



## Why Do Tulips Close at Night?

*by Marilyn Loser*

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As I walked around my garden early this morning, I noticed the tulips that opened yesterday were tightly closed. Crocuses and dandelions (not that I have any in my yard!) exhibit similar behavior. I thought a quick search of the web would enlighten me, but it wasn't quite that simple.

Various flower petals respond to temperature intensity (thermonastic) and/or light intensity (photonastic). Sources agree that tulips and crocuses respond to thermonasty. With our cold nights (lows ranged between 18 and 32 degrees F the past week) the blooms close at night. One blogger on the web asked if tulips really did close at night as she'd never seen it happen. My guess is she lives somewhere with very warm nights. Even here, some tulips that bloom late in the season may not close too tightly. And fading blooms often lose the ability to respond to temperature changes.

Dandelions, lilies, and cacti are known to respond to photonasty and will close at night whether it's cold or warm. Sources differ as to whether tulips respond to light intensity. I haven't yet experimented with placing a tulip in a dark, warm environment to see what happens.

So what's going on in the plant to produce the 'open and shut' behavior? For thermonastic flowers, heat makes the inner surfaces of a flower's petals grow. When the temperature goes down, the outer surfaces grow faster than the inner ones, thus making the flower close. If you watch your tulips over several days, you'll notice that the flowers actually do get larger each day!

Morning glories and dandelions are known to be photonastic. This kind of opening and closing may be a growth movement or the result of changes in turgor pressure. As the sun warms the flower petals, the pressure of the liquid inside the cells at the base of the petals increases. The cells expand and become rigid causing the flower to unfold.

Some speculate that the opening and shutting behavior protects the plant. When tulip petals fold in at night, or on a cold, rainy day, the pollen stays dry and reproductive parts are protected. When they open the next morning, the pollen attaches to the bodies of pollinating insects.

Of course, some spring-blooming bulb flowers, like daffodils and creeping phlox, stay open once they've fully bloomed, despite weather conditions.

What else is blooming around Alamosa right now? Almost everyone I run into comments on the early blooming of crabapples, plums, and forsythia. Downtown is ablaze with pink and yellow. I always hope the crabapples will be blooming for Adams State graduation. Usually, they bloom a few days after. This year I wonder if they'll be gone by graduation!

Crabapple trees have light pink, dark pink, and white blossoms. There are some really large ones in the older part of town. In recent years people have been planting 'Spring Snow' crabapples as they don't produce messy apples. You can see some around the new Alamosa City Complex.

Flowering plums tend to have smaller, more delicate, lighter colored blossoms. The trees tend to be smaller than crabapples. In less abundance around town are flowering almonds. My favorite is the double-petaled flowering almond that is often sold as "Tea Rose of China" – beats me how it got that name! It's looking great this year (there's one on north State Street, east side), but some years it freezes out. Its relative, the single flowering Russian almond is also nice and blooms every year in my yard, no matter what the weather.

You can easily recognize the bright yellow blooms of the forsythia shrub – it's the color of the daffodils that abound right now. The most magnificent forsythia downtown are up against houses and protected from our cold, southwest winds. Another yellow bloomer is cushion spurge. I'd never heard of it until Ruthie Brown gave me some cuttings years ago. In my garden it's one of the first flowers to bloom that's not a bulb.

Also blooming are the aptly-named grape hyacinths. They are a low bulb with grass-like leaves and clusters of purple blooms looking much like a bunch of grapes if you squint. Creeping phlox blooms are blanketing my warmer garden right now – mostly light lavender with some hot pink mixed in.

The colorful cavalcade of flowers is just beginning! Visit [AlamosaFlowers.net](http://AlamosaFlowers.net) for information on flowers that do well in the San Luis Valley.

*"Forsythia is pure joy. There is not an ounce, not a glimmer of sadness or even knowledge in forsythia. Pure, undiluted, untouched joy."* Anne Morrow Lindbergh