

**SCOTCH BROOM***(Cytisus scoparius)*

Drawing from: Ivan Watkins-Dow Ltd., New Plymouth, New Zealand.

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Scotch broom (*Cytisus scoparius*) and French broom (*C. monspessulanus*) are ornamental leguminous shrubs that have escaped from cultivation on the Pacific Coast and have become problems in both wooded and pasture areas. Another introduced leguminous shrub which is potentially even a worse problem on the Pacific Coast is gorse (*Ulex europaeus*). In New Zealand gorse was introduced as a shrub for fence row hedges, but escaped and has occupied hundreds of thousands of acres of first-class pasture lands. Great effort has been expended in controlling both Scotch broom and gorse in that country. Interestingly, these shrubs are not serious problems in Scotland, a country from which they were introduced. Some effort, however, toward controlling them is also practiced in that country. There are about 80 species of *Cytisus* native to Europe, the Canary Islands, northern Africa and western Asia.

Scotch broom is an erect shrub with green branches from about 3 to 10 feet high. The foliage is sparse and deciduous. On young plants the leaves are trifoliate and from  $\frac{1}{4}$  to 1 inch long, with the petioles being about the same length as the blades. On older plants, the leaves may be from  $\frac{1}{8}$  to  $\frac{1}{2}$  inch long, with the petioles again

being approximately the same length as the blades. The flowers are yellow, legume or pea-like in shape, about  $\frac{3}{4}$  inch long, and occur solitarily or in pairs in the leaf-axils. They are extremely showy during their flowering period which extends from January to June.

While this plant is a useful and beautiful shrub when kept under control, it can be a serious problem if left to grow unchecked. It is noted for its ability to produce a large number of seeds with long-lasting viability. On the Pacific Coast these seeds germinate from fall through spring. Since Scotch broom is a leguminous plant with nitrogen-fixing bacteria, its small seedlings quickly develop nodules on their roots and thereafter can take care of their own nitrogen requirements. Therefore, these seedlings often grow very rapidly and extend their roots sufficiently deep to withstand competition from grass and other vegetation during the dry summers common to the Pacific Coast.

Although Scotch broom is not a vigorous sprouter, cutting a plant off near the ground line does not prevent it from sprouting. However, a severe fire will kill the entire plant. Incidentally, Scotch broom is highly flammable when conditions are right and can, therefore, be a fire hazard. It burns with such intense heat that many forest trees have been killed by Scotch broom fires.

Young Scotch broom plants can be controlled with 2,4-D. Periodic sprayings will be necessary, however, because seedlings will keep appearing. Even the older plants can be killed with 2,4-D when the treatments are made when they are most sensitive, i.e. when they are in bloom and there is sufficient soil moisture for good growth to occur. Good coverage of the plants is required for best kill and esters should be used. When the plants are old, especially when conditions are not ideal, 2,4,5-T should be used. Again esters should be employed. Mixtures of picloram and 2,4-D or 2,4,5-T are being used in New Zealand to control this shrub.

Like many woody plants, Scotch broom is susceptible to basal sprays. Esters of 2,4-D and 2,4,5-T, or 2,4,5-T alone, are mixed with diesel oil and sprayed on the stems above the ground line. Control is assured if a good application job is done.

Biological control tests on Scotch broom were begun in the U. S. in 1960 when moths of the Scotch broom stem miner (*Leucoptera*) were released in northern California. The use of seed weevils (*Apion*) to destroy broom seed has also been started in California. Reducing the vigor of the plants and destroying their seed with these insects should aid in slowing the spread of this menace.