

Autumn olive
Elaeagnus umbellata Thunberg
and
Russian olive
Elaeagnus angustifolia L.
Oleaster Family (Elaeagnaceae)



Russian olive in flower

DESCRIPTION

Autumn olive and Russian olive are deciduous, somewhat thorny shrubs or small trees, with smooth gray bark. Their most distinctive characteristic is the silvery scales that cover the young stems, leaves, flowers, and fruit. The two species are very similar in appearance; both are invasive, however autumn olive is more common in Pennsylvania.

Height - These plants are large, twiggy, multi-stemmed shrubs that may grow to a height of 20 feet. They occasionally occur in a single-stemmed, more tree-like form.

Leaves - Leaves are alternate, oval to lanceolate, with a smooth margin; they are 2–4 inches long and $\frac{3}{4}$ –1½ inches wide. The leaves of autumn olive are dull green above and covered with silvery-white scales beneath. Russian olive leaves are grayish-green above and silvery-scaly beneath. Like many other non-native, invasive plants, these shrubs leaf out very early in the spring, before most native species.

Flowers - The small, fragrant, light-yellow flowers are borne along the twigs after the leaves have appeared in May.

Fruit - The juicy, round, edible fruits are about $\frac{1}{3}$ –½ inch in diameter; those of Autumn olive are deep red to pink. Russian olive fruits are yellow or orange. Both are dotted with silvery scales and produced in great quantity August–October. The fruits are a rich source of lycopene. Birds and other wildlife eat them and distribute the seeds widely.



autumn olive in fruit

Roots - The roots of Russian olive and autumn olive contain nitrogen-fixing symbionts, which enhance their ability to colonize dry, infertile soils.

DISTRIBUTION AND HABITAT

Autumn olive was introduced to the United States from East Asia in the 1830s. It was extensively planted in Pennsylvania and other states for revegetation of severely disturbed areas such as strip mines. The Pennsylvania Game Commission has also planted it for wildlife food and cover. Russian olive, native to Eurasia, was planted as an ornamental and for wildlife value. Both species have naturalized extensively in Pennsylvania, and in states from Maine south to Virginia, and west to Wisconsin. Russian olive is also a problem further west.

EFFECTS OF INVASION

Both autumn olive and Russian olive are very troublesome invasive species; their nitrogen-fixing root nodules allow them to thrive in poor soils. Typical habitats are disturbed areas, roadsides, pastures, and successional fields in a wide range of soils. They are drought tolerant and often invade grasslands and sparse woodlands. Neither species does well in densely forested areas, but Russian olive can be found in moist soils, and does particularly well in sandy floodplains. Both species create heavy shade that suppresses shorter plants requiring direct sunlight.

REPRODUCTION AND METHODS OF DISPERSAL

Autumn olive and Russian olive spread by seeds disseminated throughout the landscape by birds and other wildlife that consume the fruits. These shrubs grow rapidly, begin to produce fruit as early as 3 years of age, and have the ability to thrive in poor soil. They also resprout vigorously after cutting or burning.

CONTROL

Mechanical - Seedlings and sprouts can be pulled by hand when the soil is moist enough to insure removal of the root system. On larger plants, cutting alone results in thicker, denser growth upon resprouting. Burning during the dormant season also results in vigorous production of new shoots.

Chemical - Glyphosate can be used to control larger plants. Foliar application has proven effective in controlling these species. Since glyphosate is nonselective and will affect all green vegetation, care should be taken to avoid impacting native plants. At sites where this is a concern, application of the herbicide to the freshly cut stumps of the invasive shrubs should achieve the desired results. This method minimizes damage to other plants.

Biological - No biological control options are currently known.

LANDSCAPE ALTERNATIVES

The following native plants are suggested as alternatives to autumn olive or Russian olive in revegetation and wildlife habitat plantings: sweet-fern (*Comptonia peregrina*),

bayberry (*Myrica pensylvanica*), shining sumac (*Rhus copallina*), fragrant sumac (*Rhus aromatica*), staghorn sumac (*Rhus typhina*), black-haw (*Viburnum prunifolium*), shadbush (*Amelanchier arborea*, *A. laevis*), clammy locust (*Robinia viscosa*), redbud (*Cercis canadensis*), New Jersey tea (*Ceanothus americanus*).

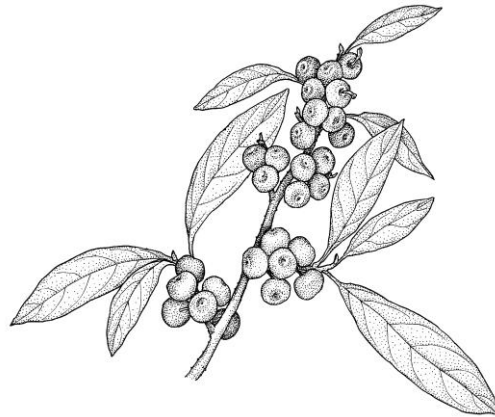
REFERENCES

Fordham, Ingrid M., Beverly A. Clevidence, Eugene R. Wiley, and Richard H. Zimmerman. 2001. Fruit of autumn olive: a rich source of lycopene. *HortScience* 36(6): 1136-1137.

Rhoads, Ann Fowler and Timothy A. Block. 2007. *The Plants of Pennsylvania: An Illustrated Manual*, 2nd edition. University of Pennsylvania Press, Philadelphia, PA.

Rhoads, Ann Fowler and William McKinley Klein. 1993. *The Vascular Flora of Pennsylvania: Annotated Checklist and Atlas*. American Philosophical Society, Philadelphia, PA.

Internet resources – <http://www.paflora.org> , <http://www.invasivespecies.gov>



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