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Growing Lilacs in Montana

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This publication contains extensive information about one of the plants best adapted to Montana's climate. It includes sections on hardiness; colors and fragrances; advice on which of nearly 2,000 cultivars to plant; recommended techniques for planting, watering, fertilizing and pruning; and information about diseases and insect problems.

Lilacs are the beacon of spring to many Montanans. The earliest homesteaders brought lilacs to the state and found them to be one of the few exotic flowering shrubs to thrive on the Great Plains. Even today, many of these hardy shrubs survive next to long-abandoned homesteads.

The most well-known lilacs belong to the common lilac species (*Syringa vulgaris*), which includes "old fashioned" lilacs and the many French hybrids. However, there are 23 lilac species and many hybrids, none of which are native to North America. Two species, *Syringa vulgaris* and *S. josikea*, are native to Eastern Europe; the rest come from Asia. Lilacs were brought to New England from Europe perhaps as early as 1620.

Today's lilacs are very different from the ones early settlers had. Flowers are larger and more diverse in color and form. Plant size ranges from five-foot tall dwarfs to 30-foot tall tree forms.

About lilacs

Hardiness of lilacs

Lilacs are adapted to USDA Hardiness Map zones 3, 4, 5 and milder areas of zone 2. They thrive in sunny sites with good air circulation. Although they can withstand -40 degrees F, they need protection from cold winds that can kill flower buds. Lilacs will not tolerate poorly drained sites where the roots freeze in blocks of ice during the winter. Do not plant them in "frost

Now is the brief season of the lilac bush, modest and enduring symbol of ... depth and permanence... To what strange and distant homes have its roots been transplanted, there to grow, blossom and, in their turn be abandoned again... Were it not for the steadfast lilac, there would be nothing to mark that here once dwelt human souls who shared happiness, sorrow, hope, and despair."

—Editorial, the Rutland Herald
(Rutland, Vermont), 1929

pockets" or against warm, light-colored buildings that force the buds prematurely. Lilacs on their own roots are far more hardy than grafted lilacs.

Lilac blooms

Modern lilacs are divided into seven standard color groups: white, violet, blue, lavender, pink, magenta and purple. Colors are most intense during cool, damp springs. Often the buds and open flowers are of different colors. This "unfolding of the colors" is part of the captivating charm of lilacs.

The date of common lilac bloom is a good predictor of whether spring is early or late in a particular year. Bloom date depends on average spring temperatures (growing degree days), although the different lilacs bloom in a fairly reliable chronological order (i.e., common lilacs always bloom before Preston lilacs). From the beginning of bud color to the fading of the flowers, common lilacs typically bloom for 16 to 20 days, the longest

bloom period of all lilacs. If you plant several species in your garden, various lilacs can be in full bloom for at least six weeks.

Lilac fragrance

Lilac fragrance varies considerably with species and cultivar. Even on the same shrub, fragrance depends upon stage of bloom, time of day and temperature. Lilacs are most fragrant on a warm, sunny afternoon when the florets are fully open.

The lilac scent familiar to most Americans is that of the common lilac. However, cultivars of common lilacs differ widely in amount of fragrance, with many newer cultivars having little fragrance. Small, dark, single florets generally are more fragrant than larger, lighter, double ones, although there are exceptions. Some of the most fragrant cultivars are noted in Table 1.

Asian lilacs have different fragrances, many of which are heavy, "spicy" and pleasant.

Fall color

Most lilacs have little fall color. Exceptions include the Manchurian lilac ('Miss Kim') with its burgundy fall color, and the Meyer lilac with its reddish-brown autumn leaves.

Choosing which lilacs to plant

With approximately 2000 cultivars to choose from, selecting lilacs to plant is not easy. All of the lilacs described here are hardy in Montana, although the Preston hybrids generally flower more reliably in colder, windy areas than do the early-blooming Hyacinthifloras. By planting lilacs from several different groups in your garden, you can extend the blooming season and create more variety in flowering as well as in shrub form, leaf texture, and fall color.

Hyacinthiflora lilacs

(*S. vulgaris* x *S. oblata*)

Hyacinthifloras are very vigorous hybrid lilacs that look like French hybrids but bloom seven to 14 days earlier. The shrubs themselves are very hardy, but since they are early bloomers, they should be planted in sites where May frosts are less frequent. Most cultivars flower freely and are very fragrant. Some have good fall color. Many grow to 10 to 12 feet tall, but there are some dwarfs (denoted by *). Cultivars include 'Assessippi,' 'Bountiful,' 'Churchill,'* 'Dr. Chadwick,'* 'Maiden's Blush,' 'Mirabeau,' 'Pochantas,' and 'Sunset.'

Meyer lilac (dwarf Korean lilac)

(*Syringa meyeri*)

The Meyer lilac is a spectacular and unusual spreading shrub that grows only four to five feet high. Suckers allow it to spread from six to 10 feet wide. This lilac flowers abundantly with heavy, spicy fragrance even when very young. Because the Meyer lilac flowers before the leaves are fully developed, it is beautiful when planted in a shrub border with an evergreen background. 'Palabin' is a popular cultivar for low hedges. It also can be used as a focal point in a rock garden or where space is limited. The fall color is a nice reddish brown. Meyer lilac is resistant to powdery mildew.

Table 1. Sequence of lilac bloom

Early:	Hyacinthiflora lilacs
Mid-season:	Meyer lilac; common lilac and French hybrids; Chinese lilac, Manchurian lilac ('Miss Kim')
Late blooming:	Hers lilac, Preston Hybrids, Late lilac
Very late blooming:	Japanese tree lilac, Pekin lilac

European common lilac and French hybrids (*Syringa vulgaris*)

The European common (or "old fashioned") lilac is the best known lilac. Common lilacs have either purple or white flowers and account for the majority of lilacs planted in Montana. These lilacs are fragrant, very hardy, quite drought tolerant and inexpensive. In general, they sucker more than French hybrids, a characteristic that has allowed them to persist on abandoned homesteads. They are used commonly in shelterbelts and as hedges.

The French hybrids are so-called because the Lemoine family of Nancy, France, initiated a lilac breeding revolution that began in the 1870s and has resulted in about 1,500 different cultivars today. These cultivars represent a wide spectrum of flower color, size, shape and fragrance, as well as differences in shrub size and form. As a group, *S. vulgaris* cultivars are susceptible to more diseases and pests than other lilacs, although these typically cause fewer problems in Montana than in wetter, more humid climates.

Table 2 (center pages) summarizes characteristics of some of the best and most widely available French hybrids.

Chinese lilac (*Syringa x chinensis*)

The Chinese lilac is an arching, spreading shrub growing 10 to 12 feet tall and six to eight feet wide. Compared to the common lilac, the leaves are smaller and the flowers are more delicate and abundant. Very fragrant flowers bloom with or just after common lilac. Chinese lilacs do not

produce many suckers, so they stay "in bounds" more easily than do common lilacs. However, some winter injury can occur during very severe winters or in colder areas of Montana. Cultivars include 'Alba' (white to very light pink flowers) and 'Saugeana' (lilac-red flowers). This is one of the best lilacs for taller hedges.

Manchurian lilac (Korean lilac)

(*Syringa patula*) 'Miss Kim'

The Manchurian lilac is rare among lilacs in that it provides four seasons of interest. Abundant, deep purple buds open to uniquely fragrant, purple-blue flowers. Flowering occurs shortly after the common lilac season. Leaves are an attractive and glossy, dark green in summer and turn burgundy in autumn. The branches form a pleasing winter habit. The best cultivar, 'Miss Kim,' is a vigorous, upright shrub that grows from five to seven feet tall. This cultivar is excellent for massing or hedging. 'Miss Kim' resists powdery mildew.

Hers lilac

(*Syringa julianae* var. 'Hers')

The rare and unusual Hers lilac grows up to five feet tall and 10 feet wide in a weeping form. This unique lilac can be trained to grow on a trellis. It is hardy to -30 degrees F and generally avoids spring frosts, since it blooms later than common lilac. The small leaves and fragrant, lavender-purple flowers occur abundantly on delicate branches. It resists lilac borers and other pests.

Preston hybrids (Preston lilac, Canadian hybrids)
(S. reflexa x S. villosa)

Preston hybrids are very valuable in areas where spring frosts often freeze the flowers of earlier blooming lilacs. Prestons bloom about a week after common lilacs. Most cultivars have pink or lavender flowers with a unique scent. They grow quickly and have showy blooms and large, dark green leaves which are mostly free of diseases and insects. Among the best cultivars are ‘Agnes Smith,’ ‘Donald Wyman,’ ‘Isabella,’ ‘James MacFarlane,’ ‘Minuet,’ ‘Miss Canada,’ ‘Pauline’ and ‘Ursula.’

Left to themselves, Preston hybrids can become rampant growers. They do not sucker, but grow strongly to 10 to 12 feet high. As shrubs, Prestons are effective along backyard property lines, as corner accents or along garage walls or service areas. Due to their size, they should not be planted too closely together or planted in small areas. However, certain pruning techniques can allow them to be used where space is a concern. By pruning them to three to five upright trunks while still young, they become wonderful small, spreading trees. When planted near small patios or decks, pruned Prestons provide excellent shade and focal beauty.

Late lilac (*Syringa villosa*)

Late lilac grows up to 12 feet tall and wide. Its pink flowers emerge a week after common lilacs and smell like cloves. Although used for backgrounds, hedges and mass plantings in large areas, its greatest value has been in hybridizing the Preston lilacs.

Japanese tree lilac (*Syringa reticulata*)

The June blooms of the Japanese tree lilac bring the lilac season to a brilliant close. This small, vase-shaped tree has a refined beauty that is rare among trees that will survive in Montana. The form is graceful with and without leaves, and the showy cream-colored flowers smell like honey. The glossy, reddish-brown bark is similar to cherry bark. Japanese tree lilac has little fall color, but the seed heads persist into winter and compliment the branching pattern and bark.

This hardy tree grows slowly and may reach 25 feet high and 15 feet wide in 30 years. Japanese tree lilacs can be grown as single-stemmed or multi-stemmed trees. The single-stem form makes an excellent small shade or street tree. The multi-stemmed form can be a fine focal point in larger areas. ‘Ivory Silk’ is similar to the species except the crown form is more narrow. This lilac resists powdery mildew, scale and borers.

Pekin lilac (*Syringa pekinensis*)

The Pekin lilac grows to a 15- to 25-foot tree form and differs from the Japanese tree lilac in its more vigorous growth and interesting peeling bark. However, Pekin lilac often does not flower for many years after planting.

Obtaining lilac cultivars

Many of the lilacs and cultivars listed above and in Table 2 are available through Montana nurseries. If you are interested in obtaining a lilac that you cannot find locally, several U.S. nurseries specialize in lilac production. Contact the International Lilac Society at 11 Pine Street, Dixfield, ME 04224 or 1-207-562-7453 for more information.

A book with excellent information and color photographs of many different lilacs is *Lilacs: The Genus Syringa* by John L. Fiala (1988, Timber Press, Portland, OR).

Lilac Cultivation

Planting location

Plant lilacs where they will receive at least six hours of sunlight each day. Shade greatly reduces flowering, causes plants to become leggy and increases powdery mildew problems. Dark-flowered lilacs seem to tolerate dappled shade better than lighter ones. However, do not plant dark-flowered lilacs on sites that receive hot afternoon sun, which fades the flowers quickly. Avoid windswept locations and warm areas near reflective, light-colored buildings where the buds will be killed or forced prematurely.

Neutral soil is ideal, but lilacs will tolerate soil with a pH of 6.5 to 8.5 if it is well-drained. Soil type sometimes alters flower colors so arboretum specimens may not look the same in your garden.

For specimen plants, plant lilacs 10 to 15 feet apart. Spacing of plants for a hedge depends on the hedge height. For a three- to four-foot tall hedge, space plants 18 to 24 inches on center. A six- to eight-foot tall hedge requires spacing of two to three feet on center. For a very tall, informal hedge, spacing could be as far apart as six feet. Plant lilacs at least five feet from buildings, since their root systems can damage foundations over time.

Mulch an area from the base of the lilac to the drip line to reduce weeds, conserve moisture and prevent lawnmower damage. A two- to three-inch deep bark or wood chip mulch may be better than brick chips or stone, since the latter retain heat and may damage the roots in hot weather.

Watering

Lilacs need approximately one inch of water per week during the months of June and July. This is when buds for the next year are being formed. Begin decreasing irrigation in early August to encourage the shrubs to harden tissues for winter. New transplants need occasional water during this “taper off” period to prevent wilting. Deep water lilacs in late fall after they are dormant to ensure they have adequate soil moisture during winter.

Fertilization

In general, lilacs in Montana do not need fertilizers, although low rates of phosphorous and potassium sometimes are beneficial. Most soils contain enough nutrients for adequate growth and flowering. Nitrogen actually can harm lilacs for two reasons. First, nitrogen encourages plants to produce more leaves and shoots and less blooms. Second, succulent new shoots often cannot harden off sufficiently, and winter damage results.

Fertilizing lilacs within two years of transplanting can harm the roots. However, if plant growth remains weak after two years, and soil tests indicate nutrient deficiencies, apply about one pound of 5-10-10 or equivalent fertilizer to each mature bush in early spring. Spread the fertilizer around the shrub in a broad band beneath the dripline. Use no more than a small handful of fertilizer on young plants.

Table 1. French hybrids that are of high quality and are widely available through nurseries.

Cultivar	Color	Flowers Florets	Abundance	Height in feet	Rating*	Comments
Adelaide Dunbar	Purple	Semi-double	Heavy	>10	Very good	One of the richest of the bright reds; fragrant.
Agincourt Beauty	Violet	Single	Heavy	>10	Excellent	Very large violet-purple flowers; flowers well even when young.
Albert Holden	Violet	Single	Heavy	6–10	Excellent	Reddish buds open to showy violet-silver flowers; fragrant.
A.M. Brand	Purple	Single			Very fine	Rich rose red flowers; flowers well even when young.
Ami Schott	Blue	Very double			Excellent	Neat, upright habit; flowers tolerate heat well.
Anna Nickels	Lilac	Single	Heavy		Very fine	Very fragrant; reddish-purple buds open to lilac-lavender flowers.
Anne Shiach	Purple	Single			Very fine	Purple buds open to lighter-toned flowers with large, recurved petals.
Arch McKeen	Magenta	Single	Moderate–heavy	8–10	Excellent	Practically no suckering; very large, upright flowers.
Belle de Nancy	Pink	Double	Moderate–heavy	>10		Nice, rosy florets with white center; blooms early; old favorite.
Charles Joly	Magenta	Double	Heavy	10–12	Very good	Strong, narrow, upright grower; wine-red flowers; fragrant.
Congo	Magenta	Single	Moderate–heavy	8–10	Excellent	Wine-red flowers turning to purple; very old but excellent cultivar.
Decaisne	Blue	Single			Very fine	Darker blue with purple shades; very dependable bloomer.
DeMiribel	Violet	Single			Very fine	Unique and distinct dark violet-blue color.
Edith Cavell	White	Double	Light to moderate	8–10	Excellent	Open, showy, lace-like flowers; fragrant.
Edmond Boissier	Purple	Single			Very fine	One of the darkest lilacs; late bloomer.
Edward J. Gardner	Pink	Double	Heavy	8–10	Excellent	One of the finest double pinks.
Etna	Purple	Single			Excellent	Beautiful, rich claret purple; old favorite.
Firmament	Blue	Single			Excellent	Mauve buds; outstanding pale blue flowers; blooms well when young.
General Sherman	Pink	Single			Excellent	Fragrant.
Georges Bellair	Magenta	Double			Very fine	Distinctive shade of brick red; compact low grower.
Glory	Magenta	Single	Mod. to heavy	>12	Good	Enormous florets, but a shy bloomer; many suckers.
Henri Robert	Violet	Double			Very fine	Pale violet.
Katherine Havemeyer	Pink	Double	Mod. to heavy	6–12	Very fine	Beautiful lavender pink; florets large and densely filled; very fragrant.
Krasavitsa Moskvyy	White	Double	Heavy	>10	Excellent	One of the finest in commerce; pink buds open to creamy-white flowers; flowers double with 4 petal layers.
Leon Gambetta	Lilac	Double			Excellent	Very showy—one of the best! Strong, upright specimen lilac. Sky blue blooms; compact, mounded shape; fragrant.
Lois Utley	Pink	Double	Mod. to heavy	10–12	Excellent	Very showy.
Lucie Baltet	Pink	Single	Mod. to heavy	6–8	Excellent	Copper-colored buds open to coral pink; compact, slow-grower.
Ludwig Spaeth	Purple	Single	Heavy	>12	Good	Rich purple-red florets hold color in sun; dependable; fragrant.
Macrostachya	Pink	Single	Mod. to heavy	8–10	Very fine	Delicate pale pink clusters on slender spikes; old variety
Marechal Lannes	Violet	Double			Excellent	Very rich fragrance; open growth habit.
Marie Finon	White	Single	Mod. to heavy	8–10	Very fine	Large florets; slow growing.

Cultivar	Color	Flowers Florets	Abundance	Height in feet	Rating*	Comments
Michael Buchner	Lilac	Double	Heavy	8–10	Very fine	Florets darker in center; striking, heavy bloomer; strong grower.
Madame Lemoine	White	Double	Mod. to heavy	8–10	Very good	Very dependable bloom, but not Lemoine's finest; fragrant.
Monique Lemoine	White	Double	Heavy	10	Very fine	Very showy.
Mme. Antoine Buchner	Pink	Double			Excellent	One of the best for flower shows; late, tall variety; long, shapely flowers.
Mme. Florent Stepman	White	Single		>10	Very fine	Large florets grow above foliage; tall, upright grower; older cultivar.
Monge	Purple	Single	Mod. to heavy	10→12	Excellent	Large, bunched reddish-purple flowers.
Montaigne	Pink	Double	Mod. to heavy	10–12	Very fine	Floret interior is lavender blue, but the effect is still pink; fragrant.
Mrs. Harry Bickle	Pink	Single			Very fine	Reddish-pink buds open to translucent pink; beautiful.
Mrs. Ed Harding	Magenta	Double	Heavy	8–10	Fine	Large heavy flowers; nice, upright grower.
Mrs. W.E. Marshall	Purple	Single			Excellent	One of the darkest lilacs; excellent foliage.
Nadezhda	Blue	Double	Mod. to heavy	8–10	Excellent	Small purple buds open to light blue.
Oiver DeSerres	Blue	Double			Excellent	Large florets of medium to dark blue; very showy.
Paul Thirion	Magenta	Double	Heavy	8–10	Excellent	Wonderful progression from red buds to pink flowers; good cut flowers; very good compact grower; fragrant.
President Grevy	Blue	Double	Mod. heavy	10–12	Excellent	Giant clear blue florets; strong, upright grower.
President Lincoln	Blue	Single	Heavy	>12	Very good	Heavy leaf growth may obscure medium blue flowers; grows to be an enormous shrub; fragrant.
President Poincaire	Magenta	Double	Mod. to heavy	12	Very fine	Buds are purplish-red turning to lavender blue as they open; very large flower spikes.
Primrose	White	Single	Moderate	10–12	Very good	The creamy, butter color is the closest to yellow of all lilacs.
Professor E.H. Wilson	White	Double			Excellent	Beautiful white rosettes; lavish blooms.
Reaumur	Magenta	Single			Excellent	Dark-toned rose-red florets keep color for a long time; very reliable bloomer; upright grower.
Rochester	White	Single	Heavy 8–10		Excellent	Magnificently multi-petaled; outstandingly beautiful; slow grower.
Romance	Pink	Single			Very fine	Large outstanding florets; long-lasting, abundant blooms are attractive even as they dry.
Sarah Sands	Purple	Single	Mod. to heavy	8–10	Excellent	Beautiful deep red-purple florets with recurved petals.
Sensation	Purple	Single	Moderate	8–10	Excellent	Single purple florets with a pure white border; very striking.
Silver King	Blue	Single			Excellent	Unique white-blue with silvery reverse petals; heavy, showy bloomer.
Slater's Elegance	White	Single			Excellent	Canadian variety; beautiful, vase-like flowers.
True Blue	Blue	Single			Excellent	Outstanding showy pale blue flowers.
Vesper Song	Purple	Single	Heavy	>10	Excellent	Very showy.
Victor Lemoine	Lilac	Double	Heavy	8- 10	Excellent	Outstanding; one of the latest to bloom; rose-like florets intermixed in light tints of pink and blue; fragrant.
Volcan	Purple	Single			Very fine	Deep red florets; grows slowly, but bloom every season.
Wedgewood Blue	Blue	Single	Mod. to heavy	6–8	Excellent	Pink buds, Wedgewood pottery blue flowers; wisteria-like blooms; small shrub; excellent fragrance.

*The very best cultivars are rated "excellent" followed by "very fine," "fine," "very good," and "good." Source: Father John Fiala, 1988, *Lilacs: the Genus Syringa*, Timber Press, Portland, OR)

Pruning and rejuvenation

New shoots that continually sprout from the roots allow lilacs to remain young and in prime flowering condition for many years. Suckers are such effective rejuvenators that lilacs planted centuries ago are still thriving today. These include lilacs planted in 1650 in Mackinac Island, Michigan and lilacs planted in Portsmouth, New Hampshire about a century later.

Newly transplanted lilacs usually need no pruning for five years or until they are six to eight feet tall. After that, regular pruning is essential to maintain healthy flowering. An ideal lilac is one growing on its own roots with seven to 12 stems, all of different ages and thicknesses. Stems of one to two inches in diameter produce better blooms than stems that are three or more inches thick. The branches should not cross each other, and they should produce flowers all over the bush, not just at the top. If left to themselves, many lilacs will reach a height of 18 feet with a similar spread. However, a height of eight feet can be maintained with regular stem renewal and pruning.

The best time to prune is immediately after flowering, since the flowering buds for the next year are produced in June and July. Prune out all diseased canes, old and declining stems, thin suckers, and twiggy small branches.

To rejuvenate overgrown or declining lilacs, cut to the ground one-third of the largest trunks each year to encourage the growth of new shoots from the base. Over a three-year period, the lilacs will rejuvenate without a complete loss in bloom or canopy. Pruning in early spring when leaves are absent will make it easier to see which stems need to be removed.

Older literature recommends removing dead flowers (deadheading) immediately after flowering to prevent energy from going into seed production. On established lilacs, deadheading does not improve flowering significantly and is very labor intensive. However, we do recommend deadheading young lilacs since this encourages them to bloom well at an earlier age.

Propagation

When buying lilacs, ask how the shrubs were propagated. Lilacs grown on their own roots (through layering, cuttings or tissue culture) are superior to grafted or seed-grown lilacs. Grafted lilacs grow quickly at first, but as the stems thicken, they become difficult to rejuvenate. Sometimes the rootstock (which is commonly privet, but sometimes *S. vulgaris*) produces suckers that overtake the desirable cultivar scion, resulting in an entirely different shrub.

If there is a non-grafted mature lilac you particularly admire, ask permission to remove several rooted suckers from the shrub. Plant these and the resulting shrub will be a clone of the mother shrub.

Why lilacs fail to bloom

Some lilacs begin to bloom within two years of planting, while others take five years. Heavy blooms normally occur only every other year as with many woody flowering plants. However, several practices can optimize blooming:

1. Plant lilacs in full sun. Lilacs will never bloom well in the shade.
2. Lilacs need well-drained soil and will not tolerate standing water.
3. Prune lilacs immediately after blooms fade since buds for the following year are produced in June and July.
4. Overgrown lilacs with many thick, older branches and rampant suckers do not bloom as well as ones with a few well-maintained branches of younger ages. See pruning section.
5. Lilacs rarely need fertilizer. High nitrogen fertilizers favor leaves over flowers and may increase winter injury and bacterial blight.
6. Deadheading often improves flowering on young lilacs. See pruning section.

Diseases and insects

Bacterial blight (*Pseudomonas syringae* pv. *syringae*)

Bacterial blight causes brown leaf spots (often surrounded by yellow areas) and rapid browning of young shoots. Young tissues are more severely infected. The lilac pathogen also attacks pear, cherry, maple and other ornamentals.

As with most bacterial diseases, mild, moist weather favors lilac blight. Factors that weaken or injure plants make infection more likely. These include wounds, frost damage, improper nutrition or other diseases or insects. The bacteria spread via wind, rain, insects, tools and infected nursery stock.

Most common and French hybrid lilacs are susceptible, and some experts say that white-flowered lilacs are most susceptible. The following cultivars may be less susceptible: 'Edith Cavell,' 'Glory' and 'Ludwig Spaeth.'

Adequate plant spacing and pruning to allow good air circulation can minimize blight. Prune out and burn all affected tissues as soon as you see them. After each cut, sterilize pruning shears in rubbing alcohol or diluted bleach (one part bleach to nine parts water). When spring weather is favorable for infection, Bordeaux mixture or copper fungicides can be used as protectant fungicides just before bud break. Always follow instructions on the pesticide label.

Powdery mildew

(Microspheera syringae)

Powdery mildew forms a grayish-white powdery mat on leaves. Infected leaves may turn yellow and fall off. New growth often is stunted. Hot, humid weather favors mildew. Generally, mildew occurs in late summer and does little harm. Most French hybrids are very susceptible, but Manchurian lilacs ('Miss Kim'), Meyer lilacs and Japanese tree lilacs are quite resistant to mildew.

To prevent mildew, do not plant lilacs in the shade! Space and prune shrubs properly to allow good air circulation. High nitrogen fertilizers favor the disease, so minimize their use. Fungicides usually are not needed. However, if mildew becomes a yearly problem, contact your county Extension agent about fungicide use.

Lilac borer (*Podotesia syringae*)

Lilac borers are most common east of the Rockies. These moths resemble wasps as adults because of their brownish, clear wings. The moths fly to lilacs and lay their eggs on trunks and branches in late spring. Near wounds

and cracks, larvae tunnel into branches, feeding on sapwood and heartwood. They cause branch tips to wilt in late summer, especially when weather is warm and dry. Lower branches swell and crack, and sawdust appears around the borer holes. Affected branches may die or break.

Lilac borers are more common on stressed plants. Adequate watering and sufficient nutrients can reduce stress and future attacks. Fresh pruning wounds attract egg-laying adults. In infested areas, do not prune before the moth flight period. Instead, prune infested branches in the fall. Pheromone traps can be used to monitor flight periods using a standard clearwing borer lure to attract this species. Insecticides can be applied to the trunk two to three weeks after the first moths are captured. Reapplication may be needed if heavy flights continue for one month after application or if borers injured plants previously.

Lilac leafminers **(*Caloptilia syringella*)**

Lilac leafminers occur most commonly in western Montana. Leafminer damage first appears as light green blotches on the leaves in early summer. The outer cell layer of the leaf separates easily from other layers as a pale yellow larva up to $\frac{1}{3}$ -inch long grows inside. When infested heavily, nearly every leaf turns brown, causing the shrub to appear burned.

There is some evidence that neem, a least-toxic option for leafminers, has some systemic activity. Diazinon and Orthene are labeled for leaf miner controls on lilacs. Spray when blotches are first noticed.

Scales

Scale insects cover lilac trunks and branches with scaly bumps that can be scraped from the branch. The hard covering protects the insect underneath. Scales extract fluids from the plant, resulting in stunting, leaf yellowing and premature leaf drop. Scales may infest lilac, ash, maple and many other trees.

Depending on the species, scales lay their eggs on the bark in the fall or spring. Eggs hatch in late May or June. Young scales (crawlers) are small ($\frac{1}{10}$ inch), mobile and pale yellow or orange. Later in the season, their legs wither and a hard shell develops over the body. Beneath the shell, they continue to feed, and the females lay eggs.

A good planting site and adequate watering and nutrients promote healthy growth that helps lilacs resist scale infestations. Prune heavily infested branches. The most effective chemical controls are applied to the crawler stage of the insect. Carbaryl (Sevin), chlorpyrifos (Dursban), diazinon, orthene, bifenthrin (Talstar), and cyfluthrin (Tempo) are available as crawler sprays. Lilac is prone to phytotoxicity from some insecticides. Follow label directions carefully.

Insecticidal soap or oil sprays, applied at three- to four-day intervals during the crawler stage, can be effective also. Dormant oil sprays have not been as effective on oystershell scale because overwintering eggs are well protected by the hard scale covering. They work better when applied in spring after the egg covering has weathered.

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