

Dairy Pipeline



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Too Busy to Plan: Estate Planning and My Spice Cabinet

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I've been preaching about the importance of estate planning for farmers for the past 20+ years and often wonder if anyone ever listens to me. After all, it's not the most fun topic to discuss—it makes you realize that bad things can and will happen in your life. It can be confusing or intimidating due to all the “legal speak”. It can start family fights just by talking about wills and inheritances. It's no wonder that don't people listen to me! *But don't let that stop you from starting the process.*

One day during the pandemic I realized that my personal estate planning documents hadn't been updated in over 10 years—years that have involved family deaths (and inheritances), marriages, births, career changes, and trusted advisors getting older. So, I sent my attorney a list of changes for my durable Power of Attorney (POA), Advance Medical Directive (AMD), and Will. He quickly sent me the revised documents. All I had to do was get them signed and notarized. I'd get right on that!

Almost two years later those revised documents sat on my desk, unsigned. I had gotten “too busy” to go to the bank and have them signed, witnessed, and notarized. I had focused on things that were CLEARLY more important taking care of myself

and my estate—including the all-important task of organizing my spice cabinet (true story). Instead of signing my documents I learned that I had 4 tins of chili powder and a 15-year old bottle of cream of tartar. Yes, that was CLEARLY more important than protecting my family and belongings.

Last week I finally went to the bank and signed the documents. It took about 15 minutes. I waited 2 years to take care of 15 minutes-worth of estate planning. I had no good excuse. I hadn't listened to my own preaching. But you know what? It felt so good to get those documents signed and know that my affairs are in order, valid, and up-to-date.

My definition of estate planning used to be “taking care of your assets while you are alive, at the time of your death, and after your death.” But I'm thinking of changing that definition to “taking the load off your family and survivors should something happen to you.” My POA gives my family instructions and powers to help take care of me when I'm not able to take care of myself. My AMD specifies my medical “attorney-in-fact” and tells the doctors, nurses, lawyers, and my family what level of medical care I want – so my family won't have the burden and emotional strain of making those choices. My Will helps me get back at my brother and sister for all the childhood teasing – that's right, I'm leaving them all of my stuff (and my organized spice cabinet), most of which they don't want or need! But seriously, I'm trying to ease the burden on my family by making these decisions for them. I'm urging my family to revise their estate planning documents. I'm also

urging you to take actions to protect your assets and reduce the stress on your family!

Don't put it off for more "important" tasks. Trust me, you'll sleep much better knowing that you've taken actions to protect yourself and your family. Please get help from qualified professionals before taking any actions. Here are 10 nuggets on estate planning to get you motivated:

- **Develop an estate planning team** to help you. Think about including a financial planner, an insurance agent, a lender, an accountant, and an attorney. This will provide you with different viewpoints on how to achieve your goals.
- **Start planning TODAY!** The earlier you start, the more estate planning tools you will have at your disposal. And, starting today helps reduce the chance of being caught unprepared should something happen next week!
- **Set aside time every year to review and revise** your estate planning documents as necessary. If you don't put it on your calendar it won't happen. Estate planning regulations seem to change with each new tax bill, so schedule a regular time to review your documents.
- You can find templates for estate planning documents on-line, but I strongly recommend that you work with an attorney who specializes in estate planning to be sure your documents are valid in Virginia.
- **Everyone over the age of 18 should have a Power of Attorney and Advance Medical Directive.** This will reduce any confusion or "turf battles" as well as spelling out your wishes. In Virginia, a POA requires two witnesses and a notary; an AMD requires two witnesses, but does not have to be notarized.
- If you have minor dependents or dependents with special needs, you should have a Will that names their guardians. In

Virginia, you will need two witnesses for your Will. The Will does not have to be notarized, but it is strongly recommended to have it notarized.

- **Review the beneficiaries on your insurance policies and retirement accounts** after significant life events. Beneficiary clauses overrule your Will.
- **Review how your main assets (land, house) are titled.** Property titles overrule your Will. The property will transfer to the person on the title regardless of what your Will states.
- **Let people know that you have these documents and where they are stored** – otherwise, they're worthless papers. Also, ask your family members and business partners if they have estate planning documents of their own. Don't keep these documents a secret from your family. Communication is critical in estate planning and business transition planning!
- In my experience, easing into estate planning by talking with your family about POAs and AMDs is more effective than talking about Wills and inheritances. Also, this is a great way to ease into the business transition planning conversations!

Transcriptome analysis of the bovine mammary gland under heat stress conditions

Authored by Gabriela Perez-Hernandez, Ph.D. Candidate with Ben Corl, Associate Professor—Nutrition Physiology, School of Animal Sciences, Virginia Tech; bcorl@vt.edu

Dairy cows constantly interact with their adjacent environment. Any changes occurring in the environment will generate internal biological

adjustments in the cow, producing an external response to cope with and re-adapt to newly altered surroundings in order to maintain a stable equilibrium at all times. Environmental components, such as ambient temperature and humidity, fluctuate over time. However, if the ambient temperature increases significantly for a prolonged period, it can strain the cow's biological system in the short or long term. When this occurs, the capacity of the cow to manage and dissipate heat is exceeded, producing a rise in its core body temperature. This physiological event is known as heat stress. In 2020, heat stress affected around 9.5 million milk cows in the US, and its economic impacts in the dairy industry averaged \$1B per year in 2003 and 2010. This paper discusses the central genes and biological pathways altered in the bovine mammary gland under heat stress associated with milk yield decrease.

It is widely recognized that dairy cows exhibit their maximum genetic potential and production capacity within a specific thermoneutral range. Ambient temperature and humidity values are integrated into a single reference value used as an indicator to measure heat stress, the temperature and humidity index (**THI**). The THI threshold for dairy cows to maintain balance with the ambient conditions and not trigger heat stress response is established at 68. When the THI threshold is exceeded, it produces detrimental physiological and associated economic effects. Some of the most recognized physiological effects caused by heat stress on dairy cattle are increased peripheral blood flow, respiratory rate, rectal temperature, and decreased activity, dry matter intake, and milk production. Milk yield depression is the most substantial and acknowledged that loss heat stress produces in the dairy industry. On average, peer reviewed, published articles have estimated a decrease in milk yield of 4 kg per day per cow after being exposed to heat stress for seven days. For perspective, a typical dairy farm in Virginia,

with 170 lactating cows, can lose around 680 kilograms (1,500 pounds) of milk per day during hotter months.

Although some researchers have proposed how heat stress causes milk yield reduction, the actual causation, independent of reduced dry matter intake, is not yet defined. The mammary gland is the chief organ for milk production in a dairy cow. The number and activity of milk secretory cells, the milk synthesis machinery present in the udder, determine the production capacity of the gland. Based on this premise, exploring possible molecular alterations occurring in the gland and milk secretory cells due to heat stress has become meaningful for research. Recent studies have investigated the effects of heat stress on the bovine mammary gland using transcriptome analysis. This valuable method measures the expression of genes across thousands of cells at once. The expression present in the gland carries the genetic information needed to make proteins in a cell, which determines cell functionality and, ultimately, the capacity production of the cells and the gland. This technical approach allows a global perspective of the changes in the bovine mammary gland when exposed to heat stress. The extensive data obtained from transcriptome analysis permits the integration of the biological pathways involved in reducing milk production. According to increased and decreased gene expression in the lactating and non-lactating bovine mammary gland, the central systems and mechanisms altered due to heat stress are the immune response, cellular organelle function, milk component synthesis, general cellular metabolism, protein-membrane transportation, cell death, and cytoskeleton degradation. The alteration of these intrinsic pathways in the mammary gland directly or indirectly reduces milk yield under heat stress.

Since 1980, the ambient temperature has globally increased by 1.6 Fahrenheit (0.89 °C). It is

estimated that this increasing trend will persist over the years, influencing the functionality of all biological systems. This temperature increment trend denotes the importance of continual research on heat stress and the intrinsic changes occurring in the bovine mammary gland. Furthermore, the complexity of the processes revealed with transcriptome analysis can help establish further research questions to elucidate the definite effects of heat stress in milk secretory cells and the bovine mammary gland to seek alternative solutions to prevent or reduce its detrimental effects.

2023 Stockmanship/Grazing Infrastructure Training

October 3-4, 2023
Weyers Cave

Dairy Calf Workshop

October 24, 2023
Rockingham County

If you are a person with a disability and require any auxiliary aids, services or other accommodations for any Extension event, please discuss your accommodation needs with the Extension staff at your local Extension office at least 1 week prior to the event.

Of Note

The **Southeast Dairy Business Innovation Initiative (SDBII)** has opened applications for two grant opportunities and Virginia farms and producers are eligible. **Applications are due 3:00/EST on October 16, 2023.**

Learn more:

Specialty Processing Equipment Grant:
<https://sdbii.tennessee.edu/specialty-equipment-processing-grant/>

Dairy Business Planning Grant
<https://sdbii.tennessee.edu/dairy-business-planning-grant-open/>

→ **For assistance or more information please contact your local dairy agent.**

Upcoming Events

Virginia State Fair
Jr Dairyman's Contest - September 22, 2023
Dairy Show - September 23, 2023

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