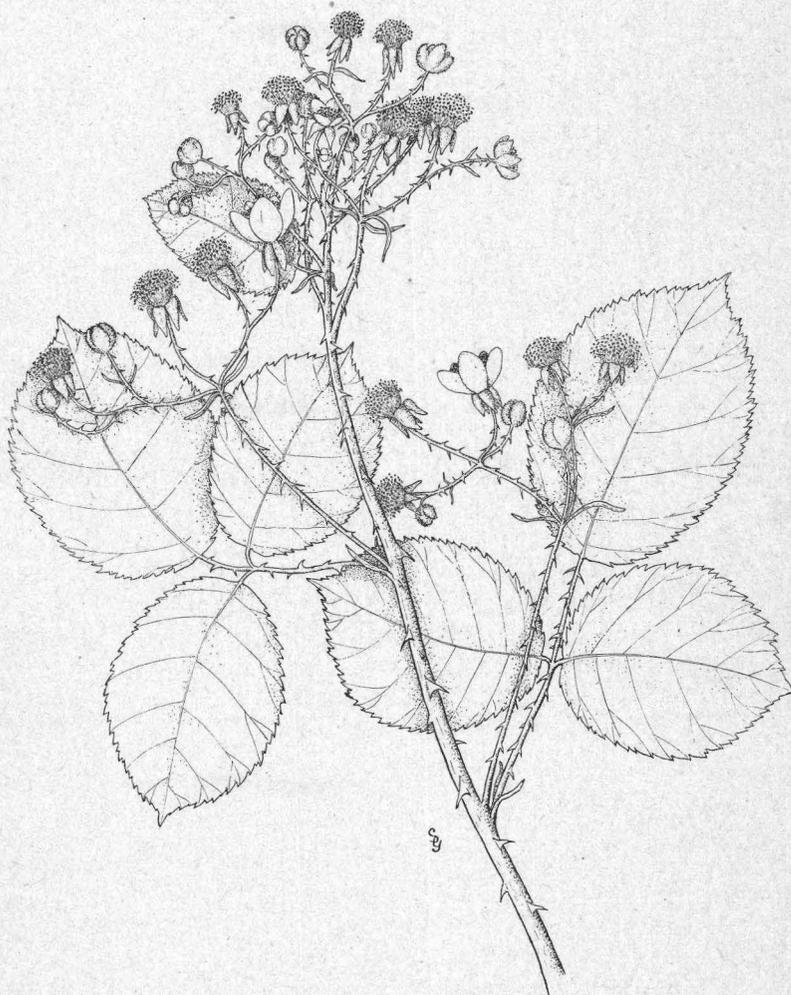


Evergreen, Himalaya and Wild Blackberry

Revised by
Rex Warren and Virgil Freed



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Drawing on Cover—

Himalaya Blackberry—*Rubus procerus*—Showing leaves, stem, and flowers.

Evergreen, Himalaya and Wild Blackberries

Revised by
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Evergreen, himalaya, and wild blackberry are the most common blackberries found in the state. The evergreen and himalaya varieties are not native, but have escaped cultivation and become wild in many areas.

Newcomers to Oregon marvel at the huge clumps of blackberries growing wild in pastures and on roadsides in western Oregon. Until recently these formed an important source of income to some communities, but now the berries of both the evergreen and himalaya varieties are affected by the berry mite, which makes them hard and unsuitable for canning.

Evergreen Blackberry (*Rubus laciniatus*)

Evergreen blackberry is a perennial that spreads by seed and underground roots. The canes also take root at their tips and spread the plant in that manner. The stems are long, very thorny, and reach $\frac{3}{4}$ inch in thickness. They may trail along the ground or grow in clumps 10 feet or more high and from a rod to many rods wide. The clumps develop and spread so rapidly that they sometimes seriously encroach on pasture land. Leaves are divided into from 3 to 15 leaflets, except at the tips of the branches where the leaves are often entire. Leaflets are cut into many long slender lobes with many sharp thorns along the underside of the midvein. The flowers are white or pinkish and are borne singly from joints formed by the attachment of the leaf stems to the main stem. The fruit is shiny, black, and almost round. Seeds are rather large and hard.

Himalaya Blackberry (*Rubus procerus*)

The himalaya blackberry now grows wild in all sections of western Oregon, but it is not a native. Like the evergreen, it is rank-growing and aggressive. There are usually three leaflets that are rounded, have toothed edges, but are not divided. The canes reach 1 inch in thickness.

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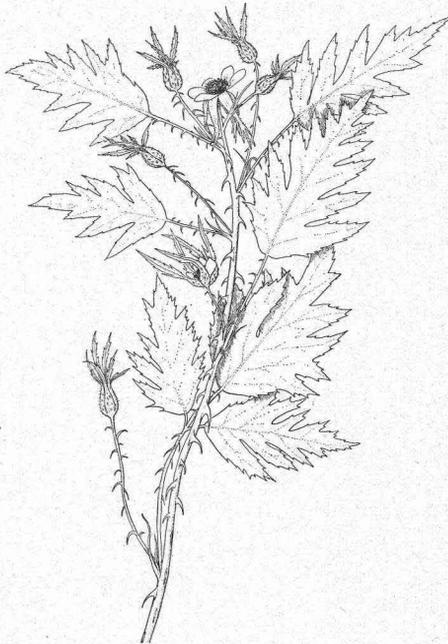
Wild Blackberry

(*Rubus macropetalus*)

Other name: Trailing blackberry.

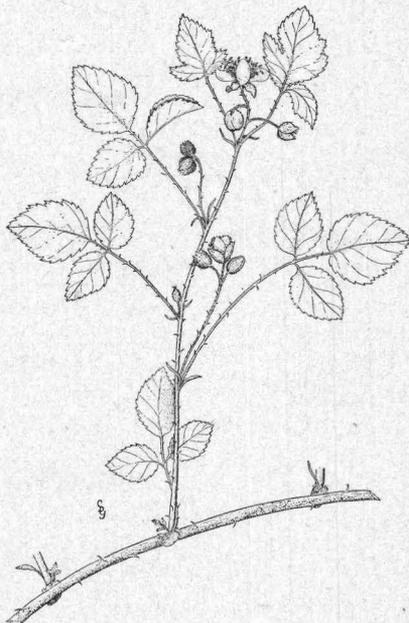
Wild blackberry also is a perennial. It produces woody stems up to 25 feet long that trail along the ground and reach $\frac{1}{4}$ inch in thickness. The first year's growth is unbranched and does not flower, but the second year many flower-bearing branches are formed. The canes therefore are biennial and die after the second year. The roots or rootstocks and crown are perennial. The stems are hairless or slightly hairy with short, curved prickles. Leaflets are egg shaped, pointed, roughly toothed, and somewhat hairy on both sides, especially on the underside. End leaflets are broader and longer (2 to 3 inches long) than the side leaflets and are often somewhat lobed. Leaves are borne alternately along the stem and are usually divided into 3 leaflets. Flowers are white, have 5 petals, and are from $1\frac{1}{2}$ to $2\frac{1}{2}$ inches wide. Male and female flowers are produced on different plants.

Wild blackberry, or trailing blackberry as it is sometimes called, grows abundantly in cut-over areas. It is also common in open



Evergreen Blackberry—*Rubus laciniatus*—
Showing leaves, stem, and flowers.

woods, along roadsides, and in fence-rows. This blackberry, together with bracken fern and fireweed, rapidly comes in on an area that has been slashed and burned unless the burn is seeded down immediately to grass. It has fair to good palatability for both sheep and cattle.



Wild Blackberry—*Rubus macropetalus*—Showing trailing stem, leaves, and flowers.

Control with 2,4,5-T

Four to six pounds of parent 2,4,5-T acid per acre, applied after the plant is fully leafed out, will give good control on both large and small blackberry bushes. With thorough coverage and proper strength of solution one may expect to achieve up to 90 or 95 per cent control with a single application. One thorough application will usually give complete kill of all top growth, but 5 to 10 per cent regrowth may occur on treated plots.

Time of application

The best time of application is after the blackberry has fully leafed out. The leaves should be fully expanded and the lower ones of a mature size before spraying begins.

Amount of application

Experiments conducted by the Oregon State College Agricultural Experiment Station indicate that $2\frac{1}{2}$ to 3 pounds of 2,4,5-T acid per acre is required to control small, moderately-dense berry plants. For larger plants—chest high or higher—applications of 4 to as high as 8 pounds per acre are required. Since it is often difficult to gauge the amount of water that will be required to spray scattered patches of varying sized plants, the simplest method of spraying blackberries or other bushy plants is to use 2 or 3 pounds of 2,4,5-T acid per 100 gallons of water. Then spray to cover the entire plant foliage thoroughly. It is not necessary to spray the plant until the spray solution drips from the leaves and stems. It is necessary, however, to get all the leaves and as much of the stem as possible uniformly wet with a thin film of spray.

Spray pressures needed

For greater effectiveness and ease of spray application, it is necessary to have equipment that will deliver a sufficient volume of spray to wet the plants rapidly. For old large plants, this means that it will be necessary to use spraying equipment capable of operating at 125 pounds pressure. For rapid spraying, the pump should deliver at least 4 gallons of solution per minute. Pressures up to 250 to 350 pounds are often useful when spraying dense growth or large blackberry patches. Low-growing blackberries may be sprayed successfully with low-pressure equipment such as a 3-gallon hand sprayer.

Regrowth

It is difficult, if not impossible, to obtain a 100 per cent kill with the first application. Usually there will be a limited amount of new sprouts or regrowth from treated plants. After spring application, new growth should be fall-treated or sprayed again the following spring. Follow-up spraying usually requires a small amount of chemical per acre.

Caution

The use of growth-regulating compounds such as 2,4,5-T is dangerous unless proper precautions are observed. Minute quantities of these materials affect plants so that it becomes necessary to protect desirable plants from the drift and vapors of these chemicals.

Even when a very coarse spray is used, a number of droplets from the spray will be atomized and carried a considerable distance by wind. As the pressure is increased or as the size of the nozzle is decreased, there is a greater tendency for the spray to atomize. These atomized droplets of spray solution may then be carried long dis-

tances by a slight breeze. When there are desirable plants in the near vicinity—such as shrubbery, orchards, etc.—it is wise to stop spraying operations if the wind shifts in their direction.

With chemicals of this type, a number of different so-called derivatives are available for use. The two most common forms are the ester form and the amine salt form. The amine salt form as purchased is a liquid that dissolves in water, whereas the ester form tends to be somewhat oily and forms a milky emulsion or suspension in water. This difference in appearance in water can serve as a basis for distinguishing between these two materials. It has been found that with each material, as the isopropyl or butyl esters, that warm sunlight will cause the material to vaporize and the vapor may be carried for some distance by the wind and result in injury to desirable plants.

When spraying during the hot summer months, make sure there are no desirable plants near if using the ester form of 2,4,5-T. It would be better to use the amine salt instead. However, the ester form is more effective on blackberry and other weedy plants than amine salt.

Control with Chlorates

Sodium chlorate and atlacide have been used many years for the control of wild blackberry varieties. Best results with these materials are obtained by cutting off the old plants and treating the soil or spraying the regrowth when it is approximately 2 feet in height. In western Oregon best results are usually obtained by spraying in the spring and early summer months.

Method of application

Dry chlorates can be applied by hand or by small spreaders. Such applications require at least 5 pounds of chlorate per square rod. If chlorate is applied as a spray, the chemical is dissolved in water at the rate of 1 pound per gallon and application made of 5 pounds per square rod. Best spray results are obtained by first removing the old canes by burning or cutting and then spraying the new growth when it is 12 to 24 inches tall.

Caution

Sodium chlorate is not ordinarily dangerous in a water solution since the material must be dry to burn. However, when a spray of sodium chlorate has been applied and allowed to dry, the fire danger is great. Therefore, persons handling sodium chlorate should wear old clothing which can be discarded or washed immediately after

spraying. It is safest to wear rubber boots or other footwear that can be removed quickly. This precaution applies to both dry and wet chlorate applications.

Sodium chlorate should not be transferred from one container to another. Do not handle it in or around buildings. As a fire precaution and to avoid soil sterilization, the material should be handled on a spot away from buildings and preferably over noncropped soil. When weighing out or transferring the material is completed, the soil area should be thoroughly washed down with water to avoid possible fire hazard. In handling chlorates the handler should neither smoke nor strike matches, nor should he wear shoes with steel plates, caulks, or even nails that might cause a spark. Frequently the friction of hands being rubbed over chlorate-soaked trousers is sufficient to cause the material to burst into flame.

Since chlorates are somewhat poisonous, farm animals should be kept away from the treated area until the material can be washed into the soil.

Control with Ammonium Sulfamate

When properly used, ammonium sulfamate (ammate) has proved effective for controlling blackberries. This chemical, which costs from one and one-half to two times as much to use as sodium chlorate, is neither a fire hazard nor poisonous to livestock. For maximum effectiveness, blackberry top growth should be brushed off and regrowth allowed to reach a height of two feet. The chemical should be sprayed at a rate of six pounds per square rod. Since ammate is extremely soluble in water, a solution containing as high as three pounds per gallon may be prepared. Ammate is most effective when applied during the late spring and summer months.

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