Larrea tridentata

*D. C.*) Cov.

**Common Names**

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black bush</td>
<td>United States</td>
</tr>
<tr>
<td>Chaparral</td>
<td>England</td>
</tr>
<tr>
<td>Chaparral</td>
<td>United States</td>
</tr>
<tr>
<td>Creosote bush</td>
<td>United States</td>
</tr>
<tr>
<td>Creosote bush</td>
<td>England</td>
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<tr>
<td>Creosotum</td>
<td>United States</td>
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<tr>
<td>Dwarf Evergreen Oak</td>
<td>United States</td>
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<tr>
<td>Gobernadora</td>
<td>United States</td>
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<tr>
<td>Grease bush</td>
<td>United States</td>
</tr>
<tr>
<td>Greasewood</td>
<td>United States</td>
</tr>
<tr>
<td>Guamis</td>
<td>Spain</td>
</tr>
<tr>
<td>Hediondilla</td>
<td>Spain</td>
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<tr>
<td>Jarilla</td>
<td>Spain</td>
</tr>
<tr>
<td>Kreosotestrauch</td>
<td>Germany</td>
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<tr>
<td>Paloondo</td>
<td>Spain</td>
</tr>
</tbody>
</table>

**BOTANICAL DESCRIPTION**

*Larrea tridentata* is a member of the caltrop family ZYGOPHYLLACEAE. It is a native, drought-tolerant, evergreen shrub slowly growing to 2–4 m tall and 1.8 m wide, with numerous flexible stems projecting at an angle from its base. The bush is a group of four to 12 plants that shoot up from one plant in all directions. The root system consists of a shallow taproot and several lateral secondary roots, each approx 3 m in length and 20–35 cm deep. The taproot extends to a depth of approx 80 cm. The leaves are thick, waxy, resinous, 12–25 mm long, alternate leaves with two leaflets, pointed, yellow-green in color, covered with a varnish; darker and aromatic after rainfall. These leaves grow directly from the branches of the bush. The bush may lose some of leaves during extreme drought. Yellow flowers are solitary and axillary, numerous, up to 2 cm wide, mostly bloom from February to August, some individuals maintain flowers year-round. Fruits are small, reddish-white, globose, consisting of five united, indehiscent, one-seeded carpels that may or may not break apart after maturing. Each carpel is densely covered by long, gray or white trichomes.

**ORIGIN AND DISTRIBUTION**

*Larrea tridentata* occurs throughout the Mojave, Sonoran, and Chihuahuan Deserts. Its distribution extends from southern California northeast through southern Nevada to the southwest corner of Utah and southeast through southern Arizona and New Mexico to western Texas and north-central Mexico. It is known to attain ages of several thou-
sand years; some clones may be the earth’s oldest living organisms. The age of the largest clone in Johnson Valley, California, is estimated at 9400 years; one estimated the average longevity to be 1250 years at a study site in Dateland, CA, and 625 years at a San Luis site. Larrea tridentata commonly grows on gentle well-drained slopes, plains, valley floors, and sand dunes and in arroyos at elevations up to 1515 m and occurs on calcareous, sandy, and alluvial soils with a layer of caliche. It can survive without any added water. Often the most abundant shrub, even forming pure stands.

TRADITIONAL MEDICINAL USES

Mexico. Decoction of the bark and dried branches is taken orally as an abortive and for diabetes. Decoction of the dried root is taken orally by pregnant humans as an abortive and for diabetes\(^\text{LT034}\). Infusion of the shade-dried entire plant is taken orally to treat infectious diseases\(^\text{LT011}\). Decoction of the dried leaf is taken orally for treatment of diabetes. Hot water extract of the dried leaf is taken orally as a blood purifier; to treat kidney problems, urinary tract infections, and frigidity; for gallstones, rheumatism and arthritis, diabetes, wounds, and skin injuries, displacement of the womb, and paralysis; and to dissolve tumors\(^\text{LT032}\).

United States. Hot water extract of the dried leaf is taken orally as a stimulating expectorant and tonic, for tuberculosis, and is drank by Indians of the Southwest for bowel cramps, as a diuretic, and for venereal disease. Hot water extract of the dried leaf is used externally for wound healing\(^\text{LT038}\). Hot water extract of the dried plant is taken orally for cancer. Effects described are from multicomponent reaction\(^\text{LT029}\).

CHEMICAL CONSTITUENTS

\(^{\text{ppm unless otherwise indicated}}\)

\((+-)\)-3,3’-Didemethoxyverucosin: Pl\(^\text{LT048}\)
Acetophenone: EO\(^\text{LT027}\)
Agarofuran, \(\alpha\): EO\(^\text{LT027}\)
Anisic acid methyl ester, ortho: EO\(^\text{LT027}\)
Ayanin: Lf\(^\text{LT027}\)
Benzaldehyde: EO\(^\text{LT027}\)
Benzoic acid ethyl ester: EO\(^\text{LT027}\)
Benzoic acid hex-3-enyl ester: EO\(^\text{LT027}\)
Benzoic acid N-hexyl ester: EO\(^\text{LT027}\)
Benzyl acetate: EO\(^\text{LT027}\)
Bergamotene, \(\alpha\): EO\(^\text{LT027}\)
Borneol acetate: EO\(^\text{LT027}\)
Borneol: EO\(^\text{LT027}\)
Butan-1-al, 3-methyl: EO\(^\text{LT027}\)
Butanoic acid benzyl ester: EO\(^\text{LT027}\)
Butanoic acid, 2-methyl: EO\(^\text{LT027}\)
Butyric acid, isovaleric: iso: EO\(^\text{LT027}\)
Calamenene: EO\(^\text{LT027}\)
Camphene: EO\(^\text{LT027}\)
Camphor: EO\(^\text{LT027}\)
Car-3-ene: EO\(^\text{LT027}\)
Chrysoeriol-6-8-di-C-\(\beta\)-D-glucoside: Lf\(^\text{LT023}\)
Cineol 1-8: EO\(^\text{LT027}\)
Cinnamic acid ethyl ester, hydro: EO\(^\text{LT027}\)
Copanene: EO\(^\text{LT027}\)
Curcumene, \(\alpha\): EO\(^\text{LT027}\)
Cymene, para: EO\(^\text{LT027}\)
Edulane: EO\(^\text{LT027}\)
Erythrodiol, 3-β-(3.4-dihydroxy-cinnamoyl): St 0.073–8 LT\(^\text{LT019, LT028}\)
Eudesmole, \(\beta\): EO\(^\text{LT027}\)
Eudesmole, \(\gamma\): EO\(^\text{LT027}\)
Farnesol: EO\(^\text{LT027}\)
Fenchene, \(\alpha\): EO\(^\text{LT027}\)
Furan, tetrahydro, 3,4-dimethyl: EO\(^\text{LT027}\)
Gossypetin, 3-3’-7-tri-O-methyl: Lf\(^\text{LT05600}\)
Gossypetin, 3,7-di-O-methyl: Lf\(^\text{LT008}\)
Gossypetin-3,3’-7,8-tetramethyl ether: Lf\(^\text{LT030}\)
Guaiacin, didehydro, 3’-3’-demethoxy-6-O-demethyl: Lf/Tw 2.8\(^\text{LT025}\)
Guaiacin, iso, nor, 3’-demethoxyl, triacetate: Lf/Tw\(^\text{LT023}\)
Guaiacin, iso, nor, 3’-demethoxy: Pl\(^\text{LT031}, Lf/\text{Tw} 53, St 1.49\(^\text{LT035}\)
Guaiacin, iso, nor: St 1.4\(^\text{LT035}\)
Guaiacin, iso: 3’-6-di-O-demethyl: Lf/Tw 32.6\(^\text{LT025}\)
Guaiacin, iso: 3’-demethoxy-6-O-demethyl: St 0.2\(^\text{LT006}, Lf/Tw 3.5\(^\text{LT025}\)
Guaiacin, iso: St 0.2\(^\text{LT006}\)
Guaiaretic acid, nor-dihydro, 3’-O-methyl: Pl\(^\text{LT018}, Lf\(^\text{LT007}\)

MEDICINAL PLANTS OF THE WORLD