Mediterranean sage is native to southern and southeastern Europe, as far north as Czechoslovakia and 51° North Latitude in south central Russia and east through Turkey into Iran. Probably introduced in the United States in alfalfa seed, Mediterranean sage has also been planted as a garden flower. Since its introduction near Susanville, California, around 1892, Mediterranean sage has invaded extensive areas of rangeland in northern California, southeastern Oregon, and northcentral Idaho.

Although not poisonous to livestock, Mediterranean sage reduces forage production by displacing less competitive, more palatable species. The Pacific Northwest’s largest rangeland infestations occur in Idaho County, Idaho, and southern Lake County, Oregon. Small scattered infestations grow in Baker, Grant, Harney, Klamath, Malheur and Wheeler counties, Oregon. In Washington, Mediterranean sage grows in Columbia and Klickitat counties. It also grows in Arizona, Colorado, and Texas.

Mediterranean sage is a Class B noxious weed in Oregon and California and a Class A noxious weed in Washington. It is not on the Idaho noxious weed list.

Revealing prominent veins and a wrinkled surface. Most of the leaves form a basal rosette. Stem leaves are progressively smaller and clasp the stem, with the uppermost ones reduced to purple-tinged bracts having a long tapering point. Rosette leaves have indented or irregular margins and a stalk 1½ to 3½ inches long. Mediterranean sage leaves are light green to gray-green and do not have the yellow cast of common mullein, which Mediterranean sage rosettes resemble. Mullein leaves are neither stalked nor toothed along the margin. In addition, Mediterranean sage emits a pungent sagelike odor when crushed.

A branched panicle that resembles a candelabra bears numerous flowers in woolly clusters. Four to six white flowers are clustered in whorls. Each flower is about 1/2 inch long, shaped like a mint flower, with the upper lip resembling a hooked beak. The pale yellow lower lip divides into

**IDENTIFICATION**

Mediterranean sage is a member of the mint family (Lamiaceae). It has erect, sturdy, squarish stems up to 3 feet tall, opposite leaves and a stout taproot. Plants are densely woolly with white hairs, especially when young. As they age, the upper sides of the leaves often lose the felty covering of hairs.

Small white flowers appear in woolly clusters at the tips of branches.

Mediterranean sage has a candelabra-shaped flower stalk that breaks off to form a tumbleweed.

Mediterranean sage rosette leaves are gray-green with irregular margins.
three lobes, having a center lobe smaller than the outer lobes. Each flower produces four seeds. Seeds are smooth, brown with darker brown veins, egg-shaped and about 1/8 inch long.

**BIOLOGY AND ECOLOGY**

Mediterranean sage is a biennial or short-lived perennial. During its first growing season it forms a rosette of basal leaves that remain close to the ground. Second year rosettes are very leafy, almost succulent, and are usually 7 to 10 inches in diameter, although they can grow to 4 feet across. Flowering occurs from May to August of the second and following years. After flowering, the seed-bearing top detaches at a natural joint. The wind blows it about as a tumbleweed, scattering seeds. An average sized plant produces 50 to 100,000 seeds. Seeds germinate in the fall or spring. As the seeds take in water, cells of the seed coat excrete a mucilaginous substance. This mucilage layer apparently functions like a covering of soil to limit water loss. Mediterranean sage is primarily a rangeland weed, but occasionally appears in alfalfa and grain crops. It usually grows on warm dry sites (often south-facing slopes) with soils ranging in texture from silt loam to loamy sand. Very invasive on disturbed sites, it can also move into openings in less disturbed sagebrush and bunchgrass communities. It has become a dominant plant in the shrub steppe of southern Lake County, Oregon. In Turkey and the Mediterranean region, it grows on dry grasslands, igneous and limestone slopes, fallow fields, and roadsides from near sea level to 6,900 feet elevation.

**CONTROL**

Prevent seed movement and control new infestations. In addition to tumbleweed seed dispersal, seeds may move with contaminated soil, hay, agricultural equipment, livestock, wildlife and vehicles.

Dig out individual plants to eradicate small infestations. In Oregon, cutting the taproot 2 to 3 inches below the crown when the plants were starting to bolt prevented most resprouting. Remove all plants before flowering each year until the seed reserve in the soil is exhausted. No one knows how long the seed can remain viable in the soil. Weed scientists do not advise mowing because the rosettes are too low and mowing may spread seeds by cutting flowering tops. Cultivation will control Mediterranean sage, but is rarely an option on sites where the weed grows.

A biological control insect, the Mediterranean sage weevil (*Phrydiuchus tau*), has been established on the major infestations in Oregon (1969), California (1974) and Idaho (1979). Its larvae mine the root, crown, and basal leaf petioles, weakening affected plants. Although heavily infested seedlings and young rosettes die as a result, the weevil has not stopped the spread of Mediterranean sage.

Chemical control can be effective, but it is difficult to penetrate the woolly leaves without using adjuvants. For chemical control recommendations, refer to the *Pacific Northwest Weed Control Handbook*, an annually revised extension publication available from the extension offices of Oregon State University, Washington State University and the University of Idaho.

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Use pesticides with care. Apply them only to plants, animals, or sites listed on the label. When mixing and applying pesticides, follow all label precautions to protect yourself and others around you. It is a violation of the law to disregard label directions. If pesticides are spilled on skin or clothing, remove clothing and wash skin thoroughly. Store pesticides in their original containers and keep them out of the reach of children, pets, and livestock.

Pacific Northwest cooperative Extension bulletins are joint publications of the three Pacific Northwest states—Washington, Oregon, and Idaho. Similar crops, climate, and topography create a natural geographic unit that crosses state lines. Since 1949, the PNW program has published over 350 titles. Joint writing, editing, and production have prevented duplication of effort, broadened the availability of faculty specialists, and substantially reduced costs for the participating states.

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