

Thorny olive (*Elaeagnus pungens* Thunb.)

Victor Maddox, Ph.D., Postdoctoral Associate, Mississippi State University
Randy Westbrook, Ph.D., Invasive Species Specialist, U.S. Geological Survey
John D. Byrd, Jr., Ph.D., Extension/Research Professor, Mississippi State University



Fig. 1. Thorny olive grows in vine or shrub form.

Fig. 2. Thorny olive leaves have silvery undersides and brown veins.

Introduction

Problems Caused

Thorny olive or thorny elaeagnus (*Elaeagnus pungens* Thunb.) is a broadleaved evergreen shrub or vine native to Japan and China. It was introduced into cultivation in 1830 and escaped. It has been used for hedges, screening, natural barriers, and bank stabilization, and still commonly sold in nurseries. It is sometimes planted along highways where it can escape.

Regulations

It is a Category II invasive in Florida and currently only a problem in localized areas throughout the southeastern United States. It is not regulated in the Mid-South.

Description

Vegetative Growth

Thorny olive is an arching, evergreen shrub, or vine under certain conditions (Figure 1). Vining or climbing stems produce thorns which can make removal more difficult. Shrubs may reach 10 to 15 feet high with a similar spread. Leaves are alternate, 2 to 4 inches long, $\frac{1}{4}$ to $1\frac{3}{4}$ inches wide, and thick and leathery. They are dark green above with a silvery lower surface due to a covering of scales (Figure 2). Major leaf veins are typically brown (Figure 2) including the petiole which is also covered with brown scales. The stem is also brown with a covering of scales.

Flowering

Flowers are perfect, $\frac{1}{2}$ inch long, silvery white, and fragrant. Flowering occurs from October to December often in three's from leaf axils and easily overlooked except for the strong fragrance they produce. The fruit are $\frac{1}{2}$ to $\frac{3}{4}$ inch long drupes, likewise seldom seen. They are scaly brown at first but mature red finely dotted with brown scales in April to May.

Dispersal

Thorny olive is commonly cultivated as an ornamental which is a major means of dispersal. Fruit may attract birds and other animals which can disseminate seed.

Spread By

Thorny olive is spread by humans, birds, and animals.

Habitat

Thorny olive is a problem in fence rows, forest, roadside margins, waste areas, dry disturbed sites, and open woodlands. Thorny olive can withstand adverse conditions in the Mid-South, such as drought, sun, shade, salt spray, and apparently air pollutants. It can form dense thickets, replacing the surrounding native vegetation. Although these thickets may provide habitat for certain wildlife, they are a difficult barrier for human activity.

Distribution

US

Thorny olive has escaped in scattered localities in the southeastern United States. Animal-dispersed, its common usage for ornament and hedges may lead to invasions in other areas of the southeastern United States. It can form dense stands when conditions are right. Thorny olive is hardy from Zone 6 to 9 and portions of 10.

Mid-South

Thorny olive is most likely escaped in all five Mid-South states, although the full extent of distribution is not known.

Control Methods

Biological

No biological controls are widely used for thorny olive control. Thorny olive seems to have few pests in the United States.

Chemical

There are a limited number of chemical controls for thorny olive (Table 1). These include foliar

sprays with glyphosate (2% solution), imazapyr (1% solution), or triclopyr (2% solution) or cut stump applications with glyphosate (50% solution), imazapyr (5% solution), or triclopyr (50% solution in oil). Control may be slow and symptoms may not be evident for some period following application.

Mechanical

Small populations of thorny olive may be removed by hand. Stems may produce thorn-like structures which adhere to branches making removal more difficult. Stems climbing trees can be either cut near the ground and left on the tree or removed from the tree. Removing plants prior to fruit ripening is recommended to avoid seed dispersal. Mechanical control can be labor intensive and slow.

Physical

Physical controls are not generally utilized for thorny olive. Thorny olive grows in a wide range of environmental conditions making physical controls difficult.

Herbicide	Method	Rate	Method	Rate
glyphosate	Foliar spray	2% solution	Cut stump	50% solution
imazapyr	Foliar spray	1% solution	Cut stump	5% solution
triclopyr	Foliar spray	2% solution	Cut stump/basal bark	50% solution in oil
Mechanical	Method			
Hand Removal	Remove plants prior to fruit ripening to avoid seed dispersal. Can be labor intensive and slow.			

Table 1. Chemical and mechanical methods of control for thorny olive (*Elaeagnus pungens* Thunb.).

References

- Dirr, Michael A. 1998. Manual of woody landscape plants: Their identification, ornamental characteristics, culture, propagation, and uses, 5th ed. Stipes Publishing LLC., Champaign, IL.
- Miller, James H. 2003. Nonnative invasive plants of southern forests: A field guide for identification and control. Southern Research Station, Asheville, NC.
- USDA, NRCS. 2007. The PLANTS Database (<http://plants.usda.gov>, 5 September 2007). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

More Information

The Genus *Elaeagnus* belongs to the *Elaeagnus* (*Elaeagnaceae*) Family. *Elaeagnus* is not native to the southeastern United States. There are approximately 40 species of *Elaeagnus* worldwide, occurring in Europe, Asia, and North America. Two other species of *Elaeagnus* species have also escaped: *E. angustifolia* L. (Russian olive) and *E. umbellata* Thunb. (Autumn olive or *Elaeagnus*). Russian olive is a small tree and more problematic in the western United States. Autumn olive, like thorny olive, can be problematic in the southeastern United States. It is a shrub to small tree with leaves typically more elliptic and lighter green on the surface. There are several cultivated forms of thorny olive, including variegated forms.

Victor Maddox, Ph.D.

Mississippi State University, Geosystems Research Institute
Box 9555, Mississippi State, MS 39762-9555
Ph. (662)325-2313, vmaddox@gri.msstate.edu
www.gri.msstate.edu

