

The Midnight Garden

Fort Gordon Community Garden Club

Kathleen Duncan



Today's Information will cover:

What are nightshade fruits and veggies?

Truth and fiction

Other things to know

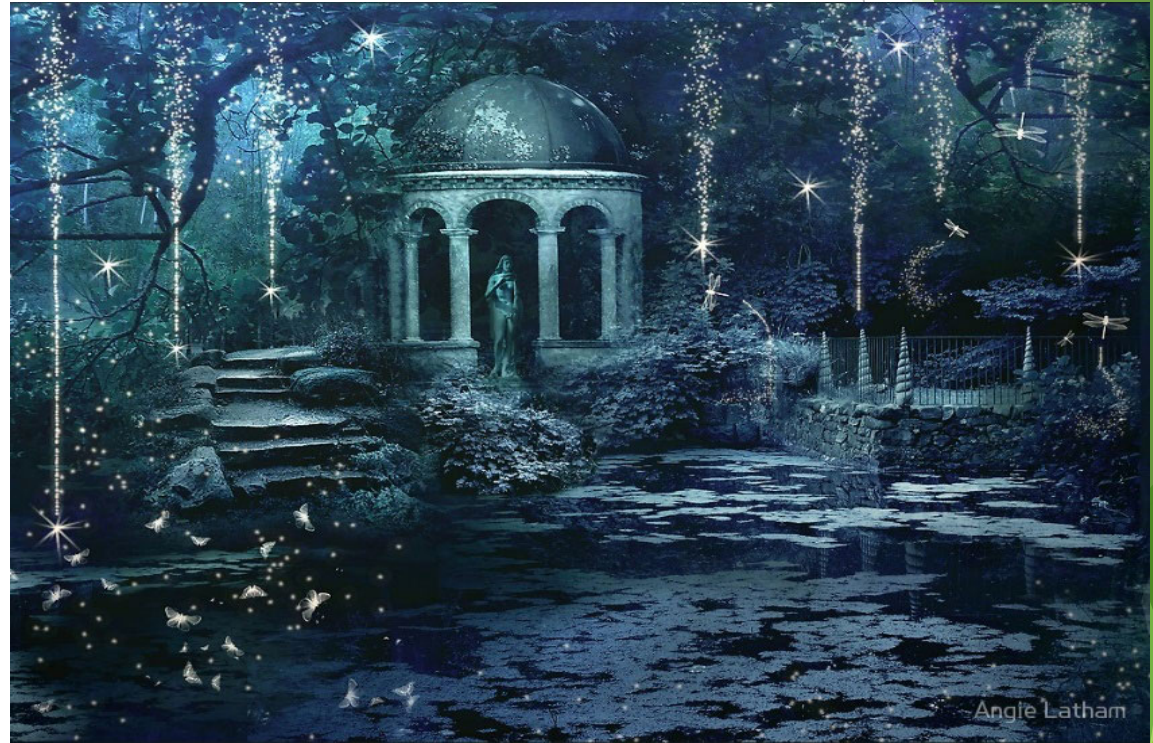
Deadly Nightshade

The Nighttime Garden

Night Blooming Plants

Plant for all of your senses

Lighting for your nighttime garden



“The Midnight Garden” by Angie Latham

What are nightshade fruits and veggies?

- ▶ Nightshade fruits and vegetables are a broad group of plants from the solanum and capsicum families. Nightshade plants contain poisons, one called solanine. While ingesting nightshade plants can be fatal, fruits and vegetables in this same classification of plant — many of which you'll find at your local grocery store — are actually safe to eat. This is because the amount of this toxic compound is lowered to nontoxic levels once the fruits and vegetables ripen.
- ▶ Nightshades include several thousand species of flowering plants, and most of these plants are not edible as food. At the very same time, however, there are a good number of nightshades that have been enjoyed as staple foods in diets for literally thousands of years. These include: tomatoes, potatoes, eggplant, and bell peppers. Nightshades can also be found in herbs and spices, and these nightshades include cayenne pepper and chili pepper.

Truth

- ▶ **Eggplant:** Eggplant is an ingredient used in many diets, including the Mediterranean diet and is stocked in most grocery stores. Eggplant is a good source of fiber, potassium, and vitamin B-1, B-6, and K. Eggplant is a good source of manganese, a mineral important for both development and metabolism. Additionally, contains natural antioxidants that can help protect your skin from the oxidative stress of the sun's ultraviolet radiation. Because of their meaty texture when cooked, they're popular among vegetarians
- ▶ **Tomatoes:** Tomatoes are an excellent source of vitamins and minerals, including biotin, potassium, iron, and zinc. They also contain the antioxidant lycopene, which may improve inflammation. According to Penn State University's Extension program, current research suggests that tomatoes contain carotenoids, powerful antioxidants that protect the body from certain types of cancers. Lycopene, the most common carotenoid found in tomatoes, may help reduce the risk for pancreatic, prostate, and digestive cancers.
- ▶ **Potatoes:** Purple, white, and yellow potatoes all offer nutritional value that includes fiber, vitamin C and vitamin B-6. Potatoes are one of the most abundantly grown foods used in the Western world. Potatoes are great sources of vitamin C, which helps aid immunity. They also contain enough potassium, vitamin B-6, and fiber to make a healthier staple than you may realize. Moreover, they contain carotenoids, flavonoids, and caffeic acid, all forms of phytonutrients known to promote health benefits, according to the USDA.

Potatoes aren't as healthy when they're prepared with high amounts of fats, salts, and oils...like french fries.

- ▶ **Peppers:** Bell peppers are great sources of vitamin A and C, potassium, and folic acid. One green pepper contains more vitamin C than an orange. Hot Peppers may be nightshades, but like the sun they can bring some heat. And if your tongue can endure the burn, these fiery devils contain good nutrients. Common hot peppers — like jalapenos, serrano peppers, and red or green chilies — are good sources of vitamin C, vitamin A, and potassium. Capsaicin, what helps give spicy peppers their kick, has been shown to decrease inflammation, which can help people with joint disorders walk with less pain.
- ▶ **Tomatillo** is a nightshade that grows in a husk and is similar to a tomato. Common in Central and South America, it's a staple of Mexican green sauces and can be boiled, fried, or steamed. While not as nutritiously plentiful as your garden-variety red tomato, they contain antioxidants and can help you sneak some extra fiber into your diet without adding in too many extra calories.
- ▶ **Goji berries** contain protein and numerous healthy amino acids such as tyramine. They're high in antioxidants, which help immune function and cell health. If you're trying them for the first time, know that it's possible to be allergic to them. You'll want to stop eating them should you develop a rash or become ill.

Blueberries contain solanine alkaloid like nightshade plants, though they aren't technically a nightshade plant. Blueberries are often touted as a superfood because many believe they contain cancer-preventing ingredients. They're high in antioxidants, which are known to reduce inflammation. With that in mind, blueberries are thought to prevent inflammatory diseases such as metabolic syndrome, type 2 diabetes, Alzheimer's, and cardiovascular disease. According to researchers at the Gerontological Society of America, evidence from recent studies show that blueberries contain flavonoids, specifically one called anthocyanin, that's directly associated with cognitive benefits. A cup of blueberries provides a quarter of your daily vitamin C needs, as well as supplying some dietary fiber. The fiber, when combined with probiotics in yogurt, can keep your gastrointestinal tract in good working order.



Fiction (don't fall for HYPE, read)

- ▶ Along with the potential health benefits associated with food alkaloids, are also potential problems with excessive intake. The key word in this sentence is "excessive." Potatoes provide a good example here. The strictest public health standards that we have seen for intake of TGA (total glycoalkaloids) in potato is 100 micrograms per gram of potato. The U.S. Food and Drug Administration (FDA) has set the maximum acceptable content of TGA at 200 micrograms per gram of potato. While it is possible to purchase potatoes in the U.S. that exceed the 100 microgram/gram level, we have not seen studies on U.S. potatoes for which the TGA level exceeded the 200 microgram/gram FDA level. In fact, it is not uncommon for the TGA level in potatoes to dip into the range of 25-75 micrograms/gram. So while it is possible to consume too many solanine and chaconine alkaloids from potatoes, it is also unlikely based on the research data.
- ▶ It is not uncommon to find accounts from individuals who have been diagnosed with varying forms of arthritis or other musculoskeletal health problems in which elimination of nightshades vegetables resulted in a feeling of improvement. While we have no reason to dispute the experience of anyone who makes dietary changes and experiences a change in health, we also have yet to see a large-scale human research study showing health improvement of any kind following elimination of nightshades. While future research may end up shedding more light on the relationship between nightshade alkaloids and the function of our joints, musculoskeletal, or nervous systems, at present we have no research-based reason to recommend elimination of nightshades in connection with these body system problems.

<http://www.whfoods.com/genpage.php?tname=george&dbid=62>

Deadly Nightshade

The name says it all — both the foliage and the berries of these plant are extremely toxic. Deadly Nightshade's have a long, colorful history of use as a poison. In fact, all of these plants contain toxins, usually in their foliage, that can be harmful.

- ▶ **Rosary pea:** This plant may sound pious, but it's actually deadly. Rosary peas got their name from their traditional use as ornamental beads for rosaries. They are used in jewelry around the world. Many jewelry makers have died after pricking a finger while handling a rosary pea. The poison contained within the seed is abrin — a close relative of ricin and one of the most fatal toxins on Earth. *Rosary pea has been widely used in Florida as an ornamental plant for many years. The native range of rosary pea is India and parts of Asia.*
- ▶ **Oleander:** Oleander is one of the most toxic, commonly grown garden plants in the world — and oddly enough, it's often found in schoolyards. Ingesting any part of this plant can be deadly, especially for children. Even smoke from burning oleander can be fatal. The plant's use as a poison is well-known. Oleander is reportedly a favorite suicide agent in Sri Lanka, where oleander poisonings exceed 150 per 100,000 people each year. About 10 percent of those cases are fatal. *Hardy to U.S. Department of Agriculture plant hardiness zones 8 through 10, oleander is part of the Apocynaceae or dogbane family.*
- ▶ **European yew:** Relatively common in Europe, northwest Africa and the Middle East, nearly all parts of this slow-growing tree can be poisonous. The exception is the red fleshy aril that surrounds the toxic seeds. The aril is frequently eaten by birds. Some people have chosen to commit suicide by ingesting the leaves or the seeds, both of which contain a poison called taxane. Sometimes there are no symptoms of poisoning and a person or animal can die within a few hours of ingesting yew seeds or leaves. If there are symptoms, they can include a fast heart rate, muscle spasms and labored breathing. *Native to western, central and southern Europe, northwest Africa, northern Iran and southwest Asia.*



- ▶ **Daffodils:** Prized for their beauty, daffodils grow from bulbs that could be mistaken for an edible food, like an onion. Daffodils – also known by their Latin name *Narcissus* – are common ornamental plants with a bright, cheery and mostly toxin-free flower. Most daffodils are deer- and vermin-resistant, but gardeners shouldn't overlook the dark side of this plant. The Greek philosopher Socrates sometimes referred to daffodils as the "Chaplet of the infernal Gods" because of the plant's numbing effect. *Grown pretty much everywhere.*
- ▶ **Doll's Eye:** It's a good thing the creepy-looking berries of this plant aren't enticing, because consuming the fruit of a doll's eye plant (or white baneberry) could kill you. The berries contain cardiogenic toxins that can have an immediate sedative effect on cardiac muscle tissue. Symptoms of poisoning include burning of mouth and throat, salivation, severe stomach cramps, headache, diarrhea, dizziness and hallucinations. Ingestion of the berries can eventually lead to cardiac arrest and death. *The plant is native to eastern North America, in eastern Canada, and the Midwestern and Eastern United States.*
- ▶ **Hemlock:** This is one of the most famous poisonous plants in history – it's the flora responsible for killing Socrates. All parts of the plant contain the relatively simple alkaloid coniine which causes stomach pains, vomiting and progressive paralysis of the central nervous system. Hemlock is also known by several common names, including devil's porridge, beaver poison or poison parsley. *This plant is native to Europe and North Africa.*



- ▶ **Stinging tree:** *Dendrocnide moroides* is the deadliest and most potent stinging nettle in the world. Accidentally brushing past any part of this plant or its stinging relatives can deliver a potent toxin that will cause a painful stinging sensation lasting for days or even months. A severe sting from this plant will cause a severe allergic reaction in pigs, horses, dogs and many other animals, but there's not as much evidence that it has killed humans. (One researcher documented her time working with *Dendrocnide excelsa*, which is considered a less dangerous plant, and her increasingly allergic reaction to the plant offers a sense of what's possible.) *Found in forests in Queensland in Australia and Indonesia.*
- ▶ **Castor beans:** If you have consumed castor oil before, you might be surprised to learn that castor beans contain one of the most poisonous substances in the world, ricin. Just one castor bean has enough ricin to kill an adult within a few minutes. Despite this grim quality, castor bean plants are frequently grown for decorative purposes, even in parks and public places. *This robust tender perennial can grow to 40 feet tall, developing woody stems over a few years in frost-free climates.*
- ▶ **Angel's trumpet:** Angel's trumpets are woody-stemmed bushes with pendulous flowers that hang like bells. They are prized as decorative additions to the garden because of their elegant flowers. The catch is that all parts of these plants contain dangerous levels of poison and may be fatal if ingested by humans or animals. Angel's trumpets have occasionally been used to create a recreation drug, but the risk of overdose is so high that these uses often have deadly consequences. Grown in the South's coastal and frost-free climates.



- ▶ **Monkshood:** Monkshood has a long tradition as a deadly plant and was used by ancient warriors to poison the water of their enemies. It was also once used as a popular werewolf-detection tool. The flower was held near the alleged wolf's chin, and if a yellow-tinged shadow appeared, that was confirmation that the person was a werewolf. In 2015, a gardener died of multiple organ failure after brushing past this deadly purple flowering plant on the estate where he was working in the U.K. *The monkshood plant is an herbaceous wildflower that can be found growing in mountain meadows throughout the northern hemisphere.*



- ▶ **White snakeroot:** White snakeroot contains the toxin tremetol, which can be poisonous if consumed directly or second-hand. When snakeroot is eaten by cattle, the animals' beef and milk become contaminated with the toxin, and ingesting those substances can lead to a condition called milk sickness. Abraham Lincoln's mother, Nancy Hanks, reportedly died after swallowing snakeroot-contaminated milk. Human disease is uncommon today because of current practices of animal husbandry and the pooling of milk from many producers, but milk sickness does still occur. *Native to eastern and central North America.*



- ▶ **Larkspur:** The seeds and young plants of the larkspur are toxic to both people and animals. Toxicity decreases as the plant ages. Larkspur has several alkaloids including delphinine, delphineidine, ajacine and others that can cause very unpleasant issues. According to the U.S. Department of Agriculture (USDA) symptoms of poisoning include general weakness and muscle spasms, as well as abdominal pain and nausea. Eventually, it can lead to respiratory distress, paralysis and death. Larkspur is responsible for heavy livestock losses, according to the USDA, particularly with cattle in Western states when the animals are allowed to graze where the plant is abundant. *Native throughout the Northern Hemisphere and also on the high mountains of tropical Africa.*
- ▶ **Foxglove:** The seeds, stems, flowers and leaves of the foxglove plant are poisonous. They contain digitalis glycosides, which are organic compounds that act on the heart. When someone eats part of this attractive plants or sucks on the flowers, the glycosides affect cardiac function, causing an irregular heartbeat. Symptoms can also include digestive issues, headache, blurred vision and confusion and can eventually lead to death. *Foxglove is an attractive plant that grows throughout the United States.*
- ▶ **Melia Azedarach:** In Australia, it's known as **white cedar**. But this deciduous tree in the mahogany family is also known as a **chinaberry tree**, the **Pride of India**, an **umbrella tree** and the **Persian lilac**. Its fruits contain a mixture of poisons, including neurotoxins, which can harm humans (as few as 6 to 8 berries can kill a person). Birds, however, can tolerate them, so they eat the fruit and spread the seeds. The flowers on the tree, which is native to Australia and Southeast Asia, are small with light purple and white petals of five, and they often grow in clusters. The fruits are small, spherical and yellow. *Distribution of Chinaberry is not limited to the United States (from Virginia to Florida and westward to Texas) it is also common in Central America, the Virgin Islands, and Puerto Rico.*



The Nighttime Garden

When evening falls and it's too dark to weed, deadhead or start a new project, it's time to turn off your busy mind and turn on your senses. The garden becomes a whole new place after dark, filled with mysterious sounds, fragrances, and luminous colors.

There are lots of easy ways to make your garden a more compelling destination in the magical light of evening. Incorporating just a few of them will keep you outdoors as long as possible, and hopefully add a whole new dimension of enjoyment.

A gardenia knows just how to entice. At dusk, the waxy white flower's fragrance intensifies, attracting pollinating moths...and gardeners



Incorporate Places to Sit

If you want to tune into your garden in the evening, you need to slow down. Way down. In fact, the best way to tune in is to just sit down. If you don't already have a bench or two in your garden, get yourself something to sit on. Though a pretty bench can be an attractive garden feature as well as a practical one, your garden seating can be as simple as an old kitchen chair or a plank of wood balanced on two stumps. Maybe a porch swing facing a garden area you light for your own viewing pleasure.

Having a destination is important — especially after dark.



Plant Evening-Scented Flowers

There are many flowers that become more heavily scented after dark because they use their fragrance to attract moths and other nighttime pollinators. In the calm, moist air of evening, the fragrance of these flowers can seem to hover over the entire garden. Add a few of the plants listed below (or add them all!) and enjoy an olfactory adventure as you follow your nose to seek out the source of each scent. Here are some favorites:

- ▶ Nicotianas - *N. alata* and *N. glauca*, which are both white, and the most fragrant this plant is also called Tabaco Plant.
- ▶ Brugmansia and Datura - Both are scentless in the daytime; they turn it on after dark.
- ▶ Moonflower - A vine that thrives in heat, it has fragrant, white, trumpet-shaped blooms.
- ▶ Trumpet and Oriental lilies - Plant as many different varieties as you can justify!
- ▶ Acidanthera - Also known as peacock orchids, they need to be dug like glads, but are totally worth it.



Nicotianas



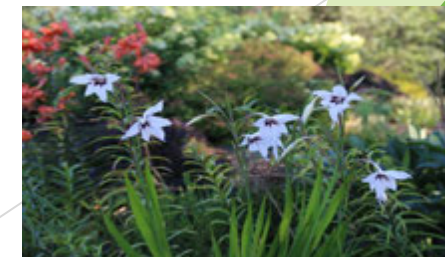
Brugmansia Datura



Moonflower

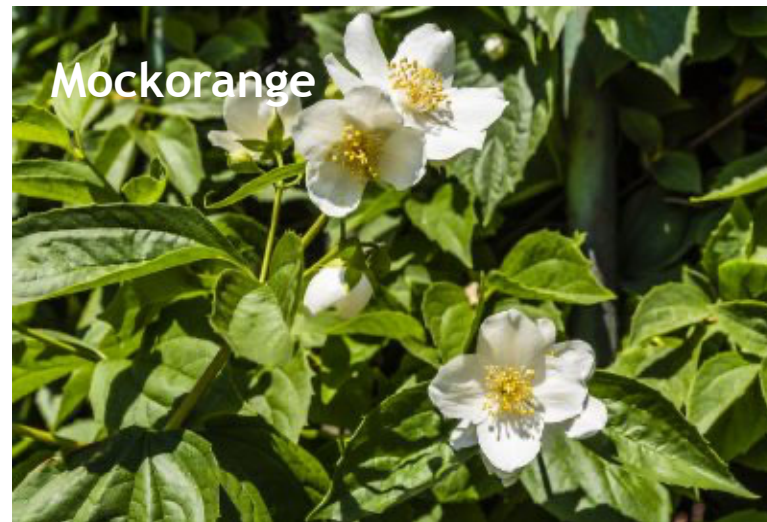
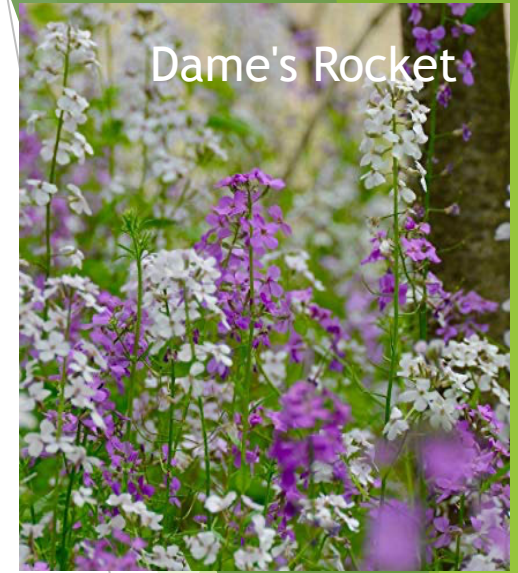


Casa Blanca Lily



Acidanthera

- ▶ Dame's Rocket (*Hesperis matronalis*) - This annual is easy to grow from seed
- ▶ Stock - This is a lackluster name for a beautiful annual with a carnation-like fragrance
- ▶ Dianthus - Not all varieties are fragrant, but many of them are.
- ▶ Tuberose - This is a tender bulb that needs to be dug and stored indoors over the winter.
- ▶ Mockorange (*Philadelphus coronarius*) - This shrub has fleeting but fabulous white flowers.
- ▶ Alyssum - More fragrant in the sun, alyssum's honey-scented blooms are still quite fragrant after dark.



- ▶ Hostas - Some varieties, such as Guacamole, have fragrant flowers in late summer.
- ▶ Petunias - Seek out fragrant varieties — use your own nose to evaluate them.
- ▶ Heliotrope - Both the purple and the white varieties have a vanilla fragrance.



Include Plants with White flowers and Silvery Foliage

- ▶ At dusk, and especially when there's moonlight in the garden, white flowers become luminous and can be seen from quite a distance. Most of the evening-scented flowers described above are white as well as fragrant. Other flowers to consider adding to your garden include white varieties of the following: clematis, roses, foxgloves, daisies, cosmos, impatiens and cleome. Sprinkle them around the garden to create little patches of moonlight.
- ▶ Pale gray foliage, especially if the leaves are slightly fuzzy, really seems to glow in the evening light. The best plants for this effect are: lamb's ears (*Stachys byzantina*), Artemesia (Mugwort or Wormwood), *Lamium maculatum*, lavender, garden sage (*Salvia officinalis*), *Plectranthus argentatus* 'Silver Shield', Licorice mint (*Helichrysum petiolare*), and Russian sage (*Perovskia atriplicifolia*) Dusty Miller.



Russian Sage



Dusty Miller



Silver Shield





Plant for all of your senses

A gardenia knows just how to entice. At dusk, the waxy white flower's fragrance intensifies, attracting pollinating moths—and nudging garden lovers to slip outside to enjoy the intoxicating scent of nighttime in the South. Just the reason Scott Ogden, a Texan, garden designer, and author of [*The Moonlit Garden*](#), likes to plant nocturnal landscapes. “The idea is to stop paying so much attention to color,” Ogden says, “and let loose some of these other senses.”

Ogden plants crinum lilies, for their aromas, and papaya, magnolia, and gardenia for scent and structure. He also recommends intermingling white trumpet flowers, nicotiana, tuberose, and majestic moonflowers, plus silvery agave, dusty miller, and lamb's ears.

Finally, consider adding to the chorus of cicadas and nightingales. “I lay gravel paths for evening gardens because they crunch and make noise,” Ogden says. With sight, smell, and sound engaged, keep that other Southern sense—the itch of skeeter bite—at bay with plantings of citronella and Ogden's go-to, lemongrass.

Include Lighting for Ambience and Safety

If you want to add lighting to your evening garden, keep it subtle. To appreciate the white and silver plants, you'll need to let your eyes adjust to the fading light. If there are bright lights scattered through the garden, that effect would be lost. Low-voltage or solar outdoor lights can add a soft glow, as will candle-powered lanterns. You might even use some white twinkle lights to accent a special tree or garden structure.



Special Features

- ▶ A white or pale-colored fence really glows at dusk, and can serve as a wonderful backdrop.
- ▶ Moving water catches moonlight in a magical way, and a little pond or self-contained water feature can take on a whole new life after dark.
- ▶ As winds calm and ambient noise levels drop, you can really start appreciating the sound of leaves that rustle (think about bamboo or an ornamental grass) or the soft tinkling of wind chimes.



Whether you enjoy your midnight garden in the company of friends and family, or on a silent stroll by yourself, you'll find it's a soothing, soulful way to put the day to rest.



References and Resources

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