Weed of the Week - Oriental Bittersweet

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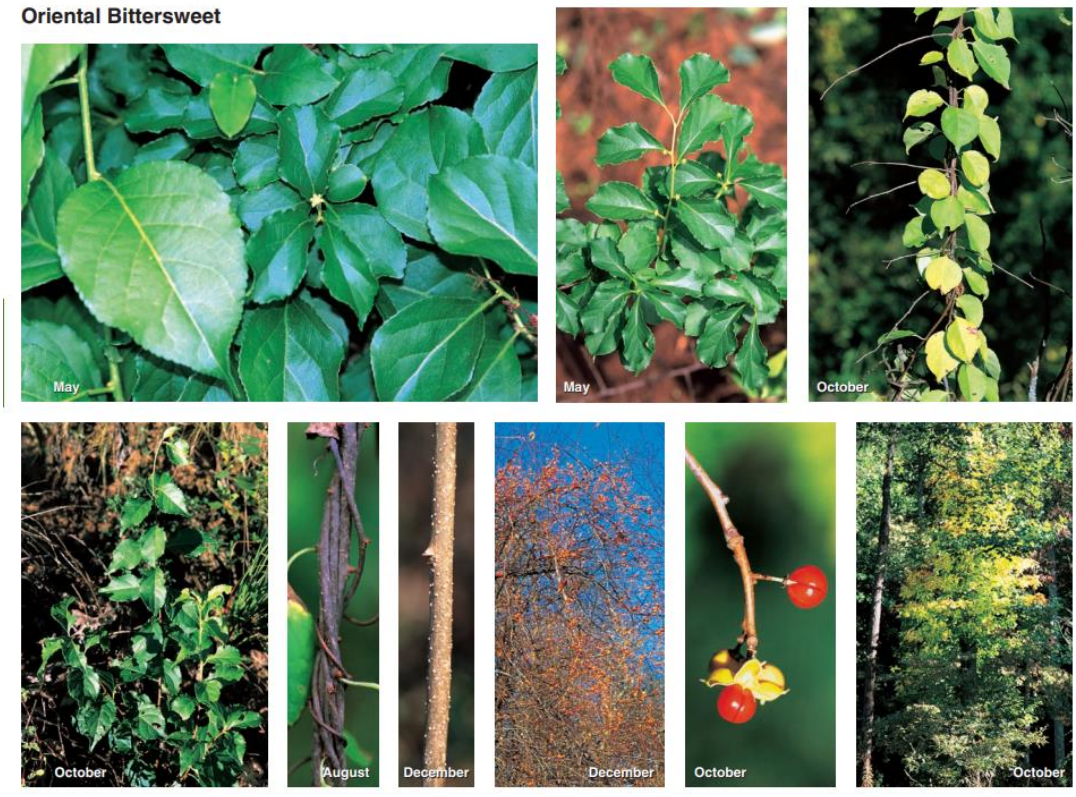
Oriental Bittersweet is one of the most destructive weeds that perennial crop farmers and landowners confront. One of our readers encouraged us to include this challenging weed in our series, and because it has become such a problem for blueberry growers, we are focusing on it this week.

Celastrus orbiculatus is the Latin name for Oriental bittersweet, which is also referred to as round-leaved and Asiatic bittersweet. This plant should not be confused with our native American bittersweet (*Celastrus scandens*) which is a less woody and less aggressive plant and therefore less destructive. The Oriental bittersweet is a heavier vine that can girdle trees and kill them, and has the weight to topple living trees, fences and crop trellises. I have even seen Oriental bittersweet pull down a small shed because of the weight of the plant! Left unchecked, this vine can easily grow 100' in length up into native trees and in one season the vine can become too woody for landscape rotary mowers to control. Since birds love the berries, the seeds are scattered far and wide.

The native origins of *C. orbiculatus* is Eastern Asia, Korea, China and Japan. It is a deciduous, woody, perennial vine or trailing shrub. The early growth appears as light green stems emerging from seeds. In just a few years the plant can develop woody brown stems 2 – 4 inches in diameter and up to 100 feet in length. The leaves (2-5 inch) are glossy, rounded, finely toothed and arranged alternately along the



Photos of Oriental bittersweet throughout the year -
https://www.srs.fs.usda.gov/pubs/gtr/gtr_srs062/03_vines.pdf

stem. The leaves look remarkably similar to American bittersweet, but are described as being rounded, although I find it a challenge to differentiate the plants from just a leaf sample.

To make a definite ID of Oriental bittersweet, look at the flower clusters. Clusters of small whitish-greenish flowers emerge from May into June. The flowers of Oriental bittersweet are borne in the leaf axils all along the vine. This is different from the American bittersweet which forms flower clusters mostly at the terminal end of the vine. The best way to differentiate the two species is to look at the fruit in the early fall.

Oriental bittersweet produces large numbers of seeds. The seed is contained inside a fruit encased by a seed capsule. As the fruit matures, the seed capsule opens. The color of the seed capsule provides another good way to differentiate the two types of bittersweet. Oriental bittersweet tend to have yellowish seed capsules that open to reveal a red-orange fruit. American bittersweet seed capsules are darker in color – more reddish orange with no yellow. The berry color is similar. Many crafters gather bittersweet for floral arrangements in the fall. From my experience walking through the woods, most of the bittersweet that I find is the Oriental species. Ecologists anticipate that over time, through successful competition and hybridization, Oriental bittersweet will crowd out American bittersweet from many wild areas.

The showy and plentiful fruits of oriental bittersweet have made it popular for use in floral arrangements. Because seeds remain viable for some time, even dried crafts improperly discarded could pose a problem. But the plants don't rely on seed propagation entirely. They have a very aggressive root suckering habit which also creates problems and makes it difficult to eradicate an infestation without the help of systemic herbicides.

Oriental bittersweet infests forest edges, woodlands, early succession fields, hedgerows, any area that has some type of disturbance will likely have an infestation. Because this plant is very tolerant to shade, it has become a real problem for forested sites. It is found throughout the Northeast west to Minnesota and south to the Carolinas.

You can control Oriental bittersweet mechanically by hand pulling vines by the roots and removing the plant from the site, preferably before fruiting; if fruits are present, vines should be bagged and disposed of in a landfill, or left in the bags and allowed to bake in the sun long enough to kill the seeds.

Systemic herbicides, such as glyphosate (e.g., Roundup) or triclopyr (e.g., Garlon) are very helpful tools that can make eradication easier and more successful long term. These herbicides are taken into the roots and kill the entire plant. The method and timing for using these materials is important. Cutting, then applying a high strength formulation of herbicide immediately to the cut stem in the fall of the year will provide the best control. This action may need to be repeated annually for several years before the plant and root suckers are completely controlled.

The University of Minnesota has a really nice video explaining the ID techniques and how to effectively control Oriental bittersweet with a combination of mechanical cutting and systemic herbicides. It also provides some great safety information for these jobs. The heavy vines that are overhead can cause injury if precautions are not taken.

Sources:

USDA Plant Species Profiles covers introduction, impacts, provides images and includes additional resources.

Penn State Extension - https://extension.psu.edu/oriental-bittersweet

NW Michigan Invasive Species Network - https://www.habitatmatters.org/invasive-bittersweet.html

YouTube - Defeating a Killer Vine: Oriental Bittersweet Management **-** *University of Minnesota Extension.*