

21st Century Agronomics

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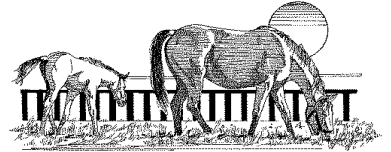
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PLANTS POISONOUS TO LIVESTOCK ESPECIALLY HORSES

This spring has brought an unusual number of inquiries and cases of poisonous weeds and their effect on horses (there are a number of plants also poisonous to humans). All livestock can be affected, to one degree or another, but horses, due to their digestive system compared to ruminants, are much more susceptible. Sheep and goats seem to be most tolerant to poisonous weeds and are often used as biological control agents to control unwanted vegetation, including poisonous weeds.



There are several weed species poisonous to livestock including fiddleneck, common groundsel, yellow starthistle, cocklebur, jimsonweed, scarlet pimpernel, hairy vetch, nightshade, poisonous hemlock, Klammath weed and lupine. Poisoning from any one of these plants is usually not a problem by grazing as long as the pasture is not over grazed. When over grazed, animals are then forced to feed on the poisonous plants. The greatest danger occurs when poisonous plants are found in hay. Then, there are plants such as alsike clover, that one would normally not think of being poisonous. But, horses can be affected by grazing on alsike clover which contains a toxin that causes liver damage and photosensitization. The white skinned area of the horse becomes raised, reddened, painful and eventually dry and sloughs off.

Plants are poisonous due to various toxins, but accumulation of nitrates can also cause poisoning. Drought conditions, low temperatures and deficiency of sulfur and phosphorous can result in excessive amounts of nitrogen in plants. The entire plant becomes toxic. Milk thistle, mustard, fiddleneck and johnsongrass have all caused problems due to high nitrates. Nitrate poisoning can be a serious problem in cattle, but horses are rarely effected.

The greatest concern is contamination in both oat and alfalfa hay. Fiddleneck and common groundsel and to a lesser extent, yellow starthistle are the most common problems of horse poisoning.

Fiddleneck

Fiddleneck infestations were abnormally severe this spring. You may remember seeing fields and roadsides of the bright orange flowers of fiddleneck all through the county in April.

Fiddleneck is a winter annual plant with lance shaped, hairy leaves that are harsh to the touch. The bright orange flowers are arranged on one side of the flower stalk, which is curled, resembling the neck of a fiddle. It contains a pyrrolizidine alkaloid that causes necrosis of the liver. The most toxic part of the plant is the seeds. Pyrrolizidine poisoning is cumulative or chronic. Less than lethal amounts of the alkaloids may produce liver damage that is not detected for several months or even years after ingestion. Symptoms include weakness, uncoordination (walking disease in horses), photo sensitization and jaundice with a yellowish color of the mucous membranes. Death can and does occur in horses.



Common Groundsel



Common groundsel is also a common occurring winter annual that is easily confused with sow thistle. The mature plant can reach a height of two feet, with branching stems. The numerous flowers are clustered together, yellow in color with black tipped bracts (important site identification characteristics in hay). The mature flowers form seed with tufts of long, silky white hair. As is the case with fiddleneck, common groundsel also contains pyrrolizidine alkaloids. The entire plant is toxic and symptoms are the same as occurs with fiddleneck poisoning.

Yellow Starthistle



Yellow starthistle is also an annual which is of less concern, but can cause acute death in horses. It is not often a problem in alfalfa or oat hay (although it can be) but, can be a problem in pastures. The mature plant is grayish green and grows to a height of 1 to 3 feet tall. It often has a white appearance due to a loose, cottony wool covering on stems and leaves. The mature plant is easily identified by its dandelion like, bright yellow flowers with long, sharp, rigid spines at the base. The entire plant is toxic, but unlike fiddleneck and common groundsel, the toxins are sesquiterpene lactones. Consumption of large amounts of starthistle produces a nervous disorder by destroying brain tissue. Starthistle

Steps to Prevent Plant Poisoning

- ***Pasture Management***
 - < *don't over graze*
 - < *eliminate or fence around toxic plants*
 - < *check for toxic plants periodically*
 - < *have adequate water, as well as salt and mineral supplements*
- ***Know how to identify poisonous plants***
- ***Do not feed yard or garden clippings and trimming to livestock***
- ***If possible, check hay in fields, before cut, for poisonous weeds***
- ***Before buying, ask about possible poisonous weeds and control measures, if used***
- ***If in questions, bring hay sample to your local UCCE Office for identification***

poisoning is often referred to as “chewing disease.” Symptoms include aimless walking with muzzle to the ground, the mouth half open and difficulty in eating and drinking. Once symptoms appear, there is no treatment and the horse develops either pneumonia or dies of starvation and thirst.

Identification of Plants in Hay

Identification of these poisonous plants is relatively easy when mature and flowering. They are usually in full flower at about the same time the hay crop is ready to cut. However, for effective control with herbicide, identification in the seedling stage is a must. But, identification in baled hay can be problematic. Identification in cubed or pelleted forage can be all but impossible, visually. When familiar with the growing mature plant, there are features that can be distinguished to identify the presence of any one of these plants in baled hay.

The surface of leaves and stems of fiddleneck have raised hair bases that are white in color. Leaves and stems are sand paper-like to the touch. The coiled arrangement of the flowers can be easily seen. Dried stems and leaves are cinnamon to chocolate brown with dense silvery hairs.

Common groundsel can be identified by black tipped flower bracts near the base of the flower. Stems are hollow.

Yellow starthistle flower heads have the conspicuous rigid yellow spine. Surface of leaves and stems are covered with matted, cob web like hairs.

For more information in this area, contact me at 559-675-7879 or you can purchase UC DANR publication #21483 “Three Poisonous Plants Common in Pastures and Hay” for \$2.50 at your local UCCE Office.

CONSERVATION MANAGEMENT PRACTICES (CMPS) PLANS DUE TO AIR DISTRICT

**Madera County - General Farming (RSVP to Madera County Farm Bureau: 559-674-8871
Wednesday, June 2, 8:00 a.m. - Madera Fairgrounds Van Alan Hall, Madera
Wednesday, June 2, 4:00 p.m. - SFA Portuguese Hall, Chowchilla**

Dairy Only:

Wednesday, June 2, 9:30 a.m. and 6:00 p.m. - Chowchilla Fairgrounds, 1000 South 3rd Street, Chowchilla (No RSVP needed)

**Merced County - General Farming (RSVP to Merced County Farm Bureau: 209-723-3001
Thursday, June 3, 8:00 a.m. - Los Banos Fairgrounds, Los Banos
Thursday, June 3, 4:00 p.m. - UC Cooperative Extension Office, 2145 Wardrobe Avenue, Merced**

Dairy Only:

Thursday, June 3, 9:30 a.m. and 6:00 p.m. - Stevinson Hall, 2962 North Landers Avenue, Stevinson 95374 (No RSVP needed)

Workshops will be held in late May and early June to assist farmers and dairy producers with new air quality reporting and permitting requirements. The workshops are scheduled throughout the San Joaquin Valley from May 25 through June 10, and focus on rules for complying with on-farm practices for PM10 emission reductions, and

Plants Seriously Poisonous to Humans

- i Castor beans*
- i Pokeweed*
- i Tree tobacco*
- i Oleander*
- i Foxglove*
- i Jimsonweed*
- i Deathcamas*
- i Poison Hemlock*

*Go to <http://wric.ucdavis.edu>
for information and
identification of these and
many other weeds.*

new permitting requirements triggered by last year's passage of Senate Bill 700. **These workshops cover what farmers and dairy producers must do by July 1, 2004 to remain in compliance with the law, so attendance is strongly encouraged.**

The workshops will produce "one-stop shopping" – that is, producers will have the option of filling out the necessary forms during the workshops and submitting them on the spot.

Due to space limitations and special requirements for dairies, **there will be a separate, parallel series of workshops for dairy producers.** Dairy producers who also grow other crops/commodities **need not attend both workshops**; general farming requirements will be covered at the dairy workshops. All other producers should attend the general farming workshops.

All workshops are free and include assistance with necessary forms.

Sincerely,

**Ron Vargas
Farm Advisor**



For special assistance
regarding our programs,
please contact us.