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# COMMON KNOTWEED

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*Integrated Pest Management for Home Gardeners and Landscape Professionals*

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Common knotweed, *Polygonum arenastrum*, also called wiregrass or doorweed, is common throughout most of the United States and Canada. It is an annual species that is native to Europe and is most often found in compacted soils. This weed is particularly well adapted to the winter and early spring rainfall pattern throughout California. It gets a good start with the early moisture and establishes a taproot, which allows it to survive the summer drought. Other scientific names that have been used for common knotweed in the past are *P. aviculare* and *P. montereyense*.

## IDENTIFICATION

Common knotweed is a prostrate annual plant with numerous slender, wiry stems that are highly branched to form prostrate mats (Fig. 1). However, in cultivated conditions it may ascend slightly to 4 to 8 inches. Seedlings are initially upright with strap-shaped cotyledon leaves (Fig. 2). There is a single taproot that can penetrate to more than 18 inches. Leaves are bluish green in color with blades narrowly

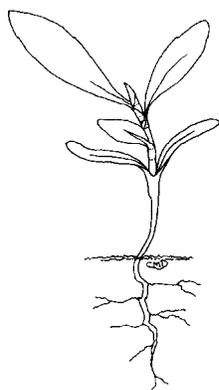


Figure 2. Common knotweed seedling.

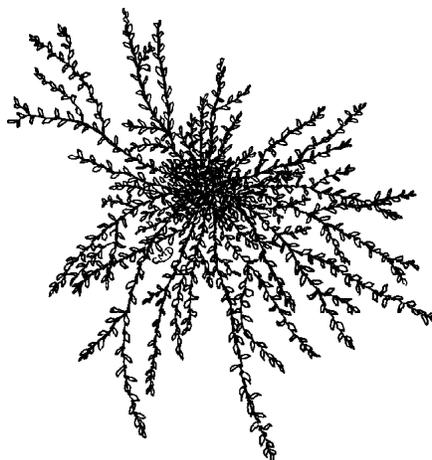


Figure 1. Common knotweed (top view).

ovate in shape (about 1/2 to 1 1/2 inches in length). The leaf stalk is short and stem nodes are encircled by papery leaf stipules. These stem nodes are slightly swollen giving the typical “knot”-like appearance from which the common name is derived. Flowers are small and inconspicuous; they are borne in the upper leaf axils (Fig. 3). The colors of the flowers range from white to green, and they may have a pinkish tinge. The seed is an achene that is three-sided, dark in color, and about 1/8 inch long.

Silver-sheathed knotweed, *P. argyrocoleon*, is similar to common knotweed, but has a more erect growth habit ascending to 12 to 20 inches in height. It may be distinguished from common knotweed by its long leafless, rose-colored flower spikes and its shiny seed. Silver-sheathed knotweed is most common in southern California.

In mowed areas, knotweed often resembles spotted spurge (see *Pest Notes*:

*Spotted Spurge* in References). An easy way to distinguish them is to break off a piece of stem. If a white milky sap is exuded, the plant is spurge.

## IMPACT

Common knotweed is a frequent weed of turf, roadsides, vacant lots, gravel parking areas, gardens, and any other site that has compacted soil and sufficient moisture to complete its life cycle. It has been found in perennial tree and vine crops as well as in alfalfa, where soil is compacted from frequent traffic. In turf it is found where heavy wear causes soil compaction. It is a typical weed of footpaths or dirt roadways. It can serve as a host for diseases, such as powdery mildew, and is an alternate host for the parasitic weed dodder.

## BIOLOGY

Common knotweed germinates in late winter or early spring, when there is sufficient available moisture. It often germinates in soil cracks in compacted soil, and seedlings appear in lines where the cracks are. Though it germi-

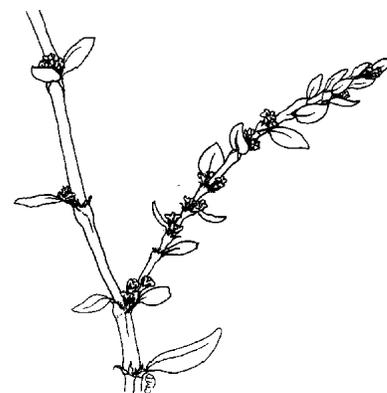


Figure 3. Small, inconspicuous flowers in the leaf axils.

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# PEST NOTES

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nates in early spring, it grows slowly and upright before becoming prostrate. If mowed, it remains prostrate and spreads, forming a mat that is 3 to 4 feet in diameter. Seed develop on the plant low to the ground and they readily survive mowing. Flowering may occur from March through October.

## MANAGEMENT

One of the best methods of control is to mitigate the condition under which this weed grows best—compacted soils. Arrange landscapes so that there is less likelihood that pathways or other areas will become compacted. Spread out traffic over a broader area. Do not trample areas soon after irrigation or rainfall. Arrange soccer fields and athletic areas so that trafficked areas such as goals, midfield, and sidelines can be rotated.

Aeration or loosening the soil to provide better drainage and a better environment for more desirable species can be beneficial. Prevent knotweed from producing seed by destroying young plants. This will reduce the amount of seed present in the soil in succeeding years. If areas are compacted, loosen

the soil and overseed with a locally adapted grass seed.

A variety of mulches can be applied to planting beds and other landscaped areas to prevent establishment of common knotweed. Mulching with landscape fabrics can be effective if the fabric is overlapped and no light is allowed to penetrate to the soil. Use a polypropylene or polyester fabric or black polyethylene (plastic tarp) to block all plant growth. Rock or organic mulches such as bark or compost can be used over the top of synthetic fabrics. If used alone, organic mulches should be at least 3 inches thick. If seed of common knotweed gets into the mulch, it may germinate and establish, just as if it were in soil. In these cases the plants can be easily removed by hand. Mulch will need to be replenished periodically to maintain cover thickness and eliminate light penetration to the soil.

Common knotweed is easy to dislodge with common weeding tools, such as a swivel hoe. For the home gardener, frequent manual removal along with mulching should be sufficient to manage this weed in most situations.

There are many herbicides that will control common knotweed, but they are not generally required in home garden situations. The selection of the herbicide is governed by the site and, should there be one, the crop. Remember that many of these herbicides can have negative effects on desirable plants as well and should be used with

care, especially in a landscape situation.

*Preemergent herbicides* must be applied before the knotweed seed germinates. Examples of preemergent herbicides are atrazine\*, benfen, bensulide, dithiopyr, diuron\* (for use in turfgrass only), hexazinone\*, isoxaben, napropamide\*, oryzalin, oxadiazon\*, pendimethalin, proflam, pronamide\*, simazine\*, and trifluralin.

*Postemergent herbicides* like dicamba (for use in turfgrass only), glyphosate, and nonanoic acid will control common knotweed. For best results, these foliar herbicides must be used while the weed is in the juvenile stages, preferably the early seedling stage, before it becomes hardened. When knotweed is young (i.e., less than 3 inches in diameter), it can be controlled with 2,4-D\*. Some postemergent herbicides kill the top growth of a plant, but it regrows from the root.

\* Available to licensed pest control operators only.

## REFERENCES

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### WARNING ON THE USE OF CHEMICALS

Pesticides are poisonous. Always read and carefully follow all precautions and safety recommendations given on the container label. Store all chemicals in the original labeled containers in a locked cabinet or shed, away from food or feeds, and out of the reach of children, unauthorized persons, pets, and livestock.

Confine chemicals to the property being treated. Avoid drift onto neighboring properties, especially gardens containing fruits or vegetables ready to be picked.

Do not place containers containing pesticide in the trash nor pour pesticides down sink or toilet. Either use the pesticide according to the label or take unwanted pesticides to a Household Hazardous Waste Collection site. Contact your county agricultural commissioner for additional information on safe container disposal and for the location of the Hazardous Waste Collection site nearest you. Dispose of empty containers by following label directions. Never reuse or burn the containers or dispose of them in such a manner that they may contaminate water supplies or natural waterways.

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