UCCE University of California Cooperative Extension

Northern California Ranch Update

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Blackberry Management

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Blackberry brambles infest many acres of pasture land in norther California. They quietly invade pasture resulting in a reduction of available forage for livestock. Imagine a field 667 feet by 667 feet (ten acres). This field has blackberries along the fence line out into the pasture ten feet along the entire perimeter of the pasture. The area encompassed by the blackberries is 0.60 acres - over 5% of the entire field. At 10,000 lbs/ acre production, that is a loss of 6 AUMs in one season.

Understanding the biology of the blackberry plant will help you better manage this pest:

1. The Seeds are readily spread by wildlife.
2. The plants produce canes from the central cane as well as from rhizomes.
3. A single blackberry plant can live 25 years.
4. They may be self-pollinated or pollinated by honey bees.
5. First year canes do not produce flowers.
6. Second year canes fruit and die.
7. Tips of the first year canes that contact the ground form roots at the nodes.

Vegetative growth of a blackberry plant from a central crown.
Illustration by Seventeenth Street Studios.

Tools available to help manage blackberries include:

1. Burning
   A. Burning blackberries can reduce canopy short term. It is not a good long-term strategy because plants will resprout from the base.
2. Mechanical
   A. Wild Blackberries can be controlled by REPEATED tillage.
   B. Bulldozing can cause resprouting and can spread the pest by means of root and stem fragmentation.
   C. Mowing is not effective because it stimulates formation of suckers from lateral roots and induces branching.

3. Biological Control
    A. There is not biological control method available in the U.S. In Australia, blackberry leaf rust has been released for control of the weed. It is not generally considered successful because the rust does not do significant damage to the host. Although the rust was recently found in Oregon it has had sporadic success. It is also in California, but has not been effective.
4. Herbicide
    A. Common Herbicide products include Glyphosate (Round-up®), Triclopyr (Garlon® 4 - 61.6% Triclopyr) or Triclopyr/2.4-D (Crossbow® - 34.4% 2,4-D, 16.5% Triclopyr)

These products behave differently and it is important to apply the product at the right time and at the appropriate rate. Table A summarizes rate and timing, but refer to the pesticide label for specific information.

Table A.

Product	Rate	Water	Timing	Application
Round-up	0.5-1.5%	0.6-2 oz/gallon of water	Late summer/early fall	Spray foliage to wet
Garlon	1%	1.25 oz/gallon of water	Mid-summer and later	Spray foliage to wet
Crossbow	1%	1.25 oz/gallon of water	Mid-summer and later	Spray foliage to wet

As a quick review…

2 cups/pint
2 pints/quart
4 quarts/gallon

8 fluid oz/cup
16 fluid oz/pint
32 fluid oz/quart
128 fluid oz/gallon

When herbicides are used, it is critical to read and follow all label instructions. Understanding the label improves efficacy and assures the product is being applied safely. Some products require a restricted materials permit where others only require an Operator ID. If you have any questions about this, call your local agriculture commissioner's office.

Table B summarizes the products outlined above.

Product	Operator ID	Restricted Materials Permit	Notice of Intent	Use Report
Round-up	Yes	No	No	Yes
Garlon	Yes	No	No	Yes
Crossbow	No	Yes	Yes	Yes

If you are considering spraying blackberries take some time to review and consider the following:

1. Think carefully about the goals for your property/operation.
2. Blackberry control and management requires persistence - be sure you commit the time it takes.
3. Try to work on projects with measurable objectives that move you along towards your goal.
4. Remember the rules - check with your agricultural commissioner locally to make sure you understand the process for obtaining permits, operator ID and submission of reports.

References

DiTomaso, J.M. "Pest Notes: "*Wild Blackberries.*" IPM Education and Publications, University of California Statewide IPM Program. UC ANR Publication 7434. http://ipm.ucdavis.edu/PMG/PESTNOTES/pn7434.html.

Managing Mint in Irrigated Pasture in California

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Irrigated pasture acreage in California totals just over 1.1 million acres (2004). County Agriculture Commissioner Reports estimate the value of pasture between $100 and $120 per acre per year. The forage provided by irrigated pasture supports the California beef, sheep, dairy and horse industries. Irrigated pasture provides between 5 and 6 million animal unit months (AUMs*) of forage annually, including summer forage for

California ranches and is critical to their economic sustainability.

The typical vegetative composition of irrigated pasture generally includes a mix of perennial legumes and grasses. This combination of grasses and broadleaves coupled with the long term nature of the crop make managing weed pests challenging.

Many pasture operators in California have been plagued with mint infestation. Members of the mint family usually give off a distinctive, aromatic, minty odor when the stems and leaves are crushed. They have a square stem and opposite leaves, which are characteristic of the plants in the mint family. Common mint weeds in pastures include henbit (*Lamium amplexicaule*), white horehound (*Marrubium vulgare*), pennyroyal *(Mentha pulegium*), and healall (Prunella vulgaris). While henbit is an annual or biennial, the other common mint weeds are perennials, persisting for many years. Biennial and perennial weeds generally pose the greatest problems in pastures since they produce seed each year and can also reproduce from underground roots or rhizomes. Perennial weeds can also survive for many years and are not affected by occasional mowing or grazing. Additionally, henbit is a host of the Sclerotinia fungus that causes crown and stem rot in forage legumes.

Mint species have been reported to produce from 100 to over 5,000 seed per plant. Seeds can persist in the soil for 20 to 30 years, with some seed surviving much longer. Seeds of mint weeds often fall near the parent plant, but can disperse to greater distances when soil is moved or with water. Animals also can move mint seed by consuming seeds and passing through the digestive tract, but more commonly by transporting them in their hair or hooves. Mint seeds generally require a short after-ripening period before they will germinate. Germination occurs more readily when seed are exposed to light and moisture, generally in the upper ½ inch (5 to 20 mm) of soil. Mint seeds often germinate in fall or spring, but can germinate most times of the year if conditions are correct. Seedlings are frost tolerant. Established perennial plants often will die back during the cold winter period and re-grow from rhizomes in the spring. Rhizomes or stem fragments can develop into new plants if conditions are favorable.

If unchecked, mint can dominant a pasture. Livestock do not generally find the plant palatable and will actively avoid it. This puts more grazing pressure on the more desirable pasture plants which in turn creates more opportunity for the weed.

Management Considerations
Control of mint in pastures, barn lots and forage fields is very important. The best time to scout for and control mint is late April to early June. It is very difficult to control in late summer and early fall. While livestock typically avoid mint in pastures, Kingsbury (1964) notes the plant is toxic if ingested in large amounts and cites the death of two horses on Prince Edward Island. Burrows and Tyrl (2001) report cattle, sheep and horses are susceptible to poisoning by *L. amplexicaule* but rarely causes death. If control measures are not taken early, it becomes even more crucial in late summer to maintain an adequate supply of quality feed for cattle and other farm animals so they will not feed on these toxic weeds. Grazing in infested pastures should be limited during late summer when mint is flowering. Avoid harvesting forages in areas infested with these weeds.

Mint Management
Cultural practices include anything that makes the desirable pasture species more competitive with the weeds. The best management is to prevent the introduction of mint into the pasture. Avoid moving animals from mint infested fields, since 5 to 15% of weed seed which has been eaten safely passes through the animal's digestive tract and infests the new field. Seeds can also be transported in the hair and hooves of animals. Contaminated hay is also a potential source of mint seeds. Use hay free of weed seed to avoid introducing weeds into pastures.

Managing Mint Using Mechanical Methods
Systematic mowing can help to control weeds. Repeated mowing reduces the competitive ability of weeds, depletes the carbohydrate reserves in the roots of perennials, and helps to prevent seed production. Mowing reduces seed production, but seed production on mints can occur below the cutting height of most mowers, allowing some seed to still be produced. Mint also has the ability to regrow after mowing, and thus seed production may only be delayed. Mowing at a height just above the desired species reduces shading and increases the competitive ability of the desired forage species. A single mowing will not control mint, but repeated mowing 3 or 4 times per season can greatly reduce there presence. Mowing along fence lines and borders helps to stop the spread of weeds into the pasture. Hand removal may be the easiest way to deal with new infestations or when only a few individuals are present. An attempt should be made to dig up the roots of

perennials to prevent their recovery.

Grazing Management to Limit Mint Infestations
Over-grazing can result in new infestations of weeds. Weeds, such as mint, are opportunist, germinating and growing where sunlight, water and nutrients are available. When pastures are heavily grazed, open spaces are created, allowing weeds to invade. Moving livestock when pastures reach approximately a 4-inch height allows the pasture to recover quickly, preventing open spaces and weed invasion. If bare areas exist, over-seed with desirable species to keep open areas to a minimum.

Maintain Pasture Fertility
Fertility management can help to reduce weed problems. Feeding the crop and not the weeds is the objective. Fertilizing in the spring when pasture plants are growing rapidly, often results in good pasture growth, while fertilizing when desirable pasture plants are small with limited root systems, results in nutrients being more available to weeds.

Chemical Management of Mint
Herbicides can be used to selectively control mints in pastures. 2,4-D amine has been shown to be very effective at controlling mint weeds in pastures. 2,4-D is safe for use on grass pastures, but can cause injury to clovers and thus may not be desirable in all situations. Sequential treatments of 2,4-D amine at 1 lb/ac made one month apart were highly effective at controlling established mint. Likewise, triclopyr is also effective in controlling mint weeds in pastures, but also injures clovers. Triclopyr is less volatile than 2,4-D and thus would be considered safer from drift or volatilization around sensitive vegetation. 2,4-DB also controls mints, but is generally less effective than either triclopyr or 2,4-D. The advantage of 2,4-DB is that it is safer for use in clovers. As with 2,4 -D, sequential treatments of 2,4-DB at 2 to 4 week intervals is more effective at controlling mint than a single treatment.

Non-selective herbicides can also be used to control mints. Spot treatment with glyphosate is very effective, but kills almost everything that is contacted. If spot treatments are used, a dye should be added which will indicate the plants that have been treated, and to avoid missing plants or treating others twice. If mints are taller than the surrounding vegetation, a rope-wick applicator can be used to selectively treat the mint. The rope-wick contacts the taller mint plants, while the shorter pasture species are not contacted. Glyphosate is often used with this type of application, as it is effective against a broad range of annual and perennial weeds.

Herbicides need to be applied at the proper timing for optimum performance. Weeds are always most sensitive in the seedling stage. Treat biennial weeds in the rosette stage prior to bolting. Perennial weeds are best controlled when treated at the flower bud or bloom stage. Early fall can also be a good time to treat perennials, if a good rain has occurred to wash off the dust and the target weeds are actively growing.

When herbicides are used, it is critical to read and follow all label instructions—understanding the label improves efficacy and assures the product is being applied safely. When pesticides are applied to commercial production pastures, use reports are required. Some products require a restricted materials permit where others only require an operator ID (see Table A). If you have any questions about this—call you local agriculture commissioner's office.

Table A Summarizes the regulatory and reporting requirements for products outlined above.

Product	Operator ID	Restricted Materials Permit	Notice of Intent	Use Report
2,4-D	No	Yes	Yes	Yes
2,4,DB	No	Yes	Yes	Yes
Glyphosate	Yes	No	No	Yes

Mint management often requires repeated treatments or combinations of treatments. The goal is to prevent seed production and to control established plants. When mint infestations are dense, repeat treatments of herbicides or cultural control methods are needed to reduce the population.

Rotary Wiper Control of Smutgrass in Irrigated Pasture

Josh Davy – UCCE Farm Advisor
Betsy Karle – UCCE Farm Advisor

Now is an optimal time to control smutgrass in irrigated pasture. UC research on controlling smutgrass has led to the testing of a rotary wiper for weed control. The advantage of a rotary wiper is the ability to make herbicide contact with weeds only, as desirable forage can be grazed short and not contacted by the wiper.

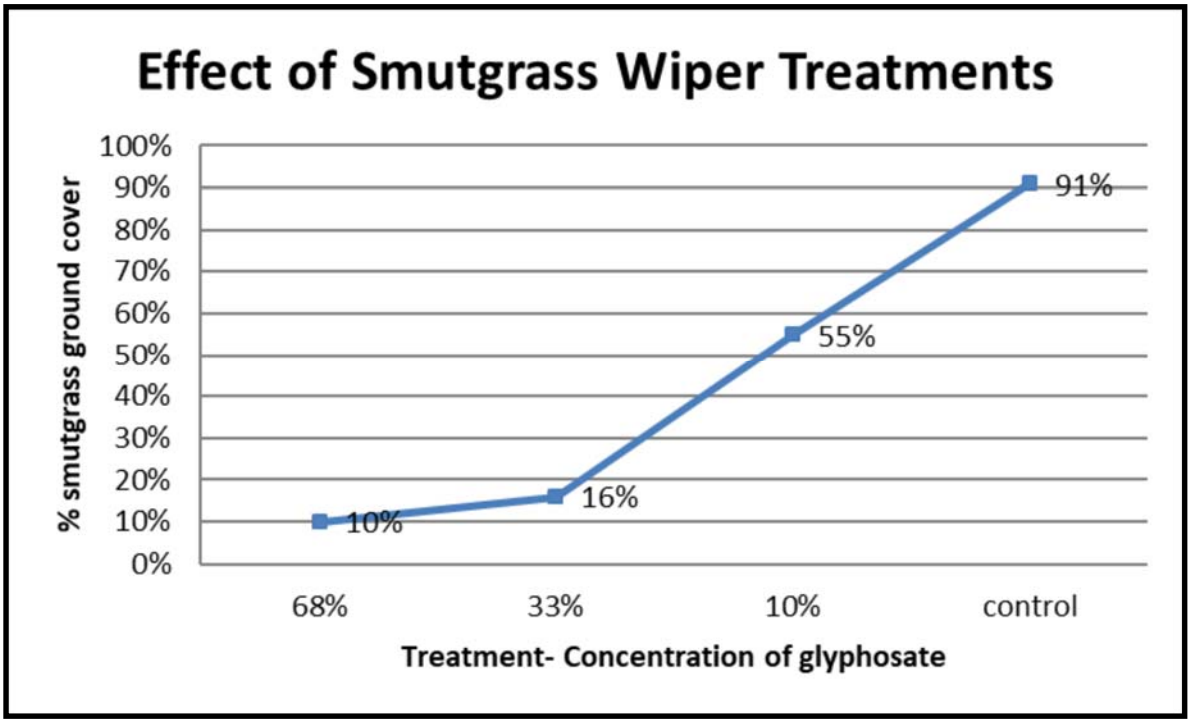
What is a rotary wiper?

The wiper delivers herbicide via an adjustable, carpet-covered spinning drum set to a height that will only contact the weed species. A covered spray boom is on top of the drum. When a button is pressed, herbicide is pumped from the holding tank and sprayed onto the backside of the carpet covering the drum. The herbicide soaks into the carpet and the drum spins backwards, providing optimal herbicide contact. A greatly reduced total spray volume is needed compared to a traditional spray rig because herbicide is only applied to the foliage of the weed species.

Glyphosate Rate

The most common herbicide used in a rotary application is glyphosate (Roundup, Buccaneer, etc.) because the herbicide translocates through plants very well. Glyphosate is non-selective, making it important that desirable forages are grazed below the weed height so that the weeds are the only thing killed.

Since a low volume of herbicide is used, UC research looked at the effectiveness of a variety of glyphosate rates for controlling smutgrass in an irrigated pasture. Rates from 10% (10% glyphosate, 90% water) up to 68% (68% glyphosate, 32% water) were applied to a pasture heavily infested with smutgrass. RoundUp Pro Concentrate was the herbicide used in this trial. All treatments were statistically significant, demonstrating a linear effect, with the control rate increasing with the rate of glyphosate. Rates below 33% were not considered acceptable for smutgrass control, and the research would suggest that rates of 50% to 70% glyphosate are optimal. A separate trial testing a rate of 50% yielded excellent control



of smutgrass. The rate used in a rotary wiper application is far higher than the traditional rate of 2% in a spray application, but the lower volume of material used makes the amount of actual herbicide applied very similar between the two methods. Thus the herbicide costs are not generally different between the two application methods.

As discussed above, none of the trials yielded 100% weed control with a single application. This is because a small number of plants were lower growing and therefore not contacted with the weed wiper. These small plants may require a later application in most fields to increase control and start depleting the weed seed bank. A follow up trial conducted the year following the rate trial referenced above demonstrated a smutgrass cover of 6% in an area treated the subsequent year (area treated twice, 1 time each year) versus 27% in plots treated only one time in the previous trial. Ongoing research is working on controlling the soil seed bank to help prevent smutgrass reinvasion of the pasture.

Rotary wipers are available for rent from the Tehama County RCD if desired. The cost is $50 per day. For more information contact one of the authors at the Tehama or Glenn UC Cooperative Extension Offices (530) 527-3101 or (530) 865-1107, respectively.

Figure 1. Rows of smutgrass comparing treated with a rotary wiper and non-treated

Consumption of Mineral by Yearling Cattle Grazing Annual Range and Irrigated Pasture

Larry Forero, UCCE Shasta/Trinity, Livestock Farm Advisor
Josh Davy, UCCE Tehama/Glenn/Colusa, Livestock Farm Advisor

Over the years, many livestock operators have shared with us the variation they have experienced with regard to mineral consumption by their livestock. We developed several projects that looked at mineral consumption as a component of a larger question using yearling steers. Yearling cattle are grazed seasonally in California on rangelands in the winter and pasture in the summer. We report the results of two trials from each forage source.

One set grazed annual grassland in the CA foothills while the others grazed irrigated pasture in the northern Sacramento Valley.

Annual Rangeland-Winter Grazed: On Dec. 20, 2016 steers were uniformly shrunk and then weighed and sorted into groups of 35 head. Each set of cattle were assigned an initial pasture rotated on an approximate 35 day interval to minimize any pasture effect. An individual shrink weight was taken during each movement. Average "in" weight was 667 lbs, and final weights on 5/23/2017 were 989 lbs. Cattle were provided an appropriate salt based mineral blend free choice.

Valley Irrigated Pasture Yearling-Summer grazed: On May 28, 2013 steers were individually weighed and in single pasture totaling 48 head. In this trial average "in" weight was 558 lbs and average season ending on 9/10/2013 was 769 lbs. Table 1 summarizes the dates, weights and performance.

Table 1. Summary of weight gain for both rangeland and pasture grazed yearlings.

	Forage	In Wt	Out Wt	Gain	Days	Average Daily Gain
Winter Yearlings	Foothill annual rangelands	667	989	322	151	2.1
Summer Yearlings	Valley Irrigated Pasture	558	769	211	105	2.0

Mineral consumption for both groups was determined by tracking the amount of mineral provided and subtracting what was left over on a 35 (winter) and 21 (summer) day interval. Mineral was always available in adequate supply. Per head mineral consumption by group is shown in figures A and B.

Figure A. Annual Rangeland: Daily consumption of mineral in ounces per steer by 35 day period

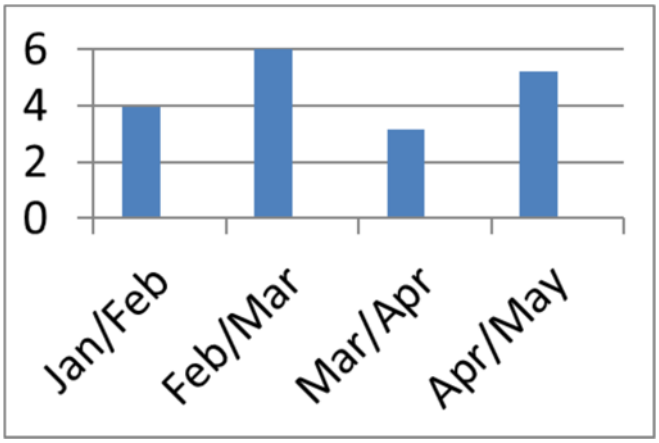
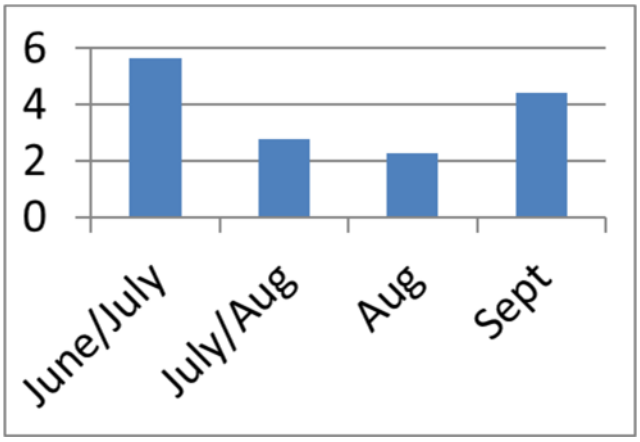


Figure B. Irrigated Pasture: Daily consumption of mineral in ounces per steer by 21 day period



Blood was drawn and analyzed from a subset of the each set of steers. Levels were below what are considered generally acceptable lower limits at the onset of the grazing season. By the end of the season, both groups had reached adequate levels. Table 2 summarizes blood levels

Table 2. Average whole blood selenium levels of both range and pasture grazed yearling

	Levels at onset of season	Levels at end of season
Winter Yearlings	.078 ppm*	0.218 ppm
Summer Yearlings	.06 ppm*	.08 ppm

*generally considered to beneath the lower limit

Summary

The average consumption for the 2017 winter cattle was about 4.5 oz/head/day. The summer cattle averaged about 4 oz for the season. Keeping that in mind:

- ⇒ Mineral consumption was variable throughout both the winter and summer grazing seasons, but season average consumption matched target levels of each mineral design. The corresponding increases in mineral levels provides evidence that average season long consumption of mineral is a valid assessment measurement to determine if supplementation intake is adequate.
- ⇒ **Keep the mineral in adequate supply for the cattle all season long**. Limited commitment to having mineral available to cattle at all times may miss the periods of time when consumption would be higher. Additionally, even during low consumption periods, some mineral was always being consumed.
- ⇒ The cost of supplement is about about $1000/ton ($.50/lbs). The per head daily cost at the 4 oz/head/day is about $0.125—$46/year. In both the winter and summer groups of yearlings, whole blood Se levels improved as the season progressed almost linearly. Work with your veterinarian and farm advisor to determine the current mineral levels in your cattle and develop a mineral supplementation program that meets those needs.

Alleviating Worries for Nitrate and Prussic Acid Poisoning

Josh Davy – Livestock and Range Advisor Tehama, Glenn, Colusa
Birgit Puschner – Professor of Veterinary Toxicology, UC Davis

Grazing of warm season grasses such as sudangrass, johnsongrass, and other sorghum relatives presents a risk for livestock to develop nitrite/nitrate and prussic acid (HCN) poisoning. Clinical signs of both intoxications are very similar including respiratory distress, tremors, and convulsions. In most cases, cattle are simply found dead. Post-mortem examination is often non-specific but sampling can be used to diagnose nitrite/nitrate poisoning (best: eye ball) or cyanide poisoning (best: frozen muscle).

However, these are very valuable sources of summer forage because of their high yields. They can also be a very good option for spring planting to prepare a field for a permanent pasture planting in the fall. Rather than avoiding their use, a few key management points can prevent toxicity issues. These tips can help.

Tips to avoid poisoning

- In irrigated areas fertilize with low rates of nitrogen to avoid nitrate accumulation. High rates of fertilization can also cause prussic acid poisoning. Splitting applications of smaller rates over summer is a safer strategy.
- In dryland situations avoid fertilizing with nitrogen, and plant a low prussic acid accumulating variety called "piper" sudangrass. Hybrid forage sorghum varieties should be avoided in the central valley in dryland areas.
- Both poisonings can be brought on by drought conditions. If sudangrass or related plants have been subjected to drought and are then irrigated, wait 14 days before grazing to reduce risk for nitrite/nitrate poisoning. HCN levels should be dissipated in less time.
- Do not graze after a frost.
- Nitrate tends to accumulate in the lower 3 to 5 inches of stems so swathing plants higher when haying will help avoid the most toxic plant part.
- Prussic acid will dissipate when forages are cut for hay (within 24 hours on a hot, sunny day; longer time is needed on cooler days), but **nitrate levels will not**.
- **Do not graze with horses**. Horses are not susceptible to nitrate poisoning but can be affected by cyanide. In addition, a syndrome causing cystitis is possible in horses grazing sorghum family plants.

Table 1. Interpreting nitrate (differing reporting units) and prussic acid (cyanide) forage tests

NO3 (dry matter)	***NO3-N (dry matter)***	***KNO3 (dry matter)***	***Feeding Recommen-dations***
< 5,000 ppm (0.5%)	< 1,200 ppm (0.12%)	< 8,100 ppm (0.81%)	Generally Considered Safe for Livestock
> 5,000 ppm (0.5%) but < 10,000 ppm (1%) ppm	> 1,200 ppm (0.12 %) but < 2,300 ppm (0.23%)	> 8,100 ppm (0.81%) but < 16,000 ppm (1.62%)	Caution: Problems can occur at this level
>10,000ppm (1%)	> 2,300 ppm	>16,200ppm (1.62%)	Do not feed
HCN (Dry matter)			
<600 ppm HCN (dry matter)			Safe
>600 ppm HCN (dry matter)			Do not feed
HCN (variable moisture)			
<200 ppm HCN			Safe
>200 ppm HCN			Do not feed

Lab testing

Lab testing can help decision making on whether forages are safe to feed. The California Animal Health and Food Safety lab at UC Davis can test for both prussic acid (cyanide, $30) and nitrate (nitrate/nitrite, $25) of forages. Samples for HCN should be frozen in an air tight container immediately to prevent dissipation. Lab contact information and submission sheets can obtained at http://cahfs.ucdavis.edu/index.cfm. Your veterinarian and/or farm advisor can assist you in sampling and interpretation as proper sample collection is crucial. If quality sampling is already being conducted it is usually possible to add nitrate testing to list of forage quality parameters, but this is not always the case with HCN. Table 1 provides guidelines for interpreting forage samples.

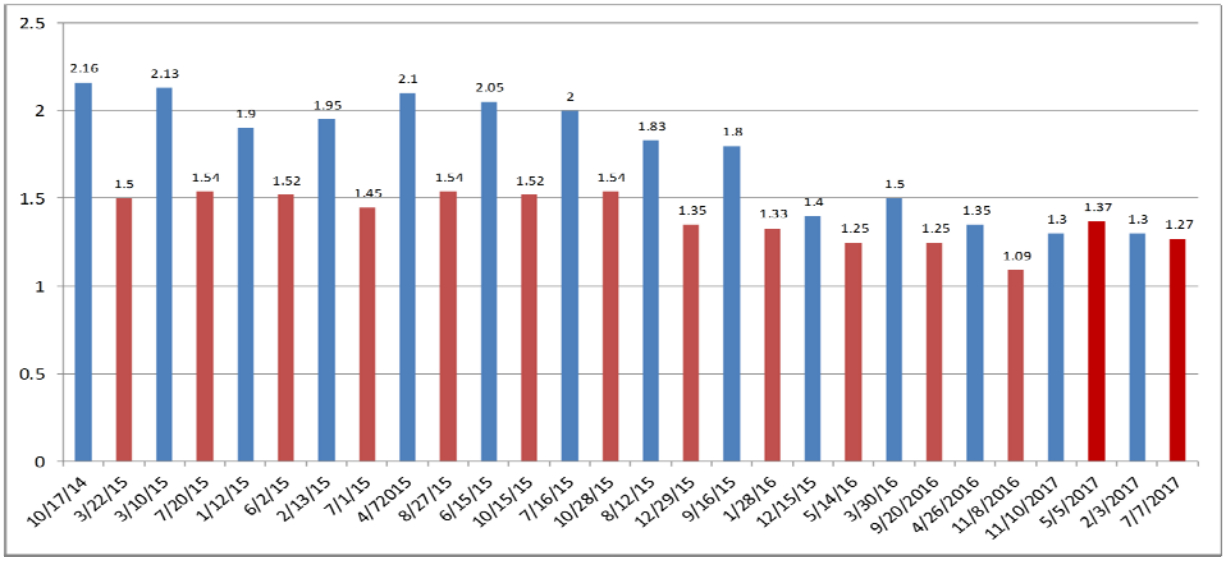
Beef Cattle Market Relationships

Larry Forero, UCCE Shasta/Trinity, Livestock Farm Advisor
Jim Oltjen, UC Davis Animal Science Specialist

The UC Davis Animal Science Department, UC Cooperative Extension and California Beef Cattle Improvement Association continue to support an educational program to help improve California beef cattle producers' understanding of feeding performance and carcass attributes of their cattle. It is called the Ranch to Rail program. Producers sell their cattle to the university, who then feeds and harvests them, and report the feeding and carcass data back to the producer. This data also provides the opportunity to look at the relationship between yearlings off grass and finished cattle.

There is an old adage in the cattle business that goes along the lines of "*you make money when you buy the cattle, not when you sell them.*" Purchasing these cattle from producers, feeding them and then selling them 120 days (or more) later has illustrated this point. The first set of steers weighing 897 lbs was purchased for $2.16/lb. on 10/17/2014. That was ahead of the market collapse beginning in 2015. That set of cattle sold on 3/22/15 for $1.50/lbs weighing 1325 lbs resulting in an over $300/head loss. While many factors influence the profitability of feeding cattle (freight, feed cost, sickness, death loss, etc), the biggest factor influencing the profitability of the steers fed through this program has been the cattle market. Figure 1 shows the relationship between the per pound purchase price and the per pound sale price. Note that from 10/17/16 purchase through 1/28/16 sale, the price per pound difference between purchase and sale was significant.

Figure 1. Ranch-to-Rail Buy/Sell Data in Date order



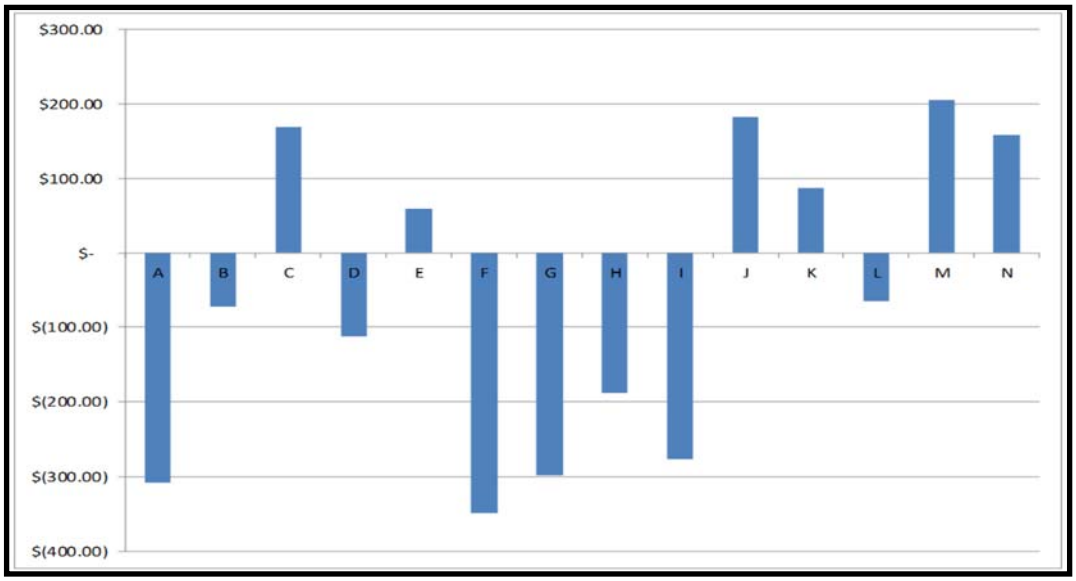
Profitability on these ranch to rail steers is calculated by subtracting gross sale receipts from cash costs. Only cash costs are considered (feeder cattle, feed costs, vaccine and freight) labor, equipment and capital costs excluded. To illustrate this, the relative stable feed costs on a per pound basis are outlined in table one.

Table 1. Cost of per lb gain by group fed in date order.

A	B	C	D	E	F	G	H	I	J	K	L	M	N
$.76	$.64	$.66	$.62	$.69	$.73	$.64	$.65	$.76	$.76	$.73	$.78	$.93	$.80

Figure two looks at the return over cash costs. Feed prices moved up in the past six months making the last two sets of cattle some of the more expensive cattle to feed, however, figure two notes that both sets of cattle made money. These two profitable lots illustrate the significant effect the market has on feedlot profitability.

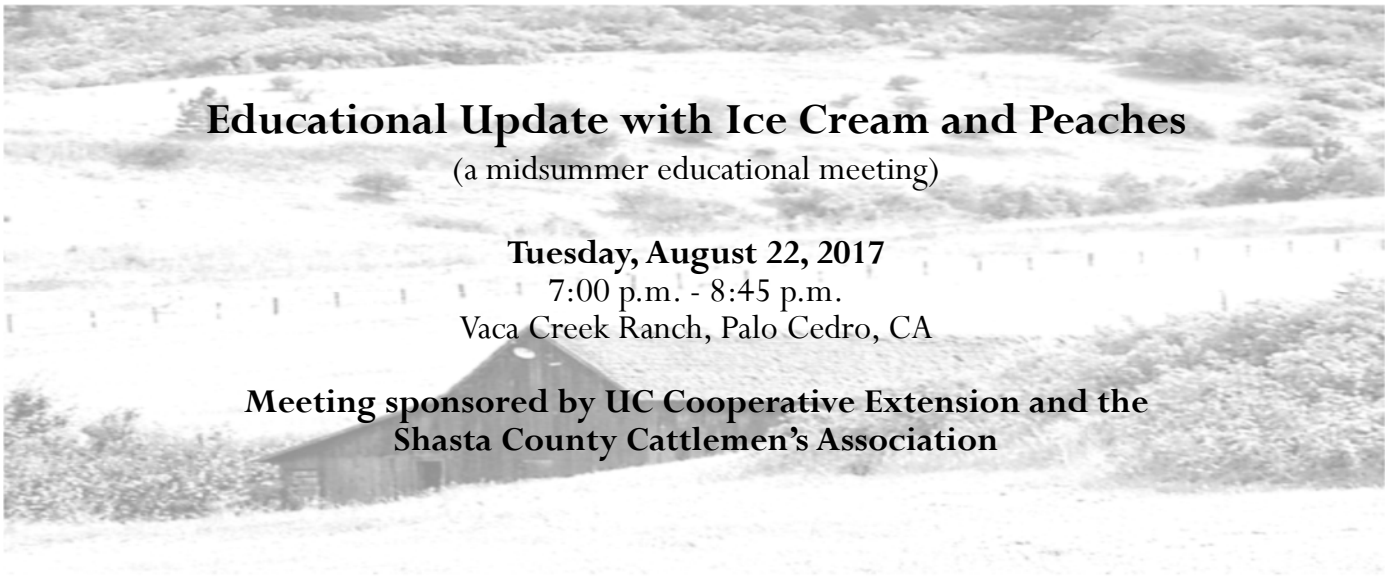
Figure 2. Return over cash costs in order of sell date



While UC is only in the market for small lots of cattle occasionally, this example demonstrates the drastic influence changing market conditions can have on both yearling and feedlot operators. Of the small numbers of cattle purchased by UC, four of the five sets of cattle purchased since December 2016 have generated return over cash costs. The market, while lower, has been less volatile during this period than 2014 and 2015.

There is no doubt many factors influence the beef cattle market (beef consumption, exports, competitive products, etc) it sometimes feels that cow-calf producers can't exert a lot of influence over the beef market. Here are some things grass based operators can think about:

* Run scenarios through a spreadsheet - https://coststudies.ucdavis.edu Cost savings should always be considered.
* Semen test bulls—**Weaning a calf from a dry cow is tough.**
* Consider pregnancy testing cows- It doesn't cost much more to run a bred cow than an open cow.
* Consider fertilizing- Urea is a little cheaper than a year ago and $30 cheaper than two years ago.
* Price feeds that you haven't considered feeding for years- Commodity price can change every year making new types of feeds feasible.
* Talk to the marketing reps to gain information as they are in the business every day.
* Watch the trends-seasonal trends can be important to pay attention to. How does your marketing window line up?
* Is anything paying a premium (natural, age and source, third party certified, etc.)?
* Quality and reputation matter.
* Preconditioned, vaccination program (i.e., booster shots-including but beyond just an 8 way and 4 way). Preconditioning programs including a boosted IBR/BVD/PI3 modified live vaccine (branding and pre-weaning), and a pre-weaning Pasteurella is desirable.



Educational Update with Ice Cream and Peaches

(a midsummer educational meeting)

Tuesday, August 22, 2017
7:00 p.m. - 8:45 p.m.
Vaca Creek Ranch, Palo Cedro, CA

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

Agenda

7:00 p.m.	**Introduction and Welcome** *Rick Fischer, President Shasta County Cattlemen's Association*
7:05 p.m.	**2017 Farm Camp** *Teresa Urricelqui, Supervisor, Redding Parks and Recreation*
7:20 p.m.	**Historic Perspective of Vegetation Management Program—Shasta County** *Glenn Aldridge, VMP Participant*
7:40 p.m.	**VMP Today** *Shane Larson, CalFire*
8:20 pm	**Burning on Private Lands—What Are Others Doing?** *Jeff Stackhouse and Lenya Quinn-Davidson, Humboldt/Del Norte*
8:40 p.m.	**What's a "Normal" Forage Year** *Larry Forero, Shasta County Livestock Farm Advisor*
8:45 p.m.	**Adjourn to SCCA Director's Meeting**

Directions:
From the corner of Deschutes and Dersch Road (Hawes Ranch and Farm Supply)

- Take Deschutes Road East, cross Cow Creek.
- When you get to the top of the hill, look to the north, you will see Golden Lane (gravel road).
- Turn onto Golden Lane and follow it north 1/2 mile to the ranch gate.
- Come through the gate and continue north about a mile to the house.

Name _____

Address_____

City _____ State _____ Zip _____

Email _____

Number attending: _____ Phone# _____

This is a free workshop, but your RSVP by Aug. 21 will help assure we have an adequate supply of Ice Cream and peaches.

Larry Forero
UCCE Shasta County
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Northern California Ranch Update is a newsletter published by the Shasta County 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...

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.

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