

Why Do Flowers Close At Night? + Handy Translation Headphones!



Crop culture and commentary for fresh-cut flower growers

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BLOOM BEAT

Crop culture and commentary for fresh-cut flower growers

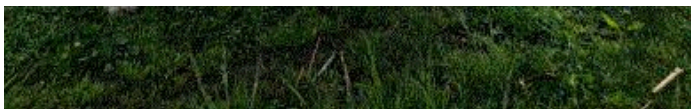
COMING UP THIS WEEK:

- End-of-May Farm Update
- Why Do Flowers Close?
- Reviewing Translation Headphones
- Fill Out AFE's Industry Survey



End-of-May Farm Update





The Lisianthus are a nice change of pace, we need flowers desperately!

The end of May has been a lesson in patience. Tater and I have been trying really hard to embrace the reality of farming in Michigan. The repeated freezes this spring were especially hard on some of our early field crops, especially the peonies. We rely on peonies to bridge the gap between the ranunculus and the dahlias. The cold spring delayed our other shoulder crops by three weeks. It's always more challenging not having enough flowers than having too many. It's a real test to my patience because I see all these beautiful green plants with so much potential. Our client relationships are delicate and well cultivated but it's a challenge this season to communicate why we have so few flowers right now.

The blessing in disguise is that we get to focus on maintaining the field crops and making sure our dahlias have a great start to the season. I am continually reminded that flowers sometimes are on their own timeline—in spite of my constant prodding. Tater reminds me to embrace the moment and relish in the slower rhythm (which I am definitely not used to this time of year). Usually it's full-throttle—harvesting peonies as fast as we can and then moonlighting to lay plastic for the field crops. Every day I watch Tater chase the same rabbit around the barn, and every day the rabbit follows the same pattern: she runs around the barn and into the stack of field drain tiles (long, black perforated tubes) and out the opposite end. And poor Tater is confounded as to why the rabbit is not in the drain tile. She spends approximately thirty minutes running from each end and barking into the abyss. This reminds me that even in the redundancy there is a beauty in living in the moment. Tater and I are making the best decisions possible with what the season gives us and trying to find the joy along the way.

With all that being said, let's talk shop!



Why Do Flowers Close At Night and Open in the Day?



Have you thought about why flowers open and close? Tater and I decided to find out.

As the spring flower season comes to a close, I am spending more time appreciating the few bunches of anemone and ranunculus we have left for the season. It finally dawned on me after nine years of growing these crops that I never took the time to research why and how the flowers open and close. The phenomenon has a pretty cool name: **nyctinasty**. There are some critical advantages and protections involved in this process.

First of all, how do the petals open and close? There are two ways. One is through changes in turgor pressure. Water and ion transport drive this process. Vacuoles on one side of the petal gain water while those on the opposite side lose water. Specialized ion pumps inside the cells drive this process. Water moves in and out of cells via osmosis and this is what causes the petals to “bend” on one side to close the flower. During the day this process is reversed and the flower “opens.”

Method two is by growth differential. Hormones on one side of the petal stimulate cell expansion, the cells absorb water and permanently change in size. Uneven growth causes the petal to curve.

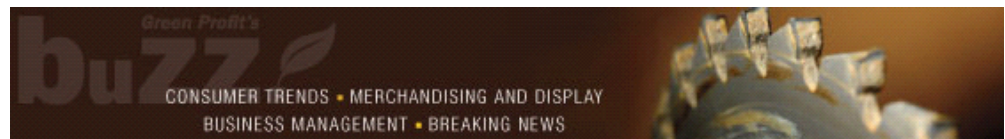
Some plants even use a combination of both of these processes. A plant’s perception of light drives these processes. Specialized organelles in the plant called phytochromes detect red light and cryptochromes and phototropins detect blue light. Temperature can also play a role. And to make things even more complicated, plants have a circadian rhythm that also can help “schedule” opening and closing petals.

Ironically, the flowers aren’t “going to sleep” for the night when they close. Flowers are sensitive tissue and their life span is finite. Bee-pollinated species open during the day and close at night. The goal is to protect the pollen and match bee activity. However, moth-pollinated flowers open

during the evening. Also, opening and closing protects the delicate reproductive structures from environmental damage and helps reduce water loss. Flowers aren't passive structures, and now I have an even deeper appreciation for them!

If you are looking for some late-night technical reading, check out his [THIS ARTICLE](#) about pollen viability in crocuses. There are even more articles [HERE](#) if you really want to go down Tater's rabbit hole.

The more I farm, the more I become enchanted by the subtle and intricate art of what we do. I hope you find this as magical and insightful as I do.



Translation Headphones—An Honest Review



I've been learning a lot of Spanish this season, and I look forward to learning more.

For the first time, Tater and I have some Spanish-speaking employees, and I learned rather quickly that my high school Spanish didn't prepare me for conversational Spanish on the farm. Over the last couple months, my crew has taught me a lot about the nuance differences between Spain Spanish and Mexico Spanish. If you have a sense of humor ask the difference between "chaqueta" versus "chamarra." Trust me, this question isn't for the faint of heart—but you might

get a laugh out of it.

I also learned that passing my cell phone back and forth using Google translate for one sentence wasn't very efficient. As a result, I started using translation headphones, and have tried a couple different ones. But the **Timekettle W4 earbuds** are the best ones I have found so far—and they also come with a reasonable price tag. I like the W4 model in particular because there is less delay in the translation (approximately 5 seconds) so conversations flow naturally.

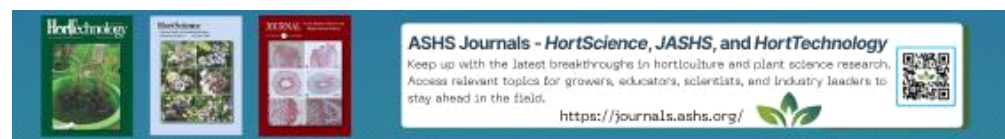
According to Chat GPT, “the headphones work by each participant wearing a single earbud. During a conversation, Person A speaks in their native language, and the earbud microphones capture their speech and send it to the Timekettle app on a connected smartphone. The app uses artificial intelligence and cloud-based translation technology to quickly convert the spoken words into the listener’s language. The translated audio is then played through Person B’s earbud in near real time. When Person B responds, the same process happens in reverse—their speech is captured, translated by the app, and delivered through Person A’s earbud in their preferred language. Because each person hears the translation directly through their own earbud, conversations feel more natural and private than using a phone speaker or passing a device back and forth.”

These only work well with one-on-one conversations. I have to choose one person to communicate with and this person translates what I say to the rest of the crew. So there is an opportunity for important things to get lost in translation. So picking the right person that understands the basic principles of the tasks we are doing for the day is critical.

The only challenge with these headphones is that they require an excellent Wi-Fi connection, and on our farm that can change on any given day. They do have an offline translation mode but I have found that the translation time is delayed and it's geared toward Spain Spanish. But if you have great Wi-Fi connection on your farm I can recommend these without reservation.

The goal is for my Spanish to keep improving and eventually I won't need the headphones. But until then, these are a handy tool. These are expensive, and like any tool on the farm, people need to take care of them. But I have found them to be a worthwhile investment.

What tools or classes do you use on your farm to help with language barriers? Tater and I would love to **HEAR** from you!

A banner for ASHS Journals. On the left, there are three journal covers: HortTechnology, HortScience, and HortScience Journal. To the right, the text reads: "ASHS Journals - HortScience, JASHS, and HortTechnology. Keep up with the latest breakthroughs in horticulture and plant science research. Access relevant topics for growers, educators, scientists, and industry leaders to stay ahead in the field." Below this text is the URL <https://journals.ashs.org/> and a QR code.

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The logo for the American Floral Endowment, featuring a stylized green tree with white leaves.

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According to AFE, “We are asking for your input as we continue working to strengthen and support the floral industry. Through a new industry-wide survey, we hope to gather feedback that will help guide AFE's priorities, outreach, education and resources for the floral community. Your insights will help us better understand how we can continue providing meaningful value and support cross the industry.”

Tater and I never miss an opportunity to help out our industry, so we just submitted our responses. We hope you do, too!

[HERE](#) is the link to the survey. Please respond by June 5.

Stay Warm!

Lindsay 

Lindsay Daschner (and **Tater**)
Editor-at-Large—*Bloom Beat*
Owner—Forget-Me-Not Farms

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