

California's Trichomonosis Control Program: Proposed Changes

There has been a lot of discussion regarding the current California Trichomonosis Control Program. Despite the overwhelming general support and the acceptance by producers, one problem that has been highlighted is the repeat infections in herds adopting good preventive practices. It is apparent that in some locales herds are being continually re-infected by some neighboring operations. CDFA has proposed changes in these regulations. CCA membership has adopted policy that support these changes and they have been joined by other organizations such as the Farm Bureau. We will review the changes in this column.

There are a number of areas in the control program where changes are proposed: (1) importation of bulls, (2) pasture-to-pasture herds movements, (3) public sale of bulls, (4) sampling by veterinarians, (5) laboratory certification, (6) confirmatory tests of lab results, (7) investigation and mandatory testing of neighboring at-risk herds, and (8) disposition of infected cattle.

What are the proposed regulations for imported bulls? First, bulls 18 months of age or older must have the following:

- ▶ Official individual animal identification
- ▶ An interstate entry permit number
- ▶ A negative Trichomonosis test result (collected after 10 days of sexual rest and within 60 days of entry into California)
- ▶ A health certificate (Certificate of Veterinary Inspection) which states:

- (a) The bull(s) is Trich test negative and have not had sexual contact since their last negative test.
- (b) Trichomonosis has not been diagnosed in the herd within the last 24 months.
- (c) A bull originating from a herd that has had Trichomonosis diagnosed within the last 24 months must have three (3) negative tests conducted at least 7 days apart and not more than 28 days apart, with the last test conducted within 60 days prior to entry.

These same requirements must also be met by bulls entering California for sales purposes.

What about pasture-to-pasture movements of bulls? Bulls as part of a pasture-to-pasture permitted herd must have one negative test within the 12 months prior to entry. The permit must include the date of the test, negative test results, and the name and contact information of the testing veterinarian.

Are there any exemptions for import testing of bulls? Yes, bulls that are to be used solely of exhibition purposes (rodeo bulls for example) may be exempt from import testing. However, these

exhibition bulls must be confined to the location of the exhibition without having access or being allowed to commingle with sexually mature female cattle. Secondly, bulls that are being used solely for artificial insemination and housed under protocols that meet the Certified Semen Services standards may be exempt from the testing requirements. A third possibility is an exemption for bulls consigned directly to slaughter without unloading prior to arrival at the slaughter plant.

What about bulls sold at public auction within California?

Bulls 18 months of age or older sold through a public livestock market shall be sold only to slaughter or to a feedlot designated only for slaughter unless accompanied by a negative Trichomonosis test result from a sample taken by a Trichomonosis approved veterinarian within 30 days prior to sale. Additionally, public salesyards shall post a sign saying "All bulls 18 months of age and over sold for breeding must have a negative Trichomonosis test or consigned as slaughter only."

How is Trichomonosis testing done? Only USDA accredited California licensed veterinarians can take samples from cattle for Trichomonosis testing. These veterinarians must successfully complete a training program approved by CDFA for sampling and handling specimens used in the diagnosis of Trichomonosis. Any testing, reading or diagnosis of Trichomonosis must be performed in an approved laboratory under the direction of a person approved by CDFA to perform these activities. CDFA will also maintain a list of certified veterinarians and approved laboratories. It is important to note that all Trichomonosis tests are official tests and both presumptive and confirmatory tests must be reported.

What will happen when infected cattle are identified? First, the state veterinarian will impose a quarantine on the herd and any Trichomonosis infected cattle will be held on the premises where found and movement may be allowed only under written confirmation by CDFA. Infected cattle can only be moved to slaughter and written confirmation of the slaughter is required. In the infected herd, all herdmate bulls shall be held on the premises until three (3) negative tests are completed and any cattle determined to be infected will be handled as above.

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What about neighboring herds that might have been exposed? CDFA veterinarians will conduct an epidemiological evaluation to identify exposed herds. All herdmate bulls in a Trichomonosis exposed herd shall be held on the premises where found until one (1) negative Trichomonosis tests is completed. Any infected cattle will be handled as in any infected herd. The testing in exposed herds will be at the owner's expense.

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If the proposed changes are adopted it will give veterinary professionals the necessary tools to clean up Trichomonosis in a given locale and prevent "spillover" infections from continually occurring. The Trichomonosis control program will be reviewed constantly by CCA and other producer groups. CCA and CDFA welcome all comments and suggestions.

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Barb Goatgrass – Impact and Control

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Although first identified in California in the early 1900s, the large spread of barb goatgrass (*Aegilops triuncialis* L.) is relatively recent in the Sacramento Valley foothills. Its first introduction is associated with the importation of Mexican cattle to Eldorado and Sacramento Counties. Populations of goatgrass continue to grow as the weed moves further north.

*Photography by Dennis Nay - NRCS Range Specialist
Glenn County*



Impact of Barb Goatgrass on Rangelands

Barb goatgrass grows in dense stands much the same as medu-

sahead; however, its deeper and more rapidly growing roots make it even more competitive on annual rangeland. The slowly decomposing thatch creates a mulch that crowds out all other desirable forage and native perennial species, creating a monoculture that quickly infests an entire ranch. The plant is generally unpalatable, especially when it matures. Its long awns protrude from the seed head and can cause serious mechanical injury to livestock. Not only is forage quality greatly reduced from goatgrass infestations, but also the pounds of production in infested rangelands have been stated to decrease by 50 to over 75 percent. In addition, since livestock tend to avoid the plant, selected consumption of more desirable plants weakens them and heightens the ability of goatgrass spread.

Identification and Life Cycle

Barb goatgrass is an 8-16 inch tall winter annual that, like medusahead, matures later than most common annuals such as soft chess, wild oats and rip gut brome. The immature plant closely resembles medusahead, but produces a very different seed head that resembles a wheat kernel. Three long and barbed awns protrude from each glume. It also differs in that the entire spikelet drops from the stem and remains intact on the soil surface until fall rains stimulate germination. This is different from medusahead, which still displays a seedless head in the fall residual dry matter (see photo below). Another distinguishing feature is goatgrass' ability to proliferate in multiple types of soils including serpentine soils where many annual grasses have not prospered.

The plant produces both large and small seeds that differ in germination time due to both maternal and sibling factors. Research shows the large seeds germinate more rapidly and actually hinder smaller seed germination while they're still together in the spikelet (sibling). It is also demonstrated that a chemical from the spikelets retards the smaller seeds germination (maternal). These factors can cause smaller seeds to remain dormant for up to five years, but dormancy has been generally accepted as two years. This is important because it means that gaining control of the seed bank will take several years due to the smaller seeds delayed germination.

Control

Various methods of control have been tested with differing amounts of success. In all cases where treatment incurs excess removal of litter, reseeding of desirable clover or grass species should be done to prevent another infestation of non-desirable species.

Burning

Data from research at the UC Hopland Research and Extension Center shown burning at the proper time for two consecutive years proved proficient in controlling goatgrass infestations. Complete control was not found in a single burn due to a build up of the seed bank. Proper burning time was found to be late spring when there was enough fire fuel load, but before seeds were viable and the spikelets were still in the inflorescence. Multiple burns were also found to increase populations of native species.

Chemical

There is no selective herbicide for goatgrass control so herbicides that control goatgrass will generally kill surrounding grasses,

forbs and legumes. Spraying selected patches is very effective in the winter or spring, but may take two years of application to ensure the seed bank is depleted.

Mowing and/or Grazing

Mowing alone has shown limited benefit in complete control due to low growing or bent over plants being missed. Although livestock typically avoid goatgrass, intensive grazing at seed head emergence removes animal selectivity and can prevent goatgrass seed formation. Current UC research is looking at the effectiveness of properly timed grazing of goatgrass at differing stocking rates.

For assistance in barb goatgrass control contact Josh Davy at the Tehama County Cooperative Extension office (530) 527-3101.

Information Drawn From:

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Efficacy of Pour-on Vs. Injectable Ivermectin Trial

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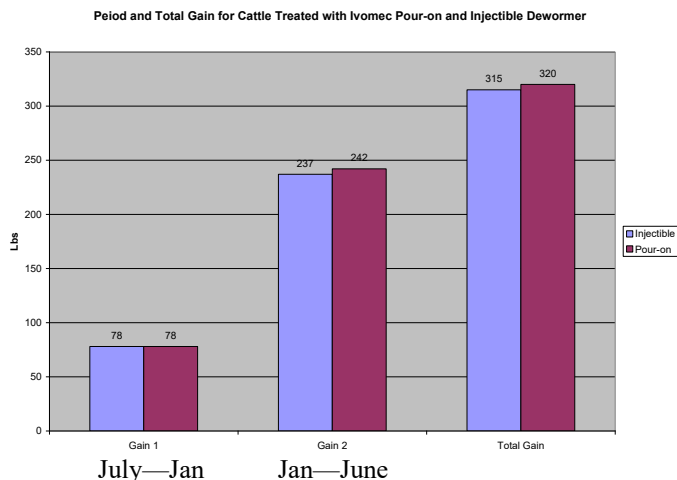
Currently there are many dewormer choices for cattle. The routes of administration include oral (pastes and drenches), injectables, and pour-ons. Consequently, some producers worry about the effectiveness of the various products, be they oral, pour-ons or injectables.

In 1992 a trial was conducted on 68 crossbred steers purchased in the spring. Two different dewormer treatments were administered, either pour-on or injectable Ivermectin®. Merck and Co. products were used (at the time of this project, Merck was the only company who could legally use ivermectin as the active ingredient for dewormers).

Products were applied according to the label directions. Treatment was randomly assigned to the steers. Cattle were weighed and shipped to irrigated pasture in the Marysville area in July. In January, cattle were gathered, retreated, weighed and then shipped to Walnut Creek where they grazed annual rangeland through the grazing season. In June, cattle were gathered and weighed.

Cattle gains were similar by treatment. In this trial, the route of administration did not affect net gain statistically.

Each method of administration brings with it advantages and disadvantages that need to be carefully considered before a product is selected. The pour-on products are easy to use. However, some of the pour-on products are flammable and their use at branding can result in fire. These products could be less effective if applied during rain or snow that washed product off. Additionally, if liver flukes are a concern, there are no pour-on products that contain a flukicide. The injectable products can be applied during inclement weather. Their use requires the animal be "poked" with another needle at processing, however.



most of California, veterinarians suggest you treat beef cattle to control flukes at least once per year. Currently, there are only two drugs that kill flukes—clorsulon and albendazole. Clorsulon comes as a drench (Curatrem®) or injectable (Ivermectin Plus®). Albendazole comes as drench (Valbazen®). If you wish to treat liver flukes, make sure the product you are using has the appropriate material in it to kill flukes.

According to some people, generic ivermectin products may not be as effective in killing parasites as branded products and producers should consult with their veterinarian regarding this aspect of drug selection.

To Fertilize or not to fertilize...
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Energy costs have increased and with it cost of production of hay and pasture. Many producers are considering not fertilizing this year in an effort to reduce costs.

Before making a decision about fertilizing, review what you know about fertilizers. In Shasta County, the most popular fertilizers are Ammonium Phosphate (16-20-0-15), Urea (46-0-0-0), Ammonium Sulfate (21-0-0-24) and Monoammonium phosphate (11-52-0-0). Table 1 summarizes the percentage of nutrient components in each fertilizer.

Table 1-Percentage of Nutrient Components by Fertilizer Type

Fertilizer	Name	%N	%P ₂ O ₅	%K ₂ O	%S
16-20-0-15	Ammonium Phosphate	16	20	0	15
46-0-0-0	Urea	46	0	0	0
21-0-0-24	Ammonium Sulfate	21	0	0	24
11-52-0-0	Monoammonium Phosphate	11	52	0	0

The
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al pasture for cattle or sheep is a mixture of legumes and grasses. An optimum mixture is probably 25% legumes and 75% grasses. Generally speaking:

- ◆ If you have some legumes, but desire more fertilize with a product containing phosphorus such as ammonium phosphate or mono-ammonium phosphaste.
- ◆ If you have some legumes but their leaves are small and appear stunted, they may respond to additions of phosphorus.
- ◆ If you do not have legumes, consider overseeding

As a rule, applying nitrogen will stimulate more grass growth. Before making a fertilizer decision, take the time to assess you pastures. There are several ways to assess your pastures. Early in the growing season there is little grass growth so a visual assessment is difficult. It is also difficult to obtain a tissue sample. The tissue samples would be from very immature plants that would likely have high nitrogen content due to its concentration in a small amount of grass material. Soil tests are practical any time of year.

Soil Sampling

Soil samples are best for phosphorus and potassium. Table 2 lists critical levels. Walk a diagonal across the pasture collecting about 15-20 cores (3/4" in diameter) of soil from the top 6 inches. Avoid collecting samples from areas where there appears to be a plant response from urine or manure. Put the samples in a paper bag. You will need about three cups of soil.

To determine the amount of product to use, divide the desired amount of P₂O₅/acre by the percent of P₂O₅ in the product to give the pounds of prod- uct per acre. For example, if you wanted to apply 50 lbs of P₂O₅/acre

Table 2—Interpreting Soil Test Analysis

Nutrient	If Soil Test is...	Suggested Fertilizer Rate
Phosphorus	< 5 ppm	100 lb P ₂ O ₅ /acre
	5-10 ppm	50 lb P ₂ O ₅ /acre
	10-20 ppm	25 lb P ₂ O ₅ /acre
	>20	none
Potassium	<40 ppm	200 lb K ₂ O/acre
	40-60 ppm	100 lb K ₂ O/acre
	>60 ppm	0-50 lb K ₂ O/acre

and were going to use ammonium phosphate, divide 50 by .2 to give 250 lbs of product.

Many local producers have been applying Ammonium Phosphate to their pasture annually. This strategy assures the clover is provided phosphorus and sulfur and a limited amount of nitrogen is available to encourage grass growth. A soil test will confirm if phosphorus

levels are adequate in which case continuing to apply a phosphorus fertilizer would not make sense

Tissue Sampling

Plant tissue samples are best for determining nitrogen and sulfur levels. Critical levels are outlined in table 3. Walk a diagonal across the pasture collecting grass blades (from the same species if possible). Avoid collecting samples from areas where there appears to be a plant response from urine or manure. Try not to collect dead or decadent plant samples. Put the samples in a paper bag (not a plastic bag as the samples may rot).

Table 3—Interpreting Plant Tissue Analysis

Grasses (tall fescue, orchard grass and other)	Plant Part		Deficient	Critical	Adequate
	Top 4-6 leaves, no stems				
		N%	<2%	2.0-2.8%	>2.8%
		S%	<.10%	0.10-0.15%	>0.15%

Source-Adapted from Western Fertilizer Handbook, 9th Edition

Recent fertilizer trials on irrigated fescue and orchardgrass pastures in Lassen, Modoc and Siskiyou Counties that were hayed found a very economical response to nitrogen applications (personal communication with Rob Wilson, Lassen County UC-CE). They observed a highly favorable response with the fertilizer was applied in split amounts. That is all the fertilizer was not applied in the spring but split into 2 or 3 applications. Trying to adapt their results to grazed not hayed pastures suggests nitrogen rates of about 100 lbs. of nitrogen per acre would be very economical. In practice if soil phosphorus levels were found adequate, ammonium sulfate might be used to supply nitrogen (and sulfur) but no phosphorus at a rate of 250 lbs. of ammonium sulfate per acre (50 lbs. of nitrogen per acre) in the spring and a second application of 250 lbs. of ammonium sulfate about mid season, provided there was adequate water.

Tables 4 and 5 summarize cost on a per unit nitrogen and phosphorus basis. Urea and ammonium sulfate are less expensive sources of nitrogen than ammonium phosphate and monoammonium phosphate at the prices shown. Ammonium sulfate does provide some sulfur which can be deficient on some soils. For a source of phosphorus, monoammonium phosphate is less expensive for each unit of P, even though it is more expensive on a per ton of product basis.

If a field was being considered for fertilizing with 200 lbs of 16-20-0 (ammonium phosphate), the most commonly applied fertilizer in Shasta county on pasture, effectively 32 lbs of N and 40 lbs of P₂O₅ would be applied for a material cost of \$39.90/acre. If nitrogen was the nutrient needed the same amount (32 lb N per acre) could be obtained with 152 lbs. of ammonium sulfate at a product cost of \$22.72 per acre. If phosphorus was needed, the same amount of P₂O₅ (40 lb) could be obtained with 77 lbs of monoammonium phosphate at a product cost of \$18.83 per acre. This clearly indicates why soil testing to assess the phosphorus levels is cost effective. If it isn't needed, don't use it.

Table 4—Cost per unit Nitrogen

Fertilizer	Name	Cost/Ton Spring 2007	\$/Unit N	Cost/Ton Spring 2004
16-20-0-15	Ammonium Phosphate	\$399	\$1.25	\$255
46-0-0-0	Urea	\$499	\$0.54	\$371
21-0-0-24	Ammonium Sulfate	\$299	\$0.71	\$215
11-52-0-0	Monoammonium Phosphate	\$489	\$2.22	\$300

Table 5—Cost per unit Phosphorus

Fertilizer	Name	Cost/Ton Spring 2007	\$/Unit P	Cost/Ton Spring 2004
16-20-0-15	Ammonium Phosphate	\$399	\$1.00	\$255
11-52-0-0	Monoammonium Phosphate	\$489	\$0.47	\$300

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Every article you read and every Farm Advisor you talk to encourages you to test your fields so you can maximize your return on fertilizer investment. Costs for tests are modest Generally less than \$50 for each. Below are a couple of simple points to help you through the process:

If you want to achieve the maximum benefit for the dollars you spend on fertilizer, the field must be amended with the most limiting nutrient. For an irrigated pasture operation it is important to keep in mind the only way you get your money back from fertilization is to:

Grow and harvest more feed through:

- ▶ Increase Stocking Rate
- ▶ Make hay
- ▶ Stockpile feed

The intent of this article it to get producers to think carefully about fertilization. What you are currently doing may not provide the biggest bang for the buck. If you are currently providing adequate water (water is not the limiting factor), applying nitrogen will produce more grass with the same amount of water.

Remember:

- ▶ All Fertilizers aren't considered equal for a reason
- ▶ Determine the limiting nutrient through tests and visual examination
- ▶ Think about what you are doing and spend your fertilize dollars wisely

If you need help finding analytical labs, pulling samples, submitting to an analytical lab and interpreting the results please contact any of the newsletter authors.

Cost Study for Beef Stocker/Yearling Operations

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This study simulated the impacts of different stocker/yearling business options on net returns and is based upon seven years of video auction data and cost reviews with producers. It focuses on the impact of calf prices on purchasing or retaining stockers, natural production compared to traditional, and of marketing feed resources through rental on a per head compared to per pound of gain basis.

Purchasing or Retaining Stockers

Market fluctuation during the grazing season represents significant risk for producers purchasing or retaining calves. Many operations have done a great job on calf performance only to have the market price move against them during the period that they own the calves. The feeder margin is the price per pound difference between the lighter weight calves purchased at a higher price per pound and the heavier weight calves sold at a lower price per pound. Receiving about 15 cents less per pound is expected, based upon Western Video Auction sale averages from 1997-2003. Table A shows the feeder margin for six years on the average prices of a 500-600 pound steers compared to 800 pound steers during a six month ownership for both a winter rangeland and summer irrigated pasture operation.

Winter (October to May) operations had an average feeder margin of -17 cents per pound, compared to cattle pastured over the summer (May to October), which averaged -12 cents. One third of the time the market moved resulting in higher than normal feeder margins and price insurance would have been helpful. For exam-

Table A. Price Spread for Winter & Summer Operation

YEAR	FEEDER	YEAR	FEEDER
Winter	MARGIN	Summer	MARGIN
Oct to May	cents/lb	May to Oct	cents/lb
1997-1998	24.80	1997	15.30
1998-1999	9.80	1998	14.52
1999-2000	8.48	1999	7.02
2000-2001	28.11	2000	10.46
2001-2002	35.30	2001	18.82
2002-2003	8.75	2002	8.31
Average	19.21	Average	12.41

ple, the winter feeder margin in 2001-02 grew to 35.cents, resulting in an estimated loss of \$35,402 for a 300 head operation. This clearly points out that price risk management is an important management area that should not be overlooked to assure profitability or at least avert a financial disaster.

Feeder options can be used as a method to provide price insurance. An option can be purchased though a commodities broker and producers can choose the level of risk that they want to insure against. Some choose to buy the lowest cost option to provide cheap insurance against a large price swing. Others determine their breakeven costs and insure a price at or above that amount. Larger operations use multiple purchases of calves over time (similar to dollar cost averaging in stocks) as a strategy to limit risk. Using a video auction to forward contract calves can also be used to reduce price risk.

Natural

There has been much interest in determining if there is a financial advantage to natural production (no implants, hormones, or antibiotics used in production) of stocker or yearling cattle. Although evaluation of just the price per pound received may indicate there may be a large advantage to natural production, a previous University of California study evaluated the 16 identifiable variables that impacted price from 1997 to 2003, and found the average premium for natural by itself was 1.8 cents per lb. when sold through video markets. Additional costs of natural operation are identifying any sick animals that require antibiotic treatment and selling them separately at an auction yard in a smaller lot. Smaller lots were estimated to bring a nine cent per pound reduction in price due to the small number of animals in the pen lot (Western Video Auction). It is estimated that not using implants and ionophores will reduce the animal gain by .084 to .30 and .11 to .18 pound of gain per day respectively (Fields and Taylor). Based on this, the "natural" calves would be expected to gain 36 lbs less than the conventional cattle, resulting in a three cent per pound higher price was used as the sales price. This price differential (generated by the lighter sale weight) coupled with the natural premium paid resulted in a higher price per pound for the natural

cattle of 4.8 cents per pound. Using these data inputs, this study found stocker/yearling cattle pastured under a "natural" regime had per calf net income of \$3.03 less than standard operation that used conventional production tools (implants, antibiotics, ionophores, etc). If you presently do not use implants or ionophores, your income differential may be greater with natural production.

Per Pound of Gain

Some landowners graze non-owned stockers and are paid on the body weight gain. Stockers usually will weigh between 500-600 pounds upon arrival. In most contracts a 2% death loss is acceptable to the cattle owner. Missing cattle, not verified as dead, may be the responsibility of the landowner above the accepted 2% deathloss. Any amount above that is the responsibility of the lease holder providing the pasture. Generally, the owner of the cattle provides medication and processing vaccine, and the lease holder provides the labor. Payments currently range from 30 to 34 cents per pound of gain. This cost study assumed the producer would receive 30 cents per pound of gain. The contract specifications for shrink weight can be an important item of consideration. In most gain payment contracts, calf weights are determined at the time of purchase and are generally shrunk. Cattle are gathered, weighed and shipped at the end of the grazing season. Shrink is generally figured at 3%. Net gain is calculated by subtracting the shrunk weight from the in weight. The quality of calves that are received can greatly vary the pounds of gain. Some landowners have a contract clause allowing loads to be rejected on quality or health. The study assumes that the cattle will gain 270 pounds (or 1.5 pounds per day) during the grazing period. In this example cost study, it was found that the net returns above operating costs for gain cattle (at 30 cents per pound) was \$0.73 less per head than straight cash pasture rent.

The study used the average of steer prices for the appropriate weight class during the purchase and sales from a Western Video Auction market study to analyze the net income over a six year period. A table in the study illustrates the impact of market price shifts on the operation profitability for each year. The net incomes per calf estimates without price protection ranged from \$-146 to \$28/head.

To view and obtain a copy of the 15 page publication or to obtain a spread sheet to enter your own cost and income data, go to the University of California, Davis Department of Agriculture & Resource Economics website at <http://coststudies.ucdavis.edu> and look under "New Cost and Return Studies" for "Beef 2005 - Sacramento Valley, Yearling/Stocker Production".

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- Western Video Auction. Weekly Price Report for Shasta Live-stock Auction September 2, 2005. www.wvmcattle.com/shastamr.htm

Let us know what you think!!!

This newsletter contains articles written by University of California Farm Advisors, Specialists, and Program Representatives. Our aim in writing this newsletter is to provide the ranching community in the Sacramento Valley with science based information for your consideration. Our intent is that this newsletter will be published on a quarterly basis. We welcome your feedback and encourage you to call or email with questions, comments, or ideas for future articles.

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