

Preventing Weed Spread via Contaminated Hay and Straw

**Joanna Clines
Sierra National Forest**



**California Invasive Plant Council
Symposium 2005
Chico, California**

OVERVIEW

- The problem – examples of contaminated hay and straw spreading invasive weeds
- The solution? – use only certified weed-free forage and mulch.....
- California efforts towards a certification “program”
- Current status of certification “program”

State of knowledge (how do we know hay and straw spread weeds?)

- Scientific studies specifically focused on hay and straw as vectors
- Documented instances where hay or straw contained weeds that started new infestations (observational evidence)
- Logical inference – makes sense, can't prove it.

SCIENTIFIC LITERATURE

National Park Service

National Park Service
U.S. Department of the Interior



DOMINICAN UNIVERSITY *of* CALIFORNIA

- Literature search on non-native, invasive plants found in field grown forage products, straw, and mulch; as well as pathways of spread.
- Dominican University is also assembling a resources kit for National Parks and others to use for education and outreach.
- A DRAFT FOR PEER REVIEW IS EXPECTED BY THE END OF 2005.**

National Park Service & Dominican University of California manure study (Cal-IPC poster)



Preliminary study investigating presence of viable seed in manure gathered from pastures and stables in the Bay Area. Further research is planned on a larger scale in California National Park Service Units

Documentation of a B-rated noxious weed entering California in alfalfa hay from Fallon, Nevada 1999

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE PEST AND DAMAGE RECORD



FORM 65-020		STATE OF CALIFORNIA/DEPT. OF FOOD & AGRICULTURE	
COUNTY		PLANT INDUSTRY-PEST AND DAMAGE RECORD	
ACTIVITY 016	OWNER 41406 K	NV	
SITUATION 012	ADDRESS		
SECTION	[REDACTED]		MO. DAY YR 09 06 99
TOWNSHIP	[REDACTED]		AFFILIATION F S C E U O
RANGE	[REDACTED]		
BASE & MERIDIAN H M S	QUARANTINE ORIGIN FALLON NV	ZIP CODE	
SHPT. SIZE	QUARANTINE DESTINATION DOYLE	ZIP CODE	
CODE	HOST/CROP NAME/TYPE OF TRAP ALFALFA HAY		
GENERAL OR PLANT PATH	NUMBER OF	ACRES INVOLVED:	
	NO. % OF PLANTS AFFECTED:		
PLANT DISTRIBUTION <input type="checkbox"/> LIMITED <input type="checkbox"/> SCATTERED <input type="checkbox"/> WIDE SPREAD <input type="checkbox"/> ERADICATED			
PLANT PARTS AFFECTED			
<input type="checkbox"/> BUDS	<input type="checkbox"/> TUBERS	<input type="checkbox"/> GROWING TIPS	<input type="checkbox"/> LEAVES, UPPER SURFACE
<input type="checkbox"/> SEEDS	<input type="checkbox"/> BLOSSOMS	<input type="checkbox"/> FRUITS OR NUTS	<input type="checkbox"/> LEAVES, LOWER SURFACE
<input type="checkbox"/> STEM	<input type="checkbox"/> PETIOLES	<input type="checkbox"/> BULBS OR CORMS	
<input type="checkbox"/> TRUNK	<input type="checkbox"/> ROOTLETS	<input type="checkbox"/> BRANCHES LARGE	
<input type="checkbox"/> BARK	<input type="checkbox"/> LARGE ROOTS	<input type="checkbox"/> BRANCHES, TERMINAL	
PLANT SYMPTOMS <input type="checkbox"/> LIMITED <input type="checkbox"/> GENERAL			
<input type="checkbox"/> GALLS	<input type="checkbox"/> ROOT ROT	<input type="checkbox"/> LEAF FALL	<input type="checkbox"/> LEAF MOTTLING
<input type="checkbox"/> CANKER	<input type="checkbox"/> DIE BACK	<input type="checkbox"/> FRUIT SPOT	<input type="checkbox"/> MARGINAL BURN
<input type="checkbox"/> GUMMING	<input type="checkbox"/> YELLOWING	<input type="checkbox"/> FRUIT ROT	<input type="checkbox"/> SLOW DECLINE
<input type="checkbox"/> WILTING	<input type="checkbox"/> SHOT HOLE	<input type="checkbox"/> ROUGH BARK	<input type="checkbox"/> SUDDEN COLLAPSE
<input type="checkbox"/> STUNTING	<input type="checkbox"/> LEAF SPOT	<input type="checkbox"/> MALFORMATION	<input type="checkbox"/> INTERNAL DISCOLORATION
ENTOMOLOGY CONDITION <input type="checkbox"/> ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> TRAPPED # / SWEEP			
STAGE <input type="checkbox"/> EGG <input type="checkbox"/> LARVA <input type="checkbox"/> NYMPH <input type="checkbox"/> PUPA <input type="checkbox"/> ADULT			
# / ROOT	# / LEAF	# / STEM	# / LIMB # / ANIMAL # SQ. YD. # / TRAP
WEED & VERTEBRATE		NET	ACREAGE GROSS
DENSITY <input type="checkbox"/> LIGHT <input type="checkbox"/> MEDIUM <input type="checkbox"/> HEAVY			
CROP LOSS		TYPE OF REPORT <input type="checkbox"/> REPLACEMENT <input type="checkbox"/> ADDITIONAL <input type="checkbox"/> NEW	
% CROP LOSS	% PLANTS	% MARKET VALUE	CONTROL COST TYPE OF LOSS
REMARKS:		QUALITY QUANTITY	
PLEASE ID			
CODE	DETERMINATION		RATING
	Caudaria chalapensis		B
DETERMINED BY:		DATE	
[Signature]		9/15/99	
SEND REPORT TO: [Signature]			

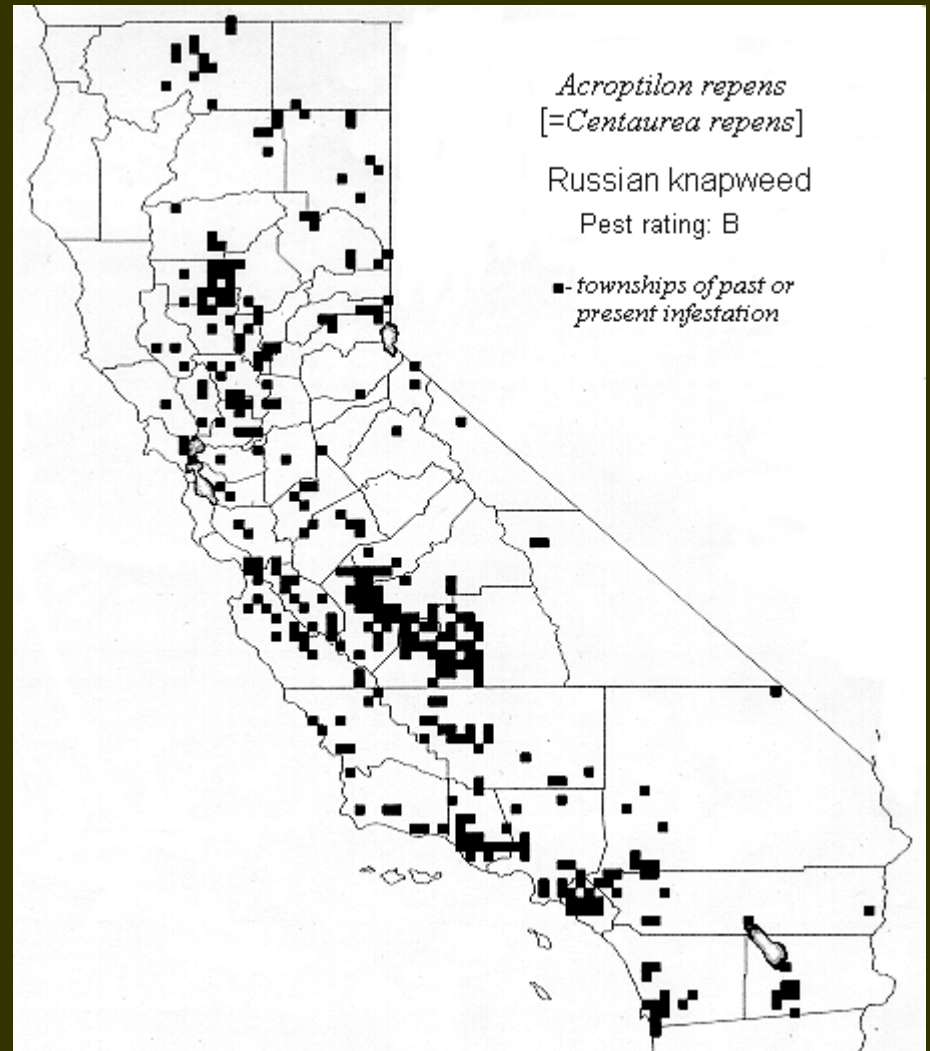
013256

Lens-podded hoary cress (*Cardaria chalapensis*) at Dinkey Creek Pack Station, Fresno County.



Russian knapweed,
Acroptilon repens

**#1 CONTAMINANT
IN HAY
ENTERING
CALIFORNIA FROM
NEVADA**



Canada thistle, *Cirsium arvense*



Canada thistle was introduced along Hwy 36 in Humboldt County in straw used for roadside erosion control.

Contaminated hay produced in California - Merced County, June 2005



“HAY FOR SALE” SIGN
WAS OBSERVED LATER
IN THE SUMMER

Photo by Brent Johnson, Yosemite National Park.



**Madera County, Federal Highway Administration
Chepo Saddle road reconstruction, Sierra National Forest
June 2000 - 1 year after project completion**

**Madera County – Chepo Saddle,
Sierra National Forest**



Chepo Saddle YST from contaminated straw - 8 acres

Year	# plants pulled
1999	<i>Straw bales put in place</i>
2000	10,000
2001	16,000
2002	3,600
2003	6,000
2004	<i>None found (dry year)</i>
2005	3,000+ (<i>wet year</i>)

Darby Fire (2001) - Stanislaus National Forest

62 acres were “bombed” with “**certified weed free**” rice straw bales for erosion control. 63 acres of yellow starthistle and tocalote were mapped in 2002 in these locations.



USDA FOREST SERVICE NATIONAL POLICY

- Make every effort to ensure that all seed, feed, hay, and straw used on National Forest System lands is free of noxious weed seeds (Forest Service Manual 2080)
- Where States have enacted legislation and have an active program to make weed-free forage available, Forest Officers shall issue orders restricting the transport of feed, hay, straw, or mulch which is not declared as weed-free, as provided in 36 CFR 261.50(a) and 261.58(t).

USDA - Forest Service

Guide to Noxious Weed Prevention Practices
Version 1.0, Dated July 5, 2001

- Practice 16. Use certified weed-free or weed-seed-free hay or straw where certified materials are required and/or are reasonably available. Always use certified materials in areas closed by administrative order; refer to Appendix 3 for a sample **closure order**.

Order No. 04-17-00-1
ORDER
CERTIFIED NOXIOUS WEED-FREE HAY AND STRAW REQUIREMENT
HUMBOLDT-TOIYABE NATIONAL FOREST

Pursuant to 36 CFR 261.50(a) and (b), to prevent the spread of noxious weeds, the following acts are prohibited on all National Forest System lands, Forest Development Roads, and Forest Development Trails within the Humboldt-Toiyabe National Forest, until further notice:

Possessing, storing, or transporting any hay, straw, mulch or forage product. 36 CFR 261.58(t).

Pursuant to 36 CFR 261.50(e), the following persons are exempt from this order:

Persons with a permit specifically authorizing the otherwise prohibited act or omission.

Persons with a receipt from a State or County Agricultural Officer which documents that any hay, straw, mulch or forage product is free of noxious weeds/seeds and has been certified as such.

Persons possessing, storing, transporting and/or using pelletized feed.

Any Federal, State, or local officer, or member of an organized rescue or firefighting force in the performance of an official duty.

Done at Sparks, Nevada this 4th day of January 2000.

/s/ Burt Kulesza

BERT KULESZA

Forest Supervisor

Humboldt-Toiyabe National Forest

Violation of this prohibition is punishable as a class B misdemeanor, by a fine of not more than \$5,000 for an individual or \$10,000 for an organization, or imprisonment for not more than six months, or both (15 U.S.C. 551 and 18 U.S.C 3571 (b) (6) and (c) (6)).

What we can do

Utah Bureau of Land Management
Partners Against Noxious Weeds

Weed-Free Hay, Straw or Mulch Required on Utah Public Lands Notice---1998



Beginning November 1998, users of BLM administered land in Utah will be required to use only certified noxious weed-free hay, straw or mulch. Approved products for livestock feed on public lands include pellets, hay cubes, processed grains and certified hay, straw or mulch normally available at some feed stores and producers in Utah.

History

The North American Weed Free Program (formerly the Regional Forage Certification Program) was initiated in 1991 by some of the Western States.

In the late 1990's the North America Weed Management Association took over the program and created minimum standards.

Many states have accepted these standards. For a list of the states that have the minimum standards in place contact the weed free chairman on the web.

The standards, weed list, and committee members can be found on our web-site:

www.nawma.org

**NORTH AMERICAN
WEED MANAGEMENT
ASSOCIATION**

**PO Box 1910
Granby, CO 80446
970-887-1228**

PLEASE DON'T FEED WEEDS & SEEDS
YOU MUST USE REGIONAL CERTIFIED FORAGE IN THIS AREA.

DON'T KNOW WHERE TO GET CERTIFIED WEED FREE FORAGE?
TO FIND OUT, CONTACT:

- COLORADO: [Logo]
- UTAH: [Logo]
- IDaho: [Logo]
- MontANA: [Logo]
- Wyoming: [Logo]
- NeW MexICO: [Logo]

Weed Free Certification Standards



**ANSWERS TO YOUR
QUESTIONS ABOUT
THE WEED FREE
CERTIFICATION
PROGRAM**

2005 California CWFFM MEMORANDUM OF UNDERSTANDING

Bureau of Land Management

California Agricultural Commissioners
and Sealers Association

California Department of Food and Agriculture

National Park Service

U.S. Forest Service, Region 5

USFS, BLM, NPS ROLE:

- Implement a program and formal policies to prohibit or restrict possession, storage, and movement of non-weed free certified products on their lands.
- Work together in a coordinated manner so that there is consistency in the requirements each agency develops for possession, storage, and movement of certified weed free products.
- **Move together in a coordinated manner to implement such programs.**
- **Share information as needed and necessary for development of environmental documents, regulations and rules.**
- **Accept the certification procedures developed by the California Department of Food and Agriculture.**

3-year phase in to allow market to adjust

CERTIFIED WEED-FREE
STRAW & FEED REQUIRED
ON NAT'L FOREST LANDS

6 2 1 9 7

Role of California Agricultural Commissioners and Sealers

Encourage agricultural commissioners to inspect and certify products as weed free.



11. INSPECTION PROCEDURES OF FIELDS GROWING FORAGE, BALED FORAGE OR OTHER FORAGE PRODUCTS FOR NOXIOUS WEEDS.

The preferred inspection of forage for noxious weeds in the growing field is prior to harvest. Post-harvest inspection of processed forage may be performed at the discretion of the county agricultural commissioner. Authority to certify forage as weed free is permitted under sections 5101 and 5205 under authority of section 403 of the California Food and Agricultural Code.

A Certificate of Quarantine Compliance (CQC) may be issued by a qualified inspector if:

No noxious weeds are found after a reasonable and prudent visual pre-harvest field inspection within 10 days prior to harvest.

- a. The pre-harvest inspection for noxious weeds in cereal crops should follow the walking pattern outline in Q.C. Circular 204, Supplement 2, "Field Inspection Procedure Notes" subsection B "Alternative Field Inspection Walking Patterns," number 1 "Cereal Crops".
- b. The pre-harvest inspection for noxious weeds in other crops should follow the walking pattern outline in Q.C. Circular 204, Supplement 2, "Field Inspection Procedure Notes" subsection B "Alternative field Inspection Walking Patterns," number 2 "Other Crops".

2. No noxious weeds are found in processed forage (harvested/baled) after a visual inspection of:

- a. 100% of all visible surfaces of at least 10 bales or 3% of the total number of bales, whichever is greater, taken randomly from the lot.
- b. If an inspector, after visually inspecting the lot as described in 2.a., suspects that noxious weeds may be present, he may open the bale(s) to inspect or sample for noxious weeds.

Copies of the CQC must accompany any bill of sale for all portions of the processed forage harvested from a certified field or inspected after harvest to maintain the identity of the forage.

Definitions:

"Noxious weeds" mean propagative plant parts and seeds from plants listed in section 4500, title 3, division 8, subchapter 6 of the California Code of Regulations.

"Propagative plant parts" are any part of a plant capable of reproducing themselves, including live roots, rhizomes, and/or stolons present in the forage to be harvested.

"Forage" includes hay, straw, or mulch and straw waffles.

- CDFA's role:
Develop and distribute procedures for certification of weed free products in compliance with California law and regulation

(Q.C. Circular 210,
dated 2-22-05)

MOU DEFINITIONS

“Weed Free Forage” is hay, straw or mulch that is not known to contain **propagative plant parts** and seeds of noxious weeds.

- “Noxious weed” is any one of those species listed by the Secretary in the California Code of Regulations, Title 3, Division 4, Chapter 6, Sub-Chapter 6 Section 4500 (published by Barclays Law Publishers) and means any species of plant that is, or is liable to be, troublesome, aggressive, intrusive, detrimental or destructive to agriculture, silviculture or native plant communities, and difficult to control or eradicate.

140+ noxious weeds in Calif.

County agricultural commissioner visually inspects field within 10 days of harvest



OR

conducts a post-harvest random inspection of all visible surfaces of at least 10 bales or 3% of all bales. If noxious weeds are suspected, bales may be opened....



How is certified weed free forage and mulch identified?

- Some states use special colored twine
- California will issue a Certificate of Quarantine Compliance
- A copy of the CQC must accompany the certified product (yes, people could cheat, but hopefully few will)

Certified weed-free products may have other undesirable weeds



“prevention” is the goal, but
minimizing spread is the reality

California is worth the trouble!

A photograph of three horses grazing in a green field with yellow wildflowers. In the background, there are blue mountains under a clear sky. The horses are of various colors: one is dark brown, another is brown with white patches, and the third is black with white patches.

Care About Montana?

Show It.



Use Certified Noxious Weed Seed Free Forage. 406-444-5400

www.weedfreefeed.com