UC CE University of California Cooperative Extension

Northern California Ranch Update

ANR University of California

Volume 4, Issue 2 — August 2012

Milestone (Aminopyralid) Applied Preemergence can Control Medusahead

Joseph DiTomaso – UCCE Weed Specialist
Guy Kyser – UC Davis Specialist
Josh Davy – Livestock and Range Farm Advisor

Medusahead (*Taeniatherum caput-medusae*)

Medusahead (*Taeniatherum caput-medusae*) is one of the most problematic invasive grasses on many California rangelands. It is difficult to control selectively in grasslands. Prescribed burning, grazing, and herbicides have been tested with some success but are not practical in all situations. The selective herbicide Milestone (aminopyralid), normally used for control of certain broadleaf species such as thistles, suppresses some annual grasses when applied pre- or early postemergence. We tested the efficacy of the aminopyralid for medusahead control in preemergence applications at three foothill rangeland sites in northern California. Treatments were applied in early fall 2009 and we evaluated the plots in May 2010.

Our results indicate that high label rates of aminopyralid applied in fall, before medusahead emergence, can help to suppress this weed in annual grasslands of California. Medusahead control at the highest rate (14 oz product/acre) of aminopyralid was consistent across the three sites, averaging 89% reduction in cover. Aminopyralid also provided some selectivity among grasses, resulting in increased cover of more desirable annual forage species, such as slender oat (*Avena barbata*) and Italian ryegrass (*Lolium perenne* ssp. *multiflorum*) at both 7 and 14 oz product/acre.

Though our study showed that control was less effective at the 7 oz product/acre rate, studies in other areas of California have shown this rate to also be effective. The key to optimum results is the timing of application, which should be made in late summer prior to rains and seed germination in order to provide the best possibility of suppression or control. Grass control results will be poor if any of the

Continued on next page...

To simplify information, trade names of products have been used. No endorsement of named products is intended, nor is criticism implied of similar products not mentioned.

Continued from front page…

winter annual grass seeds have germinated prior to application. Thus, aminopyralid has potential utility for suppressing medusahead and also cheatgrass, also called downy brome (*Bromus tectorum*), based on other studies. This may be a particularly effective management strategy if a target site is also infested with yellow starthistle or other problematic members of the Asteraceae (sunflower family), which are also highly susceptible to aminopyralid. In many cases, aminopyralid applications that already being made to control starthistle can simply be applied prior to fall rains instead of during winter with the added advantage of medusahead in addition to starthistle control.

However, the most effective rate (14 oz product/acre) is registered for use only as a spot application. In situations where this rate can be justifiably used, it would be expected to give season-long control of medusahead, as well as longer-term control of thistles and some perennial species. This treatment may be a useful management tool in situations requiring intensive management, such as small infestations and revegetation projects.

We are currently testing these results on a larger scale to determine how long the effects will last and provide an insight into the economics of this weed control measure for range managers. Additionally, aminopyralid plots are also being combined with other control methods such as burning to determine if eradication is possible.

Figure 1. Treated area on the right with annual ryegrass, non treated on the left with medusahead.

Assistance with Fish Screen on Diversions

Glenn Nader
Livestock & Range Farm Advisor, Sutter—Yuba Counties

Some landowners are interested in low maintenance fish screens for their irrigation diversions. The Family Water Alliance, Inc. has formed the Sacramento Valley Fish Screen Program in Maxwell, California to assist landowners with obtaining grants for fish screens. They have installed 24 successful fish screens using the most innovative screen technology. By the end of 2012, their fish screen program will have screened 1293 CFS of California Water and have protected a total of 42,723 acres of productive agriculture lands. Based on the cfs screened, the cost per cfs is approximately $12,000 per cfs. This cost includes, design, construction and installation, engineering, permits, monitoring, post-installation adjustments, education and outreach, and overall project management. They currently have approximately 18 diversions on a waiting list for a grant to fund the screens. Depending on the grant the program, most will pay 100% of the screen installation which includes 1 year of screen maintenance and system adjustments. After the initial year it then becomes the responsibility of the landowner. It is possible that on future grants a cost share may be required.

If you are interested participating in the fish screen program, contact the Family Water Alliance's Sacramento Valley Fish Screen Program at (530) 438-2026, or submit a letter of interest to P.O. Box 365, Maxwell, CA 95955 or email to fwa@frontiernet.net. For more information on the program, visit http://www.fwafishforum.com.

Selective Control of Barb Goatgrass with Aminocyclopyrachlor

Guy Kyser – UC Weed Specialist
Josh Davy – Livestock and Range Farm Advisor
Joe DiTomaso – UCCE Weed Specialist

The Mediterranean annual grass barb goatgrass (*Aegilops triuncialis*) is widely hated by land managers, and with good reason. Grazers avoid its tough, silica-rich foliage. In early summer it produces big, centipede-like, spiny-awned seedheads. Barb goatgrass is also tolerant of serpentine soils, presenting a threat to some California endemic species. Many ranchers consider this grass a greater problem than medusahead.

As with any invasive grass, it is difficult to selectively remove barb goatgrass from grasslands. Because it goes to seed late in the season, after most desirable species have dropped their seed, it is possible to control barb goatgrass seed production by burning in early summer (DiTomaso et al. 2001). However, because barb goatgrass seeds are viable for two years, the field must be burned a second year as well. It's not always possible to get burn permits, and in the second year the field may not carry a reliable fire. Mowing and spot application of herbicides have been effective on a small scale (Aigner and Woerly 2011).

We've been doing thistle control trials with aminocyclopyrachlor, an experimental chemical from DuPont. This is a selective auxin-type herbicide with very little effect on most grasses. However, we heard a rumor that aminocyclopyrachlor might have a suppressive effect on barb goatgrass when applied preemergence. So we established a trial near Red Bluff to test it.

The test site was heavily infested, with an average 47% cover of barb goatgrass and 14% other annual grasses. We set up 10 ft by 30 ft plots in four replications and made treatments with a CO_2 backpack sprayer. We applied aminocyclopyrachlor at two rates in October 2011, January 2012, and April 2012, as well as a split treatment with a low rate applied in both October and January. (We also tried some other chemicals, but let's stick with aminocyclopyrachlor for now.)In June 2012 we evaluated percent cover of all plant species in three 1-m^2 quadrats per plot (see table). At all times of application, rates of 2 oz a.i. aminocyclopyrachlor/acre reduced barb goatgrass cover to 41% to 48% compared to untreated plots (~50% to 60% control). Rates of 4 oz a.i./acre reduced barb goatgrass to 9% to 13% of untreated plots (~90% control). Interestingly, the split application of 2 oz in October followed by 2 oz in January (4 oz total) gave better than 99% control. The October and October/January applications resulted in 3.1x to 4.7x increases in the cover of other, more desirable annual grasses.

These results show potential for using aminocyclopyrachlor to selectively remove barb goatgrass from rangeland. Although the best treatment (split application) essentially prevented seed production, barb goatgrass has a two-year seed cycle, so the treatment would have to be repeated in order to deplete the seedbank.

Continued...

Timing	Chemical	Rate (oz a.i./acre)	Plant cover (% of untreated)	
			Barb Goatgrass	Other annual grasses
October	Aminocyclopyrachlor	2	41	313
October	Aminocyclopyrachlor	4	12	467
Oct + Jan	Aminocyclopyrachlor	2 + 2	0.5	359
January	Aminocyclopyrachlor	2	41	149
January	Aminocyclopyrachlor	4	13	82
April	Aminocyclopyrachlor	2	48	122
April	Aminocyclopyrachlor	4	9	133
none	none	none	100	100

"Selective Control of Barb Goatgrass with Aminocyclopyrachlor" Continued….

An effective integrated management approach might be to conduct a prescribed burn during summer, followed by aminocyclopyrachlor treatment in fall and winter; this would prevent seed production for two successive years, which should bring the barb goatgrass population down to the point where it can be managed by cultural practices. Similar integrated strategies have proved very effective in managing yellow starthistle (DiTomaso et al. 2006).

The future registration status of aminocyclopyrachlor is uncertain. It is not available in California at present, owing to unresolved concerns over risks to tree roots. In other states, it is only available in formulations premixed with sulfonylurea herbicides, which we have found somewhat injurious to desirable grasses. We'll be continuing to communicate with CDPR and DuPont regarding registration of this chemical.

References

Aigner, P.A., and R.J. Woerly. 2011. Herbicides and mowing to control barb goatgrass (*Aegilops triuncialis*) and restore native plants in serpentine grasslands. Invasive Plant Science and Management 4:448-457.
DiTomaso, J.M., K.L. Heise, G.B. Kyser, A.M. Merenlender, and R.J. Keiffer. 2001. Carefully timed burning can control barb goatgrass. California Agriculture 55(6):47-53.
DiTomaso, J.M., G.B. Kyser, J.R. Miller, S. Garcia, R.F. Smith, G. Nader, J.M. Connor, and S.B. Orloff. 2006. Integrating prescribed burning and clopyralid for the management of yellow starthistle (*Centaurea solstitialis*). Weed Science 54:757-767.

2011/12 Northern California Winter Pasture Experience Varies

Larry Forero—Shasta/Trinity Livestock Farm Advisor
Glenn Nader—Sutter/Yuba Livestock Farm Advisor

Forage production on California annual range is highly variable. The 2011/12 forage year was an especially difficult year to predict. The timely fall rains coupled with a dry warm January and February and then a favorable spring rainfall in some areas resulted in better than average forage production in a Redding Area plot and below average results in Marysville area. Figure 1 represents long term plot data on a ranch located near the Redding Airport with an average annual production of about 1500 lbs/acre. The 2011-2012 annual production is estimated at about 120% of normal.

Figure 2 shows the average monthly and seasonal production at the UC Sierra Foothill Research and Extension Center near Marysville. The forage produced on a monthly basis last year was below the average across the entire growing season. The late season rains pushed up the forage total to about 82% of average. This situation was common across northern California. Many producers made arrangements and removed livestock from annual ranges and the rains that came in some areas after cattle were removed resulted in additional dry forage to ship back to in the fall. If we fast forward to the 2012/2013 forage year, the residue from the previous forage year (2011/12) resulted at least a comfortable start to the grass season in some areas. Other areas the rain was too little, too late. The problem many ranchers are faced with is inadequate stock water. The lack of rainfall in the 2011/12 forage year has left many reservoirs and seasonal streams dry. Some counties have initiated drought relief program. The USDA drought monitoring group is watching the situation and updating the precipitation maps weekly. It can be seen at http://droughtmonitor.unl.edu/ The local Farm Services Agency is charged with the responsibility of administering disaster programs and these programs tied to these maps. Check with your local USDA-Farm Services Agency to discuss your specific situation. Your local FSA staff are interested in hearing about range conditions. Take the time to get acquainted with them and how these programs work now so that should they become necessary, you will be better prepared if the dryer conditions continue.

See Figures on next page

"2011/12 Northern California Winter Pasture Experience Varies" Continued...

Figure 1.

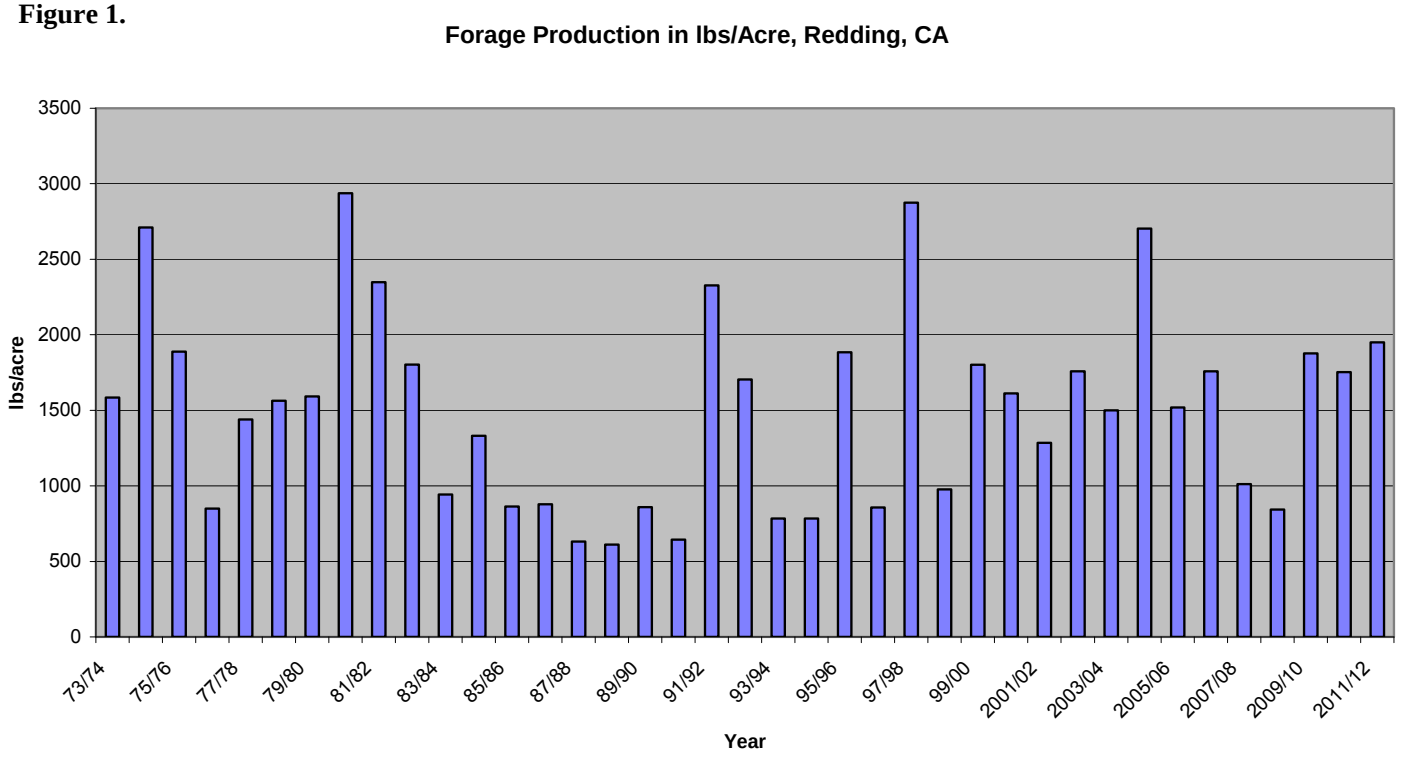
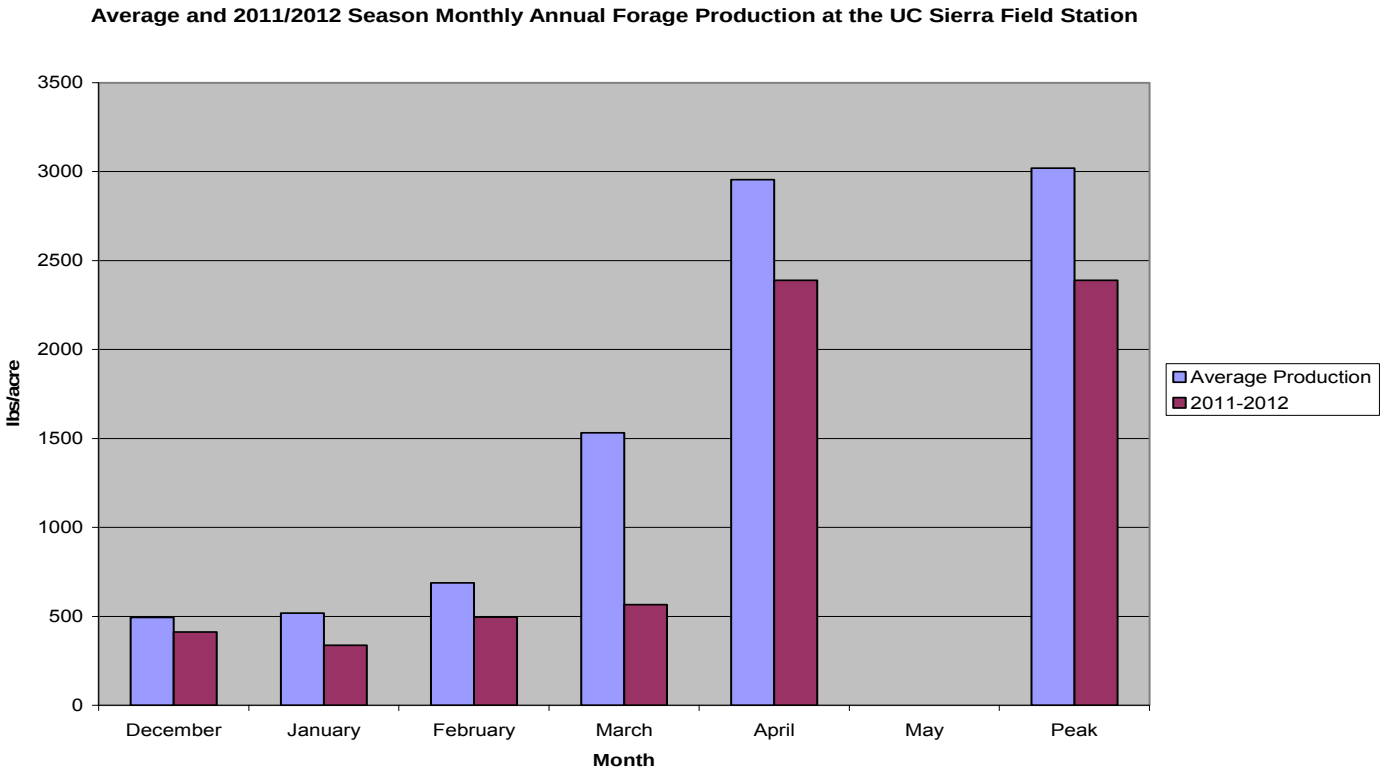


Figure 2.



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

Continued...

"Understanding and Managing Shrink…" Continued...

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. Coblentz, J. B. Humphry, and F. K. Brazle. 2001. Review: basic principles and economics of transportation shrink in beef. Prof. Anim. Sci. 17:247–255.

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

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

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 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 field close to the corral with a bank of forage. This field 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 field 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 pens 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.

Continued...

"Understanding and Managing Shrink…" Continued...

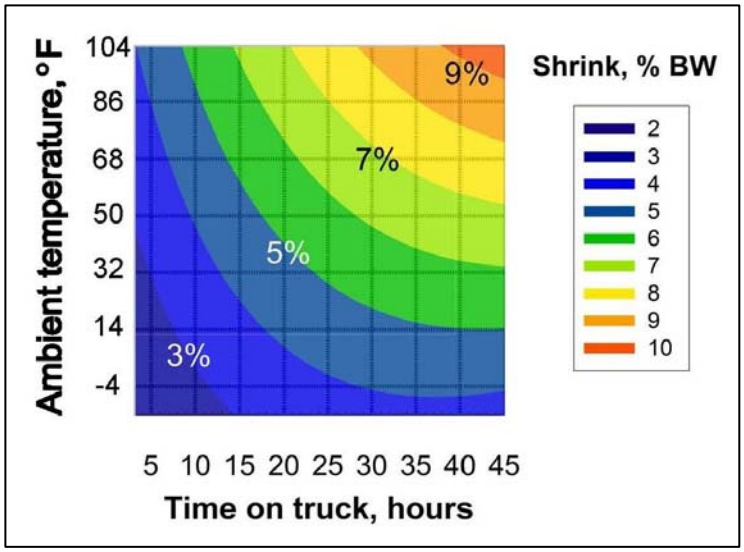
Buyers have quantified the amount of shrink that occurs on a given haul. Figuring into this number are factors such as: time on the truck, environmental conditions, and driver experience. Figure 1 quantifies the amount of shrink that can be estimated while cattle are on the truck. This table also includes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

Figure 1. [1,2] 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 shrink.



[1]*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*

[2]*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 authors appreciate and acknowledge the review and comments by Kevin Devine and George McArthur.*

References

Coffey, K. P., W. K. Coblentz, 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

Important Facts to Know about the Herbicide: Glyphosate

Brad Hanson and Glenn Nader
University of Calif. Cooperative Extension

Not all glyphosate herbicides are equal

Producers need to compare price and application rates of glyphosate herbicides based on the acid equivalent per gallon. Various glyphosate products have different formulations (e.g. "salts") which affects the concentration of glyphosate acid in the formulated material. Since it is actually the acid form of glyphosate that binds to the plant enzyme and stops amino acid formation and kills the plant, glyphosate rates are often expressed as lbs "acid equivalent" per acre rather than lbs "active ingredient".

Should I Add Adjuvants?

There are three primary types of adjuvants that are sometimes used with glyphosate herbicides: surfactants, water conditioners, and buffering agents. Most glyphosate formulations contain an adequate concentration of surfactants, except if applying it to weeds with dense hairs or thick cuticles on their leaves or to woody plants.

Water conditioning agents such as ammonium sulfate fertilizers are commonly used to increase glyphosate efficacy in two ways. First, one of the major causes of a reduction in effectiveness of glyphosate is from mixing it in "hard" water high in sodium, potassium, calcium or iron. These positively charged ions bind to the negatively-charged glyphosate molecule (think of two magnets with opposite polarity) in the spray tank and this new molecule cannot be absorbed by the plant. One of the most effective and inexpensive methods of reducing this problem is to add dry ammonium sulfate (AMS) fertilizer with formulation numbers on the bag of (21-0-0-24) at .085 to .17 lb per gallon of water before adding the glyphosate. The ammonium in the AMS also helps with glyphosate absorption through the leaf and increases transport to the roots in some weeds which can increase efficacy.

Table 1. Glyphosate Product Comparisons[1]

Trade Name	Fomulated Salt[a]	Concentration[b] lb ae/gal
Roundup Original	IPA	3
Roundup Original Max	K	4.5
Roundup Weather Max	K	4.5
Touchdown	DA	3
Touchdown Total	K	4.5
Touchdown Hi Tech	K	5
Durango	IPA	4
Glyphomax XRT	IPA	4
Most Generics	IPA	3

1Glyphosate is generally formulated as one of the following salt molecules: IPA = isopropylamine; K = potassium; DA = diammonium; or TMS = trimethylsulfonium.

[b] The concentration of glyphosate salts can be expressed in terms of either pound of glyphosate salt (ai) per gallon or pound of glyphosate acid (ae) per gallon. Because the various salts have different weights, comparing glyphosate on an acid equivalence (ae) basis provides a better comparison of the herbicidal component of the different salts.

Plant and Environment Conditions

Plants that are covered in dust or are under significant environmental stress (water, heat, cold, physical damage) do not absorb or transport glyphosate effectively to growing points. For optimal weed control with glyphosate, weeds should be actively growing and free of dust at the time of application. Consider applying when nighttime frosts are not occurring and the daytime temperature is above 60 degrees. Excess leaf moisture from a heavy dew or rainfall too close to the application can also reduce glyphosate performance due to herbicide runoff. Although it is not well understood, it seems that when light intensity is higher at the time of application performance is often greater.

Timing of Application

Annual weeds (plants that grow from seed each year) are best controlled when they are small; however,glyphosate only kills emerged growing plants, not seeds or newly germinated seedlings so time application(s) accordingly. Young annuals have relatively smaller root systems then and require less glyphosate to kill the plant. In contrast to annuals, perennials (plants that grow each year from the same roots and have a larger root structure than annuals), like scotch broom, are best controlled later in the season when the plant is in the bud stage immediately prior to flowering. This is when perennial plants are moving sugars, along with the more glyphosate, to their larger root system for winter storage and glyphosate performance is typically much better.

Adapted from University of California Statewide Integrated Pest Management Program publication. For a complete copy of the report go to http://www.ipm.ucdavis.edu/PDF/PUBS/miller-glyphosatestewardship.pdf

Free online Information Resource for Ranchers and Range Managers

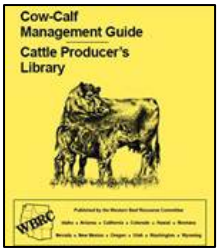
The University of California Cooperative Extension has many publications related to agriculture and natural resources available. Below are examples that may be of interest. Publications can be ordered off the internet or obtained at your local Cooperative Extension (Farm Advisor) Office.

Managing Smutgrass in Irrigated Pastures

A free UC peer reviewed publication highlighting researched methods of controlling smutgrass.
http://anrcatalog.ucanr.edu/Items/8473.aspx

Cow-Calf Management Guide

A collection of publications put together by a committee of Extension University's in the Western US called the Western Resources Beef Committee. The committee meets annually to update the publications and add new ones. The whole publication can be ordered, or individual fact sheets downloaded at:
http://www.ansci.colostate.edu/beef/info_pages/cattlemanslibrary.html



Topics include the following areas:

PRODUCER MANAGEMENT GUIDES
QUALITY ASSURANCE
NUTRITION
REPRODUCTION
RANGE AND PASTURE
ANIMAL HEALTH
MARKETING
FINANCE
GENETICS
DROUGHT AND OTHER NATURAL DISASTERS

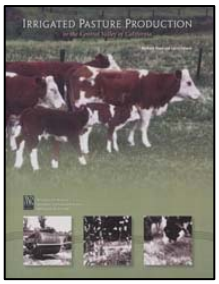
Establishing and Managing Irrigated Pasture for Horses

This is a free UC peer reviewed publication providing in-depth information on establishing a pasture with emphasis for horses and then managing the established pasture.
http://anrcatalog.ucdavis.edu/Items/8486.aspx

Estimating the Cost of Replacing Forage Losses on Annual Rangeland

Wildfires and natural events can drastically reduce or eliminate the useable forage on grazing rangeland. This publication will help you assess your losses and set a reasonable budget for restoring the rangeland to a productive condition.
http://anrcatalog.ucdavis.edu/PastureRange/8446.aspx

Irrigated Pasture Production in the Central Valley of California



Irrigated pastures, a mixture of perennial grasses and legumes, can be grown successfully in most areas of the Sacramento and San Joaquin Valleys. This is a step-by-step guide to establishing and maintaining irrigated pastures for beef and dairy cattle. It is only available currently in hard copy.
http://anrcatalog.ucdavis.edu/FieldCrops/21628.aspx

Measuring Irrigation Water

A publication has been developed showing how to install a simple weir to measure irrigation flow. http://ceshasta.ucdavis.edu/files/142601.pdf. Contact the Shasta County Cooperative Extension, 530-224-4900, for a hard copy.

Educational Update with Ice Cream and Peaches

(a midsummer educational meeting)

Tuesday, August 28, 2012
7:00 p.m. - 8:45 p.m.
Millville Grange
(Across from Palo Cedro Feed)

Meeting sponsored by UC Cooperative Extension and the Shasta County Cattlemen's Association

Agenda

7:00 p.m. **Introduction and Welcome**
Matt Fowler, *President Shasta County Cattlemen's Association*

7:05 p.m. **Quality grade and beef tenderness-how good a correlation is it?**
Josh Davy, Livestock Farm Advisor, Tehama County

7:40 p.m. **Warner –Brassler Shear Test**
Larry Forero, Livestock Farm Advisor

8:15 p.m. **Adjourn to SCCA Director's Meeting**

Name _____

Address_____

City _____ State _____ Zip _____

Number attending: _____

This is a free workshop, but your RSVP by Aug. 27 will help assure we have an adequate supply of Ice Cream and peaches

PLEASE MAIL TO:
Larry Forero, UCCE Shasta County
1851 Hartnell Avenue
Redding CA 96002-2217
(530) 224-4900

Northern Ranch Update is a newsletter published by the Farm Advisor's office containing research, news, information, and meeting notices related to the areas of livestock production, irrigated pasture, range, and natural resource management.

In this Issue...

- Milestone (Aminopyralid) Applied Preemergence can Control Medusahead
- Assistance with Fish Screen on Diversions
- Selective Control of Barb Goatgrass with Aminocyclopyrachlor
- 2011/12 Northern California Winter Pasture Experience Varies
- Understanding and Managing Shrink
- Important Facts to Know about the Herbicide: Glyphosate

For a color copy of this newsletter visit the website at:
http://ceshasta.ucdavis.edu/
In addition, the website has many UC publications and information on topics such as livestock, range, natural resources, pest control, and other agriculture and crop production areas

OR CURRENT RESIDENT

University of California
Cooperative Extension
Shasta County
1851 Hartnell Avenue
Redding, California 96002

Nonprofit Organization
U. S. POSTAGE
P A I D
Redding, Calif.
Permit No. 268