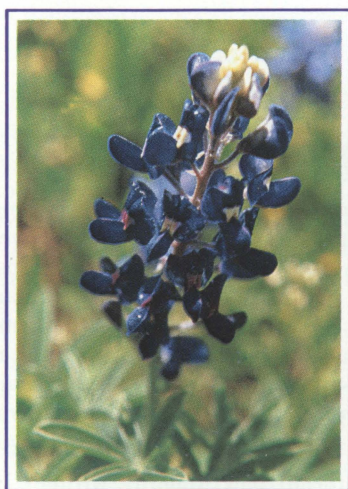


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Texas Agricultural Extension Service

TEXAS BLUEBONNETS



T E X A S P R I D E



Texas Agricultural Extension Service • Zerle L. Carpenter, Director
The Texas A&M University System • College Station, Texas

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Lore of the Bluebonnet

Bluebonnets have been loved since man first trod the vast prairies of Texas. Indians wove fascinating folk tales around them. The early-day Spanish priests gathered the seeds and grew them around their missions. This practice gave rise to the myth that the padres had brought the plant from Spain, but this cannot be true since the two predominant species of bluebonnets are found growing naturally only in Texas and at no other location in the world.

As historian Jack Maguire wrote, "It's not only the state flower but also a kind of floral trademark almost as well known to outsiders as cowboy boots and the Stetson hat." He goes on to affirm that "The bluebonnet is to Texas what the shamrock is to Ireland, the cherry blossom to Japan, the lily to France, the rose to England and the tulip to Holland."

Texas Has Five State Flowers?

As our state flower, bluebonnets have a most interesting history. Texas actually has five state flowers, more or less, and they are all bluebonnets. Selection of a state flower first began in 1901, and was finally resolved in 1971 when the Legislature officially named *Lupinus subcarnosus* and *Lupinus texensis* "plus any other variety of bluebonnet not heretofore recorded" as the state flower. Three other species of lupines have since assumed the mantle of state flower as well.

The five state flowers of Texas

1. *Lupinus subcarnosus*, the original champion and still co-holder of the title, grows naturally in deep sandy loams from Leon County southwest to LaSalle County and down to the northern part of Hidalgo County in the Valley. Often referred to as the sandy land bluebonnet, the plant's leaflets are blunt, sometimes notched with silky undersides. This species, which reaches peak bloom in late March, is not easy to maintain in clay soils.

2. *Lupinus texensis*, the favorite of tourists and artists, provides the blue spring carpet of Central Texas and is widely known as **the** Texas bluebonnet. It has pointed leaflets, and the flowering stalk is tipped with white (like a bunny's tail). With peak bloom in late March and early April, it is the easiest of all the species to grow.

3. *Lupinus havardii*, also known as the Big Bend or Chisos bluebonnet, is the most majestic of the Texas bluebonnet tribe with flowering spikes up to 3 feet tall. It is found on the flats of the Big Bend country in early spring, usually has seven leaflets and is difficult to cultivate outside its natural habitat.

4. *Lupinus concinnus* is an inconspicuous little lupine, from 2 to 7 inches tall, with flowers which combine elements of white, rosy purple and lavender. Commonly known as the annual lupine, it is found sparingly in the Trans-Pecos region, blooming in early spring.

5. *Lupinus plattensis* sneaks down from the north into the Texas Panhandle's sandy dunes. It is the only perennial species in the state and grows to about 2 feet tall. It normally blooms in mid to late spring and is also known as the dune bluebonnet, the plains bluebonnet and the Nebraska Lupine.

Think Fall, Not Spring

People have been convinced that “April showers bring May flowers,” and spring should be the logical time to think about planting. Not so, when it comes to many spring-blooming wildflowers—including the bluebonnet.

Seeds need early fall’s warm temperatures for successful germination, and both seedlings and cold-hardy transplants need cool weather to develop extensive root systems. Bluebonnets planted in the fall will produce plants approximately twice as large, with twice as many blooms, compared to plants established in the spring.

Solving the Germination Mystery

Successful bluebonnet cultivation lies in basic knowledge of the seed itself. Faced with using untreated seed for years, Texans had problems with germination. Even with doing everything correctly (pest control, optimum planting site and adequate moisture), one could expect—at best—growth from 20 seeds out of every 100 planted. To compound the problem, all 20 seeds would not sprout simultaneously, but would sprout over a 30-day period.

Texans can now buy bluebonnet seed which has been chemically treated (scarified) and will germinate within 10 days rather than the months required previously. Scarification removes inhibiting properties of the seed coat which would prevent water uptake and initiation of growth.

Planting Pointers

The ideal location for planting seeds or transplants can be described in a single word—SUNNY. Bluebonnets will not perform well if planted in the shade or in an area which receives less than 8 to 10 hours of direct sunlight. Grown in a shaded area, plants will be tall and spindly with few blooms.

Bluebonnets will thrive in any type of soil that is well drained. If you are plagued with a sticky clay, try building raised (6 inches or more) planting beds and amending the soil with 3 to 4 inches of organic matter such as compost, tree leaves or spoiled hay.

Keep the soil slightly moist. Once plants become established, bluebonnets are tough, drought-tolerant natives.

When planting bluebonnet seed, **forget the idea of just throwing or scattering the seed in the grass!** Much bluebonnet seed has been wasted as bird feed using this technique. The seed must be lightly covered or raked into the soil. In naturalized fields of bluebonnets, the seed is gradually covered by washing soil and defoliation of weeds and grass, but **it is covered before it actually germinates.**

Chemically-scarified seed should be planted no later than September 15 in North Texas (Dallas-Ft. Worth) and Thanksgiving in South Texas (San Antonio). Transplants should be planted no later than Halloween in North Texas and no later than Valentine's Day in South Texas.

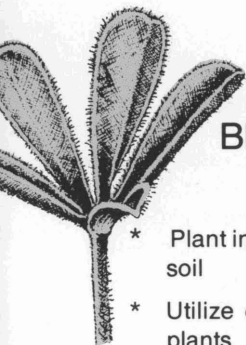
Protect from Pests

Getting seed to germinate and plants to emerge from the soil is just the beginning. You must then protect emerging seedlings from the ravages of pillbugs and soil fungi.

Major enemies of seedlings and transplants are small, nocturnal menaces referred to as pillbugs, roly-polys or sowbugs. These hungry pests can devour plants overnight.

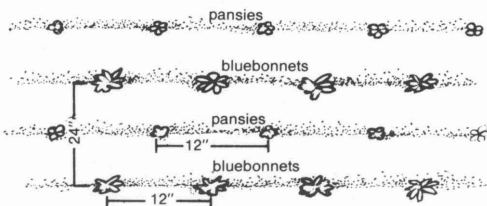
Many times the devastating onslaught does not occur immediately after planting. To ensure seedling and transplant survival, broadcast pillbug bait around the newly established or emerging plants on a weekly basis during the first month after planting.

Damping-off, a fungal disease complex which causes stem rotting, is not as prevalent with tough-stemmed transplants as with tender, emerging seedlings. To minimize damping-off, avoid planting in beds with a history of this condition, use transplants rather than seed and do not overwater. As an alternative, treat the planting bed with Vapam at least 3 to 4 weeks before seeding or transplanting if damping-off fungi have been a problem.



Bluebonnet Culture at a Glance

- * Plant in early fall, in full sun, in well-drained soil
- * Utilize chemically-scarified seed or transplants
- * Barely cover seeds with soil; don't bury crown of transplants
- * **Don't overwater!** Water seeds only on day of planting, transplants only when soil is dry to a depth of 1 inch
- * Protect against pillbugs and damping-off fungi
- * For maximum impact in the landscape, use drifts of a single color rather than a hodgepodge sprinkling of many colors.
- * Interplant with pansies or other annuals for winter-long color
- * No applications of fertilizer are required
- * In North Texas, cover with a loose blanket of mulch during extremely cold weather; uncover plants promptly when temperatures moderate



Interplant bluebonnets with pansies or other annuals.

Educational programs conducted by the Texas Agricultural Extension Service serve people of all ages regardless of socioeconomic level, race, color, sex, religion, handicap or national origin.

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Transplants Easier to Handle

To avoid problems with seed germination, use transplants instead. Transplants are much easier to handle and establish, and easier to space so that stand establishment in formal plantings is assured. Transplants of white and 'Abbott Pink' bluebonnets are available to accentuate and complement the beauty of the more common blue variety.

Do not plant a bluebonnet transplant too deeply. All of the leaves arise from a central crown-like structure which should not be buried, or the plant will rot.

Many hopeful bluebonnet growers kill plants with too much water. Bluebonnets are actually very drought-tolerant and as such are very susceptible to death from overwatering. Water seeds only on the day of planting and transplants only when the soil is dry to a depth of 1 inch.

Bluebonnets form ground-hugging rosettes during early growth. The plant may be only a few inches tall but the leaves may cover an area the size of a dinner plate. This is a natural condition and regardless of how much one waters or fertilizes, the plant will not grow rapidly until the warmth of spring initiates flower stalks. It is also natural for lower leaves to turn crimson after the first freeze.

Beneath the rosette of leaves, a large mass of roots is growing. These roots have the ability to form nodules which are filled with nitrogen-fixing bacteria that can take nitrogen from the atmosphere to feed the plant. Fertilization can thus be kept to a minimum, since most established planting beds have an abundance of plant nutrients remaining from fertilization of previous plantings.

Particularly in North Texas, it is wise to completely cover bluebonnet plants if extremely low temperatures are forecast. A loose blanket of straw, hay, tree leaves or other materials may be used. When temperatures moderate in a few days, pull the covering back to expose the plants to full sun again.

Exciting New Colors Available

Texas Agricultural Extension Service horticulturists in cooperation with seed producers, bedding plant growers and vegetable farmers have domesticated the bluebonnet wildflower into a new multi-million dollar bedding plant.

Since the beginning, development of unusual bluebonnet color types has been the main driving force of this project. Geneticists indicate that for every color in nature, there exist hues or shades of that color. Scarified seeds and transplants are already available in four color strains.

BLUE: The blue bluebonnet was, of course, already available. The only thing needed to be done with this color was to enhance seed germination and formulate a commercial production technique which would ensure a dependable seed supply.

'WORTHINGTON BLUE': This is one of the most striking of all bluebonnet colors, best described as sky blue (the color on a clear day). This color strain was named for the Worthington Hotel in Ft. Worth because of their continuing support for the bluebonnet development program. It makes a striking display alone or mixed with other colors.

WHITE: The white strain of bluebonnet was familiar to most local botanists yet still unknown to the majority of Texans. Photographers always treasure the opportunity to find a rare albino bluebonnet among the blue.

'ABBOTT PINK': Development of a pink bluebonnet was thought to be an impossible task. Even Texas naturalist Carroll Abbott considered location, purification and proliferation of the pink, and eventually red, bluebonnet a bit farfetched. This great plantsman had roamed the fields of Texas his entire life and had seen only three pink bluebonnet plants. Most of his native plant friends had never seen even one.

Because the pink strain of bluebonnet was so rare and so special, it has been named after the mentor of this project. The 'Abbott Pink' bluebonnet is now a reality. Its subtle beauty will always serve as a reminder of Abbott's dedication and inspiration to all who love and appreciate nature's rarities.

Some have asked: "If a bluebonnet flower is white, shouldn't it be called a whitebonnet?" The state flower is the bluebonnet, written as one word. A color strain of that flower would be properly described with the name of that color, **plus** the name of the flower. Thus, the terms white bluebonnet and 'Abbott Pink' bluebonnet are correct.

From all packets of seed or flats of transplants of bluebonnet color strains such as 'Abbott Pink,' white or 'Worthington Blue,' some plants will bloom with the standard blue color. The new color strains are not 100 percent pure and occasionally will exhibit the ancestral blue and possibly other hues. In bluebonnet stands allowed to reseed naturally the mixing of blues with pinks or whites will eventually result in reversion to blue because of cross-pollination and masking of the less dominant strain.

The additional colors of the state flower were not genetically created by man. These colors, already existing in nature for hundreds of years, were simply isolated, purified and grown in large numbers. No plant breeding or genetic manipulation of bluebonnets has been done. All of these colors have been developed to enhance the Texas state flower. **All** of these colors, by law, are legally the state flower. Now, for the first time in history, color patterns of the state flower can be planted and enjoyed. And, since these colors are all naturally occurring selections, they complement each other perfectly, making design and color selection almost fool-proof.

Add Pansies for Winter Color

Many would-be planters of bluebonnets have been discouraged with the idea of a non-blooming winter plant. From September until April, bluebonnets are a hard sell item to those who demand beauty from flower beds all year. This problem can be solved by interplanting with other fall annuals as companion plants to provide interim beauty. After several years of testing and some record-breaking cold winters, the recommended companion plants for bluebonnets are pansies, dusty miller, dianthus, spring-flowering bulbs (tulips, etc.), ornamental cabbage or kale and Drummond red phlox. Most of these flowering plants will be overgrown as the bluebonnets begin to expand in March. At that time, remnants of the interim annuals can be removed, thus allowing the bluebonnets to take center stage.

To ensure continuous beauty and utilize the texture of the bluebonnet foliage as a background, plant bluebonnet transplants in rows 24 inches apart at intervals of 12 inches or less within the row. Between each row of bluebonnets (every 12 inches), plant a row of recommended winter annuals. To keep bluebonnets blooming longer in the spring, remove the old blossoms. This encourages a profusion of side shoots to develop and eliminates the seed production which would stop the cycle.

Bluebonnets also make great companion plants for summer perennials such as lantana, mealy cup sage, autumn sage and Michaelmas daisy. These and similar plants can be cut to the ground after the first frost and interplanted with bluebonnet transplants. As the bluebonnets fade in late spring, they can be removed as the warm season perennials emerge.

In addition, bluebonnets are good plants for containers such as whiskey barrels and terra-cotta pots. Fill containers with a potting mix which drains well, and place in a sunny location. Bluebonnets are an ideal low-maintenance flower with which to replace summer color container plants (copper plants, periwinkles, purslane)—particularly those around decks, patios and pools. The following spring, as the bluebonnets fade, replace them with your favorite heat-loving flowers.



A major advantage of commercial production of bluebonnet seeds and transplants is that it is no longer necessary for any homeowner to wait until plants produce dry seed in June before removing old, ugly, dried plants. Rather than enduring the ugliness of a drying plant for 40 days after blooming, remove them. Next fall buy more rapidly germinating seed or tough Texas transplants.