



Weed Control in Pansy Beds

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Winter color beds can enhance the visual appeal of most any landscape – unless they are filled with winter weeds like henbit, chickweed and annual bluegrass. To minimize these problems, a weed management program should be developed and implemented prior to planting. This weed management program should include site preparation to control perennial weeds, mulching to control annual weeds, sanitation to prevent weed introduction and spread, judicious use of herbicides, and manual weed control.

Before You Plant – Start Clean, Stay Clean

The most important weed management tasks are done before planting. Good site preparation includes scouting for perennial weeds and controlling them before planting. Manual or mechanical control of perennial weeds is difficult and costly once the bed is established. There are two main options for controlling perennial weeds: repeated cultivation or systemic postemergence herbicide (glyphosate). Cultivation is typically a part of pre-plant bed preparation, but cultivation is generally not an effective means of controlling creeping perennial weeds like mugwort. Rototillers can also spread weed seeds from one bed to the next. Wash tillers between job sites to reduce weed spread. If organic materials are to be added to the soil, use composted materials that are essentially

weed-free. Before planting, glyphosate (Roundup-Pro, Touchdown, and many other trade names) can be used to control emerged annual and perennial weeds.



Creeping perennial weeds like mugwort are not controlled by cultivation. Pieces of the rhizome can be spread on equipment.

Cultural Control

Weeds occupy open spaces. Designing and maintaining the color bed to utilize all the bed space will increase competition and reduce the sunlight reaching the soil surface which will decrease weed populations. Escaped weeds in the bed and weeds in the surrounding areas should be controlled for removed before they can produce seeds.

Mulch

An essential part of a weed management program is use of organic or inorganic mulch. Mulches control weeds by depriving them of light. For annual flower beds, a fine-textured, organic mulch is preferred. Our research has shown that pine straw mulch can reduce pansy flower numbers in the spring. The cause for this is unknown. Consequently, many commercial landscape managers use compost-based mulch in the pansy beds and edge the bed with pine straw to prevent the finer textured compost from washing off the beds. Mulches will control most annual weeds from seed, but do not control perennial weeds such as quackgrass, bermudagrass, goldenrod, nutsedge, and mugwort. Furthermore, some winter annual weeds will grow well in mulch if the weed seeds are spread on top of the mulch.



Pansy plantings should be mulched with finer-textured mulch, and may be edged with pine straw to prevent washing. Do not use pine straw to mulch pansy beds. Pine straw mulch has been shown to reduce pansy growth and flowering in the spring.

Preemergence Herbicides

Preemergence herbicides are applied before weeds emerge and provide residual control of weed seedlings. Preemergence herbicides should be applied after transplanting and mulching, and then irrigated. Herbicides applied in October will provide preemergence control of fall germinating weeds but may not last through the entire spring season. If bedding plants establish well and full bed coverage is achieved before spring, a second application of preemergence herbicides is rarely warranted. However, if the pansy bed has not completely filled-in, a second application of preemergence herbicide in mid to late February may be needed to control spring germinating weeds. However, if an application is made in February, it is advisable to use the lowest labeled dose to minimize the potential for injury to spring-planted bedding plants.

The proper herbicide for each color bed is dictated by the plant species located in the bed, weed species, and future use. Few herbicides are labeled and safe on pansies and violas. Our research has shown that spray applications of common herbicides such as oryzalin* (Oryzalin, Surflan), pendimethalin (Pendulum), prodiamine (Barricade), and isoxaben (Gallery) have been very injurious to pansies and violas. Granular herbicides are much less injurious. Granular formulations of dithiopyr (Preen for Southern Gardens), trifluralin (Preen Garden Weeder), pendimethalin (Pendulum 2G), and oryzalin + benefin (XL) are labeled for use on pansies. Each of these herbicides controls annual bluegrass and chickweed but trifluralin is generally more effective on henbit.

If preemergence herbicides are used, follow these precautions to prevent injury to the bedding plants.

1. Make sure the bedding plants healthy vigorous.
2. Mulch may be applied before planting. If this is done, be sure pansy roots are planted in the soil (not the mulch) and the soil is settled around the plants.
3. Select the right herbicide – one that is labeled for use on pansies and violas.
4. Follow label directions. Some herbicides require plants to be established for 2 weeks before treatment.
5. Apply the herbicide when the foliage of the bedding plants is dry. Granules sticking to moist foliage can injury the plants.
6. Apply the correct amount uniformly on the bed. Measure the bed area; then weigh out the correct amount of herbicide for the bed. Apply this pre-weighed amount of herbicide

to the bed using a hand-held spreader or shaker jar. Make three to four passes over the bed in different directions to ensure uniform distribution of the granules.

The most common causes of herbicide injury to pansy beds have been the use of non-labeled herbicides, over-dosing with the herbicide, planting bedding plants in the mulch layer (not soil) then applying herbicides, or planting pansies with root disease (that can be exacerbated by the application of root-inhibiting herbicides).

Postemergence Weed Control

Of course, hand weeding will always be a component of weed management programs, but limited use of selective and non-selective postemergence herbicides, those applied to weeds after they have emerged, is also possible.

Selective herbicides only kill specific plants. The only selective herbicides recommended for use in pansy beds are the postemergence, grass control herbicides, sethoxydim (Segment) and clethodim (Envoy). These herbicides only kill grasses while broadleaves are unharmed. Envoy controls annual bluegrass; Segment does not. Generally, these herbicides may be applied directly over the top of bedding plants, but some injury may occur to certain species or cultivars. When flowers are fully open, some damage to flower petals is to be expected.

Non-selective postemergence herbicides such as glyphosate (Roundup-Pro, Touchdown, and many other names), glufosinate (Finale), diquat (Reward) and pelargonic acid (Scythe) have the potential to kill or injure any plant that it contacts. However, they may be used as spot sprays near landscape plants avoiding contact with desirable vegetation. If tall weeds emerge in beds, and hand weeding is not feasible, it is also possible to wipe them with glyphosate (2 parts water and 1 part of the 41% active ingredient glyphosate formulation). Of course care must be taken to avoid contacting the bedding plants with glyphosate.

Mechanical Control (hand weeding)

Despite your best efforts using sanitation, mulches and herbicides, some weeds will emerge. So, some hand weeding will be required. Remove these weeds when they are young to prevent competition with the pansy transplants and to reduce soil disturbance. Removing weeds on a regular cycle will also prevent the spread of weeds like oxalis that can have multiple generations.

Let's face it – no one wants to look at weedy pansy beds next spring. By starting clean and preventing weeds from establishing and spreading, winter color beds can be a pleasing component of the winter and spring landscapes.

*Author's note: Liquid applications of oryzalin are labeled for use on established pansies. However, in research conducted at NC State University we have consistently seen severe injury to pansies and violas from spray applications of oryzalin.

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