

Table 1. A Biological Calendar for Wooster, Ohio, from 1997-2002.

The phenological sequence consists of 91 plants and 43 insect and mite species. Average date of occurrence, average cumulative degree days, and the earliest and latest date on which an event occurred over the six-year period is reported, as well as date of occurrence and cumulative degree-days for 2002. Insect and mite species are indicated in bold. Common names of plants follow Dirr (1998). Cumulative degree-days were calculated using a base temperature of 50°F and a starting date of January 1.

Plant or Arthropod Taxon	Pheno- logical Event	1997 - 2002				2002	
		Average Date	Average Degree Days	Earliest Date	Latest Date	Date	Degree Days
Silver Maple	first bloom	9-Feb	32	22-Feb	7-Mar	22-Feb	23
Corneliancherry Dogwood	first bloom	14-Mar	39	5-Mar	31-Mar	6-Mar	30
Silver Maple	full bloom	17-Mar	42	4-Mar	25-Mar	8-Mar	40
Red Maple	first bloom	21-Mar	45	6-Mar	3-Apr	11-Mar	48
Speckled Alder	first bloom	20-Mar	52	7-Mar	27-Mar	11-Mar	48
Northern Lights Forsythia	first bloom	24-Mar	58	8-Mar	1-Apr	14-Mar	56
Japanese Pieris	first bloom	26-Mar	61	14-Mar	7-Apr	23-Mar	66
Red Maple	full bloom	28-Mar	74	9-Mar	6-Apr	26-Mar	66
Star Magnolia	first bloom	1-Apr	83	23-Mar	7-Apr	4-Apr	83
Border Forsythia	first bloom	30-Mar	85	19-Mar	4-Apr	4-Apr	83
Northern Lights Forsythia	full bloom	30-Mar	89	17-Mar	8-Apr	26-Mar	66
Eastern Tent Caterpillar	egg hatch	2-Apr	94	23-Mar	10-Apr	10-Apr	102
Corneliancherry Dogwood	full bloom	3-Apr	98	25-Mar	9-Apr	9-Apr	97
Norway Maple	first bloom	4-Apr	115	25-Mar	11-Apr	11-Apr	109
Border Forsythia	full bloom	5-Apr	117	26-Mar	12-Apr	12-Apr	123
Larch Casebearer	egg hatch	6-Apr	122	25-Mar	15-Apr	8-Apr	90
Chanticleer Callery Pear	first bloom	5-Apr	123	25-Mar	12-Apr	12-Apr	123
Japanese Pieris	full bloom	8-Apr	125	29-Mar	11-Apr	11-Apr	109
Sargent Cherry	first bloom	5-Apr	126	25-Mar	12-Apr	12-Apr	123
Saucer Magnolia	first bloom	6-Apr	131	28-Mar	12-Apr	12-Apr	123
Inkberry	adult						
Leafminer	emergence	11-Apr	140	6-Apr	15-Apr	8-Apr	90
Common Floweringquince	first bloom	9-Apr	141	26-Mar	23-Apr	15-Apr	159
Bradford Callery Pear	first bloom	10-Apr	141	31-Mar	21-Apr	13-Apr	136
Weeping Higan Cherry	first bloom	10-Apr	143	1-Apr	20-Apr	13-Apr	136
European Pine Sawfly	egg hatch	10-Apr	144	1-Apr	18-Apr	14-Apr	144
PJM Rhododendron	first bloom	12-Apr	147	1-Apr	21-Apr	14-Apr	144
Star Magnolia	full bloom	12-Apr	148	2-Apr	17-Apr	13-Apr	136
Chanticleer Callery Pear	full bloom	13-Apr	149	1-Apr	20-Apr	14-Apr	144
Spruce Spider Mite	egg hatch	12-Apr	154	5-Apr	20-Apr	12-Apr	123
Allegheny Serviceberry	first bloom	15-Apr	154	7-Apr	23-Apr	15-Apr	159
Spring Snow Crabapple	first bloom	16-Apr	156	6-Apr	22-Apr	15-Apr	159
Sargent Cherry	full bloom	11-Apr	157	1-Apr	20-Apr	16-Apr	181
Apple Serviceberry	first bloom	16-Apr	163	8-Apr	22-Apr	16-Apr	181
Compact Garland Spirea	first bloom	17-Apr	163	8-Apr	27-Apr	16-Apr	181
Bradford Callery Pear	full bloom	15-Apr	163	7-Apr	22-Apr	15-Apr	159
Norway Maple	full bloom	12-Apr	165	31-Mar	18-Apr	18-Apr	227
Boxwood Psyllid	egg hatch	16-Apr	172	14-Apr	20-Apr	14-Apr	144
Allegheny Serviceberry	full bloom	19-Apr	175	9-Apr	29-Apr	17-Apr	205
Saucer Magnolia	full bloom	18-Apr	176	15-Apr	22-Apr	16-Apr	181
Weeping Higan Cherry	full bloom	19-Apr	180	11-Apr	29-Apr	16-Apr	181
PJM Rhododendron	full bloom	19-Apr	183	8-Apr	1-May	17-Apr	205
Koreanspice Viburnum	first bloom	20-Apr	189	13-Apr	26-Apr	17-Apr	205
Eastern Redbud	first bloom	22-Apr	189	14-Apr	7-May	16-Apr	181

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		Average Date	Average Degree Days	Earliest Date	Latest Date	Date	Degree Days
Common Chokecherry	first bloom	21-Apr	189	15-Apr	2-May	18-Apr	227
Regent Serviceberry	first bloom	21-Apr	190	16-Apr	1-May	17-Apr	205
Apple Serviceberry	full bloom	20-Apr	190	11-Apr	29-Apr	18-Apr	227
Japanese Flowering Crab	first bloom	21-Apr	192	14-Apr	5-May	17-Apr	205
Gypsy Moth	egg hatch	22-Apr	198	16-Apr	7-May	18-Apr	227
Donald Wyman Crabapple	first bloom	22-Apr	198	16-Apr	4-Apr	17-Apr	205
Snowdrift Crabapple	first bloom	22-Apr	203	17-Apr	2-May	18-Apr	227
Common Floweringquince	full bloom	23-Apr	208	13-Apr	8-May	19-Apr	248
Compact Garland Spirea	full bloom	23-Apr	209	18-Apr	6-May	18-Apr	227
Spring Snow Crabapple	full bloom	23-Apr	212	17-Apr	3-May	18-Apr	227
Koreanspice Viburnum	full bloom	24-Apr	214	17-Apr	7-May	21-Apr	259
Carolina Silverbell	first bloom	24-Apr	216	18-Apr	5-May	18-Apr	227
Birch	adult						
Leafminer	emergence	25-Apr	217	18-Apr	5-May	18-Apr	227
Andromeda Lace Bug	egg hatch	23-Apr	221	20-Apr	30-Apr	24-Apr	263
Coral Burst Crabapple	first bloom	26-Apr	224	21-Apr	11-May	21-Apr	259
Alder	adult						
Leafminer	emergence	23-Apr	225	18-Apr	27-Apr	18-Apr	227
Elm	adult						
Leafminer	emergence	23-Apr	225	19-Apr	27-Apr	19-Apr	248
Regent Serviceberry	full bloom	27-Apr	226	21-Apr	7-May	24-Apr	263
Common Chokecherry	full bloom	28-Apr	231	21-Apr	8-May	28-Apr	279
Honeylocust Spider Mite	egg hatch	25-Apr	232	19-Apr	28-Apr	19-Apr	248
Honeylocust Plant Bug	egg hatch	28-Apr	235	20-Apr	16-May	20-Apr	258
Wayfaringtree Viburnum	first bloom	29-Apr	236	24-Apr	10-May	27-Apr	274
Sargent Crabapple	first bloom	29-Apr	238	23-Apr	10-May	28-Apr	279
Tatarian Honeysuckle	first bloom	29-Apr	238	23-Apr	12-May	24-Apr	263
Common Lilac	first bloom	29-Apr	239	23-Apr	15-May	23-Apr	259
Persian Lilac	first bloom	30-Apr	244	24-Apr	16-May	24-Apr	263
Ohio Buckeye	first bloom	1-May	248	24-Apr	14-May	24-Apr	263
Eastern Redbud	full bloom	1-May	249	25-Apr	19-May	25-Apr	269
Snowdrift Crabapple	full bloom	2-May	256	24-Apr	15-May	30-Apr	285
Common Horsechestnut	first bloom	3-May	256	27-Apr	16-May	28-Apr	279
Donald Wyman Crabapple	full bloom	2-May	257	26-Apr	16-May	30-Apr	285
Hawthorn Lace	adult						
Bug	emergence	29-Apr	260	22-Apr	3-May	1-May	290
Japanese Flowering Crab	full bloom	3-May	261	23-Apr	22-May	2-May	296
Dwarf Fothergilla	first bloom	3-May	264	23-Apr	20-May	23-Apr	259
Red Buckeye	first bloom	4-May	266	26-Apr	18-May	26-Apr	272
Imported Willow	adult						
Leaf Beetle	emergence	2-May	266	18-Apr	18-May	18-Apr	227
Japanese Kerria	first bloom	3-May	267	23-Apr	20-May	23-Apr	259
Coral Burst Crabapple	full bloom	4-May	267	29-Apr	18-May	1-May	290
Hawthorn	adult						
Leafminer	emergence	30-Apr	268	29-Apr	3-May	29-Apr	283
Carolina Silverbell	full bloom	4-May	269	29-Apr	17-May	29-Apr	283
Flowering Dogwood	first bloom	4-May	269	1-May	20-May	2-May	296
Blackhaw Viburnum	first bloom	4-May	272	29-Apr	19-May	29-Apr	283
Red Chokeberry	first bloom	6-May	284	2-May	19-May	2-May	296
Wayfaringtree Viburnum	full bloom	7-May	297	1-May	20-May	7-May	331
Pine Needle	egg hatch -						
Scale	1st genera- tion	7-May	302	30-Apr	3-May	30-Apr	285

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		Average Date	Average Degree Days	Earliest Date	Latest Date	Date	Degree Days
Sargent Crabapple	full bloom	7-May	302	2-May	19-May	6-May	321
Cooley Spruce Gall Adelgid	egg hatch	7-May	304	3-May	22-May	30-Apr	285
Eastern Spruce Gall Adelgid	egg hatch	7-May	304	3-May	22-May	30-Apr	285
Red Horsechestnut	first bloom	7-May	305	2-May	19-May	5-May	311
Umbrella Magnolia	first bloom	8-May	308	3-May	26-May	7-May	331
Persian Lilac	full bloom	8-May	309	3-May	23-May	8-May	339
Vanhoutte Spirea	first bloom	8-May	311	4-May	25-May	6-May	321
Common Lilac	full bloom	9-May	319	3-May	26-May	8-May	339
Dwarf Fothergilla	full bloom	9-May	320	3-May	23-May	4-May	303
Pink Princess Weigela	first bloom	9-May	322	1-May	20-May	9-May	351
Blackhaw Viburnum	full bloom	9-May	325	4-May	22-May	8-May	339
Winter King Hawthorn	first bloom	9-May	327	5-May	26-May	6-May	321
Redosier Dogwood	first bloom	10-May	328	5-May	27-May	9-May	351
Lilac Borer	adult emergence	11-May	343	3-May	30-May	16-May	404
Slender Deutzia	first bloom	12-May	350	6-May	29-May	17-May	411
Common Horsechestnut	full bloom	13-May	355	5-May	29-May	18-May	413
Doublefile Viburnum	first bloom	12-May	357	5-Jul	27-May	13-May	380
Common Sweetshrub	first bloom	12-May	358	2-May	4-Jun	2-May	296
Red Chokeberry	full bloom	12-May	360	7-May	26-May	16-May	404
Pagoda Dogwood	first bloom	13-May	363	7-May	30-May	11-May	363
Red Java Weigela	first bloom	13-May	368	6-May	29-May	14-May	386
Black Cherry	first bloom	13-May	371	9-May	29-May	14-May	386
Ohio Buckeye	full bloom	14-May	375	8-May	31-May	13-May	380
Holly Leafminer	adult emergence	14-May	380	9-May	29-May	16-May	404
Lesser Peach Tree Borer	adult emergence	15-May	381	10-May	4-Jun	23-May	425
Vanhoutte Spirea	full bloom	16-May	405	12-May	1-Jun	16-May	404
Winter King Hawthorn	full bloom	16-May	407	14-May	5-Jun	16-May	404
Euonymus Scale	egg hatch - 1st genera- tion	17-May	409	11-May	30-May	23-May	425
Tatarian Honeysuckle	full bloom	16-May	409	12-May	28-May	16-May	404
Catawba Rhododendron	first bloom	18-May	414	9-May	2-Jun	25-May	448
Ohio Pioneer Thicket Hawthorn	first bloom	18-May	415	6-May	26-May	26-May	460
Beautybush	first bloom	17-May	417	11-May	3-Jun	18-May	413
Black Cherry	full bloom	18-May	418	13-May	3-Jun	21-May	414
Miss Kim Manchurian Lilac	first bloom	18-May	421	12-May	4-Jun	21-May	414
White Fringetree	first bloom	20-May	435	12-May	9-Jun	24-May	436
Bush Cinquefoil	first bloom	19-May	439	14-May	8-Jun	17-May	411
Red Prince Weigela	first bloom	19-May	441	13-May	3-Jun	18-May	413
Snowmound Nippon Spirea	first bloom	20-May	441	13-May	9-Jun	23-May	425
Doublefile Viburnum	full bloom	20-May	445	15-May	1-Jun	25-May	448
Redosier Dogwood	full bloom	21-May	450	14-May	5-Jun	26-May	460
Pink Princess Weigela	full bloom	21-May	454	13-May	2-Jun	28-May	490
Red Horsechestnut	full bloom	21-May	456	13-May	2-Jun	30-May	531
Red Buckeye	full bloom	22-May	463	15-May	7-Jun	23-May	425
Black Locust	first bloom	21-May	464	14-May	9-Jun	25-May	448

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		Average Date	Average Degree Days	Earliest Date	Latest Date	Date	Degree Days
Scarlet Firethorn	first bloom	22-May	468	15-May	9-Jun	29-May	509
Pagoda Dogwood	full bloom	23-May	476	15-May	9-Jun	26-May	460
Common Ninebark	first bloom	23-May	477	16-May	9-Jun	27-May	472
Sweet Mockorange	first bloom	23-May	478	16-May	8-Jun	26-May	460
Smokebush	first bloom	24-May	495	17-May	12-Jun	26-May	460
Ohio Pioneer Thicket Hawthorn	full bloom	25-May	495	23-May	5-Jun	4-Jun	618
Oystershell Scale	egg hatch	24-May	496	17-May	9-Jun	28-May	490
Umbrella Magnolia	full bloom	24-May	500	15-May	9-Jun	3-Jun	599
Miss Kim Manchurian Lilac	full bloom	25-May	503	15-May	9-Jun	30-May	531
Catawba Rhododendron	full bloom	26-May	515	15-May	10-Jun	1-Jun	571
White Fringetree	full bloom	26-May	526	17-May	13-Jun	1-Jun	571
American Yellowwood	first bloom	27-May	537	23-May	13-Jun	28-May	490
Arrowwood Viburnum	first bloom	28-May	540	18-May	12-Jun	1-Jun	571
Sweetbay Magnolia	first bloom	28-May	553	17-May	22-Jun	28-May	490
Bronze Birch Borer	adult emergence	28-May	553	18-May	12-Jun	2-Jun	587
Black Locust	full bloom	28-May	554	21-May	14-Jun	2-Jun	587
Multiflora Rose	first bloom	29-May	554	18-May	14-Jun	2-Jun	587
Potato Leafhopper	adult arrival	29-May	558	21-May	16-Jun	29-May	509
American Holly	first bloom	29-May	561	20-May	13-Jun	2-Jun	587
Red Java Weigela	full bloom	29-May	569	17-May	14-Jun	2-Jun	587
Juniper Scale	egg hatch	29-May	574	19-May	14-Jun	2-Jun	587
Scarlet Firethorn	full bloom	31-May	574	18-May	8-Jun	4-Jun	618
Mountain-laurel	first bloom	31-May	580	20-May	12-Jun	6-Jun	654
Snowmound Nippon Spirea	full bloom	31-May	589	20-May	14-Jun	4-Jun	618
American Yellowwood	full bloom	29-May	596	26-May	2-Jun	2-Jun	587
Beautybush	full bloom	1-Jun	597	19-May	17-Jun	4-Jun	618
Chinese Dogwood	first bloom	2-Jun	604	23-May	15-Jun	7-Jun	663
Common Ninebark	full bloom	2-Jun	610	21-May	15-Jun	8-Jun	679
Smokebush	full bloom	3-Jun	616	22-May	17-Jun	5-Jun	642
Japanese Tree Lilac	first bloom	2-Jun	618	23-May	21-Jun	3-Jun	599
Arrowwood Viburnum	full bloom	3-Jun	627	24-May	17-Jun	6-Jun	654
Bumald Spirea	first bloom	4-Jun	637	27-May	14-Jun	9-Jun	701
Washington Hawthorn	first bloom	4-Jun	639	26-May	20-Jun	6-Jun	654
Black Vine Weevil	adult emergence	30-May	643	22-May	10-Jun	29-May	509
American Holly	full bloom	4-Jun	644	26-May	19-Jun	6-Jun	654
Multiflora Rose	full bloom	4-Jun	645	24-May	18-Jun	6-Jun	654
Northern Catalpa	first bloom	7-Jun	679	28-May	22-Jun	9-Jun	701
American Elder	first bloom	8-Jun	706	28-May	22-Jun	9-Jun	701
Greater Peach Tree Borer	adult emergence	6-Jun	707	1-Jun	12-Jun	10-Jun	726
Sweet Mockorange	full bloom	8-Jun	715	29-May	24-Jun	9-Jun	701
Fuzzy Deutzia	first bloom	6-Jun	722	2-Jun	9-Jun	9-Jun	701
Red Prince Weigela	full bloom	9-Jun	732	25-May	20-Jun	11-Jun	753
Washington Hawthorn	full bloom	9-Jun	739	31-May	24-Jun	12-Jun	780
Calico Scale	egg hatch	7-Jun	749	30-May	14-Jun	11-Jun	753
European Fruit Lecanium Scale	egg hatch	8-Jun	764	1-Jun	14-Jun	11-Jun	753
Striped Pine Scale	egg hatch	9-Jun	777	4-Jun	14-Jun	11-Jun	753
Winterberry Holly	first bloom	10-Jun	799	3-Jun	14-Jun	14-Jun	819

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Japanese Tree Lilac	full bloom	13-Jun	810	4-Jun	28-Jun	14-Jun	819
Northern Catalpa	full bloom	13-Jun	819	6-Jun	25-Jun	15-Jun	833
Mountain-laurel	full bloom	14-Jun	826	8-Jun	25-Jun	16-Jun	845
Oakleaf Hydrangea	first bloom	13-Jun	846	9-Jun	19-Jun	19-Jun	893
Rhododendron	adult						
Borer	emergence	13-Jun	857	6-Jun	24-Jun	24-Jun	1023
Cottony Maple Scale	egg hatch	14-Jun	864	8-Jun	17-Jun	20-Jun	916
Panicle Hydrangea	first bloom	14-Jun	866	11-Jun	19-Jun	19-Jun	893
Fall Webworm	egg hatch	17-Jun	868	12-Jun	24-Jun	18-Jun	874
Mimosa	egg hatch -						
Webworm	1st genera- tion	14-Jun	882	12-Jun	20-Jun	20-Jun	916
Fuzzy Deutzia	full bloom	15-Jun	896	13-Jun	21-Jun	21-Jun	942
Greenspire Littleleaf Linden	first bloom	18-Jun	898	12-Jun	30-Jun	19-Jun	893
American Elder	full bloom	19-Jun	915	12-Jun	28-Jun	21-Jun	942
Winterberry Holly	full bloom	16-Jun	917	13-Jun	23-Jun	23-Jun	996
Dogwood	adult						
Borer	emergence	15-Jun	918	31-May	28-Jun	3-Jul	1269
Winged Euonymus Scale	egg hatch	16-Jun	918	12-Jun	24-Jun	24-Jun	1023
Spruce Budscale	egg hatch	18-Jun	921	12-Jun	30-Jun	25-Jun	1052
Panicked Goldenraintree	first bloom	19-Jun	923	14-Jun	7-Jul	20-Jun	916
Southern Catalpa	first bloom	16-Jun	924	14-Jun	22-Jun	22-Jun	969
June Bride Littleleaf Linden	first bloom	19-Jun	957	17-Jun	22-Jun	22-Jun	969
Azalea Bark Scale	egg hatch	19-Jun	970	17-Jun	24-Jun	24-Jun	1023
Japanese	adult						
Beetle	emergence	22-Jun	979	17-Jun	24-Jun	24-Jun	1023
Rosebay Rhododendron	first bloom	23-Jun	1008	16-Jun	7-Jul	23-Jun	996
Greenspire Littleleaf Linden	full bloom	24-Jun	1043	16-Jun	6-Jul	24-Jun	1023
Southern Catalpa	full bloom	25-Jun	1094	21-Jun	30-Jun	30-Jun	1177
June Bride Littleleaf Linden	full bloom	27-Jun	1131	25-Jun	30-Jun	30-Jun	1177
Bottlebrush Buckeye	first bloom	28-Jun	1167	23-Jun	29-Jun	1-Jul	1207
Ural Falsespirea	first bloom	29-Jun	1187	26-Jun	2-Jul	2-Jul	1239
Panicked Goldenraintree	full bloom	5-Jul	1263	23-Jun	7-Jul	5-Jul	1323
Rose-of-Sharon	first bloom	9-Jul	1372	2-Jul	12-Jul	11-Jul	1445
Pine Needle	egg hatch -						
Scale	2nd genera- tion	8-Jul	1390	30-Jun	16-Jul	16-Jul	1553
Euonymus	egg hatch -						
Scale	2nd genera- tion	26-Jul	1907	30-Jul	30-Jul	27-Jul	1840
Magnolia Scale	egg hatch	4-Aug	1961	2-Aug	8-Aug	4-Aug	2078
Banded Ash	adult						
Clearwing Borer	emergence	14-Aug	2220	13-Aug	17-Aug	14-Aug	2295