
New York Agricultural Experiment Station

GENEVA, N. Y.

THE BLOOMING SEASON OF HARDY FRUITS.

U. P. HEDRICK.



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 NEW YORK AGRICULTURAL EXPERIMENT STATION, GENEVA, N. Y.

The Bulletins published by the Station will be sent free to any farmer applying
 for them.

*Connected with Grape Culture investigations.

THE BLOOMING SEASON OF HARDY FRUITS.¹

U. P. HEDRICK.

In 1908 this Station published blooming data for 866 varieties of tree and vine fruits. Though a second edition has been published of Bulletin 299, which contained this information, it is now out of print and there is still a demand for it. Meanwhile, in the seven years that have elapsed, many new varieties of tree and vine fruits have been grown for which we now have data as we have also for bramble and bush fruits and strawberries. The present bulletin assigns a blooming season, from data taken at this Station, for all of the varieties of fruits commonly cultivated in New York. Of what value is this data?

The value of blooming data.—The blooming time of fruits governs the action of fruit-growers in several critical matters. Thus, the flowers of early-blooming sorts are often caught by spring frosts; knowing the blooming date, the grower can select late-blooming varieties for frosty sites or choose the most favorable part of his plantation for early bloomers. Again, it is certain that many fruits must be cross-pollinated to insure their setting a crop; only sorts that bloom at the same time should be inter-planted for cross-pollination. Lastly, some orchard operations are governed by blooming time; thus, several fruits are sprayed as blossoms are dropping and it is, therefore, wasteful of time to inter-set a plantation to varieties blooming widely apart since to do so makes it necessary to go over the orchard two or more times for this blooming-time spraying; on the other hand, it may be desirable to prolong the spraying season by planting two or more varieties in blocks blooming at different times.

At what stage of blooming should the date be taken?—There is a fine question as to whether the opening date of the flower, its full bloom

¹ The blooming dates recorded in this Bulletin have been taken by various members of the Horticultural Department of this Station and the author has been assisted in assembling the data by all of the members of the Department.

or the dropping of its petals is most significant. For practical work in the orchard it makes little difference as to which of these events is indicated by the data provided that one of the three be adhered to for all data. In a careful study of blossom biology it is doubtful if any one of these stages of flower development is sufficiently refined; for the important event in the life of a flower is the breaking of the pollen sac or the time at which the stigma becomes receptive. This degree of refinement, however, is not necessary in practical work. The blooming seasons given for varieties in this bulletin are based upon the opening of flowers.

The effects of different temperatures on the essential organs of flowers.—There has long been a question in the mind of the writer as to whether the set of fruit might not be more or less influenced by a difference in the hastening or retarding effect of temperature on the two essential organs of flowers. The pistil, the female organ, and the stamen, the male organ, seem to be affected in different degree by cold and heat. Thus, all know that the pistil is often injured by a light frost which does no harm to the stamen. A considerable amount of work in cross-pollinating at this Station has led to the general observation that very warm weather leads to a more rapid development of the stamen than of the pistil. Not infrequently in exceptionally hot weather it will be found that the stamens have developed much more rapidly than the pistils—that the anthers have burst and lost their pollen before the stigmas are receptive. On the other hand the stamens develop least rapidly in cold weather. May not this unequal response of stamen and pistil to heat and cold be one of the causes of the uncertainty which attends the setting of fruit even when trees blossom well? Here is an important problem for some student of blossom biology.

The effects of moisture on the essential organs.—Rain during blossoming time, as we have shown in Bulletin 299 from this Station, is a frequent cause of a poor setting of fruit, doing damage oftener than frosts in New York. Usually the injurious action of rain on blossoms has been ascribed to the dilution of the stigmatic fluids or to its removal by washing out. During the current season Mr. W. F. Friedman, a student assistant at this Station, has found that pollen grains of practically all fruits burst and will not germinate in water. From his work, extending through the whole of the blooming season of 1915, there can be little doubt but that the action of rain

on pollen is quite as potent in preventing a set of fruit as is its injurious effect on the stigmatic juices.

Variability in the blooming season.—Blooming time is a more or less shifting event. It is, of course, early or late as the season is early or late. It shifts also as regards other life events of plants. In some seasons a species or variety may bloom a little before leaves burst forth; in others, leaf and flower come out simultaneously and in still others leafing precedes blooming. In southern climates the tendency in several fruits is to bloom before they leaf, while in the north the same fruit will leaf and bloom together with the first wave of summer weather. More remarkable, and much more important, is the fact that varieties of most hardy fruits vary in their relative time of blooming; for example, one peach may bloom earlier this year than another and next year the time for the two may be reversed. These variations demand at least an attempt at an explanation.

There are several theories to account for variations in the time of occurrence of life events in plants such as leafing, blooming and fruiting. Possibly the most generally accepted of these is that of Hoffman, briefly discussed in Bulletin 299 of this Station. The gist of Hoffman's hypothesis is that the beginning of any life-epoch in a plant marks a certain sum total of heat up to that event. Hoffman's zero point is arbitrarily fixed at the first of January, after which he takes the sum of the daily maximum positive temperatures of a thermometer exposed to the sun up to the beginning of the event. Hoffman holds that such a thermal constant coincides to a satisfactory degree from year to year.

If some such explanation be accepted one sees at once the cause of the variations in blooming time. Different species and different varieties, hypothetically, have different thermal constants and require a varying length of time in different climates and seasons to attain the thermal constant.

No doubt there are other causes of variations in time of blooming. The age and vigor of the plant may cause variation. As may, also, soil, moisture and all that go to make up the plant's environment. The stock may have a most decided influence. Rarely, it may be supposed, a plant normal in other respects may "sport" in the matter of time of blooming. It is probable that these conditions, affecting the vigor of the plant, account for the shifting in the relative time of blooming of varieties.

Influence of location on blooming time.—The time of blooming depends on temperature which, in its turn, is largely governed by latitude and altitude. In making use of the data to follow, then, it is somewhat important to know the latitude and altitude of this Station. The latitude is $42^{\circ} 52' 46.2''$; the altitude is from 500 to 525 feet above sea level. On the several minor factors which affect temperature the only other one necessary to have in mind in regard to the Station orchard is that the land lies a mile west of Seneca Lake, a body of water 40 miles in length, $3\frac{1}{2}$ miles wide and 600 feet deep—a lake, which because of its depth and size, exercises a powerful influence on the adjacent country, no doubt delaying the blooming time on the Station grounds several days each season.

The fruit-grower, in using such data, must usually make allowance for difference in latitude, altitude and distance from large bodies of water. But since the exact dates are not given and the procession of varieties will bloom approximately the same, subject to the variations discussed, the seasons may be generally accepted in New York as we give them in the lists that follow.

Comparative blooming dates.—A matter of much interest, and of no little importance in planning orchard work, is the dates at which the different fruits may be expected to bloom. We can best give this information by selecting an average year and giving dates of first bloom for the several fruits. The dates for other years will not be the same but the order of blooming will be. The year 1912, of the five seasons for which data are given, is most nearly an average one for blooming dates. In that year sweet cherries began blooming May 1; pears, May 2; European plums, Japanese plums, hybrid plums and currants, May 3; apples, sour cherries, hybrid cherries and gooseberries, May 4; peaches, May 5; crab apples, May 6; native plums, May 7; strawberries, May 16; blackberries, dewberries and black raspberries, May 31; red raspberries, June 1; hybrid raspberries, June 7; grapes, June 14.

APPLES.

The data presented cover the past five years. The blooming season of apples at this Station averages twelve days. The shortest season of bloom was seven days in 1913 and the longest season, eighteen days in 1910. The first date of bloom for apples in 1912, an average year, was May seventh.

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Akin			*			Challenger			*		
Alexander			*			Charlock Reinette	*				
Alice			*			Chautauqua			*		
America			*	*		Chenango			*		
American Codling			*			Chester			*		
Anis Rose	*					Chicago			*		
Arabka			*			Clayton			*		
Arkansas			*			Clinton			*		
Arkansas Beauty			*			Coffelt			*		
Arkansas Black			*			Collamer			*		
Autumn Streaked		*				Collins		*			
Avery		*				Colton		*			
Axident				*		Constantine			*		
Babbitt			*			Cortland		*			
Bailey Sweet			*			Counselor Niemetz			*		
Baker			*			Cox Orange			*		
Baldwin			*			Crimean		*			
Barnes Choice			*			Cross			*		
Barringer					*	Crow Egg				*	
Barton			*			De Chataigener			*		
Baxter			*			Deacon Jones			*		
Bayard			*			Deaderick			*		
Beach			*			Delicious			*		
Belle Bonde					*	Dickey			*		
Ben Davis			*			Dickinson			*		
Ben Hur			*			Doctor			*		
Benninger			*			Donn Marie			*		
Birth			*			Draper		*			
Bismarck				*		Dumelow			*		
Black Ben Davis			*			Early Harvest		*			
Black Gilliflower				*		Early Joe			*		
Bloomfield			*			Eiser			*		
Blushed Calville	*					Ensee			*		
Blushing Bride		*				Eper			*		
Bogdanoff Glass			*			Esopus			*		
Boiken				*		Fall Pippin			*		
Bonum			*			Fameuse			*		
Boskoop		*				Fanny			*		
Bostick			*			Fishkill			*		
Boy's Delight			*			Flanders Pippin			*		*
Brackett			*			Florence			*		
Breskovka	*					Fraker			*		
Broome			*			French Pippin		*			
Brown			*			Gano			*		
Buda			*			Gem			*		
Cagle			*			Gideon		*			
Calville de Oullins			*			Golden Reinette			*		
Canada Baldwin			*			Golden Russet		*			
Canada Reinette			*			Golden Sweet		*			
Centennial			*			Good Peasant			*		
Century					*	Gracie			*		

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Graf Luxburg				*		Lead		*			
Grand Duke Michel						Legal Tender			*		
Pearmain		*				Lehigh Greening			*		
Grandmother		*	*			Lombard			*		
Gravenstein					*	Longevity	*				
Great Barbe						Longfield			*		
Green and Yellow						Long Island Russet			*		
Newtown			*			Long Keeper			*		
Grimes			*			Lord Seedling		*	*		
Grosh		*	*			Lou			*		
Hagloe				*		Louise			*		
Halt			*			Loveland			*	*	
Hanlon			*			Lowell			*		
Haskell			*			Luckey			*		
Headlight				*		Lubsk Queen			*	*	
Hedrick				*		McCroskey			*		
Henry Clay		*				McIntosh			*		
Henry Clay Summer				*		McLellan			*		
Hilaire			*			Magnolia			*	*	
Hoadley			*			Magog			*		
Holland Pippin			*			Magyar			*		
Holland Winter			*			Maiden Blush		*	*		
Houghton Sweet			*			Mammoth			*		
Hubbardston			*			Mann			*		
Hunterdon			*			Marigold			*		
Huntsman			*			Mihalyfi			*		
Hurlbut	*					Milden			*		
Hurne			*			Miller Seedless			*		
Hyde King			*			Missouri Pippin			*	*	
Jack			*			Mock			*		
Jackson			*			Mon Desire			*		
Jacobs Sweet			*			Monmouth		*	*		
Jarvis		*				Monroe Sweet			*		
Jefferis			*			Montgomery			*		
Jersey Black			*			Moore Extra			*		
Jersey Sweet		*				Moore Sweet			*	*	
Johnson			*			Mother			*	*	
Johnsonite			*			Mountain Sweet		*	*		
Jonathan			*			Moyer			*		*
Jonathan Buler			*			Munroe Favorite			*		
Kalkidon		*				Munson		*	*		
Keckskemet			*			Nelson		*	*		
King David			*			New Water		*	*		
King of Pippins			*			Nitchner Strawberry			*		
Kinnaird			*			Northern Spy			*	*	
Kittageskee	*					Northwestern Green-			*		
Lady			*			ing			*		
Lady Sweet			*			Norton Red			*		
Landon			*			Nyari Piros			*		
Landsberg			*			Oak			*	*	
Lawver			*			Oel Austin			*	*	

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Old Garden			*			Red Seek-No-Further			*		
Oldenburg			*			Regmalard			*		
Olga	*					Rensselaer		*			
Oliver			*			Rhode Island Green-					
Olympia			*			ing			*		
Onondaga		*				Ribston			*		
Ontario			*			Richard Early Winter			*		
Opalescent			*			Richard Graft			*		
Oranie			*			Rioter			*		
Orenco				*		Rittenhouse			*		
Ortley			*			Robert			*		
Ostrakoff		*				Rockland			*		
Oswego			*			Rome				*	
Oszi Vaj			*			Roxbury			*		
Otsego		*				Ruby Gem		*			
Overton			*			Rudolph			*		
Ozone			*			Rutherford			*		
Palouse			*			Salome			*		
Paragon			*			Sandy Glass			*		
Parker Seedless				*		Saratoga			*		
Parlin			*			Scarlet Pippin		*			
Parry White		*				Schenectady			*		
Parson			*			Schoharie					*
Patten		*				Scott Winter		*			
Paul Long			*			Sekula			*		
Payne				*		Shackleford			*		
Peach Blow			*			Shannon			*		
Pease			*			Sheddan			*		
Peck Pleasant			*			Shepherd Perfection			*		
Perfect		*				Shirley				*	
Perry			*			Skank			*		
Peter			*			Skelton		*			
Pewaukee			*			Smith Cider			*		
Pickard			*			Smokehouse		*			
Pomme Grise		*				Snyder			*		
Pomona				*		Spasovka			*		
Porter					*	Spencer Seedless					*
Primate		*				Springdale		*			
Prince Double		*				Stark				*	
Princess Wilhelma			*			Starkey		*			
Prolific Sweeting			*			Stayman Winesap			*		
Pumpkin Sweet			*			Stearns			*		
Queen (West)			*			Stewart Seedling			*		
Ralls				*		Streaked Pippin			*		
Ramsdell Sweet			*			Striped Fameuse		*			
Red and Green Sweet				*		Stuart Golden			*		
Red Astrachan		*				Summer Wafer				*	
Red Canada			*			Sutton				*	
Red Carver			*			Swaar			*		
Red June			*			Sweet Jonathan			*		
Red Queen		*				Sweet Romanite			*		

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Sweet Winesap.....	*		*			Wandering Spy.....		*			
Switzer.....	*					Washington Royal.....			*		
Terdika.....			*			Washington Straw- berry.....		*			
Terry.....				*		Water.....			*		
Tioga.....			*			Wealthy.....		*			
Titovka.....			*			Wells.....			*		
Titus Pippin.....			*			Westchester.....			*		
Tolman Sweet.....			*			Whinery.....			*		
Tompkins King.....			*			Williams.....					*
Transparent de Cron- als.....		*				Wilson Red June.....				*	
Tufts.....		*				Windsor.....		*			
Twenty Ounce.....			*			Wine Rubets.....	*				
Ulster.....			*			Winesap.....			*		
Ulysses.....			*			Winter Banana.....			*		
Vandevere.....			*			Wismer.....			*		
Vaughn Seedless.....				*		Wolf River.....			*		
Ver.....			*			Yellow Forest.....			*		
Victoria Sweet.....			*			Yellow Transparent.....			*		
Victuals and Drink.....			*			York Imperial.....				*	
Wabash Red.....			*			York Stripe.....			*		
Wagener.....			*			Zoar.....		*			
Walker Beauty.....			*			Zolotareff.....			*		
Wallace Howard.....			*			Zusoff.....					

CRABAPPLES.

The blooming season of Crabapples is a few days shorter than that of other apples and usually begins from two to four days later.

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Algerienne.....				*		Montreal.....			*		
Cherry.....		*				Orange.....			*		
Currant.....		*				Paul Imperial.....		*			
Excelsior.....	*		*			Picta Striata.....			*		
Florence.....			*			Quaker.....			*		
Grant.....		*	*			Queen.....			*		
Hohenheimer.....		*				September.....			*		
Hyslop.....		*	*			Transcendant.....			*		
Large Red Siberian.....			*			Van Wyck.....			*		
Large Yellow Siberian.....			*			Whitney.....			*		
Martha.....			*			Young America.....			*		

PEARS.

During the past five years the blooming season of pears at this Station averaged ten days. The shortest season of bloom in this period was five days in 1911, and the longest season fifteen days in 1912. The first date of bloom for pears in 1912, an average year, was May second.

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Abraham		*				Japan		*			
Alamo			*			Jones		*			
Andre Desportes			*			Kieffer		*			
Angouleme			*			Koonce			*		
Ansault			*			Krull			*		
Appert			*			Lady Clapp		*			
Bartlett			*			Lamartine		*			
Bihorel			*			Lawrence		*			
Blight Proof			*			Lawson		*			
Bordeaux			*			Le Conte	*				
Bosc		*				Lemon		*			
Boussock		*				Liegel		*			
Canner		*				Lincoln			*		
Chamogea			*			Lincoln Coreless			*		
Cincinnati		*				Longworth		*			
Clairageau			*			Louise			*		
Clapp Favorite			*			Louvenjal			*		
Cocklin		*				Lucrative			*		
Col. Wilder					*	Lucy Duke				*	
Craig				*		Madeleine			*		
Dearborn			*			Magnate			*		
Desportes				*		Malines		*			
Diamyo		*				Margaret			*		
Dorset	*					Mongolian	*				
Douglas			*			Mount Vernon			*		
Duhamel				*		Nickerson			*		
Early Harvest		*				Ogereau				*	
Early Wilder			*			Olivier			*		
Easter Beurre			*			Onondaga			*		
Eastern Belle			*			Osband		*			
Fitzwater			*			P. Barry				*	
Flemish			*			Peffer			*		
Fox		*				Pitmaston			*		
Fred. Clapp			*			Pound		*			
French			*			President			*		
Gansel Seckel		*				President Mas			*		
Giffard			*			Raymond			*		
Golden Russet				*		Reeder			*		
Grand Isle		*				Ritson			*		
Hemminway			*			Romain		*			
Heyst (Emile)				*		Roosevelt		*			
Howell		*				Rossney		*			

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Russet Bartlett.....	.	.	*	.	.	Summer Beauty.....	.	*	.	.	.
Seckel.....	.	.	*	.	.	Treyve.....	*	.	.	.	.
Seneca.....	.	.	*	.	.	Triumph.....	.	.	.	.	.
Sha Lea.....	.	*	.	.	.	Tyson.....	.	.	*	.	.
Sheldon.....	.	.	*	.	.	Ulm.....	.	.	*	.	.
Siebold.....	.	.	*	.	.	Vermont Beauty.....	.	.	*	.	.
Souvenir.....	.	.	.	*	.	White Doyenne.....	.	*	.	.	.
Souvenir (Esp.).....	.	.	.	*	.	Winter Bartlett.....	.	.	.	*	.
Sudduth.....	.	.	.	*	.	Winter Nelis.....	.	.	*	.	.

PEACHES.

During the four years which the data here presented cover, the blooming season of peaches at this Station has averaged ten days. The shortest season of blooming was six days in 1911; the longest, sixteen days in 1910. The first date of bloom for peaches in 1912, an average year, was May eighth.

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Abundance.....	.	*	.	.	.	Beers.....	.	.	*	.	.
A. C. Wooster.....	.	*	.	.	.	Bishop.....	.	.	*	.	.
Ailsworth.....	.	.	*	.	.	Bilyeu.....	.	*	.	.	.
Albright.....	.	.	*	.	.	Blood Cling.....	.	.	*	.	.
Alexander.....	.	*	.	.	.	Blood Leaved.....	.	.	*	.	.
Alton.....	.	*	.	.	.	Bokara.....	.	.	*	.	.
Amelia.....	.	.	*	.	.	Bonanza.....	.	.	*	.	.
Ameliaberta.....	.	.	.	*	.	Brandywine.....	.	.	*	.	.
Anger.....	.	.	*	.	.	Bray Rareripe.....	.	.	*	.	.
Argyle.....	.	.	*	.	.	Brigdon.....	.	.	*	.	.
Arkansas.....	.	.	*	.	.	Briggs.....	.	*	.	.	.
Arp.....	.	.	*	.	.	Bronson.....	.	.	*	.	.
Athens.....	.	.	*	.	.	Burke.....	.	.	*	.	.
Augbert.....	.	.	.	*	.	Buttram.....	.	.	*	.	.
Bailey.....	.	.	.	*	.	Butler Late.....	.	.	*	.	.
Banner.....	.	.	.	*	.	Capps.....	.	.	*	.	.
Barber.....	.	.	*	.	.	Capt. Eads.....	.	.	.	.	*
Beach.....	.	.	*	.	.	Carman.....	.	.	*	.	.
Beatrice.....	.	.	*	.	.	Champion.....	.	.	*	.	.
Belle (of Georgia).....	.	*	.	.	.	Chairs.....	.	.	*	*	.
Ben Jean.....	.	.	*	.	.	Chase Early Free.....	.	.	*	.	.
Bequett Free.....	.	.	*	.	.	Chilow.....	.	.	*	.	.
Berenice.....	.	.	*	.	.	Chilow Cling.....	.	.	*	.	.

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Chinese Cling			*			Gold Drop		*			
Chinese Free		*				Gold Dust			*		
Christiana			*			Gold Gate			*		
Clarissa			*			Gold Medal				*	
Clifton Park		*				Gold Mine			*		
Cobler			*			Gordon				*	
Concord			*			Gov. Garland			*		
Conkling			*	*		Gov. Hogg			*		
Connecticut			*			Graves			*		
Connet So. Early			*			Greensboro		*			
Cooledge			*			Guinn			*		
Crosby			*			Hale			*		
Crothers		*				Heath Cling			*		
Daniel Boone			*			Heath Free			*		
Davidson		*				Henrietta			*		
Delaware			*			Hiley			*		
Denton		*				Hill Home Chief			*		
Dewey			*			Hills Chili			*		
Double Crop				*		Holder			*		
Dr. Burton			*			Holland Cling			*		
Dulce			*	*		Honest John			*		
Dunn			*	*		Horton River		*			
Early Barnard			*			Hughes			*		
Early Beauty			*			Hynds Yellow			*		
Early Canada			*			Hynes Surprise			*		
Early Charlotte			*			Hyslop Cling			*		
Early Crawford			*			Illinois			*		
Early Elberta				*		Ingold				*	
Early Free			*			Iron Mountain				*	
Early Heath		*				Jackson				*	
Early Michigan		*				Jennie Worthen			*		
Early Rivers		*				Jennings			*		
Early York					*	Kalamazoo			*		
Easton Cling				*		Klondike			*		
Edgemont			*			Lafayette			*		
Elberta			*			Lambden				*	
Elberta Cling			*			Lamont			*		
Emma			*			Large Early York			*		
Engle			*			Late Crawford			*		
Eureka		*				Late Elberta			*		
Family Favorite		*				Late Rarripe			*		
Fitzgerald			*			Lee			*		
Ford Choice			*			Levy			*		
Ford Late		*				Lewis			*		
Foster			*			Lodge		*			
Fox				*		Lolo			*		
Frances				*		Lord Palmerston		*			
Frederica			*			Lorentz			*		
G. A. Cling		*				McCollister			*		
Geary			*			McIntosh			*		
Geo. the 4th			*			McKay Late			*		

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Mamie Ross		*				Shipley Late			*		
Marcella				*		Simmons			*		*
Markham			*			Slappey					*
Martins Sept			*			Smock			*		
Massey Yellow			*			Snsed			*		
Matthew			*			Snow Ball Cling			*		
May Lee Cling			*			Steadly				*	
Maule Early			*			Stewart		*	*		
Mikado			*			Strout		*	*		
Miller				*		Stump			*		
Milliser			*			Success		*	*		
Miner Wonder			*			Sunrise		*			
Moore Favorite				*		Surpasse			*		
Morris White			*			Surprise			*		
Mountain Rose			*			Susquehanna			*		
Munson Free			*			Switzerland			*		
Newcomber			*			Tennessee Everbearing			*		
Newington			*			Thurber			*		
New Prolific		*				Tiebout			*		
Niagara			*			Tillotson				*	
Northboro		*				Tornado			*		
Old Mixon Cling			*			Triumph		*			
Old Mixon Free			*			Troth			*		
Opulent			*			Uneeda Cling			*		
Oriole Cling			*			Van Meteors		*	*		
Orleans				*		Victor		*			
Ostrander Late			*			Waddell			*		
O. Z. Cling			*			Wager			*		
Parson Early			*			Walker			*		
Patterson			*			Ward Late			*		
Pearce Yellow			*			Washington			*		
Pearson	*					Waterloo			*		
Perfection			*			Weaver			*		
Philip Horton					*	Wellington				*	
Picquet			*			Wheatland				*	
Potter				*		Whitford Yellow				*	
Pratt				*		Wiard			*		
Prolific			*			Wilkins			*		
Ray			*			Willard			*		
Red Bird			*			Willett			*		
Red Bird Cling			*			Williams			*		
Red Cheek Melocoton			*			Wm. Lynn			*		
Reeves Favorite				*		Wonderful				*	
R. S. Stevens			*			Woolsey				*	
Rudings Late			*			Worlds Fair				*	
Russell		*				Worrell				*	
Salway		*	*			Wright			*		
Schumaker			*			Yellow Rareripec			*		
Scott Nonpareil			*			Yellow St. John			*		
Sea Eagle		*				Yellow Swan				*	

EUROPEAN PLUMS.

European plums are among the first to begin blossoming, yet they cover such a long season that some varieties are recorded as very late and are only slightly earlier than our latest natives. The blooming season may open from the middle of April up to the beginning of the second week in May and may be from one week to three weeks long. In 1912, an average year for plums, the first blossoms among Europeans were recorded May sixth and the last varieties to open were recorded on the sixteenth.

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
<i>Prunus domestica</i> .						<i>Prunus domestica</i> (continued).					
Agen.....			*			Imperial Epineuse...			*		
Althann.....			*			Imperial Gage.....			*		
Arch Duke.....			*			Italian Prune.....				*	
Arctic.....			*			Jefferson.....			*		
Autumn Compote.....			*			Kirke.....			*		
Bavay.....			*			Lafayette.....			*		
Belgian Purple.....			*			Large English.....				*	
Belle.....				*		Late Muscatelle.....					*
Bradshaw.....			*			Late Orleans.....			*		
Bryanston.....		*				Lucombe.....			*		
Chambourcy.....			*			McLaughlin.....			*		
Champion.....			*			Middleburg.....			*		
Clingstem.....		*				Miller Superb.....			*		
Clyman.....		*				Monarch.....			*		
Copper.....		*				Monroe.....			*		
Czar.....		*	*			Newark.....			*		
Diamond.....		*				Orange.....			*		
Duane.....	*					Oullins.....			*		
Early Orleans.....			*			Pacific.....			*		
Early Rivers.....			*			Palatine.....			*		
Early Tours.....			*			Paul Early.....			*		
Empire.....			*			Pearl.....			*		
Field.....		*				Peters.....			*		
Furst.....				*		Pond.....			*		
German Prune.....			*			Purple Gage.....			*		
Golden Drop.....			*			Quackenboss.....			*		
Goliath.....			*			Red Date.....			*		
Grand Duke.....			*			Red Magnum Bonum.....			*		
Gueii.....			*			St. Catherine.....			*		
Guthrie Late.....		*				Saunders.....			*		
Hand.....			*			Sheldrake.....			*		
Hudson.....			*			Shipper.....			*		
Hulings.....			*			Smith Orleans.....			*		
Hungarian.....			*			Spaulding.....			*		
Ickworth.....			*						*		

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
<i>Prunus domestica</i> (concluded).						<i>Prunus insititia</i> (concluded).					
Tennant.....		*				Drap D'Or.....			*		
Tragedy.....		*				Freestone.....					*
Transparent.....			*			French.....			*		
Ungarish.....			*			Frogmore.....			*		
Victoria.....			*			Frost Damson.....			*		
Wales.....			*			King Damson.....			*		
Wangenheim.....				*		Late Mirabelle.....				*	
Washington.....			*			Shropshire.....				*	
Yellow Egg.....			*			White Bullace.....				*	
Yellow Gage.....			*								
<i>Prunus insititia.</i>						<i>Prunus cerasifera.</i>					
Black Bullace.....			*			De Caradeuc.....	*	*			
Crittenden.....			*			Golden Cherry.....					

TRIFLORA PLUMS.

Although the Triflora plums begin to bloom at the same time as the European varieties, their season is much shorter—from four to eight days—so that late Triflora varieties fall in midseason for Domesticas.

	Early.	Midseason.	Late.		Early.	Midseason.	Late.
Abundance.....	*			Long Fruit.....			*
Burbank.....		*		Maru.....		*	
Chabot.....		*		Occident.....		*	
Earliest of All.....	*			October.....		*	
Engre.....		*		Ogon.....		*	
Georgeson.....		*		Red June.....		*	
Hale.....	*			Willard.....		*	

NATIVE PLUMS.

Varieties of five native species are growing at Geneva. These are much slower in starting into bloom than are the European va-

rieties, the earliest usually blooming toward the latter part of the midseason for Domesticas, and they continue to open from a day to a week after the latter plums. The 1912 season opened on the eleventh of May and continued for six days. We have no other plums which bloom later than the Hortulanas.

	Early.	Midseason.	Late.		Early.	Midseason.	Late.
<i>Prunus munsoniana.</i>				<i>Prunus hortulana.</i>			
Newman		*		Golden Beauty			*
Poole Pride		*	*	Wayland			*
Pottawattamie		*		World Beater			*
Robinson		*					
Wild Goose		*		<i>Prunus hortulana</i>			
				<i>mineri.</i>			
<i>Prunus americana.</i>				Forest Garden		*	
De Soto		*		Miner	*	*	
Oren		*		Surprise		*	
Rollingstone		*					
Stoddard		*		<i>Prunus americana</i>			
Weaver	*			<i>mollis.</i>			
Wood	*			Wolf		*	

HYBRID PLUMS.

As would be expected, the blooming period of hybrid plums is considerably spread out—some coming in with the early Domesticas and Trifloras while others are nearly as late as the Hortulanas. In 1912 the season opened on the sixth of May and the last variety bloomed seven days later.

	Early.	Midseason	Late.		Early.	Midseason.	Late.
America		*		Japex	*		
Ames		*	*	Juicy			*
Chalco		*		Marianna	*	*	
Climax		*		Maynard	*		
Golden		*		Miracle		*	
Gonzales		*		Shiro	*		
Hammer		*		Wickson		*	

SWEET CHERRIES.

The blooming season of sweet cherries at this Station averages six days. The data presented cover the past five years. The shortest season of bloom was four days in 1912, and the longest season eight days in 1911. The first date of bloom in 1912, an average season, was May first.

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Allen			*			Kirtland				*	
Bing					*	Knight		*			
Black Tartarian		*				Lamaurie		*			
Burbank			*			Lambert			*		
California Advance	*					Lyons			*		
Centennial		*				Mercer			*		
Cleveland			*			Mezel		*	*		
Coe		*				Napoleon		*			
Dikeman		*				Republican		*			
Downer		*				Rockport			*		
Eagle			*			Schmidt		*	*		
Early Purple	*					Sparhawk		*			
Elkhorn		*	*			Stuart			*		
Elton				*		Summit		*	*		
Florence				*		Windsor		*		*	
Genesee			*			Wood		*	*		
Hoy				*		Yellow Spanish		*			
Ida	*										

SOUR CHERRIES.

The blooming season of sour cherries at this Station averaged eight days during the past five seasons. The shortest season of bloom was five days in 1911; the longest, eleven days in 1910. The first date of bloom in 1912, an average season, was May seventh.

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Bourgueil			*			Double Natte		*			
Brusseler Braune	*		*			Dyehouse			*		
Carnation					*	Early Morello			*	*	
Cole					*	Early Richmond		*	*		

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
English Morello.....	.	.	.	*	.	Olivet.....	*	.	.	.	.
George Glass.....	.	.	.	.	.	Ostheim.....	.	*	.	.	.
Grosse Picarde.....	.	.	.	*	.	Riga.....	.	.	.	.	.
Heart-Shaped Weichsel.....	.	.	.	.	*	Short-Stem Montmorency.....	.	.	.	*	.
King Amarelle.....	.	*	.	.	.	Sklanka.....	.	.	*	.	.
Large Montmorency.....	.	.	*	.	.	Spate Amarelle.....	.	.	.	*	.
Louis Philippe.....	.	*	.	.	.	Suda.....	.	.	*	.	.
Magnifique.....	.	.	.	.	*	Timme.....	.	.	*	.	.
Montmorency.....	.	.	*	.	.	Tubbs.....	.	.	*	*	.
Northwest.....	.	.	.	*	.	Vladimir.....	.	.	*	.	.

HYBRID CHERRIES.

The blooming season of hybrid, or Duke cherries, is coincident with that of sour cherries.

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Abbesse d'Oignies.....	.	.	*	.	.	New Century.....	.	.	*	.	.
Bender (of New York).....	.	.	.	.	*	Nouvelle Royale.....	.	.	*	.	.
Empress Eugenie.....	.	.	*	.	.	Reine Hortense.....	.	*	.	.	.
Late Duke.....	.	.	.	*	*	Royal Duke.....	.	.	*	.	.
May Duke.....	.	.	*	.	.						

GRAPES.

From three years' records, the average length of blooming season for grapes has been twenty days, nineteen days in 1912 and 1914 and twenty-two days in 1913. The first date in the average year of 1912 was June fourteenth while for 1914 it was June seventh.

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Adirondac.....	.	.	*	.	.	Alice.....	.	.	*	.	.
Agawam.....	.	*	.	.	.	Amber Queen.....	.	.	*	.	.
Alexander Winter.....	.	.	.	.	.	Ambrosia.....	.	.	*	.	.

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
America				*		Delaware			*		
Amethyst				*		Diamond			*		
Aminia			*			Diana			*		
Antoinette			*			Downing			*		
Arkansas			*			Dracut Amber		*			
Aroma			*			Dry Hill Beauty			*		
August Giant			*			Dutchess				*	
Bacchus	*					Early Dawn			*		
Bailey				*	*	Early Golden				*	
Banner				*		Early Ohio		*			
Barry			*			Early Victor		*			
Beacon				*		Eaton			*		
Bell		*				Eclipse I			*		
Berckmans		*				Eclipse II				*	
Bertha			*			Eldorado			*		
Big Hope					*	Elsinburgh					*
Bishop			*			Elvibach			*		
Black Eagle			*			Elvira		*			
Brighton			*			Emerald			*		
Bridgewater			*			Empire State			*		
Brilliant			*			Essex			*		
Brown			*			Etta			*		
Campbell Early			*			Eumedel			*		
Canada		*				Eumelan				*	
Canandaigua			*			Extra					*
Captain				*		Faith		*			
Captivator			*			Fern Munson				*	
Carman					*	Gaertner			*		
Catawba			*			Garfield			*		
Cayuga			*			Geneva			*		
Champion		*				Glenfeld			*		
Champanel			*			Goethe			*		
Chambril			*			Goff			*		
Chandler			*			Gold Coin			*		
Chautauqua			*			Golden Drop			*		
Cleaver	*					Gold Dust			*		
Clinton	*					Golden Grain			*		
Cloeta				*		Green Early			*		
Cochee			*			Grein Golden		*			
Colerain			*			Hartford			*		
Columbian Imperial			*			Headlight			*		
Collier				*		Helen Keller			*		
Concord			*			Herbert			*		
Corby			*			Hercules			*		
Cottage		*				Hernito			*		
Creveling			*			Hexamer				*	
Croton				*		Hicks			*		
Daisy			*			Hidalgo			*		
Delakins			*			Hopican			*		
Delago			*			Hopkins					*

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Hosford			*			Newburgh Muscat			*		
Hubbard Seedless			*			Niagara			*		
Hybrid Franc		*				Noah		*			
Illinois City				*		Nora					*
International		*				Norfolk			*		
Iona				*		Northern Muscadine		*			
Isabella		*				Norton			*		*
Janesville	*					Occidental			*		
Jefferson					*	Olita			*		
Jessica		*				Omega			*		
Jewel			*			Oneida			*		
Kensington		*				Oporto	*				
Kentucky			*			Osage			*		
King			*			Ozark				*	
Krause				*		Palermo			*		
Laconia			*			Paradox			*		
Lady Washington				*		Paragon			*		
L'Amoreaux			*			Peabody		*	*		
Leader			*			Pearl		*			
Lindley			*			Perfection			*		
Lindmar			*			Perkins			*		
Linn			*			Pierce			*		
Livingston			*			Pocklington			*		
Little Blue			*			Poughkeepsie				*	
Long John				*		Prentiss			*		
Lucile			*			President			*		
Lutie		*				Presley		*			
McPike			*			Pukwana			*		
McKinley			*			Pulaski			*		*
Mabel			*			Pulliat					
Magnate			*			Purity			*		
Mammoth			*			Rebecca			*		
Manito				*		Red Bird			*		
Mary Favorite		*				Red Eagle			*		
Marie Louise				*		Red Rover			*		
Marion	*					Red Riesling			*		
Martha			*			Regal			*		
Marsala			*			Requa			*		
Massasoit			*			Rochester			*		
Maxatawney			*			Rockwood			*		
Merrimac			*			Rommel			*		
Mills			*			Rupert			*		
Missouri Riesling		*				Rustler			*		
Montefiore			*			R. W. Munson				*	
Montclair			*			St. Hilaire	*				
Moore Early			*			St. Louis			*		
Moyer			*			Salem			*		
Munson			*			Sanbornton			*		
Nectar			*			Santa Clara				*	
Neosho				*		Secretary			*		

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Senasqua.....				*		Victoria.....			*		
Shelby.....			*			Waldo.....			*		
Standard.....			*			Wapanuka.....			*		
Stark-Star.....			*	*		Western Beauty.....			*		
Sterling.....			*			Wheaton.....			*		
Sunrise.....			*			White Imperial.....			*		
Superb.....			*			Wilder.....			*		
Telegraph.....			*			Willard.....			*		
Tonkawa.....			*			Winchell.....			*		
Triumph.....			*	*		Wine King.....			*		
Ulster.....	*					Worden.....			*		
Vergennes.....			*			Wyoming.....			*		

GOOSEBERRIES.

The average length of blooming season of gooseberries at this Station for the past three years is ten days. The shortest season was nine days in 1914 and the longest season twelve days in 1912. The first date of bloom for gooseberries in 1912, an average year, was May seventh.

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Antagonist.....					*	Gipsy Queen.....				*	
Berkeley.....			*			Golden Prolific.....		*		*	
Blucher.....			*			High Sheriff.....		*		*	
Candidate.....			*	*		Houghton.....			*	*	
Careless.....			*			Industry.....			*	*	
Carrie.....			*	*		Jolly Angler.....			*	*	
Carman.....			*	*		Josselyn.....		*	*	*	
Catherine.....			*	*		Keepsake.....			*	*	
Chautauqua.....			*			King of Trumps.....			*	*	
Dominion.....	*					Lady Houghton.....			*	*	
Downing.....		*				Lady Popham.....			*	*	
Drill.....		*	*			Lancashire Lad.....			*	*	
Duke of Sutherland.....		*	*			Leigh.....			*	*	
Duplication.....		*	*			Leveller.....			*	*	
Early Hedgehog.....		*	*			Lord Beaconsfield.....			*	*	
Freedom.....		*	*			Matchless.....			*	*	
Galopin.....		*	*			May Duke.....	*		*	*	
General.....		*	*			Monument.....			*	*	

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Oregon.....	.	.	*	.	.	Smiling Beauty.....	.	.	*	.	.
Oskender Bey.....	.	*	.	.	.	Stockwell.....	.	*	.	.	.
Overall.....	.	.	*	.	.	Succeed.....	.	.	*	.	.
Ozone.....	.	.	*	.	.	Sulphur.....	.	.	*	*	.
Pearl.....	*	.	.	.	.	Sunset.....	.	.	.	.	.
Poorman.....	.	.	*	.	.	Tally Ho.....	.	.	*	.	.
Portage.....	.	*	.	.	.	Thumper.....	.	.	*	.	.
Queen of Whites.....	.	.	*	.	.	Victoria.....	*	.	.	.	.
Red Champagne.....	.	.	.	*	.	Wellington.....	*	.	.	.	.
Red Warrington.....	.	*	*	.	.	White Eagle.....	.	.	*	.	.
Rough Yellow Scotch.....	.	*	.	.	.	Whitesmith.....	.	*	.	.	.
Smith.....	*	.	.	.	.						

CURRENTS.

From three years' records, the average length of blooming season for currants has been eight days; seven days in 1913, eight in 1914 and nine in 1912. The first date in 1912, the season which is being used to show relative dates for the different fruits, was May sixth.

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Black Victoria.....	.	.	.	*	.	Naples.....	.	.	.	.	*
Boskoop Giant.....	.	.	.	*	.	North Star.....	.	*	.	.	.
Champion.....	.	*	.	.	.	Perfection.....	.	*	.	.	.
Chautauqua.....	.	.	.	.	.	Pomona.....	.	.	*	.	.
Cherry.....	.	*	.	.	.	Prince Albert.....	.	.	*	.	.
Comet.....	.	*	.	.	.	Red Cross.....	.	.	*	.	.
Crandall.....	.	.	*	.	.	Red Dutch.....	.	*	.	.	.
Diploma.....	.	*	*	.	.	Ruby.....	.	*	.	.	.
Fay.....	.	.	.	.	.	Versailles.....	.	.	*	.	.
Filler.....	.	.	*	.	.	Victoria.....	.	.	*	.	.
Franco German.....	.	.	*	.	.	White Dutch.....	.	.	*	.	.
Holland.....	.	.	*	.	.	White Grape.....	.	.	*	.	.
Lee.....	.	.	.	*	.	White Imperial.....	.	.	*	.	.
London Market.....	.	.	*	.	.	White Transparent.....	.	*	.	.	.
Magnum Bonum.....	*	.	.	.	.	Wilder.....	.	*	.	.	.

BLACKBERRIES AND DEWBERRIES.

The average length of blooming season of blackberries and dewberries at this Station for three years is twenty-four days. The shortest season was twenty days in 1914 and the longest season twenty-seven days in 1913. The first date of bloom for blackberries in 1912, an average year, was May thirty-first, and for dewberries June first.

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Agawam.....	*					Minnewaska.....			*		
Blowers.....				*		McDonald (Dewberry)		*			
Briton.....			*			Ohmer.....		*			
Early Harvest.....			*			Premo (Dewberry)....		*			
Eldorado.....			*			Rathbun.....		*			
Erie.....		*				Snyder.....		*			
Giant Himalaya.....					*	Sorsby May.....			*	*	
Joy.....			*		*	Taylor.....		*	*	*	
Kenoyer.....			*		*	Ward.....			*	*	
Kittatinny.....			*			Wilson.....			*	*	
Lucretia (Dewberry)...		*				Watt.....			*	*	
Mersereau.....			*								

RED, YELLOW AND HYBRID RASPBERRIES.

The average length of blooming season of red, hybrid and yellow raspberries at this Station for three years is fourteen days. The shortest season was fourteen days, 1913 and 1914, and the longest season fifteen days in 1912. The first date of bloom for red raspberries in 1912, an average year, was June first; for hybrid raspberries, June seventh; and for yellow raspberries, June eleventh.

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Brilliant.....			*			Eaton.....			*		
Buckeye.....		*				Golden Queen (Yellow)			*		
Columbian (Purple)...			*			Haymaker (Purple)...			*		
Cuthbert.....			*			Herbert.....			*	*	
Donboro.....			*			Idaho.....			*	*	

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
June.....	*					Ruby.....		*			
Marlboro.....		*				Ranere (St. Regis).....			*		
Marldon.....			*	*		Segrist.....				*	
Miller.....			*	*		Shaffer (Purple).....				*	
Minnetonka.....			*	*		Surprise.....	*				
Olita.....		*				Syracuse.....			*	*	
Perfection.....		*				Turner.....			*	*	
Red Antwerp.....			*			Twentieth Century.....			*		
Royal Purple (Purple).....				*		Watson.....					*

BLACK RASPBERRIES.

The average length of blooming season of black raspberries at this Station for three years is seven days. The shortest season was six days in 1912 and the longest season nine days in 1914. The first date of bloom for black raspberries in 1912, an average year, was May thirty-first.

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Black Pearl.....			*			Mammoth Cluster.....	*				
Cumberland.....		*		*		Midwest.....		*			*
Diamond.....		*	*			Ohio.....		*			
Eureka.....			*			Palmer.....	*				
Gault.....				*		Plum Farmer.....			*		
Gregg.....			*	*		Rachel.....				*	*
Hilborn.....			*			Souhegan.....			*		
Hoosier.....			*			Stone Fort.....			*		
Johnson Sweet.....			*			Winfield.....			*		
Kansas.....			*								

STRAWBERRIES.

The average length of blooming season of strawberries at this Station for five years is seventeen days. The shortest season was eleven days in 1912 and the longest season twenty-six days in 1910.

The first date of bloom for strawberries in 1912, an average year, was May sixteenth.

	Very early.	Early.	Midseason.	Late.	Very late.		Very early.	Early.	Midseason.	Late.	Very late.
Abington.....			*			Good Luck.....				*	
Amanda.....			*			Goodwin.....				*	
Americus.....		*				Goree.....				*	
Atkins Continuity.....			*			Gov. Fort.....				*	
Autumn.....				*		Gov. Rollins.....		*			
Baltimore.....		*				Granger.....			*		
Barkley.....			*			Grand Marie.....			*		
Barrymore.....				*		Gray Dollar.....			*		
Battenburg.....			*			Greenwood.....			*		
Bederwood.....	*					Helen Davis.....				*	
Bethel.....				*		Highland.....			*		
Berlin.....			*			Hub.....				*	
Big Rock.....				*		Hughson.....				*	
Black Beauty.....		*				Indiana.....					*
Bradley.....			*			Ionia Market.....			*		
Brandywine.....			*			Iowa.....		*			
Bull Moose.....				*		Irena.....		*			
Buster.....				*		James Todd.....				*	
Carrie Silvers.....		*				Joe.....				*	
Chesapeake.....					*	July.....					*
Clara.....			*			Kevitt Wonder.....					
Climax.....			*			Killarney.....			*		
Columbia.....				*		Kittie Rice.....			*		
Consort.....		*				Klondike.....					*
Corinne.....			*			Labell.....				*	
Danby.....			*			Latest of All.....					*
Darlington.....						Late Jersey Giant.....				*	
Dawley.....			*			Laxton Latest.....			*		
Deacon.....			*			Lea.....		*			
Dewdrop.....				*		Magnus.....				*	
Dicky.....			*			Manhattan.....			*		
Dighton.....		*				Marshall.....			*		
Dixon.....					*	Maryland Prize.....		*			
Dunmore.....		*				Mascot.....					*
Dunlap.....			*			Matthew Crawford.....					*
Early Jersey Giant.....			*			Maud Muller.....		*			
Early Ozark.....		*				Meteor.....				*	
Early Queen.....		*				Missionary.....		*			
Ekey.....		*				Model.....				*	
Ernest.....			*			Monroe.....		*			
Fillbasket.....					*	Myer.....		*			
First Prize.....		*				Nanticoke.....		*			
First Quality.....				*		Nettie.....				*	
Four Seasons.....		*				New Discovery.....			*		
Glastonbury.....			*			Norwood.....			*		
Golden Gate.....			*			Ohio Boy.....					*
Goodell.....			*			Omega.....					*

