Focus on the Beef Cow Workshop

Invasive & Poisonous Plants: Concerns and Management on Rangelands

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August 17, 2017 – Arroyo Grande, CA

Yellow Starthistle

Herbicide
Grazing
Mowing

UC Weed Report - http://wric.ucdavis.edu/information/natural%20areas/wr_C/Centaurea_solstitialis.pdf

Yellow Starthistle - Herbicide

Early seedling stage

Rosette stage

Bolting. *Bolting is a stage of vigorous shoot growth during the time of greatest light availability.*

Photo: http://cal-ipc.org/ip/management/pdf/YSTBiology.pdf

Aminopyralid (Milestone) is the best option to control yellow starthistle. Spray from early seedling to rosette stage.
Clopyralid (Transline) is also very effective. Spray from seedling to mid-bolting stage.

Yellow Starthistle - Grazing

Bolting. *Bolting is a stage of vigorous shoot growth during the time of greatest light availability.*

Photo http://cal-ipc.org/ip/management/pdf/YSTBiology.pdf

Spiny stage – too late to graze!

Graze from time when plant has bolted to right before the spines come out on the heads.

Yellow starthistle - Mowing
Spiny Stage Versus Flowering Stage

Spiny stage – you could mow when all plants are in this stage, but it's safer if you wait to mow until you see flowers.

Flower initiation, flower expansion, and full bloom stage – mow now!

Mow when 2-5% of the seedheads are blooming.

http://anrcatalog.ucanr.edu/pdf/8398.pdf

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Publication 8398 | January 2011

Livestock-Poisoning Plants of California

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Poisonous plants cause significant losses of livestock every year. A successful livestock operator must know which poisonous plants occur on a given range or pasture and how they can be controlled or avoided. This publication shows which plants are poisonous, tells how they affect stock, and suggests ways to reduce losses from poisoning.

Undesirable effects may result from a single ingestion of a large amount of a poisonous plant, but some plants are so toxic that very small amounts may result in severe disease or death. Other plants cause chronic poisoning only after ingestion over weeks or months. The later situation may result in clinical signs long after the exposure to the toxic plant material, and treatment may no longer be possible.

With few exceptions, livestock will not eat poisonous plants unless forced to by hunger. The single most important way to prevent poisoning is to use proper range and pasture management practices to provide ample forage, encouraging consumption of nontoxic plants. Areas infested with poisonous plants should be avoided when trailing, holding, or unloading animals. Supplemental feed may protect stock if these conditions cannot be avoided, but there are circumstances (for example, herbicide applications) that may change palatability or increase toxicity in some plants. If toxic weeds are embedded in alfalfa cubes or included in total mixed rations, animals may not be able to avoid ingestion of them.

Many poisonous plants may be controlled with herbicides. Often, however, the uneven distribution

Livestock-Poisoning Plants in California

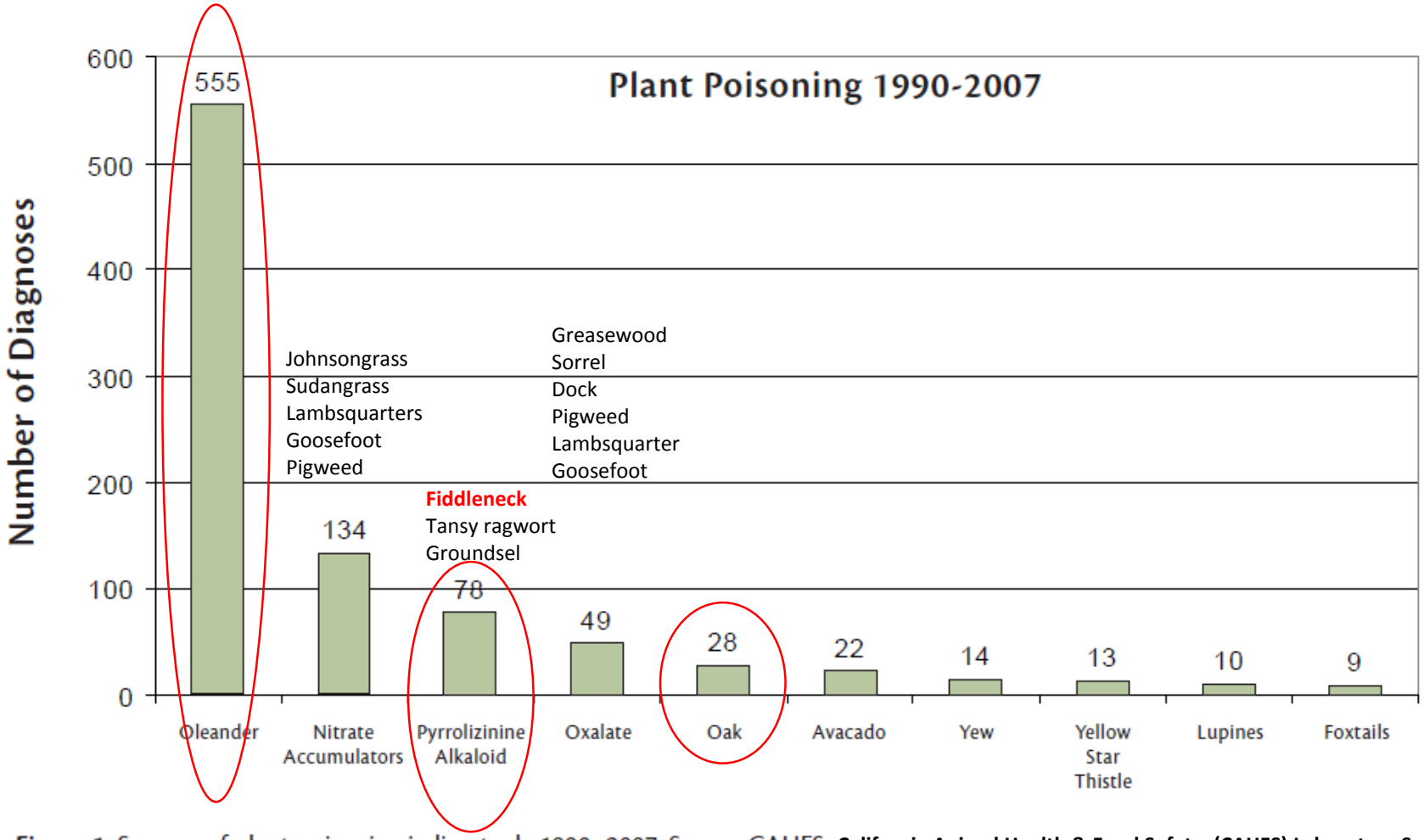

Figure 1. Sources of plant poisoning in livestock, 1990–2007. *Source:* CAHFS. **California Animal Health & Food Safety (CAHFS) Laboratory System**

Oleander: Toxin – Cardiac Glycosides

Organ or systems affected: Heart
Signs of poisoning in cattle: **Sudden death**, depression, salivation, weakness, irregular heartbeat, diarrhea
Affects cattle, sheep, horses, goats

Fiddleneck: Toxin – Pyrrolizidine alkaloids

Fiddleneck – is also a native plant

Organ or systems affected: Liver
Signs of poisoning in cattle: Chronic appetite loss, **weight loss**, rectal straining
Affects cattle and horses most. Sheep & goats are also affected but not as much.

Poison Hemlock: Toxin – Coniine (alkaloids)

Organ or systems affected: Nervous, reproductive
Signs of poisoning in cattle: nervousness, trembling, weakness, coma, **birth defects**
Affects cattle, sheep, horses, goats

Oaks: Toxin - Tannins

Organ or systems affected: Liver, kidney
Signs of poisoning in cattle: **Sudden death**, bloody diarrhea, kidney failure
Affects cattle mostly, but also horses, sheep, and goats.

California Animal Health & Food Safety (CAHFS) Laboratory System

CAHFIS Locations

UC Davis Lab

Tulare Lab

Necropsy: $120

Submit 3 things

1) Animal
2) Suspected plants
3) Water sample

CalFlora: www.calflora.org

Calflora

1 matching record.

Searching for: name like poison hemlock

Click on the **Scientific Name** to see a Taxon Report.

Conium maculatum

invasive non-native
Perennial herb

Poison hemlock

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Bluegreen Algae in Water Trough

https://www.agweb.com/article/controlling_algae_in_livestock_water_tanks_naa_university_news_release-naa-university-news-release/

Effective Herbicides for Controlling Central Coast Rangeland Weeds: Plants

1. Bull thistle
2. Cocklebur
3. Fiddleneck
4. Foxtail
5. French broom
6. Goatgrass
7. Himalaya blackberry
8. Italian thistle
9. Medusahead
10. Milk thistle
11. Purplestar thistle
12. Tumbleweed
13. Whitetop
14. Yellow starthistle

Table 1. Common Central Coast Rangeland Weeds

Plant Species	Herbicides Options Approved for use on California Rangelands	Rangeland Herbicides Known to be Effective
Bull thistle (*Cirsium vulgare*)	2, 4-D (Several names) Aminopyralid (Milestone) Clopyralid (Transline) Dicamba (Banvel, Clarity) Triclopyr (Garlon 3A/Garlon 4 Ultra) Chlorsulfuron (Telar) Imazapyr (Arsenal, Polaris)	Milestone, Transline, Capstone (=Milestone + Garlon), Garlon, Roundup (Kyser, unpublished) 2,4-D is often used because it is inexpensive. However, it is not as effective as other herbicides.
Bull thistle weed report:	http://wric.ucdavis.edu/information/natural%20areas/wr_C/Cirsium_vulgare.pdf	
Cocklebur (common and spiny cocklebur) (*Xanthium strumarium*) (*Xanthium spinosum*)	2, 4-D (Several names) Aminopyralid (Milestone) Clopyralid (Transline) Dicamba (Banvel, Clarity) Fluroxypyr (Vista XRT) Triclopyr (Garlon 4 Ultra, Remedy Ultra) Glyphosate (Roundup, Accord XRT II, and others) Imazapyr (Arsenal, Polaris) Sulfosulfuron (Outrider)	Aminopyralid (Milestone) Clopyralid (Transline)
Cocklebur weed report :	http://wric.ucdavis.edu/information/natural%20areas/wr_X/Xanthium_spinosum-strumarium.pdf	
Fiddleneck (Menzies and coast fiddleneck) (*Amsinckia menziesii*) (*Amsinckia menziesii var. intermedia*)	Aminopyralid (Milestone) Glyphosate (Roundup, Accord XRT II, and others) Chlorsulfuron (Telar) Imazapyr (Arsenal, Polaris) Sulfosulfuron (Outrider) Hexazinone (Velpar DF)	Aminopyralid (Milestone) Chlorsulfuron (Telar)
Fiddleneck weed report:	http://wric.ucdavis.edu/information/natural%20areas/wr_A/Amsinckia.pdf	

Effective Herbicides for Controlling Central Coast Rangeland Weeds: Herbicides

1. Triclopyr (Garlon 3A/Garlon 4 Ultra, Remedy Ultra,Pathfinder II)
2. Aminopyralid (Milestone)
3. Glyphosate (Roundup, Accord XRT II, and others)
4. Chlorsulfuron (Telar)
5. Clopyralid (Transline)
6. 2, 4-D (DMA4 IVM, Weedar 64 and many others)

Table 2. Commonly Used Rangeland Herbicides, Including When and How to Use Them

Chemical Name/Product Name[1]	Price[2*]	Registered for use on California rangelands[3]	Requirements to Purchase/Spray Herbicide[3]	Preemergent/ Postemergent[1]	Best time to spray[4]	Targeted Plants[4]
Triclopyr (Garlon 3A/Garlon 4 Ultra, Remedy Ultra, Pathfinder II)	$70/gallon	Yes	Operator ID #	Postemergent	Spray after all of the weed seed has germinated, but before the plants get big.	Kills broadleaves, but not grasses Kills clovers[5]
Aminopyralid (Milestone)	$300/gallon	Yes	Operator ID #	Preemergent and postemergent	January - March	Kills thistles and legumes, and some other broadleaves, but not grasses Kills clovers[5]
Glyphosate (Roundup, Accord XRT II, and others)	$21/gallon	Yes	Operator ID #	Postemergent	Spray after all of the weed seed has germinated, but before the plants get big.	Kills any green vegetation. Tree leaves can be sprayed, but it will not be effective if sprayed on tree trunks.

Effective Herbicides for Controlling Central Coast Rangeland Weeds: Herbicides - Grazing/Pet Restrictions

Chemical Name/Product Name[1]	Grazing/Pet Restrictions[5]
Triclopyr (Garlon 3A/Garlon 4 Ultra, Remedy Ultra, Pathfinder II)	"Grazing green forage: There are no grazing restrictions for livestock or dairy animals on treated areas...Haying (harvesting of dried forage): Do not harvest hay for 14 days after application...Slaughter Restrictions: During the season of application, withdraw livestock from grazing treated grass at least 3 days before slaughter...Livestock Use of Water from Treatment Area: There are no restrictions on livestock consumption of water from the treatment area." **Herbicide Label: https://s3-us-west-1.amazonaws.com/www.agrian.com/pdfs/Garlon_3A_Label1i.pdf**
Aminopyralid (Milestone)	"Grazing and Haying Restrictions: There are no restrictions on grazing or grass hay harvest following application of Milestone at labeled rates. Cutting hay too soon after spraying weeds will reduce weed control. Wait 14 days after herbicide application to cut grass hay to allow herbicide to work. Do not transfer grazing animals from areas treated with Milestone to areas where sensitive broadleaf crops occur without first allowing 3 days of grazing on an untreated pasture. Otherwise, urine and manure may contain enough aminopyralid to cause injury to sensitive broadleaf plants...For applications on rangeland and permanent grass pastures (not harvested for hay) and non-cropland areas, do not enter or allow worker entry into treated areas until sprays have dried...Grazing Poisonous Plants: Herbicide application may increase palatability of certain poisonous plants. Do not graze treated areas until poisonous plants are dry and no longer palatable to livestock...Hay from grass treated with Milestone within the preceding 18-months can only be used on the farm or ranch where the product is applied unless allowed by supplemental labeling." Check label for specific restrictions on moving hay, or using hay for silage, etc. **Herbicide Label: https://s3-us-west-1.amazonaws.com/www.agrian.com/pdfs/Milestone_Label1h.pdf**
Glyphosate (Roundup, Accord XRT II, and others)	"DOMESTIC ANIMALS: This product is considered to be relatively nontoxic to dogs and other domestic animals; however, ingestion of this product or large amounts of freshly sprayed vegetation may result in temporary gastrointestinal irritation (vomiting, diarrhea, colic, etc.). If such symptoms are observed, provide the animal with plenty of fluids to prevent dehydration. Call a veterinarian if symptoms persist for more than 24 hours...Do not feed or graze turfgrass grown for seed or sod production for 8 weeks following application...If application rates total 4.5 pints per acre or less, no waiting period between treatment and feeding or livestock grazing is required. If the rate is greater than 4.5 pints per acre, remove domestic livestock before application and wait 8 weeks after application before grazing or harvesting." **Herbicide Label: https://s3-us-west-1.amazonaws.com/www.agrian.com/pdfs/Roundup_Custom_Label2.pdf**

Anything to include from Glenn Nader pubs???

LIVESTOCK & RANGE NEWS

UCCE Research and Workshops in San Benito, Monterey, and Santa Cruz Counties

Effective Herbicides for Controlling Central Coast Rangeland Weeds

Author: Devii R. Rao

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Do you have yellow starthistle, Italian thistle, Himalaya blackberry, white top, or other common Central Coast rangeland weeds on your ranch? If so, you may be wondering which herbicides are most effective, how much they cost, what is required to purchase and spray a particular herbicide, when to spray, whether the herbicide affects grasses or clovers, and if the herbicide is safe for your livestock and pets. Many Central Coast rangeland landowners have been asking these same questions. So, I compiled this information in two tables. **Table 1** shows some of our common rangeland weeds and different herbicide treatment options. **Table 2** lists six of the most commonly used rangeland herbicides, and answers questions about cost, when to spray, purchasing requirements, affected plants, and grazing/pet restrictions. Both tables are attached as PDFs at the bottom of this blog post. All of this information is already available from a variety of sources, but I have put it together in two easy to use reference tables. The tables are self-explanatory for the most part, but the information below may clarify a few things.

Thank You

Medusahead

Herbicide
Mowing
Grazing

Kyser, G., Ditomaso, J., Davies, K. and Smith, B., 2014. Medusahead management guide for the western states. University of California Division of Agriculture and Natural Resources, pp.1-58. http://wric.ucdavis.edu/publications/MedusaheadManagementGuide_pub_2014.pdf

Medusahead – Herbicide and Mowing

Emergence of awns | **Fully emerged seedhead** | **Visible anthers**

Photos: Emilio Laca from Medusahead State of the Weed PowerPoint Presentation

Glyphosate (Roundup Pro, Accord XRT, and others) during the early flowering stage (when awns emerge to when anthers emerge - late spring, before seeds are produced) in late-spring. Several herbicides have been tried. Still determining best options.

Mow during early flowering (when awns emerge to when anthers emerge - late spring, before seeds are produced) in late-spring. Mow to about 4 inches. Same timing as glyphosate treatment.

Medusahead – Grazing

Boot Stage

Photo: Emilio Laca from Medusahead State of the Weed PowerPoint Presentation

High intensity, short duration sheep grazing when plants are in the boot stage (just before the inflorescence emerges (late-April to early-May). One study showed this timing reduced medusahead cover by 86-100%.

Intensive cattle grazing with 500 lb. calves for 3 months from winter-to-spring reduced medusahead cover down to 10% from 45%. More animals were brought in during the 2-3 weeks when medusahead was most susceptible to grazing (boot stage).

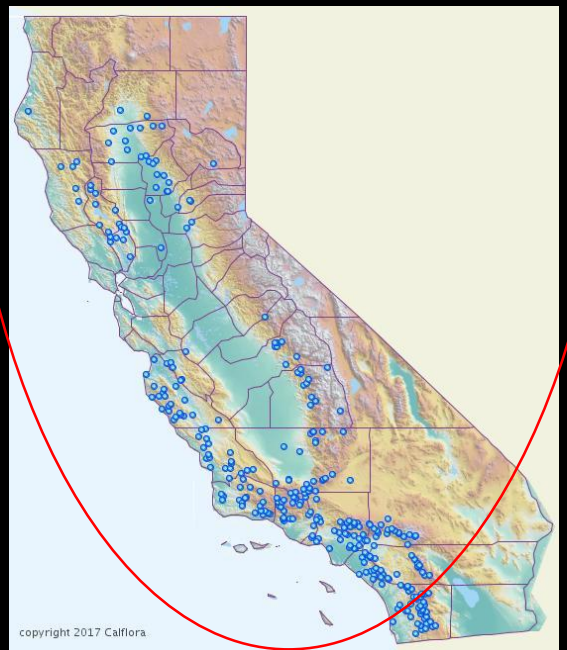
Note that medusahead can recover from grazing in years when there is late spring rain.

Milkweed: Toxin – Cardiac glycosides

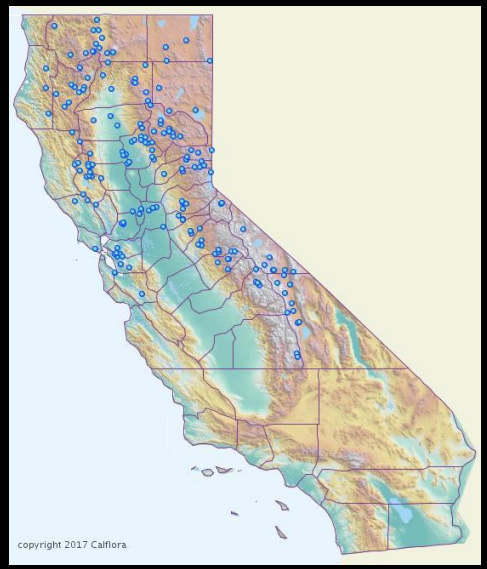
Organ or systems affected: Gastrointestinal, heart, nervous

Signs of poisoning: **Depression, diarrhea**, colic, irregular respiration

Showy milkweed:
Asclepias speciosa



Wollypod milkweed:
Asclepias eriocarpa



Mexican whorled milkweed/Narrow leaf milkweed
Asclepias fascicularis