PURDUE EXTENSION

EXPERT REVIEWED

HO-295-W

CONSUMER HORTICULTURE

Spreading Ornamental Plants: Virtues & Vices

Kyle Daniel & Rosie Lerner, Department of Horticulture and Landscape Architecture

A previous version of this publication was written by Mike Dana and Kelly Frank with input on plant rankings from Gil Daniels, Chris Turner, and Leon Glicenstein.

Photo Credits: All photos by the authors.

Formerly Purdue Extension publication HLA-1-W.

This publication is a precautionary guide for gardeners who are choosing ornamental plants and may be considering plants that have a spreading habit.

We often select plants first for their beauty and second for their functionality in the garden. Frequently, we don't know or don't consider a plant's behavior when we're selecting them. Some plants, given their optimal habitat, can become quite prolific in the garden. A plant can be considered aggressive if it spreads and has the potential to take over a garden area. A spreading plant can be considered invasive if it can also escape the garden setting and move into natural areas (prairies, wetlands, and so on) and displace native vegetation. Truly invasive plants have the potential to dominate natural vegetation.

Many useful plants get bad reputations for such spreading behavior when they may simply be in the wrong place or managed the wrong way. This publication provides gardeners with the knowledge to avoid such mistakes. After reading this publication, we hope you will know how to use these vigorous, expansive plants to great advantage by locating and caring for them correctly.

Figure 1.

A ground cover bed of pachysandra.

When Spreading Plants Become Aggressive

Some spreading ornamental plants have a high propensity for becoming invasive. You should always avoid using these plants in the landscape (see Do Not Plant!, page 7). As you consider what to plant, it may seem that more and more plants are classified as invasive — and you would be correct. There are more invasive plants for several reasons, including an increasingly instable climate, more gardeners who unwittingly plant invasives, greater scrutiny of invasives, and changes in species (that is, individual species have adapted to cooler or warmer environments).

The plants listed in Tables 1 and 2 are some of those that tend to be spreaders in the garden. We rate them according to their vigor in their optimal habitats. That said, plants and sites are unique, so the plant you select may or may not be as vigorous as indicated. For example, a plant that requires ample moisture may be a spreader in a well-irrigated spot, but the same plant may behave better in a drier location.

In the tables, a rating of 4 to 5 indicates that the plant is "aggressive." A rating of 3 to 4 means the plant is "vigorous," but generally not a nuisance. A rating under 3 suggests a "slower spreader."

A high rating implies that you should use that plant with caution. However, it does not mean you must totally avoid that plant. In fact, specific landscape situations may demand aggressive plants.

You must consider the planting situation (or landscape context) when judging a plant's suitability. A 5-rated plant may be perfect in a monoculture (only one kind of plant in a bed). Such cases are usually referred to as ground cover beds (Figure 1). The same plant may be poorly suited for use in a mixed planting bed. A common example where ground cover plants are useful is on slopes that are too steep to mow.

Table 1 lists plants frequently thought of as ground covers, but many of the species in Table 2 may be used in that manner, too.

The gardener's level of dedication also affects plant selection. For weekend gardeners who must divide their time between family, work, and the garden, some of these plants may require more time than they are able or willing to spend. Such gardeners would be wise to stick with moderate- to low-rated plants. Conversely, avid, experienced gardeners who are accustomed to active gardening may enjoy the challenge of managing plants rated at 5.

Propagation and Plant Management

You can enjoy many plants that have the potential to misbehave if you use appropriate control measures. Plant behavior relates to the plant's method of propagation. Some plants reseed and others spread vegetatively by modified stems. Knowing how a plant reproduces allows us to better influence its behavior and understand the degree of difficulty of its control.

Figure 2.

You can use a deep-walled, bottomless pipe around the plant as a barrier to contain plants that spread by rhizomes.

Measures for controlling plants include thinning and dividing them regularly, pruning them, confining them, and deadheading them. Using these control methods knowledgeably can allow these plants to be valued parts of your landscape. Below, we describe three plant propagation methods and how to control them:

1. **Rhizome**
2. **Stolon**
3. **Seed**

1. Rhizome

A rhizome is an underground stem that is commonly horizontal and may appear root-like. Because a rhizome is a stem, it has nodes where the buds are located.

Plants that propagate from rhizomes are particularly difficult to monitor. The simplest approach to controlling plants that propagate from rhizomes is to maintain a "plant-free" mulch zone around the plant and (several times each season) to dig and remove rhizomes that spread underground out from the original plant in the center. This method does require persistence and extra space in the garden.

Alternatively, you can plant rhizomatous plants in large containers (with drain holes) and then plant the container in the garden. Leave one to two inches of headspace between the soil level and the rim of the pot as a second barrier to straying. You can hide the rim of the pot with a bit of mulch, but monitor the plant carefully so that the rhizomes do not escape into mulch. It is good practice to pull up the container once every year or two (depending on plant vigor) to prune the roots to keep the plant within its confines and possibly repot. This is a helpful practice because it intimately acquaints you with the plant's rhizomatous behavior.

A third option is to use a deep-walled bottomless structure such as a section of large-diameter pipe (Figure 2). The barrier should be 8 to 18 inches or deeper to prevent most rhizomes from getting below the barrier.

The best way to remove rhizomes is to use a sturdy garden fork. Loosen the soil and gently pull the threads of the rhizomes from the soil. Total eradication can be difficult. Your success at removing the rhizomes will be evident in time — any piece with a node on it that is left in the soil can give rise to a new plant.

Pruning or pinching the top growth of the plant will reduce its vigor and aid in control. In a small garden, simply pinching unwanted new shoots as soon as they appear on the soil surface can be effective, but this will not eliminate the rhizome from which the shoot arose.

To completely eliminate a small patch or an isolated plant, you can carefully apply a nonselective herbicide to the aboveground parts of the plant. Remember, always read and follow herbicide label directions.

If you have a larger patch of one of these plants or a patch that is close to desirable plants, then you will probably have to use the method described earlier — removing them with a garden fork — or by wicking the herbicide to prevent damage to the desirable plants (Figure 3).

Figure 3.

You can use a wick applicator to apply herbicide to the intended target plant. A wick applicator can minimize the risk of contact with desirable plants

2. Stolon

A stolon is a prostrate, horizontal stem that creeps along the ground and roots at the tip or the nodes. Each rooting site gives rise to a new plant. Plants that propagate by stolons make no effort to conceal their reproductive structures, yet they can be as expansive as plants with rhizomes.

You can cut back stoloniferous plants as needed. They will generally dislodge from the soil surface more easily with a garden fork than their rhizomatous garden colleagues. You can totally eliminate a stoloniferous plant using an herbicide as described above.

3. Seed

Plants that propagate by seed produce many seeds that successfully germinate and grow into plants the following growing season.

The best method for controlling these reseeding plants is by regularly deadheading them. Deadheading is the practice of removing flowers immediately after they begin to lose their ornamental value and before they can mature any seeds.

Deadheading is an aspect of plant hygiene that gardeners often neglect. Removing flowers directs plants to use their energy to produce more flower buds or a healthier root system rather than to form seeds that may overpopulate the garden or natural areas.

However, reseeding is not necessarily a bad thing. The English cottage garden style relies on the randomness that arises from plants that reseed or "self-sow." Cottage gardeners allow some seedlings to develop, while simply plucking unwanted plantlets from the garden — a technique that has been called "editing the garden." Reseeding can actually save you work and money by providing free plants without the effort of planting them.

Table 1. *Plants commonly used for ground cover.*

SCIENTIFIC NAME	COMMON NAME	LIFE CYCLE	PROPAGATION MECHANISM	BEHAVIOR RATING	NATIVE
Ajuga reptans	bugleweed	perennial	stoloniferous	3.5	N
Ceratostigma plumbaginoides	leadwort	perennial	stoloniferous	4.5	N
Convallaria majalis	lily-of-the-valley	perennial	rhizomatous	5.0	N
Galium odoratum (syn. *Asperula odorata*)	sweet woodruff	perennial	stoloniferous	5.0	N
Houttuynia cordata	chameleon plant	perennial	rhizomatous	5.0	N
Lamiastrum galeobdolon	yellow archangel	perennial	stoloniferous	5.0	N
Lamium maculatum	lamium, spotted deadnettle	perennial	stoloniferous	3.5	N
Pachysandra procumbens	Allegheny spurge	perennial	rhizomatous	2.0	Y
Pachysandra terminalis	Japanese spurge	perennial	rhizomatous	2.0	N
Phlox stolonifera	creeping phlox	perennial	stoloniferous	2.5	Y

Table 2. *Plants not commonly used as ground cover.*

SCIENTIFIC NAME	COMMON NAME	LIFE CYCLE	PROPAGATION MECHANISM	BEHAVIOR RATING	NATIVE
Acanthus spinosus	bear's breeches	perennial	stoloniferous	3.0	N
Achillea millefolium	yarrow	perennial	rhizomes	4.0	Y
Achillea ptarmica	sneezeweed	perennial	stoloniferous	3.0	N
Allium schnoenoprasum	chives, grass onion	perennial	reseed	3.0	Y
Allium tuberosum	garlic chives	perennial	reseed	4.0	N
Anemone blanda	Grecian windflower	perennial	reseed	3.5	N
Anemone sylvestris	snowdrop anemone	perennial	stoloniferous	3.5	N
Anemone tomentosa	grapeleaf anemone	perennial	stoloniferous	4.0	N
Angelica archangelica	garden angelica	perennial	reseed	3.5	N
Angelica gigas	purple parsnip, giant angelica	perennial	reseed	3.5	N
Anethum graveolens	dill	annual	reseed	4.0	N
Aquilegia spp.	columbine	perennial	reseed	2.0	Y
Argemone polyanthemos	prickly poppy	annual	reseed	3.5	Y
Artemisia annua	sweet Annie	annual	reseed	5.0	N
Artemisia ludoviciana	white sagebrush	perennial	stoloniferous	4.5	Y
Asarum canadense	Canadian wild ginger	perennial	stoloniferous	3.0	Y
Aster tataricus	Tartarian daisy	perennial	reseed	3.5	N
Belamcanda chinensis	blackberry lily	perennial	reseed	4.0	N
Boltonia asteroides	white boltonia	perennial	stoloniferous, reseed	5.0	Y
Borago officinalis	borage	annual	reseed	3.5	N
Campanula glomerata	clustered bellflower	perennial	rhizomatous	4.5	N
Celastrus scandens	American bittersweet	perennial	reseed	5.0	Y
Centaurea montana	mountain bluet	annual	reseed	3.5	N
Chasmanthium latifolium	northern sea oats	perennial	reseed	5.0	Y
Digitalis ferruginea	rusty foxglove	biennial	reseed	4.5	N
Echinacea purpurea	purple coneflower	perennial	reseed	5.0	Y
Eranthis hyemalis	winter aconite	perennial	reseed	3.0	N
Erigeron philadelphicus	common fleabane	perennial	reseed	3.5	Y
Festuca glauca	blue fescue	perennial	reseed	2.5	N
Foeniculum vulgare	fennel	annual	reseed	5.0	N
Helenium autumnale	common sneezeweed	perennial	reseed	3.0	Y
Heliopsis helianthoides	oxeye sunflower	perennial	reseed	3.0	Y
Hierochloe odorata	sweet grass	perennial	stoloniferous	4.5	Y
Knautia macedonica	knautia	perennial	reseed	4.0	N
Lathyrus latifolius	perennial sweet pea	perennial	rhizomatous, reseed	5.0	N
Lavatera spp.	mallow	annual	reseed	3.0	N
Lunaria annua	honesty, money plant	annual	reseed	4.5	N
Lychnis coronaria	rose campion	perennial	reseed	4.0	N
Lysimachia clethroides	gooseneck loosestrife	perennial	stoloniferous	5.0	N
Lysimachia punctata	yellow loosestrife	perennial	stoloniferous	4.5	N

SCIENTIFIC NAME	COMMON NAME	LIFE CYCLE	PROPAGATION MECHANISM	BEHAVIOR RATING	NATIVE
Macleaya cordata	plume poppy	annual	reseed	5.0	N
Malva spp.	mallow	annual	reseed	3.5	N
Matteuccia struthiopteris	ostrich fern	perennial	stoloniferous	5.0	Y
Melissa officinalis	lemon balm	perennial	stoloniferous, reseed	4.5	N
Mentha spp.	mint	perennial	stoloniferous	5.0	N
Monarda didyma	bergamot, bee-balm	perennial	stoloniferous	4.0	Y
Oenothera macrocarpa	Ozark sundrops	perennial	stoloniferous	3.0	Y
Oenothera speciosa	showy evening primrose	perennial	stoloniferous	5.0	Y
Osmunda claytoniana	interrupted fern	perennial	stoloniferous	4.0	Y
Osmundastrum cinnamomeum	cinnamon fern	perennial	stoloniferous	4.5	Y
Panicum virgatum	switchgrass	perennial	reseed	2.0	Y
x Pardancanda	candylily	perennial	reseed	4.5	N
Perilla frutescens	beefsteak plant	annual	reseed	5.0	N
Phyllostachys spp.	running bamboo	perennial	rhizomatous	5.0	N
Physalis alkekengi	Chinese lantern	perennial	stoloniferous	4.5	N
Physostegia virginiana	obedient plant	perennial	stoloniferous	5.0	Y
Podophyllum peltatum	mayapple	perennial	rhizomatous	5.0	Y
Polygonatum biflorum var. *commutatum*	giant Solomon's seal	perennial	stoloniferous	4.5	Y
Polygonum virginiana	jumpseed, Persicaria, Tovara	perennial	rhizomatous, reseed	4.0	Y
Prunella grandiflora	self-heal	perennial	stoloniferous	4.5	N
Prunella vulgaris	self-heal	perennial	stoloniferous	4.5	Y
Ratibida pinnata	gray-headed or yellow coneflower	perennial	reseed	4.0	Y
Rubus spp.	raspberries, blackberries	perennial	stoloniferous	5.0	Y/N
Rudbeckia spp.	black-eyed Susan, coneflower	annual, perennial	reseed	4.5	Y
Sasa spp.	bamboo	perennial	stoloniferous	5.0	N
Senna hebecarpa (syn. *Cassia hebecarpa*)	wild senna	perennial	reseed	3.5	Y
Silphium laciniatum	compass plant	perennial	reseed	1.0	Y
Silphium perfoliatum	cup plant	perennial	reseed	5.0	Y
Spartina pectinata	prairie cordgrass	perennial	rhizomatous	4.5	Y
Stylophorum diphyllum	celandine poppy	perennial	reseed	3.0	Y
Symphytum officinale	comfrey	perennial	rhizomatous	4.0	N
Tanacetum spp.	tansy, feverfew	perennial	reseed	4.0	N
Telekia speciosa	ox-eye daisy	perennial	reseed	3.0	N
Tradescantia virginiana	spiderwort, spiderlily	perennial	rhizomatous, reseed	5.0	Y
Valeriana officinalis	valerian, garden heliotrope	perennial	rhizomatous, reseed	4.0	N
Verbena bonariensis	Brazilian verbena	annual	reseed	5.0	N

Do Not Plant!

Purdue Extension does not recommend the following plant species because they have a high potential to be invasive in natural areas where they can compete with more desirable species, reduce wildlife habitat, decrease plant diversity, and have other negative effects.

We list these plants here because you can still find them for sale in nurseries or in existing landscapes — again, we do not recommend using these plants. Consider replacing existing invasive plants in your landscape with more desirable species.

Table 3. *Plants with a high potential to become invasive* — do not plant.

SCIENTIFIC NAME	COMMON NAME	LIFE CYCLE	PROPAGATION MECHANISM
Aegopodium podagraria	bishop's weed, goutweed	perennial	stoloniferous
Celastrus orbiculatus	oriental bittersweet	perennial	reseed, vegetative vine
Clematis terniflora	sweet autumn clematis, virginsbower	perennial	reseed
Duchesnea indica	mock strawberry	perennial	stoloniferous
Euonymus fortunei	wintercreeper	perennial	reseed, vegetative vine
Fallopia japonica (*Polygonum cuspidatum*)	reynoutria fleeceflower	perennial	stoloniferous
Hedera helix	English ivy	perennial	stoloniferous
Hesperis matronalis	dame's rocket	perennial	reseed
Humulus japonicas	Japanese hops	annual/perennial	Reseed, vegetative vine
Hypericum calycinum	Aaron's beard, St. Johnswort	perennial	rhizomatous
Imperata cylindrica	Japanese blood grass	perennial	rhizomatous
Leucanthemum vulgare (syn. *Chrysanthemum leucanthemum*)	oxeye daisy	perennial	rhizomatous, reseed
Lonicera japonica	Japanese honeysuckle	perennial	reseed, vegetative vine
Lonicera spp.	Asian bush honeysuckle	perennial	reseed
Lythrum salicaria	purple loosestrife	perennial	rhizomatous, reseed
Phalaris arundinacea	reed canary grass	perennial	rhizomatous, reseed
Securigera varia	crown vetch, Coronilla	perennial	rhizomatous, reseed
Vinca minor & V. major	periwinkle, myrtle	perennial	stoloniferous

The Indiana Invasive Species Council website provides information about best management practices that reduce the introduction and movement of invasive species. The site also provides a list of invasive species. Visit the Indiana Invasive Species Council at www.entm.purdue.edu/iisc.

The USDA maintains a list of Introduced, Invasive, and Noxious Plants at plants.usda.gov/java/noxComposite.

Acknowledgements

The authors thank Ellen Jacquart and Susan Tomizawa for their assistance with this publication.

EXPERT REVIEWED

PURDUE UNIVERSITY | Extension

May 2018