

# Ornamental

## WEED CONTROL IN GROUND COVERS

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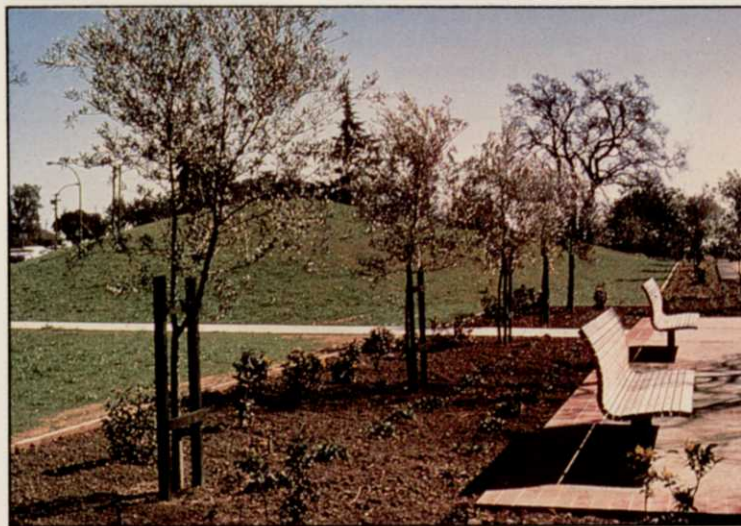
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**G**round covers are generally referred to as plants that cover slopes, open beds or serve as border plantings and grow to one foot in height or less. Most ground covers are perennials, evergreen and have growth habits that are trailing, spreading or clumping in nature. Most ground covers require a considerable amount of work and attention during their initial period of establishment. Depending on the vigor of the species and how rapidly they cover the ground, they are usually planted at spacings ranging from 12 to 36 inches. The popularity of ground covers in the urban landscape is due primarily to the wide array of different textures and colors available. Ground cover popularity is also determined on the uniformity, density and attractiveness of the plant material in covering open soil areas.

During the period when new plantings are becoming established, sunlight has the opportunity to reach the open soil areas and this favors the growth of weeds. Weeds thrive and compete with the ground covers for available moisture, nutrients and sunlight. Whenever the ground cover reaches the proper density and thickness, it shades the open soil surface thereby eliminating the environment for sprouting annual weed seeds. The most troublesome weeds are the perennials which include several grasses and broadleaf types. Perennial weeds require a sound program of weed control and management. To be effective, weed control in ground covers should utilize management techniques designed to reduce the weed population. These techniques include a thorough pre-plant clean-up, proper selection of the correct plant material, mechanical cultivation, and various types of mulches and chemical treatments.

### Sound Cultural Practices First

The landscape manager should first utilize sound cultural practices such as thorough cultivation and removal of debris from the site selected. This should be followed by one or several irrigations to allow weed seeds to germinate and then additional cultivation to exhaust the seed reservoir in the soil. Weeds that are more difficult to eradicate may require a post emergent herbicide or fumigation in addition to the cultivation.



*Highly visible plant beds require less maintenance after fumigation and application of preemergence herbicides.*

### Pre-plant

**FUMIGATION.** Fumigation may be used to kill seedlings of both annual and perennial weeds and weed seeds in the soil on both new sites and in established plantings. This method usually destroys the growth of any plants in the area so clean, fresh plant material is required to replant the ground cover bed. Fumigation is not recommended on slopes since the gas moves down the slope and does not control seeds at the top. Materials used for fumigation are limited to two materials: Methyl bromide (a highly toxic gas that requires a covering of a gas-tight plastic material) and metham (Vapam® which is a liquid material that is mixed with water and may require a vapor-proof covering like water). Methyl bromide must be applied by certified pesticide applicators.

### Post-plant

**PREEMERGENCE CONTROL.** Preemergence herbicides control primarily annual weeds as they are germinating from seed. Some are applied directly to the soil surface while others work best if they are incorporated into the soil. Many preemergence herbicides can affect the rooting ability of the ground cover, therefore, it is important to place the plant deep enough to avoid the chemical from coming into contact with the plant's root system.

Several compounds are recommended for pre-emergence control of weeds in ground covers; including Devrinol and Eptam®.

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## Postemergence Control

Since mechanical cultivation will not control or eliminate many perennial weeds, a postemergence herbicide may be necessary to reduce the weed population. Basically there are two herbicides which are used to control persistent perennial grasses such as Quackgrass, Dallisgrass, johnsongrass and bermudagrass and these include: Glyphosate (Round-up® systemic weed and grass killer) and dalapon (Dowpon®). However, it should not be applied over

the top of most ground covers.

The herbicide diphenamid (Enide®) may sometimes be used also as a post-emergence control for young grasses if the plants do not exceed 3 inches in height. Additionally, two commercial fertilizers are sometimes used to control weeds in specific ground covers such as iceplant (*Carpobrotus edulis*). These fertilizers include ammonium sulphate and magnesium chloride.

## GARDEN FUMIGATION

### New opportunity in landscape maintenance.

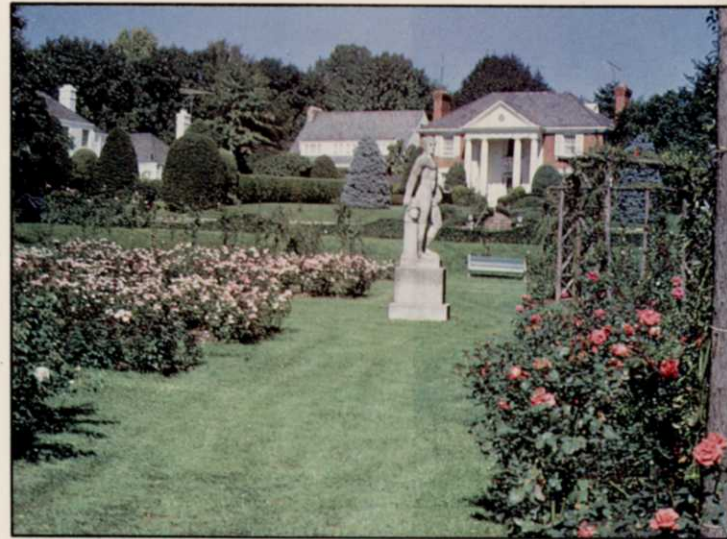
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All newly established gardens are plagued with weeds and soil born insects during their first 2 to 3 years of establishment. Turning under of sod or debris from neglected gardens is certain to create severe weed and grub or wireworm problems especially during the first year of gardening unless the soil is fumigated.

Our soils are infested with billions of weed seeds, roots and bulbs of perennial weeds and eggs or larvae of insects. Soils that have been gardened with the same crops for many years often become infected with virulent strains of fungus organisms that reduce yields.

Plowing, liming, fertilizing or adding compost to garden soils all make conditions favorable for seeds, roots and bulbs of annual and perennial weeds to germinate and grow. The most effective immediate control of such weed problems is to fumigate the soil before planting. Fumigating will also kill the eggs and larvae of insects, nematodes and soil born diseases. Because these fumigants are most active when soil temperatures are 60° or above, they may be applied in the fall while soils are still warm or in the spring as soon as the soil warms sufficiently.

Soil fumigants, such as Vapam, have been used for many years by nurserymen, growers of small fruits and vegetables. Soil fumigants leave no residues when they are properly used at recommended tem-



*Most homeowners don't have gardens like this, but they might welcome assistance with weed control from landscape maintenance firms in their gardens.*

peratures and aerated as recommended by the manufacturers. For maximum effectiveness, the soil should be thoroughly tilled, lime and compost amendments added before fumigating. After the soil has been fumigated and aerated, care should be taken to avoid digging deeply into the soil to prevent bringing to the surface unsterilized soil. Depending on the method of sterilization, only a 6" to 8" layer of soil is sterilized. Care should be taken to avoid sterilizing soils near desirable plants. Soil fumigants are nonselective and will kill desirable as well as undesirable plants.

The cost of fumigating soil is relatively inexpensive when one considers the advantages of weed free gardening and the increase in yields that have been reported. There are no weeds to compete with the desirable plants for water, nutrients and light; no insects to chew the roots or eat the stems; and no diseases to infect the roots and kill the plants.

Fumigating home owner gardens could be a new income source for landscapers and lawn care professionals. The suburban dweller in most cases would prefer a service perform this duty for a fair fee.