

The Importance of Indicator Plants and How to Use Them
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At the beginning of our Plant Health Care Report we always denote what indicator plant is in bloom at the arboretum. So you may be wondering what is the importance of indicator plants and how can they be used in the landscape.

Tracking indicator plant events, such as bud break, leaf emergence, flowering, fruiting, and growth stages, along with degree day information gives gardeners a useful way of knowing when to look for a particular pest and to manage it in its most vulnerable stage. These plant events are categorized under plant phenology, which is the study of the annual cycles of plants and how they respond to seasonal changes in their environment. The word phenology comes from the Greek “phaino” (to show or appear) and “logos” (to study). The act of plant watching dates back thousands of years. The Chinese are thought to have kept the first written records dating back to around 974 B.C. But it is Robert Marsham and Carl Linnaeus who are the founding fathers of modern phenology recording. Ed Hedborn is our modern day plant recorder.

Indicator plants can be used in two ways. First you can plant a pest-resistant variety where specific pests are present and difficult to manage on other plantings. For example, if you have a crabapple tree that gets attacked by the eastern tent caterpillar, you can plant a saucer magnolia (*Magnolia x soulangiana*) as an indicator plant, which is not attacked by the caterpillar in the landscape. When saucer magnolia (*Magnolia x soulangiana*), is in pink bud to early bloom, the eastern tent caterpillars young larvae are at their most vulnerable and easier to control. So this would be the best time to treat for or remove the eastern tent caterpillar tents. Monitor indicator plants on a regular basis to determine when conditions are favorable for the development of the pest. By doing this, you can detect problems before insects cause damage, and to determine the proper timing for chemical applications or biological control. “First bloom” is defined as the date on which the first flower bud on the plant opens revealing pistils and/or stamens. “Full bloom” is defined as the date on which 95% of the flower buds have opened.

The second way to use indicator plants is by using a highly susceptible plant to a specific pest. These plants act as an “early warning system” to detect and monitor pest problems. For example, if you have a scots pine (*Pinus sylvestris*), with groups of the European pine sawfly feeding on its needles in late April to early May, this is a warning that you should be managing the euonymus webworm’s young larvae. Don Orton’s book *Coincide* has a list of indicator plants. There are certain qualities that Orton uses to select good indicator plants. The plant should be commonly grown, easy to culture, hardy, have a relatively short, well-defined bloom period, and should not be easily confused with similar plants.

Because the development of both plants and insects is temperature-dependent, plants accurately track the environmental factors that affect insect development. Both indicator plants and degree days are meant as an aid to monitoring, not as a substitute for visual confirmation. Improperly timed insect applications are expensive and even make problems worse when they decrease populations of natural predators without impacting the target pest.

Some other fun things to watch for - it is said that...when the locusts bloom in May, it will turn cold and rainy. Crabgrass seeds germinate when forsythia are in bloom. Seeing caterpillars about later than usual in fall, indicates a milder winter. Expect rain when sheep turn face first into the wind, oxen sniff the air, and hogs are restless.

On that note, happy plant watching.