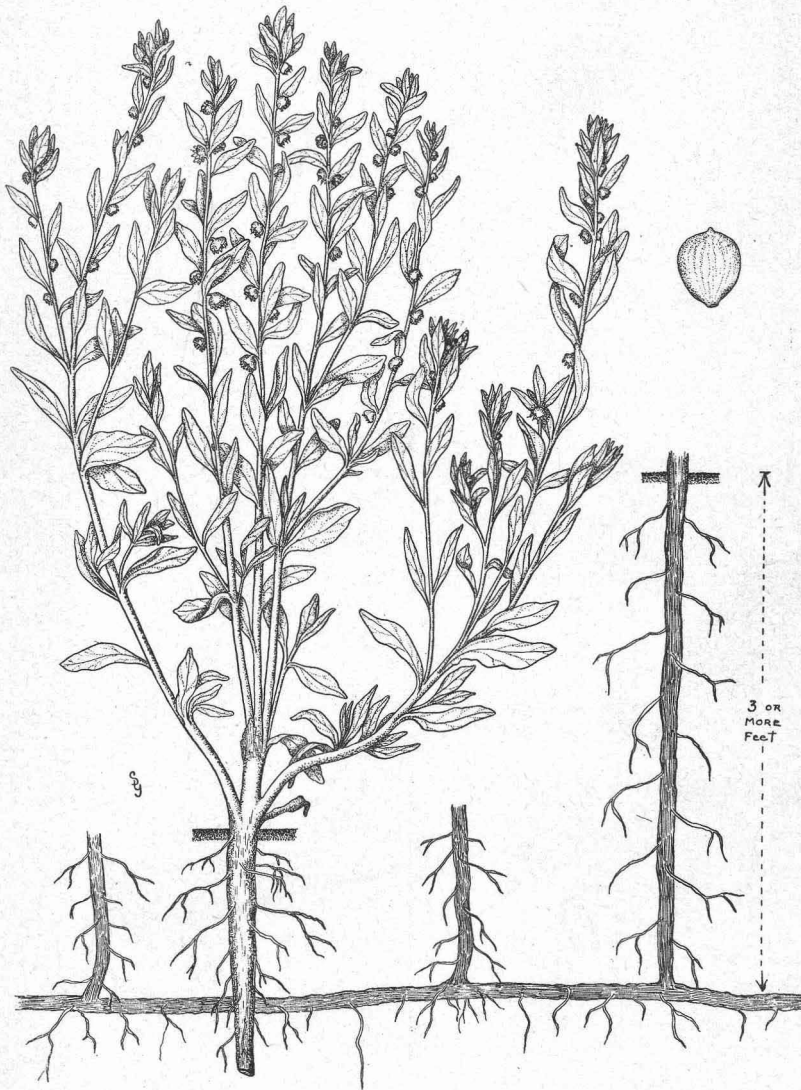


Death-weed

U. S. FISH AND WILDLIFE SERVICE
CORVALLIS, OREGON

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DEATH-WEED—*Iva axillaris*—Showing entire plant, nature of root growth, and seed.
Seed magnified 5 diameters.

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Death-weed

(*Iva axillaris*)

Other names: Poverty weed, Small-flowered marsh elder, Devilweed.

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Illustrations by Cathrine Davis Young

Death-weed is found in every Eastern Oregon county. It is a perennial that prefers alkaline soils, but will grow on any soil type. It spreads by seeds and by tough, woody, underground rootstocks that send up many new shoots, forming dense patches. Most crops are unable to compete on even terms with this weed.

The plant gives forth a rank, unpleasant odor roughly resembling that of sagebrush, distasteful to grazing animals. It has practically no forage value.

Death-weed grows to a height of from a few inches to 2 feet. Clusters of stems are sent up from a series of woody, underground rootstocks that spread in all directions and send up new shoots from joints. The rather thick, grayish-green leaves vary in length from $\frac{1}{2}$ to $1\frac{1}{2}$ inches and they are as much as $\frac{1}{2}$ inch wide. The leaf surface is covered with small, stiff, inconspicuous, whitish hairs that lie flat against the leaf and point toward the tip, giving a silver sheen when viewed from some angles. The greenish bell-shaped flower heads are about $\frac{1}{4}$ inch in diameter, or less, and are produced in the axils formed by the leaf and stem. They hang downward much like the flowers of huckleberries and are almost invisible from above. Each flower head is surrounded by a circle of small, leaflike structures. Seed cases are about $\frac{1}{10}$ inch long, egg or wedge shaped, flattened, and vary in color from gray to almost black.

Damage. The name death-weed carries no sinister implication since the plant has no poisonous properties but the plant is death to common crops trying to grow on the same land. It uses much of the available moisture and plant food and makes such dense patches that grain or row crops find competition difficult.

Damage is greater on grain farms than on livestock ranches. The weed bothers little in alfalfa or in good grass pastures but it reduces grain yields markedly and is expensive to hoe from row crops. It starts late in the spring and is therefore more troublesome in spring grains than in fall-planted crops. It tends to occupy the alkali patches and spreads from those into the fertile ground. It is a late seeder and therefore its seed is more likely to be in alfalfa seed than in threshed grain.

Oregon seed law. Death-weed is declared to be a noxious weed and if its seed is present in seed of forage or vegetable plants, the label on the container must so state and must give the number per pound.

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Control by cultivation. The most satisfactory control of death-weed on large areas is to plow the infested area deeply early in the season and follow with periodic cultivation until all growth stops in the fall. Recent work on weed control indicates that the interval between cultivations should not be longer than a week to ten days after growth appears.

Continued cultivation makes surface soil fine and the subsurface compact. Replowing may be necessary to bring clods to the surface and to allow deeper working. The duckfoot and rod weeder are the most satisfactory implements.

The soil will become dust when cultivated often enough to kill the weed, so if cultivation is used for weed control in areas subject to erosion, some precaution should be taken to avoid this danger.

Control by crops. This weed starts growth late in the spring and so is susceptible to control by deferred fallow with a smother crop. Plow deeply in the fall, plant winter wheat or winter rye at a heavy rate of seeding, cut for hay or plow under in June, then clean cultivate for the remainder of the season. One or two seasons of this will usually clean a field of death-weed.

A good stand of alfalfa will compete satisfactorily with death-weed, and if a heavy stand can be maintained it will slowly eliminate the weed, due to shading, competition for plant food, and frequent cutting. Use Ladak alfalfa because of its longer life. Deep plowing the fall before the alfalfa is seeded will aid in getting the crop started ahead of the weeds. Any sod-forming grass will compete satisfactorily with the weed. On alkaline land western wheatgrass (*Agropyron smithii*) is a good competitor. On other irrigated land



A good stand of alfalfa competes well with death-weed.

bromegrass or Kentucky bluegrass is satisfactory, and on dry land Fairway crested wheatgrass is best.

Control by chemicals. Sodium chlorate applied in either the spray or powder form is the cheapest effective chemical for control at present. It should be applied at the rate of 4 pounds to the square rod. A pound to a pound and a half of the chemical is dissolved in one gallon of water when used in the spray form. Best results have been obtained from spraying the weeds when they are approaching maturity, in the late summer or fall. Mixtures of sodium chlorate are less effective than the straight chemical, but some of them have less fire hazard. If proper precautions are taken, there is little reason for fires occurring with either chemical.

Applying the dry chlorate directly to the soil has given just as satisfactory control as spraying the foliage of the weeds in Oregon. This practice has the advantage of requiring less equipment, no hauling of water, and to a large degree eliminates the fire hazard present after spraying. Fall applications are most satisfactory all over eastern Oregon.

Chlorate chemicals are dangerous unless proper precautions are observed. See page 15 of Extension Bulletin 510 for further information.

Carbon bisulphide is the most effective chemical when applied at a time when soil moisture conditions are right. It is quicker acting than chlorate and does not leave the land unproductive for more than a few months, but is more expensive and requires more labor to apply. It is a liquid that is injected with a mechanical applicator into holes 6 to 8 inches deep and staggered 18 inches apart. The holes should be tamped shut after the liquid is applied. Two ounces of chemical per hole are recommended. Carbon bisulphide has not proved effective on gravelly or heavy or gumbo types of soils.

With any treatment be sure to *kill the last plant* or regrowth will appear and soon cover the entire area again. Chemical should be applied at least six feet beyond the last plant on the outside of each patch.

For further information on control methods and general information about weed control read Extension Bulletin 510. See particularly pages 15 to 23 on the precautions to be followed in connection with the use of chlorates.

This is one of a series of 39 bulletins discussing 58 perennial weeds in Oregon and their control. A list of bulletins in this series will be found on the last page of Extension Bulletin 510. The individual bulletins are punched so that they may all be bound together if desired.

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