



Missouri Environment & Garden

Planting Hyacinths Makes Scents *by David Trinklein*

“What most people need is more fragrance in their life,” is an observation often made by a former colleague. Although said in jest, the sentiment is plausible. The ability to smell is the most responsive of our five senses and the first to be developed as infants. Research has demonstrated that fragrances have the ability to change our mood, evoke memories and promote a sense of well-being. The latter can be attributed, in part, to the fact that stimuli to our olfactory sense are processed via our amygdala, that portion of our brain responsible for memory, decision-making and emotional reactions. Undoubtedly, fragrance is one reason that people are attracted to flowers.

Few other flowers pack the “fragrance punch” as hyacinth. This spring-flowering bulb with keel-shaped leaves and colorful, fragrant flowers is thought to be native to Turkey and the Middle East. Both Homer and Virgil made note of its sweet fragrance in their writings. Hyacinth was brought to Europe in the 16th century and, since then, has been greatly hybridized and vastly improved as an herbaceous ornamental flower. Today, it is available in many colors and bears much larger and fuller flower spikes than in days-of-old. Planting just a few can be very rewarding to the senses of both sight and smell.

October is an ideal month to plant hyacinths, whether they are destined to provide indoor fragrance in advance of the growing season or planted outdoors. In the case of the latter, the soil will remain warm enough this fall to allow a good root system to be established and the ensuing cold temperatures of winter will supply the chilling requirement needed for these bulbs to flower next spring.

Although bulbs of all sizes are readily available at this time of the year, larger bulbs are preferred. This, especially, is true if the bulbs are to be used for indoor forcing. Large, “exhibition size” bulbs, if available, are preferred for the latter process.

By using pre-chilled bulbs, hyacinths can be flowered indoors as early as Christmas. Untreated (non-chilled) bulbs may easily be flowered indoors by Valentine’s Day and throughout the late winter and early spring.

Bulbs destined for indoor flowering should be potted no later than mid-October, whether pre-chilled or untreated. When potting, add sufficient growing medium to allow only the tip of the bulbs to show above the soil line. After potting, bulbs should be placed in a protected location in the shade to allow roots to develop. Bulbs



planted in hyacinth glasses should also be placed in a cool room until roots form. Hyacinth glasses are special containers that hold the bulb so that the base of the bulb barely touches the water held by the glass.

After the bulbs have rooted in pots or in glasses, chilling for eight to 10 weeks is required if flowering is to take place. Outdoors, normal winter temperatures satisfy this requirement. Pots destined for indoor flowering may be placed outdoors but should be mulched to protect the bulbs from excessively cold weather. Indoors the pots (or glasses) should be placed in a cold place or location where the temperature constantly is near 40 degrees F. An unheated basement or storage cellar is a good choice, because temperatures don’t fluctuate

greatly and the cooling is quicker and more satisfactory. An old refrigerator may be used for just a few bulbs; make certain there are no food products in the refrigerator when it is being used to chill bulbs.

By mid-to-late January, the pots may be moved from their chilling location to the area in the house where they are to be displayed. Avoid placing them in full sunlight or close to a heater. The life of the flowers can be lengthened by placing the plants in a cool room at night. Flowering usually occurs in three to four weeks, depending upon temperature.

For flowers and fragrance from hyacinths outdoors, nature will take care of most of the details. Plant bulbs in a well-drained site, since poor drainage is a leading cause of bulb rot. Heavier soils benefit from the incorporation of organic matter before planting. Bulbs should be planted about five inches deep (top of soil to base of bulb). The cold temperatures of the winter months will satisfy the chilling requirement of the bulbs.

Hyacinths often are in full bloom in central Missouri by late March. Abnormally cold winters or late early springs will delay the process. Because they are very sensitive to spring temperatures, planting site greatly influences hyacinths bloom date. In relation to other spring-flowering bulbs, hyacinths usually bloom alongside mid-season narcissus and early types of tulips.

Some of the more popular varieties for indoor forcing include City of Harlem, Delft Blue, L’Innocence, Ostara and Pink Pearl. However, do not be afraid to attempt to force any variety you might have on hand. Outdoors, the color choice is a full range from shades of blue and pink to the more unusual creamy yellows and salmon-orange shades. Used in masses of single or mixed colors, hyacinths planted now will ensure a fragrant spring for gardeners.

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November Gardening Calendar

Ornamentals

Weeks 1-4

- Continue watering evergreens until the ground freezes. Soils must not be dry when winter arrives.
- Now is the ideal time to plant trees and shrubs. Before digging the hole, prepare the site by loosening the soil well beyond the drip line of each plant. Plant trees and shrubs at the depth they grew in the nursery and not deeper. Remove all wires, ropes and non-biodegradable materials from roots before back filling. Apply a 2-3 inch mulch layer, but stay several inches away from the trunk. Keep the soil moist, not wet, to the depth of the roots.
- Remove the spent flowers and foliage of perennials after they are damaged by frost.

Weeks 1-3

- Newly planted broad-leaf evergreens such as azaleas, boxwood and hollies benefit from a burlap screen for winter wind protection. Set screen stakes in place before the ground freezes.

Week 1

- Now is a good time to observe and choose nursery stock based on fall foliage interest.
- Plant tulips now.

Weeks 3-4

- Mums can be cut back to within several inches of the ground once flowering ends. After the ground freezes, apply a 2 to 3 inch layer of loose mulch such as pine needles, straw or leaves.
- Mulch flower and bulb beds after the ground freezes, to prevent injury to plants from frost heaving.
- Roses should be winterized after a heavy frost. Place a 6 to 10-inch deep layer of mulch over each plant. Top soil works best. Prune sparingly, just enough to shorten overly long canes. Climbers should not be pruned at this time.
- Take steps to prevent garden pools from freezing solid in winter. Covering pools with an insulating material or floating a stock tank water heater in the pond will lessen the chance of ice damage.
- Covering garden pools with bird netting will prevent leaves from fouling the water. Oxygen depletion from rotting organic matter can cause winter kill of pond fish.

Vegetables

Weeks 1-4

- Fall tilling the vegetable garden exposes many insect pests to winter cold, reducing their numbers in next year's garden.
- Any unused, finished compost is best tilled under to improve garden soils.
- To prevent insects or diseases from overwintering in the garden, remove and compost all plant debris.

Weeks 1-3

- Overcrowded or unproductive rhubarb plants can be divided now.

Weeks 3-4

- Root crops such as carrots, radishes, turnips and Jerusalem artichokes store well outdoors in the ground. Just before the ground freezes, bury these crops under a deep layer of leaves or straw. Harvest as needed during winter by pulling back this protective mulch.

Week 1

- For Thanksgiving, weave a holiday wreath of garlic, onions, chili peppers and herbs. It will make a gourmet gift for a lucky friend.

Fruits

Weeks 1-4

- Keep mulches pulled back several inches from the base of fruit trees to prevent bark injury from hungry mice and other rodents.

Week 1

- Harvest pecans when they start to drop from trees. Shake nuts onto tarps laid on the ground.
- Fallen, spoiled or mummified fruits should be cleaned up from the garden and destroyed by burying.

Weeks 3-4

- A dilute whitewash made from equal parts interior white latex paint and water applied to the southwest side of young fruit trees will prevent winter sun scald injury.
- Commercial tree guards or protective collars made of 18-inch high hardware cloth will prevent trunk injury to fruit trees from gnawing rabbits and rodents.
- Mulch strawberries for winter with straw. This should be done after several nights near 20 degrees, but before temperatures drop into the teens. Apply straw loosely, but thick enough to hide plants from view.

Miscellaneous

Weeks 1-4

- Now is a good time to collect soil samples to test for pH and nutritional levels.
- Roll up and store garden hoses on a warm, sunny day. It's hard to get a cold hose to coil into a tight loop.
- To prevent injury to turf grasses, keep leaves raked up off of the lawn.
- Continue mowing lawn grasses as long as they keep growing.
- A final fall application of fertilizer can be applied to bluegrass and fescue lawns now.

Weeks 2-4

- Clean house gutters of leaves and fallen debris before cold wet weather sets in.
- Set up bird feeders. Birds appreciate a source of unfrozen drinking water during the winter.
- Be sure to shut off and drain any outdoor water pipes or irrigation systems that may freeze during cold weather.

Weeks 3-4

- For cyclamen to bloom well indoors, they need cool temperatures in the 50-60 degree range, bright light, evenly moist soils, and regular fertilization.
- Reduce or eliminate fertilizing of houseplants until spring.

Gardening Calendar supplied by the staff of the William T. Kemper Center for Home Gardening located at the Missouri Botanical Garden in St. Louis, Missouri.
(www.GardeningHelp.org)

Winter Survival of Plants and Insects *Michele Warmund*

With winter approaching, plants are acclimating and insects are altering their behavior and physiology in response to shorter day lengths and cooler temperatures. Plants are accumulating sugars and proteins as they become dormant for the cold winter months ahead. Overwintering plants survive temperatures below 32°F by tolerating or avoiding freezing. Some plants, such as zoysiagrass, survive by tolerating ice formation in spaces between cells. Other plants, including fruit trees grown in Missouri, survive low winter temperatures by avoiding freezing. Water inside freeze-avoiding plants remains in an unfrozen state due to supercooling.

Insects utilize one or more methods for winter survival including migration, freeze avoidance or freeze tolerance. Some insects avoid cold weather by migrating to warmer climates. Probably the best example of migrating insects are Monarch butterflies that begin flying south in late August to overwinter in Mexico. Green darners, a common species of dragonflies, also migrate to Texas and Mexico to avoid freezing temperatures. Another way insects avoid the cold is by seeking shelter. For example, adult Asian lady beetles overwinter in cracks and crevices in roof shingles, windows, and siding on structures. All life stages of European honey bees overwinter inside hives. Midge larvae reside in galls for winter protection. Leaf litter is another common shelter for overwintering insects such as bean leaf beetles, stink bugs, and grasshoppers. Other insects can be found within bud scales (mites) or under loose bark of trees (codling moth larvae), in leaf litter, underneath rocks (pillbugs), or in the soil (Japanese beetles) during winter (Figure 1).

Many insects spend the winter in a state of dormancy called diapause. In the fall, shorter day lengths and exposure to cool temperatures trigger hormone production, which lowers insect metabolism and their energy requirement. When conditions become favorable near spring, insects resume their activity. Insect eggs, larvae, pupae, or adults can undergo diapause, depending on the species.

Freeze-avoiding insects lower the temperature at which their body fluids freeze. Thus, they can withstand temperatures below 23°F. Some insects avoid freezing by emptying their gut to prevent internal ice formation. Certain insects can also produce antifreeze proteins in their hemolymph (body fluid) that bind to ice crystals during their formation to prevent crystals from growing. Other types of antifreeze compounds synthesized by insects are polyols and sugars, which lower the freezing point of their hemolymph. Glycerol is a common type of polyol and sorbitol is a sugar that lowers the temperature at which an insect freezes. Codling moth and emerald ash borer larvae and forest tent caterpillar eggs survive winter by freeze avoidance.

Freeze-tolerant insects are able to withstand the formation of ice internally. In the fall, ice nucleation-active agents in the insect's hemolymph or in other parts of the body promote non-lethal ice formation extracellularly (i.e., outside cells) at temperatures usually between 23 and 14°F. Even though ice forms within the insect, it is non-lethal. Woolly bear caterpillars are an example of a freeze-tolerant insect.

For the upcoming winter, the National Oceanic and Atmospheric Administration (NOAA) is predicting a weak La Nina event. Thus, there is much uncertainty in the forecast for Missouri weather. At best, we can look for insects seeking shelter and follow their lead to avoid freezing.

Figure 1. Eriophyid mites overwintering in an elderberry bud scale.

