Weed of Interest

Pokeweed: An All-American Pioneer (and Weed!)

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Pokeweed (*Phytolacca americana*) is a rare case these days. A successful pioneering and colonizing species that moves into disturbed sites and establishes colonies quickly and often dominates the landscape. The unusual part is that this most often describes exotic and non-native invasive species but not native ones. Pokeweed is indigenous throughout eastern North America as far north as parts of Canada. The apparent limit to its range in the north is a July average temperature of less than 68°F. This 'simple' perennial species has a large taproot that can grow more than 18 inches down. Most of the new spring emerging shoots arise from the top three inches of the crown. The plant grows vigorously in the spring and can eventually reach more than nine feet by the end of the season, though most plants are 6 feet or less. Its most distinctive identifying features are the shiny purple-black berries that ripen on flower stalks (racemes) all summer long. These attractive berries are moderately to severely toxic to humans but apparently not to birds. The various plant parts have different levels of toxicity. The roots are most toxic and have been known to kill pigs that root for them. The spring emerging shoots are the least toxic and are sometimes eaten after suitable preparation.

Pokeweed berries ripen throughout the summer. Photo by Andy Senesac

Pokeweed contains several phytochemicals that have the potential to help and also to hurt. One extractable protein has strong antiviral properties and has been evaluated as a possible tool to prevent or decrease the effect of HIV and other human-borne diseases. In addition, pokeweed is one of the few plant species that can act as bio-remediators when grown in heavy metal-contaminated soils. Cadmium especially can be extracted from soils with no apparent harm to the plant. The roots and berries have been used for decoctions by herbal medicine practioners for a variety of purposes. This is a species that must be approached with cau-

Pokeweed in late summer-loaded with ripening berries. Photo by Andy Senesac

Pokeweed in mid-spring before flowering. Photo by Andy Senesac

Pokeweed seedlings emerging through leaf litter. photo by Andy Senesac

tion. One author advises wearing protective gloves before handling it because some of active compounds can be absorbed through scratches or scrapes of the skin. The alkaloid, phytolacine, occurs in greatest concentrations in the roots and berries.

Studies have shown that the seeds contained within the berries have the ability to germinate immediately without going through a period of dormancy. It has been shown that both wild and domestic birds can eat the berries without harm and pass seeds through their gut without harm to the seed. This indicates that birds are a major means of long distance dispersal for this native, but weedy species.

It is through birds that pokeweed has recently moved from being a weed of marginal areas to one that is causing economic losses in agronomic crops. Parts of Pennsylvania have seen a steady rise in the number of acres infested by pokeweed. Researchers have noted that the greatest number of seedlings are found directly under telephone and utility wires that birds roost on.

Researchers have found that glyphosate is the most effective commonly available systemic herbicide that can suppress or control mature pokeweed plants. Application timing is key. If applications of any systemic herbicide are applied before the flowering process begins, the control is almost always incomplete. However, if applications are made after mid-June, then control is greatly improved. The flowering process is a long one. New flowers start to form on the racemes (flower stalks) in late spring and although berries start to ripen in early summer, this process can continue well into September. Other means of control include digging up the roots to insure complete elimination. However, slicing the top three inches off the crown of the taproot, while still in the ground, will remove most of the leafing buds. This can be a quick and relatively easy way to remove several plants from an infested area.

Pokeweed is often infected by pokeweed mosaic virus (PkMV). This is seen on leaves as a distinctive mottled yellowish area. Although the virus doesn't appear to be able to cause plant death in pokeweed, scientists are investigating it for other uses for it as a biocontrol agent. ●