1975. The location is 140 miles West and 80 miles North of Minneapolis. The Miller data has two strengths. The first is the use of 13 years of data. The second is the evidence on many older American lactiflora cultivars. It is unlikely that we will find new evidence on these older American cultivars. As presented on pages 191-2 of the APS, Best of 75 Years, the Miller data is a single date for each cultivar. The data is not a simple average of the actual observations, but appears to be a median rather than a mean. A median date has an equal number of bloom dates before and after. It will differ from a mean, or simple average, date but probably not by more than one or two days.

The Heartland Peony Society Data

Leon Presnell compiled bloom sequence data and placed it on the Heartland Peony Society web site. This is the most comprehensive list of bloom dates available. There are about 440 cultivars and 1300 observations in the Pesnell data.

Nursery Information

Nursery catalogues provide information on the bloom time for cultivars that they sell. Nurseries do this through the use of variations of a classification system that designates a cultivar as an early, middle or late bloomer. Many use a more complex system that includes very early, very late and some intermediate cases such as early-middle or mid-late. Through construction of tables that compare bloom data from several nursery's catalogs, it is not surprising that there is rough general agreement between the nurseries and the bloom data. There are, however, some definite disagreements which need further investigation. A number of catalogs chose to exclude

the bloom period for the cultivars in their catalogs, as they recognize that there is no common source of information.

A new common classification system is important because it is not likely that nurseries will ever use a system such as the Red Charm relative dates. The basic weakness of any classification scheme is that some cultivars will bloom near the boundaries of the groups.

Canadian and American Data

New bloom data has been collected and organized by myself, Michael Denny from observations in 1999 to 2003. This adds about 1200 new observations. Bloom data was collected by Brian Porter, Carlos Beca, Lindsay D'Aoust, Leo Smit, Julia Dicks, Val Ames and Irene Tolomeo. I added my own data and organized the information. Some of the data are for years prior to 1999. In particular, Julia and Brian had observations over a number of prior years. New observations should be made and data added to broaden the research of past contributors. In the current data, listed on this website, bloom dates are being measured relative to the bloom dates of **Red Charm**. This is an attempt to adjust for different bloom dates for a given cultivar at the same location in different years and at different locations in the same and in different years. It is a relatively crude adjustment, but will remain in use until a better one is devised.

Going Forward

The objective is to provide reliable information on the bloom sequence of peonies. The simplest method would be to construct a ranked list of cultivars starting with the earliest bloomers and moving on to the later ones. Such a ranked list is simpler than current methods because no information is provided about the period of time between the blooming of each cultivar. There is evidence that even a ranked list is not totally reliable. We have data over a number of years from several gardens and the ranking by bloom time is not identical from one year to the next. This should not deter gardeners from gathering further information, but it should warn us that the bloom sequence data that we create has to be used as a valuable guide and it should not be interpreted too literally. Climate variations are likely the major source of difference in bloom dates. However, some cultivars seem to be impacted to different extents by the same weather conditions. This is not a simple story of hybrids versus lactifloras, but seems to occur for both groups.

Heat is probably the most important variable in explaining the variation in bloom time. In agriculture and the building industry, there has been wide-spread use of degree days. Degree days are a simple transformation of the average daily temperature. For example suppose we believe that it is the temperature above 40F that is important. Then the number of degree days for a day with an average of 60F is 20 (= 60 - 40) degree days. There are many variations of degree days because one can choose the base temperature (40F in the above example) to suit the problem of interest. Creating degree day measurements from data on daily maximum and minimum temperatures, that suit peony growers, may be helpful in solving further issues. When this evidence is available, it would allow us to assess the

influence of heat on the bloom sequence. One of the open questions is whether degree days is enough information to explain most of what is happening. If it is, there is less of a role for moisture and soil conditions. The latter may be important and need further exploration.

What is Missing?

There is very limited information on the bloom times for tree peonies and for the peony species. In both cases, far fewer peony enthusiasts grow these plants. Data concerning these plants may provide some interesting results due to their often earlier bloom period. For the lactifloras and hybrids the current data is more extensive. More years of observations from more locations and additional cultivars would be helpful. Finally, there are many common cultivars for which we have no bloom date observations.

Links are provided for Bloom Date data. This data combines the data from Reverend Miller, the Heartland Peony Society and more recent data collected by Michael Denny. The links to Alphabetic Sort and Bloom Sequence Sort will take you to web pages with the data listed in either alphabetical order or by bloom sequence. All bloom times are listed with respect to Red Charm. Red Charm is said to bloom at time zero and the bloom time of all other peonies is given relative to this time. This is the number contained in the offset column. For example, the entry for Alexander Woollcott shows that from the 17 observations recorded (#obs = 17), Alexander Woollcott blooms 4 days (offset = 4) after Red Charm (offset = 0). The data should be used as a guide in considering when a cultivar will bloom. There is a danger that the offset will seem too precise and consequently is misleading. Annual weather variations will change the exact number of days that a cultivar will bloom before or after Red Charm. Caution is particularly needed for cultivars with only one observation. As additional observations are obtained further data can be added to the tables.

SEE OTHER RESOURCES FOR CULTIVAR BLOOM DATES.

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