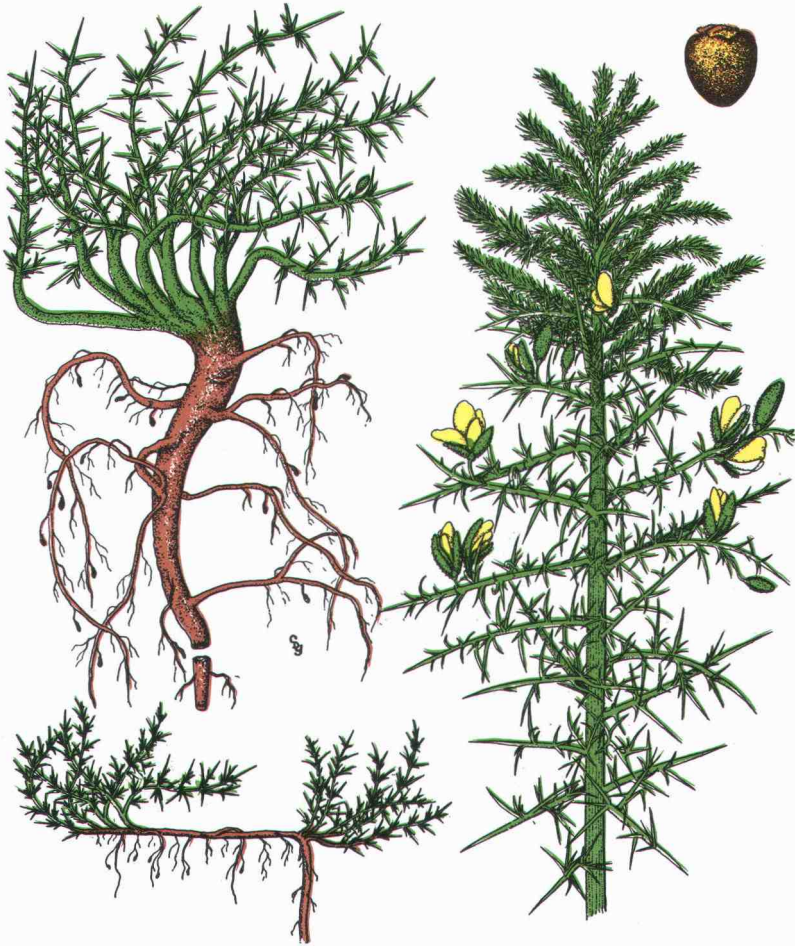


Gorse



GORSE—*Ulex europaeus*—Showing branch with flowers, seed pods and spines; individual crown and roots with nitrogen-fixing nodules; branch that has lodged onto the ground and taken root, and seed. Seed magnified four diameters.

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Gorse

(*Ulex europeus*)

Gorse is a dense, spiny evergreen legume shrub which resembles Scotch broom. It grows from 2 to 10 feet tall with erect, angular stems. Branches are spreading, ending in a stout thorn. The dense leaves take the form of branching spines. Flowers are yellow, solitary or with two or three grouped in axils of spines on the preceding year's growth.

Gorse is adapted to regions of mild winters and sandy or gravelly soils with abundant moisture. The plant was introduced from Europe as an ornamental plant and escaped from cultivation. Where adapted it makes vigorous, dense growth and when undisturbed it crowds out other vegetation. The individual plant grows outward, forming a central area of dry dead vegetation. The oil in the plant combined with the dead dry matter creates a serious fire hazard.

Propagation is largely by seed. The plants are prolific seed producers, and the bursting seed pods scatter for several feet. Seed is also carried by animals, machinery, and water. The seeds have hard seed coats and will lie in the soil for years before germinating. The dormant seed is resistant to destruction by fire, although germination is hastened following a fire.

Gorse is slow in becoming established, but where it is adapted there are few other plants that will so completely dominate an area. Gorse usually becomes established on nontillable land and in inaccessible places, such as fence rows, river banks, and rough sites, thus control is difficult. Its persistence, the constant fire hazard, and the ability to encroach on agricultural lands makes it a serious brush pest.

CONTROL. An infestation limited to a few plants or a small area can be eradicated. Once gorse has become established with quantities of seed deposited in the soil, it becomes difficult if not impossible to eradicate.

CONTROL BY CULTIVATION.

Cultivation where possible is the best method of controlling gorse. Methods of cultivation which remove the old gorse crowns and bring them to the surface are the most successful. Rotation of crops for two or three years before seeding to permanent pasture is a good way to destroy many gorse seedlings.

Seedling gorse plants 2 to 3 inches high are palatable to livestock and will be eaten if the pasture is heavily stocked for a short time. Some spraying will be required to destroy plants that escape control by the livestock. Such spraying often kills clovers if they are in the pasture mixture.

REFORESTATION. Gorse does not thrive in shaded areas. However, special precautions must be followed if forest trees are to be established in gorse-infested areas. A gorse area should be burned to remove all gorse plants. The area should be transplanted to the largest tree seedlings available (three-year-old seedlings or 2-1 transplants, or larger). These trees should be planted in the early spring. There will be gorse seedlings plus regrowth from old gorse crowns. The gorse seedlings and regrowth should be sprayed approximately two years after burning with 2 pounds of acid equivalent of 2,4,5-T in 10 gallons of diesel oil per acre. Spraying should be done before the active growth starts on the transplanted trees. Douglas-fir and Monterey pine are highly successful. Douglas-fir is the most resistant to 2,4,5-T; Monterey pine may outgrow sprouting gorse with minimum herbicide effort. Sitka spruce also is resistant to spray treatments and grows well in most gorse areas.

Special precautions must be taken to protect the area under reforestation from possible fires from adjacent areas.

CORE CONTROL. The most effective control program will include burning, cultivation, and chemicals. The best practices will be determined by the degree of the infestation on the type of land infested, and the use to be made of the land following control.

TIMINGS AND RATES OF SPRAY APPLICATION. Gorse should be sprayed during its active growing period for all purposes except release of tree seedlings. Pre-blossom spraying is more effective than spraying during the blossom period. Sprays applied in February and March are more effective than late summer and early fall sprays.

Brush killer (mixtures of 2,4,5-T and 2,4-D) or 2,4,5-T have given good results as a foliage spray. A high percentage of the plants will be killed by one application. Follow-up applications will be necessary to destroy plants that have received inadequate spray coverage or were missed in the first treatment. The addition of diesel oil, stove oil, special spray oils, or wetting agents to the spray solution helps when spraying with 2,4,5-T and brush killers.

Tordon at 2 pounds acid equivalent per acre, either as sprays or beads or granular, is effective in controlling gorse. Tordon is not registered for use on crop or grazing lands. Apply only according to labels. It can be used on waste areas which are not grazed. Tordon must be kept from areas draining directly into water channels.

Where practical, spraying should be done using the fogging pattern of the spray gun. The addition of a surfactant or 2 to 3 gallons of diesel or stove oil or spray oils per 100 gallons of spray solution helps to wet the foliage, thus giving better control. Sprays used to control gorse must be used carefully; they will damage other growing plants.

BURNING. Burning of old plants is an excellent step in a control program. Burning will destroy most of the existing growth and many of the seeds on the soil surface. To be effective, burning must be done under conditions of low humidity. If conditions are unfavorable for a good burn, the area can be sprayed with a desiccant and oil. Always check local regulations on burning permits before burning.

Gorse plant crowns are usually not killed by cutting or burning top growth. Regrowth from crowns should be sprayed or reburned. Best kills of the old crowns are obtained by spraying the regrowth after it has reached 12 to 18 inches in height. More spray will be transferred to the crowns from the tall growth than from spraying shorter growth.

When a large area of gorse is to be controlled, it can be burned, fertilized, and over-seeded with grass immediately to provide competition for developing gorse seedlings. As the new pasture becomes established, it will be infested with gorse seedlings which must be controlled by heavy grazing or the use of selective sprays. When an infested area is being developed for pasture, it should be fenced so grazing can be controlled.

Some growers prefer burning gorse areas and then seeding to annual ryegrass soon after burning. The grass retards the invasion of the gorse seedlings; it also provides fuel for reburning a year later. The second burning destroys unburned brush remaining from the previous burning. In some cases the gorse area can be seeded with a rangeland drill. The rangeland drill eliminates the need for seedbed preparation, thus minimizing the gorse seedling problem.

An alternative method is to destroy the gorse cover by burning or bulldozing, followed by leveling and seedbed preparation. Pasture seeding may be delayed for a season or two to allow germination of gorse seeds near the surface. These seedlings can be controlled with the use of chemicals. During the second season, a pasture can be seeded with minimum tillage to avoid disturbing the soil and bringing more gorse seeds to the surface. When seeding a pasture under these conditions, an annual legume such as subterranean clover could be included. Sprays for gorse seedling control may be applied after the sub clover has set seed and the plant has died for the season. Brush killer mixtures or 2,4,5-T will not damage ungerminated sub clover seed. Tordon has soil residues which will destroy the germinating legume seeds.

BIOLOGICAL CONTROL. In 1956, the gorse weevil, *Apion ulicis* (Forst) was introduced into Bandon, Oregon. The weevil increased rapidly and by 1959 the weevils covered about 1½ square miles. Almost every gorse pod contained 3 to 10 weevils. Additional releases of gorse weevils were made in 1959 in Curry and Lane counties.

Although the gorse weevil can, under most favorable conditions, reduce seed production by 98 percent, it is doubtful if it will check the spread of gorse. In California, adult weevils have caused injury to the tops of the branches by their feeding, but their feeding has not been observed to cause significant damage to gorse in Oregon.

Recommendations for Gorse Control

Chemical	Rate	How applied	Comments
*2,4,5-T	5-6 lbs. per 100 gals. water	Foliage spray	Ester form best
*2,4,5-T + 2,4-D	5-6 lbs. per 100 gals. water	Foliage spray	Ester form best
Picloram (Tordon) and ¼ lb. 2,4,5-T + 2,4-D	2 lbs. in 100 gals. water	Foliage spray	Picloram has a long residual life. Not cleared for use on crop or grazing land. Follow label directions carefully.
Picloram beads	(2% Tordon) (120-200 lbs. per acre)	Soil surface	
Picloram granular	(10% Tordon) (40-60 lbs. per acre)	Soil surface	

* Two gallons of diesel oil, stove oil, or special spray oils per 100 gallons helps wet the gorse. Consult the label for grazing restrictions and other restrictions in use.



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