OleaceaeCOlive family

# *Ligustrum* L.

privet

Daniel A. Mikowski and William I. Stein

Mr. Mikowski is a general biologist and Dr. Stein is forest ecologist emeritus at the USDA Forest Service=s Pacific Northwest Research Station, Corvallis Oregon.

**Growth habit, occurrence, and uses.** The genus *Ligustrum*Cthe privetsCincludes about 50 species native in eastern Asia and Malaysia to Australia, with 1 species occurring in Europe and North Africa (Bean 1978; Rehder 1940). Privets have been widely distributed and cultivated outside of their indigenous distributions, and many varieties and cultivars are recognized (Bailey 1947; Bean 1978; Ohwi 1965; Rehder 1940). At least 4 species have naturalized in the United States, several over broad geographic regions (table 1). European, or common, privet is widely naturalized in eastern North America. California privet has been planted from coast to coast in the southern United States and has naturalized extensively in the Southeast.

The privets are deciduous or evergreen shrubs or small trees ranging from 2 to 12 m in height (table 2). Maximum heights reported in the United States are 7.8, 24.9, and 12.8 m, respectively, for California, Chinese, and Japanese privets (AFA 1996). Growth form ranges from compact dense shrubs to small trees with slender spreading branches. Privets grow readily in many kinds of soil (Bailey 1947; Bean 1978; Meikle 1958) and in moisture regimes ranging from very dry to stream-side and floodplain (Lee and others 1991; Seymour 1982). They establish on roadsides, sand dunes, open and closed woodlands, tree borders, and other disturbed areas (Bailey 1947; Radford and others 1968; Seymour 1982; Wilson and Wood 1959).

The privets are valued for landscape shrubbery because of their handsome white flowers and dark green foliage; ready establishment; and resistance to insects, dust, and air pollution (Bailey 1947; Howe and Woltz 1981). California privet grows well even in the spray of salt water (Bailey 1947). Japanese privet is an excellent evergreen shrub for pruning into hedges, screens, or topiary (distinctive shapes such as globes or animals) (Vines 1983). Glossy privet is an evergreen tree suited for growing in narrow areas, making it a fine choice for a street or lawn tree. Several privets have been used as garden hedges, but their innumerable, fibrous roots are invasive and may impoverish adjacent flower beds (Meikle 1958).

Privets are also useful as wildlife habitat, windbreaks, and erosion-control plantings. Although the lengthy availability of fruits and seeds indicates that they are not generally relished by wildlife, some consumption by birds has been observed (Martin and others 1951; Van Dersal 1938; Vines 1983).

**Flowering and fruiting.** The terminal panicles bearing privet flowers range from 3 to 20 cm long and are usually somewhat narrower in width than length (Bean 1978). The flowers are

small, perfect, always a shade of white, and usually fragrant. However, the fragrance of some privet flowers may be Aobjectionable at close quarters@ (Bean 1978). Summer is the main flowering period, but timing and duration varies by species (table 3). There is evidence that Japanese privet seedlings require winter chilling to stimulate blooming (Morita and others 1979).

The fruits are 1- to 4-seeded berrylike drupes with membranaceous to stony endocarps about 4 to 10 mm long (table 2). Fruits ripen from September to November (table 3) and those of some species often remain on the panicles into winter (Rehder 1940). Ripened fruits generally range in color from dark blue to black. The fruits in some varieties of European privet, however, are not black: *f. chlorocarpum* (Loud.) Schelle has green fruits; *f. leucocarpum* (Sweet) Schelle, white fruits; and *f. xanthocarpum* (G. Don) Schelle, yellow fruits (Bean 1978).

According to incidental observations, privet species produce seed crops almost annually, but systematic records of crop size and occurrence are not available (Dirr and Heuser 1987).

**Collection, extraction, and storage.** Ripe privet fruits may be stripped from panicles by hand in the fall or early winter. If the fruits are already dry, they can be stored uncleaned but prompt cleaning is generally better. Seeds can be separated from fresh or remoistened pulp by running the fruits with ample water through a macerator. For some privet species, particular care must be taken during cleaning to ensure that their soft-coated seeds are not damaged (figure1).

Privet seeds are relatively small and vary in size and weight by species (table 4). In one sampling, seeds of European privet constituted 54% of fruit biomass on a dry-weight basis (Lee and others 1991).

Storage of cleaned European privet seeds in ordinary dry conditions was recommended long ago (Chadwick 1935), but little has been reported on the success of this practice. It seems likely that their longevity could be prolonged by closed storage at cool temperatures or even at - 18 °C, which has proven satisfactory for many tree species that tolerate low moisture content.

**Pregermination treatments and germination tests.** Fresh privet seeds that have been cleaned will germinate in 60 days without stratification *(*Heit 1968; Dirr and Heuser 1987). Stored seeds, however, require 30 to 60 days of cold stratification at 0 to 5 °C to induce prompt germination *(*Chadwick 1935; Dirr and Heuser 1987; Heit 1968; Shumilina 1967). Fifteen days of warm stratification at 18 to 20 °C or alternating warm and cold stratification were successful treatments on some seed lots in Russia (Shumilina 1967). Some germination may occur in lengthy stratification.

Best germination results have been obtained by running tests for 60 days at 10 °C for 16 hours/day and 30 °C for 8 hours (Heit 1968). In Australian tests, optimum constant germination temperature for fresh seeds of glossy privet was 15 °C and for Chinese privet, 20 to 25 °C (Burrows and Kohen 1983). Germination of European privet seeds ranged from 88 to 92% in tests conducted in New York (Heit 1968). Germination is epigeal (figure 2), and light is not needed for germination.

Viability of seeds can also be determined by a tetrazolium (TZ) staining test as recommended by the International Seed Testing Association (ISTA 1996). Privet seeds should be soaked in water for 18 hours at 20 °C, then cut transversely at the distal end and longitudinally with a scalpel or razor blade to expose the embryo, followed by immersion in a 1% TZ solution for 20 to 24 hours at 30 °C. Those seeds with the embryo and all nutritive tissue stained red are considered viable.

**Nursery practice.** Fall sowing is advisable for best seedling production, maximum growth the first year, and less early seedling losses (Heit 1968). Fresh, cleaned privet seeds germinate readily when sown in the fall. In spring sowings, seeds from storage may require 1 or 2 months of stratification to ensure uniform germination with minimum hold-over (Bailey 1947; Dirr and Heuser 1987). One- or two-year seedlings are used for outplanting (Chadwick 1935).

Vegetative propagation is the preferred method for producing privet species or varieties and ensuring continuation of the same characteristics in successive generations. All species are easy to root from vegetative stem cuttings and many growers root them in outside beds (Bailey 1947; Dirr and Heuser 1987; Keever and others 1989; Regulski 1984). Non-dormant cuttings should be rooted under a mist system to prevent them from drying out during summer months. Dormant cuttings can be set in rows outdoors during the fall, winter, or early spring. Shoot and root initiation and growth of dormant and non-dormant privet cuttings can be accelerated, even doubled, by appropriate applications of growth regulators, bleach, and wetting agents (Dirr and Heuser 1987; Yang and Read 1991, 1992; Rauscherova and Tesfa 1993). Pre-emergence herbicides did not affect stock plants of glossy privet or the rooting of cuttings taken from them (Cantanzaro and others 1993).

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**Figure 1**—*Ligustrum sinense*, Chinese privet: the oblong seed, exterior view (A); longitudinal section (B); cross section (C), × 14.

**Figure 2**—*Ligustrum vulgare*, European privet: seedling development 1, 5, 50, and 132 days after germination.

**Table 1C***Ligustrum*, privet: nomenclature and occurrence

| Scientific name | Common name | Occurrence |
|---|---|---|
| ***L.ovalifolium* Hassk.** | **California privet** | Planted across S US from Virginia to California; extensively naturalized from Virginia to Florida |
| ***L. japonicum* Thunb.** | **Japanese privet** | Planted in SE US from North Carolina to Alabama, to Louisiana & Texas; naturalized locally |
| ***L. lucidum* Ait. f.** | **glossy privet** | Scattered from Pennsylvania S to Texas |
| ***L. sinense* Lour.** | **Chinese privet,** trueno de seto | Planted in SE US from Virginia to Georgia, Oklahoma, & Texas; widely naturalized |
| ***L. vulgare* L.** | **European privet,** common privet | Widely naturalized in E North America |

**Sources:** Little (1979), Rehder (1940), Wilson and Wood (1959), Vines (1983).

**Table 2C***Ligustrum*, privet: height, leaf habit, color, and size of mature fruit

| Species | Height at maturity (m) | Leaf habit | Fruit color | Fruit size (mm) |
|---|---|---|---|---|
| *L. ovalifolium* | 5 | Deciduous or half-evergreen | Purple-black, black | 5B8 |
| *L. japonicum* | 2B12 | Evergreen | Purple-black, blue | 6B10 |
| *L. lucidum* | 3B10 | Evergreen | Purple-black, blue-black | 8B10 |
| *L. sinense* | 4B10 | Deciduous or half-evergreen | Purple-black, blue-black | 4B7 |
| *L. vulgare* | 5 | Deciduous or half-evergreen | Lustrous black | 6B8 |

**Sources:** Bean (1978), McMinn and Maino (1937), Ohwi (1965), Radford and others (1968), Rehder (1940), Vines (1983).

**Table 3C***Ligustrum*, privet: phenology of flowering and fruiting

| Species | Flowering | Fruit ripening |
|---|---|---|
| *L. ovalifolium* | JuneBJuly | SeptBNov |
| *L. japonicum* | JuneBSept | SeptBNov |
| *L. lucidum* | JulyBSept | SeptBOct* |
| *L. sinense* | MarBJuly | SeptBNov* |
| *L. vulgare* | JuneBJuly | SeptBOct* |

**Sources:** Radford and others (1968), Rehder (1940), Vines (1983).
* Fruits persist into winter.

**Table 4C***Ligustrum*, privet: seed yield data

| Species | Dried fruits /kg | Dried fruits /lb | Average no. cleaned seeds/wt /kg | Average no. cleaned seeds/wt /lb | Samples |
|---|---|---|---|---|---|
| *L. japonicum* | 7,950 | 3,600 | C | C | C |
| *L. lucidum* | 15,000 | 6,800 | 27,600 | 12,500 | 1 |
| *L. vulgare* | C | C | 44,100* | 20,000* | 8 |

**Sources:** Rudolf (1974), Swingle (1939).

* Ranges of cleaned seed among samples: 28,700 to 81,600/kg; 13,000 to 37,000/lb.