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Winter 2015

# THE ROUNDUP

UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION  
LIVESTOCK, RANGE, AND NATURAL RESOURCES NEWSLETTER  
KERN, TULARE, AND KINGS COUNTIES



Merry Christmas and Happy New Year to All!!

I hope everyone had a wonderful holiday season! This issue of The Roundup has a great article about managing shrink that I borrowed from some Advisors up north. I've included a review of two research articles and updates on a few current issues including the Grazing Regulatory Action Project.

I will be holding a livestock symposium in Porterville again this year. Included in this newsletter are a flier for the symposium and a registration form. I am working to build an exciting line-up of speakers with highly relevant topics that address economic sustainability from a variety of angles.

Also, I would like to let everyone know about the Rustici Range Symposium being planned for March 3 and 4 in Davis, CA. Ken Tate and his crew are working hard to put on an outstanding and informative program. For more information visit: [http://rangelandwatersheds.ucdavis.edu/main/symposium\\_RSS\\_2015.html](http://rangelandwatersheds.ucdavis.edu/main/symposium_RSS_2015.html) or call Julie.

As always, please feel free to contact Julie with any questions regarding the content of this newsletter.

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## UNDERSTANDING AND MANAGING SHRINK

Larry Forero – Shasta/Trinity Livestock Farm Advisor  
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 (Table 1). 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 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, CONT...

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.

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

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.*

## SHRINK, CONT...

Table 2.

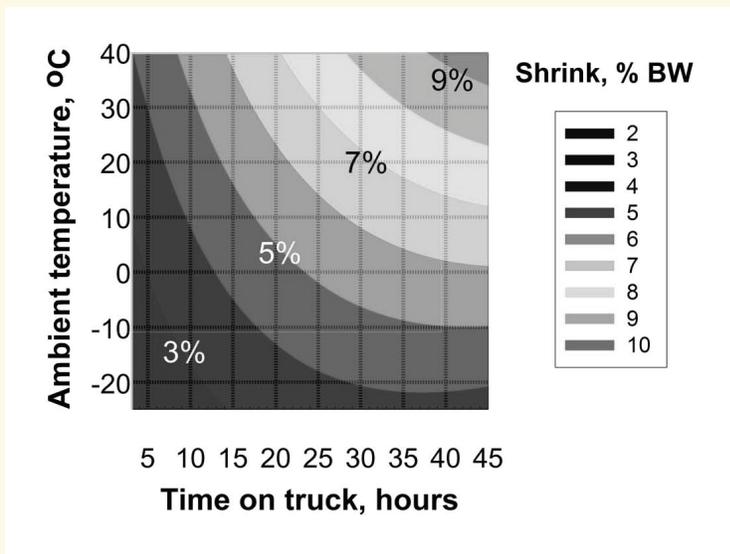
Activity	Expected Shrink
Overnight stand with feed and water	2%
Overnight stand <b>without</b> feed and water	4%
Driving 15 miles	5%
One hour sorting	1-2%
Truck haul-two hours	3.5-8%

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



**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 shown, 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 shrink.

## SHRINK, CONT...

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.

<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

### References

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

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



## GLOBAL ROUNDTABLE FOR SUSTAINABLE BEEF RELEASES

### DEFINITION OF SUSTAINABLE BEEF

“The Global Roundtable for Sustainable Beef (GRSB) is a multi-stakeholder initiative with representation across the value chain in beef production and consumption regions.” The GRSB recently released their definition of globally sustainable beef. According to the GRSB sustainable beef must meet three important criteria and be socially responsible, economically viable, and environmentally sound. Core principles for sustainable beef production and delivery include: 1) Natural resources, 2) People and the community, 3) Animal health and well-being, 4) Food, and 5) Efficiency and innovation.

The official summarized definition is: “We define sustainable beef as a socially responsible, environmentally sound and economically viable product that prioritizes **Planet** (relevant principles: Natural Resources, Efficiency and Innovation, People and the Community); **People** (relevant principles: People and the Community and Food); **Animals** (relevant principle: Animal Health and Welfare); and **Progress** (relevant principles: Natural Resources, People and Community, Animal Health and Welfare, Food, and Efficiency and Innovation). The official 12 page definition can be accessed at: <http://grsbeef.org/DRAFTprinciples>





## **APHIS ALTERS BSE TESTING PROGRAM**

The Animal and Plant Health Inspection Service (APHIS) recently announced that they have stopped collecting samples from beef calves less than 12 months of age as part of its ongoing Bovine Spongiform Encephalopathy (BSE) surveillance. This change is significant because previously any cattle showing central nervous system signs were tested for BSE, regardless of age. The agency justified the change by pointing out that classical BSE has never been detected in an animal born in the U.S., also, BSE has never been detected in cattle less than 12 months of age worldwide. APHIS further justified the decision by citing financial savings as a result of reduced testing requirements.



## **DROUGHT WORKSHOP AND WEBCAST: A REVIEW**

On November 7, 2014 a drought webcast and workshop were hosted at UC Davis with a number of satellite locations participating in the webcast, including a location in Kern County. The focus of the morning session was on the US Drought Monitor and how drought ratings are established throughout the U.S. Further, there was discussion about how important it is for the drought monitor scientists to receive input about “on the ground” conditions from local people across the U.S. That means that you have the opportunity to affect the drought rating for your area!

The afternoon session included information about California ranchers’ experience with drought, drought feeding strategies and a climate forecast for the upcoming winter season. Closing remarks were made by CCA President Tim Koopman. The entire webcast can be accessed online at: [http://rangelandwatersheds.ucdavis.edu/main/DroughtWorkshop\\_November\\_7\\_2014.html](http://rangelandwatersheds.ucdavis.edu/main/DroughtWorkshop_November_7_2014.html)



## **BACK IN THE BLACK FINANCIAL SHORT COURSE**

On November 17<sup>th</sup> and December 4<sup>th</sup> the Back in the Black Financial Short Course was held at the UCCE Tulare County Office. Participants from Tulare and Fresno Counties joined in to learn about ranch financial analysis. Topics including gross income, gross margin, opportunity costs, overhead, and net profit were covered in two, four hour sessions and participants walked away with a better understanding of how ranch finances can be analyzed on an enterprise by enterprise basis.

With cattle prices high, and rain in the forecast, analyzing the financial well-being of your ranch may be something that is low on the priority list. The importance of being financially solvent and earning a profit from your ranch doesn’t change with the weather though. If you are interested in attending a Back in the Black course please contact Julie.



## RESEARCH UPDATE

### ***California's Rangeland Water Quality Management Plan: An Update***

George. M., S Larson-Praplan, J. Harper, D. Lewis, and M. Lennox. 2011. California's Rangeland Water Quality Management Plan: An Update. *Rangelands* 33(1): 20-24

This article provides a good overview of the history of the water quality short course offered as a joint venture by NRCS and UCCE. In 1989 the Range Management Advisory Committee identified water quality as a priority issue and in response a standardized curriculum for the water quality short course was available in 1997. The Ranch Water Quality Short Course helped producers develop a ranch water quality plan. The first of four sessions focused on potential sources of pollution and water quality law in California. The second session focused on ranch and rangeland practices that protect water quality and ranch water quality goals and measurable objectives. The third session was devoted to ranch mapping, resource inventory, and estimating carrying capacity. The final meeting was a field monitoring meeting where participants would learn how to monitor water quality on their own ranch.

- From 1995 to 2007 over 70 short courses were conducted in 35 Counties
- More than 1,000 ranchers, representing over 2 million acres attended these short courses
- The majority of course participants completed and implemented water quality protection practices

In 2004, the State Water Resources Control Board replaced the voluntary, education supported program with regulatory programs. The grazing land owners and operators of the Tomales Bay Watershed were the first to comply with this new regulatory program by complying with the state's Conditional Grazing Operations Waiver program. Nine organizations partnered to complete this effort and by November 2008, 85% of grazing operators in the Tomales Bay Watershed were able to enter into the grazing waiver process. The water quality education program has helped many ranchers achieve compliance with state regulations and encouraged ranchers to become more engaged in water quality regulation and compliance issues.

### ***Williamson Act***

Wetzel, W.C., I.L. Larcher, D.S. Swezey, S.E. Moffitt, and D.T. Manning. 2012. Analysis reveals potential rangeland impacts if Williamson Act eliminated. *California Agriculture* 66:4 131-136

A survey was conducted across the state of California assessing potential impacts of state defunding of the Williamson Act. The study focused on the potential increases in land sales and the resulting likelihood of increased conversion of land out of agricultural production. The goal of the Williamson Act, more formally known as the California Land Conservation Act of 1965, is to "conserve agricultural and open-space land." The Act supports the success and sustainability of agriculture through reduced property tax rates. The voluntary program requires landowners to commit to maintaining enrolled acres in agricultural production under a local county agreement for a minimum of 10 years.



## RESEARCH UPDATE, CONT...

The survey, which was conducted in 2010 with the help of the California Cattlemen's Association (CCA), included 702 CCA members from 33 California Counties. Survey results are summarized below:

- 364 responded (52%)
- 294 owned rangeland in California (84%)
- 244 held Williamson Act contracts (83% of landowners)
- 237 (91%) reported that the Williamson Act was "very important" or "extremely important" to the "long-term viability of their cattle and rangeland operations"
- Enrolled ranchers estimated a \$10,000 median annual property tax reduction
- Proportion of ranchers who reported that the Williamson Act was important for the long term viability of their rangeland operations decreased as household incomes increased
- Part-time ranchers placed reduced importance on the Williamson Act
- 73% of respondents reported that in 2009 they earned less than \$10,000 in annual profit
- Of that 73%, 93% reported that their Williamson Act savings exceeded their profit in 2009
- On average, ranchers expected to sell 29% of their land in order to compensate for the added tax expenses associated with Williamson Act contract elimination. However, most ranchers planned to sell all or none of their ranch, with few planning on selling portions of the ranch
- 99,137 - Total acres expected to be sold as a result of the elimination of Williamson Act contracts
- Ranchers predicted that 76% of the land sold in response to the elimination of Williamson Act contracts would be developed commercially for non ag uses

## GRAZING REGULATORY ACTION PROJECT— UPDATE AND BACKGROUND

In California we have both a State Water Resources Board as well as Regional Water Quality Control Boards (Regional Boards). There are nine Regional Boards in the state and Region 5, also known as the Central Valley Regional Board, covers most of the central valley, including Kern, Kings, and Tulare Counties. The Regional Boards have oversight on both point and non-point water quality, with rangelands falling in the non-point source category. For many years voluntary compliance was maintained through a class offered by Cooperative Extension and NRCS. The Water Quality Short Course helped ranchers put together a Ranch Water Quality Plan. The first wave of classes was offered in the late 1990's. A notice of intent was filed with the Regional Board, but all other paperwork associated with the ranch water quality plans stayed with the ranch. Well over a million acres of private rangeland have achieved voluntary compliance through this process. Currently the Ranch Water Quality Short Course is undergoing a revision, however, when the revision is complete, courses will be available in Kern, Tulare, and Kings Counties based on level of interest.



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# 2<sup>nd</sup> Annual Southern San Joaquin Livestock Symposium

February 26<sup>th</sup>, 2015  
Porterville Veterans Memorial Building  
1900 W. Olive Ave.  
Porterville, CA 93257  
9 AM – 2 PM

## **A Big Thank You to our sponsors!**

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## **Topics will include:**

- Rebuilding Your Herd
  - Advances in Deworming
  - Medusahead Control Strategies
  - Seeding and Restoration can Pay!
  - Sustainable Rangeland Livestock Production
  - And more!
- A BBQ tri-tip lunch will be served. Pre-registration cost is \$15. At the door cost is \$20.
  - Please register online at: <http://ucanr.edu/livestock2> or by filling out the registration form on the back of this paper.
  - For more information visit: <http://cekern.ucanr.edu/Livestock/> or contact Julie at: 661-868-6219 or at [jafinzel@ucanr.edu](mailto:jafinzel@ucanr.edu)





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# 2<sup>nd</sup> Annual Southern San Joaquin Livestock Symposium

## Registration Form

Thursday  
February 26, 2015  
Porterville Veterans Memorial Building  
1900 W. Olive Ave.  
Porterville, CA 93257

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Daytime Phone: (\_\_\_\_\_) \_\_\_\_\_ Number Attending: \_\_\_\_\_

Email: \_\_\_\_\_

***Refreshments and lunch will be provided to all participants.***

Cost: \$15.00 per person pre-registration; \$20 per person at the door

Registration is available online at: <http://ucanr.edu/livestock2>

Or, return this form, with payment, by February 20, 2014

Mail registration to:  
Julie Finzel  
UCCE Tulare County  
4437-B S. Laspina St.  
Tulare, CA 93274

Check or money order can be made payable to: UC Regents  
Please call: 661-868-6219 with questions

## ASK THE ADVISOR

### *How do I calculate my cost per pound of gain?*

In this situation you need to know the cost of feed per pound, how much your animals are eating daily, and how much they are gaining daily. Calculating the cost of your feed is simple, figuring out the other two can be a bit more difficult. It is okay to estimate feed consumption and weight gain.

First, we need to calculate how much the cost of feed per pound. Let's assume the hay was purchased for \$260/ton.

$$\$260/2,000\text{lbs} = \$0.13/\text{lb}$$

Next, we need to figure out how much it cost to feed one animal for one day. I'm going to assume we're feeding a 500 lb steer, and the steer is eating about 12 pounds of hay each day (about 2.5% of its body weight).

$$\$0.13/\text{lb} \times 12 \text{ lbs} = \$1.56 \text{ to feed one animal for one day}$$

If the steer is gaining 1 lb per day, \$1.56 is our cost of gain per pound. If the steer is gaining 1.5 pounds per day...

$$\$1.56/1.5 = \$1.04$$

The cost of gain per pound would be \$1.04. If your steers are on grass versus being fed, the calculations are a bit more complex because you have to determine how much it cost you to produce 12 pounds of grass (dry matter basis). This cost is going to vary widely from operation to operation. Some of the variables to consider include forage production per acre and the cost of the lease per acre. If land is owned, you must decide how much overhead (if any) to apply to the acreage in the pasture being analyzed. Opportunity cost can also be factored in by considering fair market lease value and applying that to the cost per acre to graze the land. In some instances the calculations may be simpler if costs are broken down by AUM.

## GRAP, CONT...

The voluntary approach worked for many of our neighbors to the north and west who were under more pressure in smaller watersheds where grazing was the dominant land use. Ranchers were able to continue grazing and implement best management practices (BMPs) to protect water quality. In 2004, the voluntary program was replaced with a regulatory program and now the boards are considering a new program, the Grazing Regulatory Action Project (GRAP), which has been previously reported on in this newsletter. Cooperative Extension, NRCS, and Ag Commissioners across the state have been attending meetings regarding GRAP and have expressed that the current model is not broken and should be continued. Research has shown how people attending the course have implemented BMPs to protect water quality on their ranches. If you have never attended a water quality short course, please consider attending one. Updates on GRAP will continue to be published in this newsletter.

Listening sessions will be held in January in San Luis Obispo, Bishop and Redding. Contact Julie for more information or to be added to the list of attendees for one of the listening sessions.



# THE ROUNDUP



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### In This Issue...

- ◇ Understanding and Managing Shrink
- ◇ Grazing Regulatory Action Project Update and Background
- ◇ Ask the Advisor: Calculating the Cost of Gain
- ◇ Research Update:
  - Water Quality Short Course
  - Williamson Act Survey

TTY Relay Service 800-735-2922

UCCE provides reasonable disability accommodation for those who require it. To request accommodation, please call 661-868-6200 at least two weeks prior to the event.



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