

# The Roundup

Livestock and Range  
Newsletter  
Kern, Tulare, and Kings

University of California  
Agriculture and Natural Resources

April 2024

Happy Spring Everyone!

I hope this newsletter finds you and your families doing well. I have recently returned from sabbatical. The word sabbatical comes from the Greek word, sabbaton, and is typically associated with a period of rest. The UC defines a sabbatical as an extended period of time intentionally spent on something that's not my routine job.

As such, I created a sabbatical plan and outlined specific projects to complete during my sabbatical leave. Some of the highlights include an opportunity to audit a UC Davis course on the sustainability of livestock production, drafting a curriculum supplement for various grade levels summarizing information from that course, and writing a chapter on sheep parasite control for an ongoing effort to compile the California Sheep Handbook. Parasite resistance to dewormers is a big deal in sheep and I'm beginning to see more articles about similar concerns in cattle. Look for more information on that topic in my next newsletter.

The rain and beautiful spring weather means lots of grass growing. I will be visiting multiple sites around the county to measure forage production this year. I look forward to sharing my observations with you all. I will also be busy in orchards this year. An unlikely place to find a Livestock and Range Advisor, to be sure, but I recently started a project measuring fecal pathogens in grazed almond orchards. This is an exciting new project that supports sheep producers and almond growers. It's shaping up to be a busy spring.

We have started planning for the annual UCANR Range and Natural Resources Youth Camp (Range Camp). It will be held in Half Moon Bay, CA at UC's Elkus Youth Ranch from Sunday, June 16 – Friday, June 21. Through Range Camp we have impacted many high school's students understanding of grazing and natural resources management. Some of our past campers have even gone on to pursue a career in a related field.

Thanks everyone for reading. As always, don't hesitate to contact me with questions or follow-up comments. I hope you enjoy this edition of The Roundup.

Julie Finzel  
1031 S. Mt. Vernon Ave.  
Bakersfield, CA 93307  
661-868-6219  
[jafinzel@ucanr.edu](mailto:jafinzel@ucanr.edu)

## Going Loco over Locoweed?

As I was driving through the county the other day I glanced out my window and there were patches of locoweed growing on the green hills. Just a short while later, I observed a cow enthusiastically munching on some locoweed, like a kid with a giant bowl of ice cream in front of them. While quite beautiful, all parts of this plant are poisonous to livestock. Locoweed outbreaks occur most often in wet years and seeds can remain viable in the soil for up to 50 years.

Something unique about locoweed (*Astragalus* sp.), and different from many other poisonous plants, is that it is relatively palatable. Once they have a taste for it, livestock will seek it out in a pasture. Studies conducted by the USDA Agricultural Research Service indicate that livestock are most likely to graze locoweed when the plant is green and other forage is brown, or senesced. The dry, senesced stalks of locoweed remain palatable and poisonous, making locoweed a potential concern year-round.

The primary toxin is an alkaloid called Swainsonine which causes the 'loco' or associated neurologic behavior. However, this toxin affects nearly all body systems in the animal. Symptoms usually appear 2-3 weeks after livestock graze continuously on the plants. Most common symptoms are: 1) neurological damage; 2) emaciation; 3) reproductive dysfunction and abortion; and 4) congestive right heart failure when consumed at high elevations. While animals typically recover after they stop consuming locoweed, the neurologic damage can be permanent, and the 'locoism' may recur unexpectedly making working animals like horses no longer safe for use.

The most effective way to prevent potential livestock poisoning is to keep livestock in locoweed free pastures when it is most palatable. Livestock learn what to eat from watching their 'buddies'. If a cow sees another cow eating locoweed, she is more likely to consume the plant. Livestock that are 'naïve' to locoweed may avoid it.

Herbicides are an effective method for controlling locoweed. Suggested active ingredients that are safe for use on pasture include: aminopyralid, clopyralid, and 2-4, D. Treatment with herbicides is most effective when plants are small. Once mature and flowering, higher rates of herbicides are required for effective control. The herbicides above are broadleaf herbicides, meaning they will control many broadleaf plant species, including desirable forage species like clover and filaree. If used in an area where hay is harvested aminopyralid and clopyralid have required wait periods of 3-7 days before harvest after application (depending on the active ingredient and application rate). Always read herbicide labels carefully and apply herbicides according to label specifications.

The USDA Agriculture Research Service maintains a Poisonous Plant Research Lab in Logan, Utah. I recently had the opportunity to tour their facility during my sabbatical travels. The lab houses office space for scientists, lab space for research, and animal feeding pens. Scientists from this lab travel across the U.S. researching poisonous plants and collecting samples to take back to Logan for further analysis and testing. Some of their research includes work on white snakeroot. The death of Abraham Lincoln's mother, Nancy, is attributed to milk sickness or, the consumption of milk from a cow that had consumed white snakeroot. They recently developed an app that contains information on some common plants poisonous to livestock. It is available in the Apple app store. Search for USDA PPRL (for Poisonous Plants Research Lab).

For more information visit the websites below or contact Julie.

- Summary report on biology and management of locoweed  
<https://www.ars.usda.gov/is/np/PoisonousPlants/locoweedtoxicity.pdf>
- Livestock Poisoning Plants of California – UCANR Publication 8398  
<https://anrcatalog.ucanr.edu/Details.aspx?itemNo=8398>
- Webpage with info on Locoweed  
<https://www.ars.usda.gov/pacific-west-area/logan-ut/poisonous-plant-research/docs/locoweed-astragalus-and-oxytropis-spp/>

---

**Disclaimer:** Discussion of research findings necessitates using trade names. This does not constitute product endorsement, nor does it suggest products not listed would not be suitable for use. Some research results included involve use of chemicals which are currently registered for use or may involve use which would be considered out of label. These results are reported but are not a recommendation from the University of California for use. Consult the label and use it as the basis of all recommendations.

---

## The California Rancher Sustainability Assessment

*New online resource offers free self-assessment and resource library.*

By Rebecca Ozeran, UCCE Livestock and Natural Resources Advisor, Fresno and Madera Counties

In November 2023, the California Cattlemen’s Magazine published a short article announcing the California Rancher Sustainability Assessment, or CRSA. You can read that article, and the rest of the issue, here.

One topic addressed in the CRSA is generational succession. Although succession planning may feel like a low priority compared to the day-to-day needs of your ranch, having a plan in place is critical to ensure that your wishes are followed once you’re no longer running the ranch. The long evenings of winter might offer a good time to have these important conversations with your family, employees, and anyone else who has an interest in the future of your ranch.

**Sneak peek** of some questions in the Generational Succession module:

- Do you have a written plan to protect your family ranch when the current owner passes on?
- Has the family discussed and agreed upon the important aspects that the current owner(s) want to preserve? (Along with healthy land that can sustain a profitable operation, these may also include non-economic values such as family use of the ranch, conservation of wildlife habitat and open space, and demonstrating good stewardship to the public)
- Do the heirs have all the information and knowledge needed to take on ownership?

### **What is succession planning?**

From a business perspective, succession planning is the process of identifying key roles in an organization and preparing people to take on those roles over time. On a family ranch, the process considers the property or ranch business as well as the family members or existing employees who are involved. Often, a ranch includes a home and significant land area, as well as a legacy of stewardship that the owner would like to see continue.

### **What kinds of things need to be included in a succession plan?**

A succession plan typically includes descriptions of the assets being managed - in this case, the ranch and all related components - as well as a plan for what should be done with those assets once the current owner is no longer around. This could include **how** you want the ranch managed, and **who** you want to manage or own it. Part of succession planning includes making an estate plan to ensure financial plans are legally documented.



*Leigh Rubin created delightful comic panels for each CRSA module. The Succession comic (above) is a fun example.*

## **Who can help with the legal and financial aspects?**

Chances are good that you already have an accountant that helps with ranch income and taxes. They will be an important person to involve in your planning process. You may also need an attorney, a financial planner or life insurance expert, an appraiser, and possibly someone who can help facilitate family meetings.

## **How can the CRSA help?**

The CRSA provides an opportunity to reflect on your current succession plans, while giving you quick feedback on how you are doing. After taking the 7-question self-assessment on Generational Succession, the CRSA will show you a score and recommendations for next steps. You can download your report for future reference. In your report, the CRSA will also link to specific resources that can help you move forward in the process.

**Note:** No one except you will see your results - unless you choose to show them to someone else. The CRSA site automatically anonymizes and calculates an average score based on all users' self-assessment scores. We cannot see who has participated or how they ranked themselves. **We encourage all ranchers to use the CRSA!** There are five modules, covering forage, soils, drought, wildlife, and generational succession. Visit the CRSA here: [crsa.cnr.berkeley.edu/](http://crsa.cnr.berkeley.edu/). You can also access the resource library any time. It has materials for each module. For example, the [Generational Succession library is here](#).

*CRSA development was funded by a UC ANR Renewable Resources Extension Act (RREA) grant, Project #20-6284.*

## Understanding and Managing Shrink...

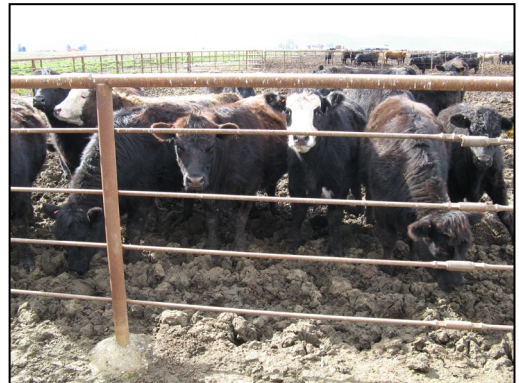
Larry Forero – Shasta/Trinity Livestock Farm  
Josh Davy - Tehama, Glenn, and Colusa Livestock Farm Advisor  
Jim Oltjen – Animal Management Specialist, UC Davis

There have been many studies that quantify beef cattle shrink. Having a working understanding of shrink is an important part of developing a marketing plan for cattle. When cattle are marketed on a video sale, the representative will discuss with the consigner what the weighing conditions are expected to be and work to align the “shrink” that is fair to both the buyer and seller. Examples of this are seen in a catalog that read “*early am gather, weigh on the ground, 3% shrink*” or “*early am gather, load on buyer trucks, weigh on truck after 15 mile haul, 2% shrink.*”

The shrink described above is referred to as “pencil shrink.” The pencil shrink values are subtracted from the gross weight and consigners are paid based upon the resulting net weight (gross weight minus shrink). Should the animals shrink more than the pencil shrink, that loss is borne by the seller.

There are essentially two types of shrink:

- A. Fill shrink- The initial shrink (generally occurs in the first 3-4 hrs) and is usually in the form of manure or urine. This shrink can be recovered from quickly.
- B. Carcass shrink- The actual tissue loss resulting from the animal being held off feed and water for long periods of time. This type of shrink requires longer recovery periods.



Here is some information to consider regarding shrink:

- The time cattle are off feed and water is the major contributing factor to shrink. As evident in table 1, the percent shrink decreases over time, but can be in excess of 1% an hour for the first several hours.
- High ambient (air) temperature has a major effect on increasing shrink. Temperature interacts with other variables, such as the times spent on the truck or in the corrals, to increase their influence on shrink.
- Handling in the corral is hard to quantify but can influence shrink by 2%
- Allowing calves to eat prior to food deprivation can reduce shrink by 2.9%
- Truck drivers with over 6 years of experience hauling livestock had less shrink when compared to less experienced drivers.
- Cattle loaded in the afternoon and evening shrank more than cattle loaded at night or morning.
- Feeding ionophores for a period of time before shipping has been shown to slightly reduce shrink
- Data is inconsistent, and at this time, does not support the use of strategies such as feeding high quality concentrate diets prior to shipping or preconditioning as methods to reduce shrink
- Many other factors affect shrink, but compared to the major variables listed above their effects are small

Table 1 can help in estimating shrink of cattle in the corral. In Table 1, each different weight group of cattle is a different study, making the chart a summary of multiple studies. This is depicted to show that

**Table 1.** Shrink effects from water and feed deprivation in a drylot/corral type situation (each weight group derived from a different study)

Cattle Type	Weight group, lbs	Length of time without feed or water (hours)	Shrink, % of body weight per hour
Stockers	675	0-2.4	1.25
Stockers	675	2.4-4.7	0.61
Stockers	675	4.7-6.8	0.16
Stockers	675	6.8-9	0.74
Stockers	645	0-2.5	0.91
Stockers	645	2.5-5	1.06
Stockers	645	5-7.5	0.9
Stockers	645	7.5-10	0.75
Stockers	700	0-2	0.76
Stockers	700	2-4	0.48
Stockers	700	4-6	0.55
Stockers	700	6-8	0.65
Stockers	570	0-2	1.41
Stockers	570	2-4	0.87
Stockers	570	4-6	1.12
Stockers	570	6-8	0.62
Stockers	570	8-10	0.34

*Adapted from Coffey, K. P., W. K. Coblenz, J. B. Humphry, and F. K. Brazle. 2001. Review: basic principles and economics of transportation shrink in beef. Prof. Anim. Sci. 17:247-255.*

environmental factors cause the actual shrink to vary even in controlled situations, however, general trends can be viewed to determine a practical estimate of shrink for cattle standing idle in the corral.

Shrink has been discussed by cattlemen for many years. In 1957 Placer-Nevada Cattlemen’s Association held a tour (September 16, 1957) and discussed the topic. Several general rules are noted in Table 2.

These data indicate that having the cattle organized in a manner that reduces the amount of time cattle are standing around and reducing the amount of sorting that needs to occur on shipping day can greatly reduce shrink. There are many practices that can help individual operations, but here are a few simple things to consider:

1. Sort off what cattle obviously don’t fit the terms of the contract well ahead of shipping day (bad eyes, off color/quality, size, etc).
2. Consider having a holding pen close to the corral with a bank of forage. This pen can help for an easy gather to the corral on shipping day and also ensure

the cattle are well fed prior to fasting. Additionally, the holding pen can act as a safety net in case problems with the trucks occur.

3. Have a crew and a facility that can accommodate easy sorts and cattle flow on shipping day.
4. Think about developing a weaning field with two pastures—one for the steers and one for the heifers to eliminate sorting by sex on shipping day.
5. If you have scales in your corrals and will be shipping from them, having pen that can adequately handle all the loads to ship that day can reduce the amount of time cattle stand around.
6. If you don’t have a set of scales, consider the possibility of installing them. Having certified scales at the corral decreases the variables you can’t control.

Buyers have quantified the amount of shrink that occurs on a given haul. Figuring into this number are factors such as: time on the truck, environmental conditions, and driver experience. Figure 1 quantifies the amount of shrink that can be estimated while cattle are on the truck. This table also

includes the importance of the average temperature while cattle are being trucked. Combining these two factors and adding the estimated shrink coefficient (see Figure 1 title) based on the class of animal provides a starting point for estimating shrink for transported cattle. For example stockers shipped for 10 hours at 70 degrees can be estimated to shrink 6.56% on the truck (5% from table plus 1.56% including the feeder cattle coefficient is 6.56%). Additionally, if cattle sat idle in the corral for a period of time before the truck arrived, it may be applicable to add the shrink from both tables to get a full shrink value.

No shrink is typically calculated for cattle sold at a sale barn. The weight of the cattle on the scales at the sale barn is after the animals have been sorted, hauled, unloaded, sorted again and eventually sold in the ring and weighed. The weight displayed when the cattle are sold reflects the entire “shrink” experience by these activities. This is corroborated by multiple studies. If you are in the position to market your livestock through a sale barn, it may be beneficial to consider how you manage the process of getting your cattle to market. Think about opportunities to reduce the shrink your cattle experience before they get to the ring.

Remember that your name is associated with the cattle even after they are weighed and gone. Buyers know the amount of shrink to expect for a given haul. Shrink outside the norm could result in a phone call and the consigner could be asked to explain why and make a price adjustment.

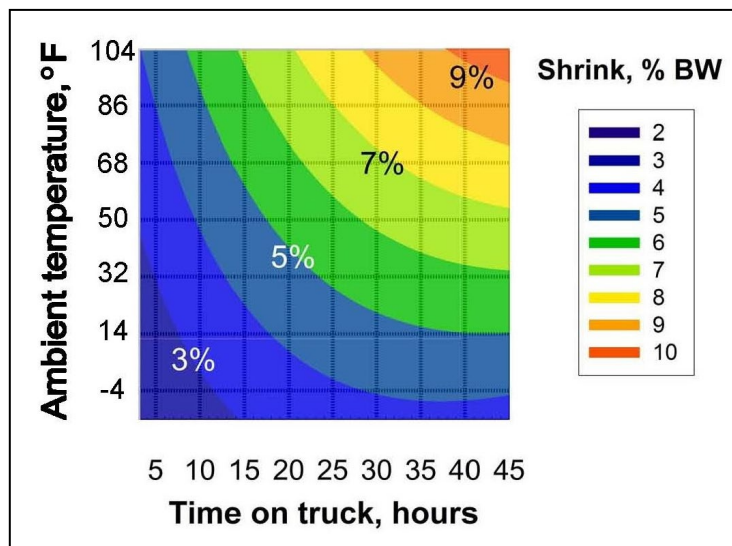
Regardless of the method used to market your livestock, take a little time to think about shrink and how you might be better able to manage it. If you can develop some strategies to reduce real shrink, that should translate to more dollars in your pocket.

*\*The authors appreciate and acknowledge the review and comments by Kevin Devine and George McArthur.*

**Table 2.** Expected shrink based on associated activity (1957 handout)

Activity	Expected Shrink
Overnight stand with feed and water	2%
Overnight stand <b>without</b> feed and water	4%
Driving 15 miles	5%
One hour sorting	1-2%
Truck haul-two hours	3.5-8%

**Figure 1.**<sup>1,2</sup> Shrink effects based on time in the truck and the average temperature during the haul. The study states that in addition to the calculated shrink below to add 1.56 % of body weight for feeder cattle (600-1,100 lbs), 2.60% for calves (<600 lbs), or 3.56% for cull cows to get the total



<sup>1</sup>Chart taken from: L. A. González, K. S. Schwartzkopf-Genswein, M. Bryan, R. Silasi and F. Brown North America Factors affecting body weight loss during commercial long haul transport of cattle in published online June 4, 2012 J ANIM SCI

<sup>2</sup>When considering combining the tables it is important to know that the model used to create table 2 does include the time taken to actually load the truck and is accounted for in the animal class coefficient

# The Roundup

Livestock and Range  
Newsletter  
Kern, Tulare, and Kings

University of California  
Agriculture and Natural Resources

## In this issue:

- Going Loco over Locoweed?
- The California Rancher Sustainability Assessment
- Understanding and Managing Shrink

Current Resident or:

University of California  
Cooperative Extension  
1031 S. Mt. Vernon Ave.  
Bakersfield, CA 93307  
Phone: (661) 868-6200  
Fax: (661) 868-6208

