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WEED CONTROL RECOMMENDATIONS FOR ESTABLISHED ROADSIDE PLANTING BEDS

General

These recommendations cover both preventive and curative techniques. Techniques will be discussed in the context of Integrated Pest Management (IPM), a systematic approach for implementing all practically available methods to reduce pests.

Recommendations will address preventing weeds from seed, as well already established weeds. These two scenarios will be addressed for plantings of woody, and herbaceous or mixed herbaceous/woody plantings.

An excellent reference for weed control in landscapes is the Penn State Cooperative Extension publication *Controlling Weeds in Nursery and Landscape Plantings* by Kuhns, Harpster, Rose, and Guiser. You can get this booklet through your County Extension office. You can also obtain this booklet in PDF format at http://pubs.cas.psu.edu/FreePubs/uj236.html, or view it online at http://ohioline.osu.edu/b867/index.html

Prevention

Weed control in the areas adjacent to planting beds will prevent deposition of seed, as well as vegetative spread by way of rhizomes, stolons, or creeping roots. Crownvetch adjacent to planting beds should be suppressed, to prevent vegetative spread into the beds. If beds are located within a planting of crownvetch, a crownvetch-free perimeter needs to be established. Aesthetically, this may be best achieved by extending the beds outwards 1 to 2 feet, mulching this area, and treating the crownvetch encroaching into, and at the edge of the border at least annually.

Organic Mulches

Maintaining a mulch layer, 2 to 3 inches thick will reduce weed seed germination from the soil below the mulch. As wood or bark mulch decomposes, it becomes a better growing medium, and may itself become the growing medium for weed seeds that blow into the bed. Bark based mulch will have fewer weed seeds in it. Using wood chips is inexpensive, but they often are a seed source for whatever species the chips are from.

Plastic Mulches

Plastic mulch is an effective way to prevent weeds from establishing from the existing soil. It is relatively inexpensive, and is easily held in place, and hidden with organic mulches. Woven or fabric mulches will prevent weeds from growing through them, but weeds establish in the mulch above can root through them. Plastic mulch does not prevent air and water exchange with the soil, so this should not be used as a reason to select a fabric mulch instead of plastic mulch.

Preemergence Herbicides

Herbicides are available that can be applied to the soil or mulch surface, that will prevent weeds from establishing from seed. Products available allow you to choose based on preferred application methods (granular vs. spray), predominant weeds species, or types of weeds (e.g. grasses vs. broadleaves), as well as selectivity to the established ornamental species. Except for the product Casoron, preemergence herbicides are ineffective against already established weeds.
Depending on how they work, some preemergence herbicides must be applied on top of mulch. Other products are more effective under mulch. Therefore, it is important to coordinate mulching and herbicide application

Table 1. A summary of preemergence herbicide products, their application method, target weeds, and planting types where they can be used, and their positioning above or below organic mulch.

Herbicide	Application Type	Weeds Most Effective Against	Planting Type woody or herbaceous	Above or Below Mulch
Casoron[1]	granule	both	woody	below
Endurance	spray	grasses	both	either
Gallery	spray	broadleaves	both	either
Pendulum 2G	granule	grasses	both	either
Pendulum 3.3 EC	spray	grasses	both	either
Preen Professional	granule	both	both	either
Regal O-O	granule	broadleaves	woody	above
RegalKade G	granule	grasses	both	either
RegalStar II	granule	both	woody	above
Ronstar 2G	granule	broadleaves	woody	above
Rout	granule	both	both	above
Snapshot 2.5 TG	granule	both	both	either
Surflan	spray	grasses	both	either
Treflan 5G	granule	grasses	both	either
XL	granule	grasses	both	either

Removal of Existing Weeds

Mechanical/hand pulling

Weeds that are already established can be cut or pulled. This is not a productive method, but is nearly essential as a selective tool. When established weeds are dense enough to warrant treatment with a postemergence herbicide, the tallest weeds may need to be pulled to make it easier to selectively treat the remaining weeds without getting spray material on the ornamental plants as well. If tall perennial weeds such as Canada thistle or mugwort are present in beds, they can be cut (shortened) to facilitate selective spraying, while leaving enough leaf area to intercept spray solution.

Isolated weeds may emerge after treatment with preemergence herbicides. These can be quickly pulled before they become large enough to be unsightly.

[1] Apply Casoron only when soil temperatures are below 50 degrees F. This product is best used as a preemergent when contending with herbaceous perennial species such as Canada thistle or mugwort.

Postemergence Herbicides

When weed establishment has reached a stage where pulling is impractical, postemergence herbicides can be used. Products are available that are non-selective (injure all species), selective for grasses (injure only broadleaves), or selective for broadleaves (injure only grasses). Relying on a non-selective, product with no soil activity is the simplest from a planning perspective.

Non-selective postemergence herbicides can be systemic, or work only on contact. Systemic herbicides move in the plant with the sugars that are produced in the leaves by photosynthesis. If sugars are moving to the root system, then the roots will be injured by the herbicide. Early in the growing season, systemic herbicides typically only injure the tops of the plants because the movement of sugars in the plants is from the roots to the tops.

Glyphosate is a systemic herbicide. It is available under many product names, the most familiar being the 'Roundup' product line. Glyphosate will control most weeds with a single application. It must be applied selectively, however, as ornamentals contacted by spray will be injured or killed. Glyphosate provides no soil activity. If the soil has not been treated with a preemergence herbicide, weeds will germinate and fill in areas where glyphosate has been used to control existing weeds.

Glufosinate is a contact herbicide. It is available as the product 'Finale'. Like glyphosate, it is non-selective, and is not active in the soil. Unlike glyphosate, it does not move throughout the plant - it only injures the plant part it contacts. Glufosinate is effective at controlling annual weeds, and removing top growth of perennial weeds. A potential advantage of glufosinate is that it is would be less injurious to ornamentals that are mistakenly treated - it would only injure the contacted parts of the plants.

A Management Program

Just having several options at your disposal is not enough. Put them together into a program with scheduled operations. Planned prevention and removal will result in a more aesthetic, and ultimately lower maintenance landscape. Timely preventive practices will eliminate much in-season weed control effort - but not all of it. Schedule maintenance visits throughout the season to remove weeds before they have a visual impact, and before perennial weeds can become established.

When persistent weeds become established in a landscape, repeated operations are the only means to eventually eliminate them from plantings.

CONTROL RECOMMENDATIONS FOR ESTABLISHED, CLEAN BEDS

March	refresh organic mulch as needed
late March	apply preemergence herbicide
May	spot treat or pull escape weeds Retreat areas missed during preemergence application
July	spot treat or pull escape weeds Apply preemergence herbicide for winter annual control
October	spot treat or pull escape weeds

CONTROL RECOMMENDATIONS FOR BEDS INFESTED WITH WINTER ANNUALS

early April	spot treat existing winter annuals
mid-April	refresh organic mulch as needed apply preemergence herbicides
May	spot treat or pull escape weeds Retreat areas missed during preemergence application
July	spot treat or pull escape weeds Apply preemergence herbicide for winter annual control
October	spot treat or pull escape weeds

CONTROL RECOMMENDATIONS FOR WOODY PLANTING BEDS INFESTED WITH PERENNIAL WEEDS

early April	spot treat existing winter annuals
mid-April	apply preemergence herbicides
May	Retreat areas missed during preemergence application
July	Apply preemergence herbicide for winter annual control
October	spot treat or pull escape weeds
November	apply Casoron to bed areas infested with perennial weeds and cover with mulch List of species tolerant to Casoron is limited - consult label!

CONTROL RECOMMENDATIONS FOR HERBACEOUS PLANTING BEDS INFESTED WITH PERENNIAL WEEDS

early April	spot treat existing winter annuals
mid-April	refresh organic mulch as needed apply preemergence herbicides
May	spot treat emerging perennials and escape weeds Retreat areas missed during preemergence application
July	spot treat or pull resprouting perennials and escape weeds Apply preemergence herbicide for winter annual control
October	spot treat or pull escape weeds

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