



Bayer Environmental Science

A stylized illustration of a rider on a horse in the background and a herd of cattle in the foreground, all rendered in a semi-transparent, light blue and brown color palette. The rider is wearing a hat and riding a dark horse. The cattle are of various shades of brown and tan.

Range & Pasture, & *“Invasive Weed Control”* Products

Frank Aulgur
Bayer Vegetation Management
Dunnigan, California

frank.aulgur@bayer.com

Cell # 530.650.5594



Bayer Environmental Science



Big news in Vegetation Management!
 The names you know and trust are now Backed By Bayer.



Backed by
BAYER
 Science. Solutions. Success.

Bayer Rangeland & Pasture Herbicides:



Cimarron[®]
MAX



Pastora[®]



Cimarron[®]
PLUS



Velpar[®] L
VU



Telar[®]
XP



Escort
XP





Controls Broom
Snakeweed, thistle
complex and many
other tough
broadleaves...

Manage your weeds.
Maximize your yield.



Cimarron[®]
MAX

Cimarron[®] MAX offers excellent weed control to help improve the quality and yield of your pastures and rangeland. A single application of Cimarron MAX herbicide can help provide season-long control of a broad spectrum of weeds. Safe, effective, affordable weed control is the key to realizing the full potential of today's pastures and rangeland. Managing weeds maximizes grass yield and quality, which ultimately leads to more cattle weight gain per acre.



Bayer CropScience



Cimarron[®]
MAX



- **One app = season long control**
- **Contact and residual activity**
- **Wide window of application**
- **Excellent grass safety**
- **No grazing restriction**





Season-long control for more successful results.



**Cimarron[®]
PLUS**

Cattle and forage producers have wanted and needed a herbicide to help manage problem weeds in rangeland and pastures. They are looking for solutions that are safe, economical and have no grazing or haying restrictions. Cimarron[®] PLUS delivers on all three. It offers residual control to protect pasture and rangeland grasses from problem broadleaf weeds, and it offers good activity on woody species.

Controls many broadleaves and brush

Flexible, can be tank mixed with other pasture herbicides

No grazing or haying restrictions.



Bayer Herbicides based around “**Aminocyclopyrachlor**” (**ACP**) a broadspectrum auxin herbicide



Method[®]

Currently registered for use on non crop land, Federal and state wildlands, habitat restoration sites



Perspective[®]



Streamline[®]

Bayer is pursuing registration of aminocyclopyrachlor in rangeland & pasture.

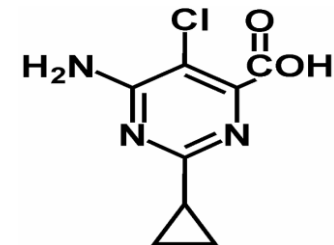


Viewpoint[®]



Method[®]

- A class of chemistry known as the **pyrimidine carboxylic acids**
- A new generation of herbicides in the synthetic auxins family
- Unique properties at the molecular and whole-plant levels
 - **Control of a much wider spectrum of broadleaf weeds and brush**
 - Quick uptake and rapid translocation





Method[®]

4 – 18 fl ozs/A

- Excellent postemergence control of many broadleaf weed, briar, vine and brush species
- Excellent residual weed control of many difficult to control broadleaf weeds
- **Both Liquid and Dry formulations available**
- Favorable environmental profile
- Low toxicity to mammals, birds and fish

**2 ½ gal Containers
Available Dec 2015**

Broadleaf Weeds Controlled



EsplAnade™
200 SC

IS BROAD SPECTRUM

Courtesy of WSSA and XID Services Inc.



Kochia



Yellow starthistle



Russian thistle



Redroot pigweed



Henbit

American black nightshade
Bittercress
California burclover
Canada thistle, Common (seedlings)
Chickweed, Common
Chickweed, Mouse-ear
Cudweed, Linear-leaf/purple
Curly dock (seedlings)
Cutleaf evening primrose
Dandelion, cat's ear
Dandelion, common (seedlings)
Eclipta

Evening primrose, common
Evening primrose, cutleaf
Filaree, redstem
Fleabane, blackleaved
Gromwell, Yellow
Groundsel, common
Hairy fleabane
Hairy nightshade
Henbit
Horseweed/ Marestail
Kochia
Lambsquarters, common

Little mallow
Long-stalk phyllanthus
Panicle willowweed
Plantain, Buckhorn
Plantain, Paleseed
Prostrate knotweed
Prostrate spurge
Purslane, common
Red tasselflower
Redmaids
Redroot pigweed

Redstem fleabane/Storksbill
Russian Thistle
Shepherd's-purse
Sowthistle, Annual
Spotted catsear
Swinecress
Tropic ageratum
Velvetleaf
Wild buckwheat (seedlings)
Wild mustard

Esplanade 5 – 7 oz/A: Level of Activity CA IVM Trials



Annual sowthistle	Short pod mustard	Common vetch	Hare barley	95-100%
Medusahead	Cheatgrass	Wild oat	Poa spp.	
Yellow starthistle	Ripgut brome	Prickly lettuce	Marestail	85-95%
Fiddleneck	Russian thistle	Red stem fillaree	Kochia	70-85%
Common sunflower				

Non Crop Bareground Options for NV:

No Trees or Tree Roots in Treated Area:

Perspective Herbicide 9-11 oz/A



Esplanade 200 SC 5-7 fl oz/A

OR

Method 240SL 12-18 ozs/Acre



Esplanade 200 SC 5-7 fl ozs/Acre

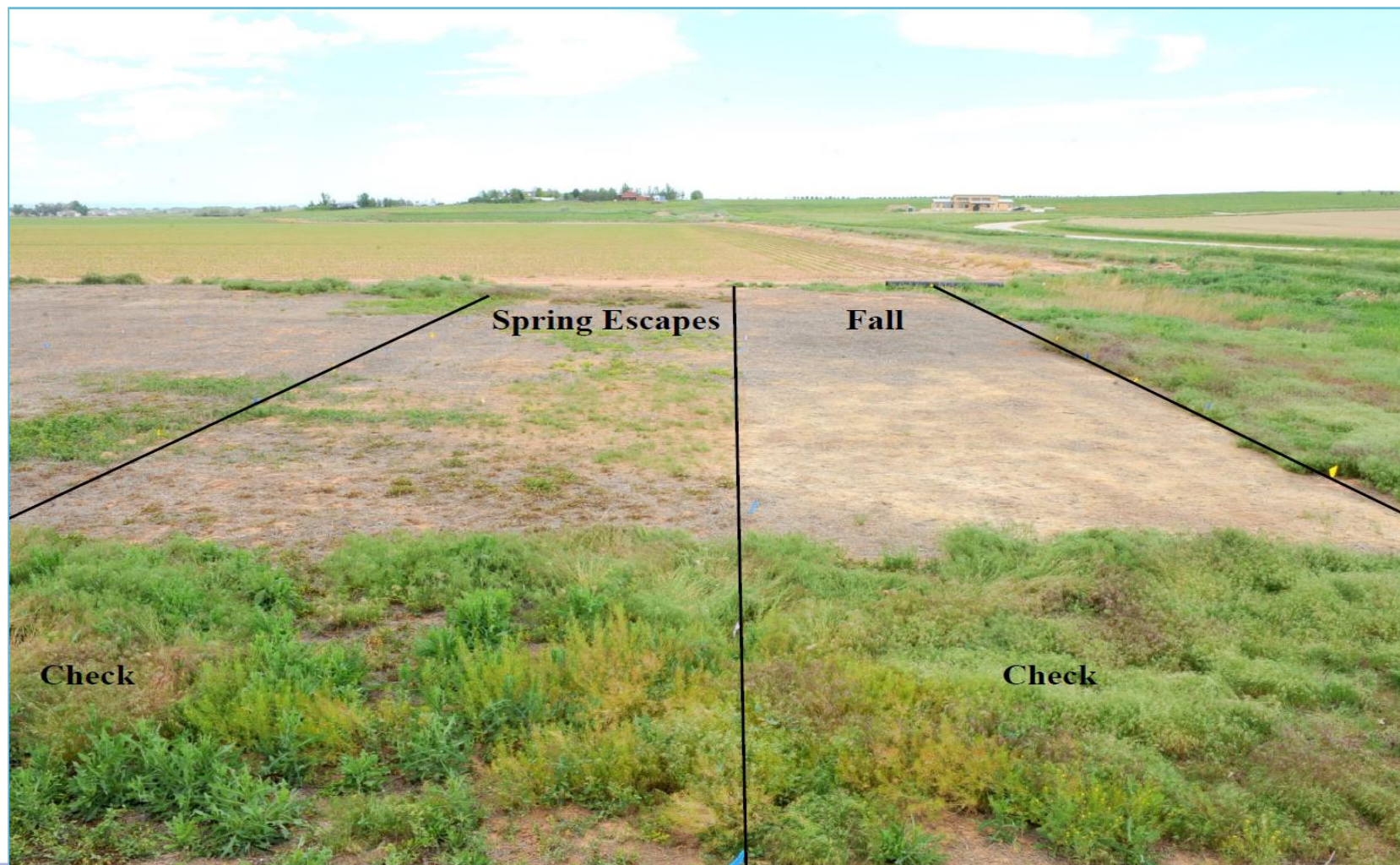
All Bareground Treatments should have 1-2 qts/Acre of Roundup tank mixed with them. Rainfall is required to activate soil residual performance. If rain does not occur in a timely manner, escaped weeds is probable.



Please practice proper stewardship when using non crop herbicides.



2014 Trials Fall vs. Spring



Perspective 7 oz +Oust 6 oz/Acre

Southern California April 2015



Winter
application

Prior year
was
infested
with
Russian
Thistle

5MAA

Bareground Program:



Perspective[®]

Plus



EsplAnade[™] 200 SC

In NV, higher rates
would be required,
9 oz + 7 oz

2015 California site



7 ozs/A

+

5 fl ozs/A

Dec 2014
applied
5MAA

Backed by
BAYER
Science. Solutions. Success.

Stewardship Around Trees with Perspective or Method Herbicides:



Stewardship of Desirable Species

When used according to label instructions, our ACP-containing products are extremely effective on trees, brush and other vegetation. Only you know best which species you want to remove and which you want to save. The active ingredient in these products is not able to make this distinction.

Therefore it is important to use care when treating around desirable vegetation. Spraying near desirable vegetation that you want to maintain may cause injury or loss. The most successful vegetation managers follow these three “smart” rules of thumb:

SMART SITE

- Carefully consider the site characteristics and soil conditions to ensure drainage falls away from desirable species. Also, think about whether the treated soil would ever be moved and come into contact with the roots of the species you want to protect. If so, avoid using these products in those areas.

SMART APPLICATION

- Only apply these products to the species you want to remove. Be mindful that it’s important to avoid direct or indirect contact with the roots and root zones of species you want to preserve.
- Desirable species have root zones that may extend beyond the drip line or plant canopy. Since all species differ in root structure, check with your extension agent if you’re not sure how far the zone extends.

Specific Sensitivities

Some specific tree and shrubs species have demonstrated a sensitivity to the active ingredient in Method, Perspective, Streamline and Viewpoint. When using these products around desirable plant species, be mindful of the potential for injury.*

Species with Demonstrated Sensitivity to Aminocyclopyrachlor (Method, Perspective, Streamline, Viewpoint)

CONIFERS	DECIDUOUS TREES	ORNAMENTAL SHRUBS
Douglas Fir	Aspen	Arborvitae
Norway Spruce	Chinese tallow	Burning bush
Ponderosa Pine	Cottonwood	Crape myrtle
White Pine	Honey Locust	Forsythia
	Magnolia	Hydrangea
	Poplar species	Ice Plant
	Redbud	Magnolia
	Silver maple	Purple plum
	Willow species	Yew



*Partial list. See product label for full listing. Consult your local extension service, professional consultants or other qualified authorities if you have any questions.

Selective Weeding , Invasive Weed Control



With:



Perspective®



Method®
240SL



Streamline®



Telar®
XP



Cimarron®
PLUS



COOPERATIVE EXTENSION

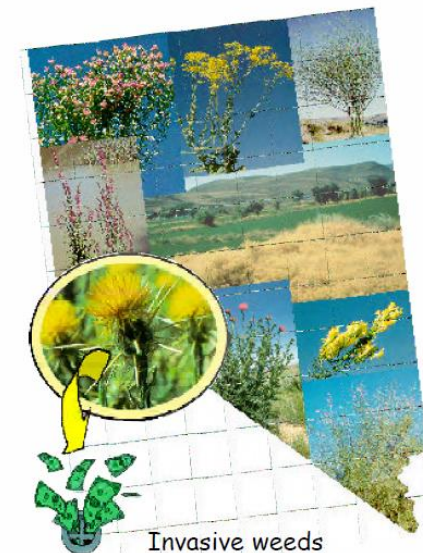
Bringing the University to You

SP 03-09

Invasive Weed Identification for Nevada

Wayne S Johnson, Associate Professor, Applied Economics and Statistics, College of Agriculture, Biotechnology and Natural Resources; IPM Specialist, University of Nevada Cooperative Extension

Robert Wilson, Extension Educator, University of Nevada Cooperative Extension
Jessica Graham, Undergraduate Research Assistant, University of Nevada, Reno



Invasive weeds
are draining Nevada's
economic and natural resources

“Habitat Restoration” Tools....

Bayer CropScience

Nevada Invasive Management Useful Guides:



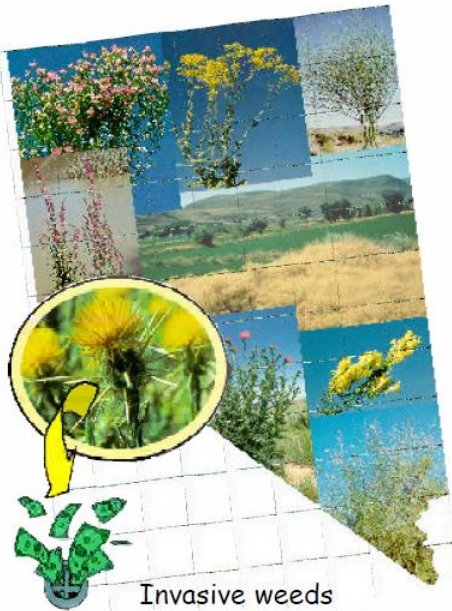
COOPERATIVE EXTENSION
Bringing the University to You

SP 03-09

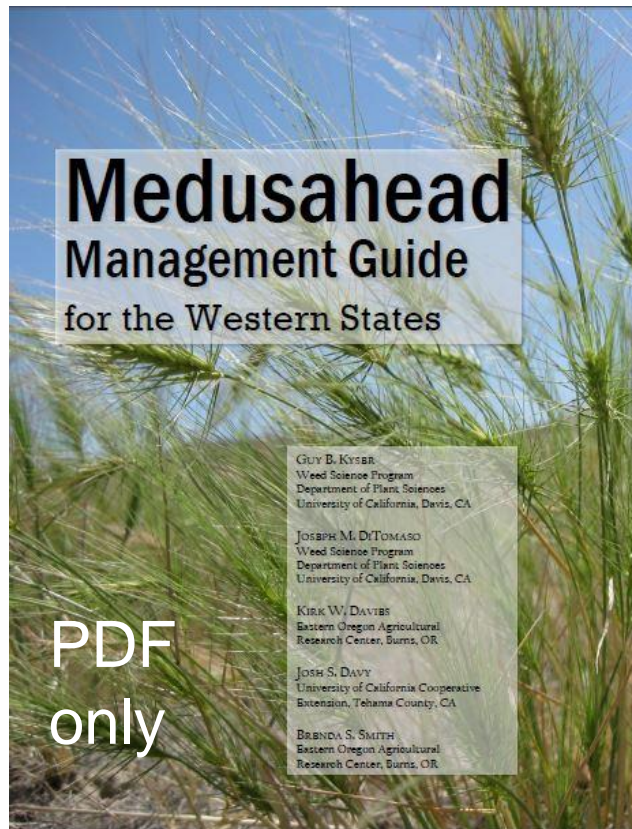
Invasive Weed Identification for Nevada

Wayne S Johnson, Associate Professor, Applied Economics and Statistics, College of Agriculture, Biotechnology and Natural Resources; IPM Specialist, University of Nevada Cooperative Extension

Robert Wilson, Extension Educator, University of Nevada Cooperative Extension
Jessica Graham, Undergraduate Research Assistant, University of Nevada, Reno



Invasive weeds are draining Nevada's economic and natural resources



Medusahead Management Guide for the Western States

GUY B. KYSSER
Weed Science Program
Department of Plant Sciences
University of California, Davis, CA

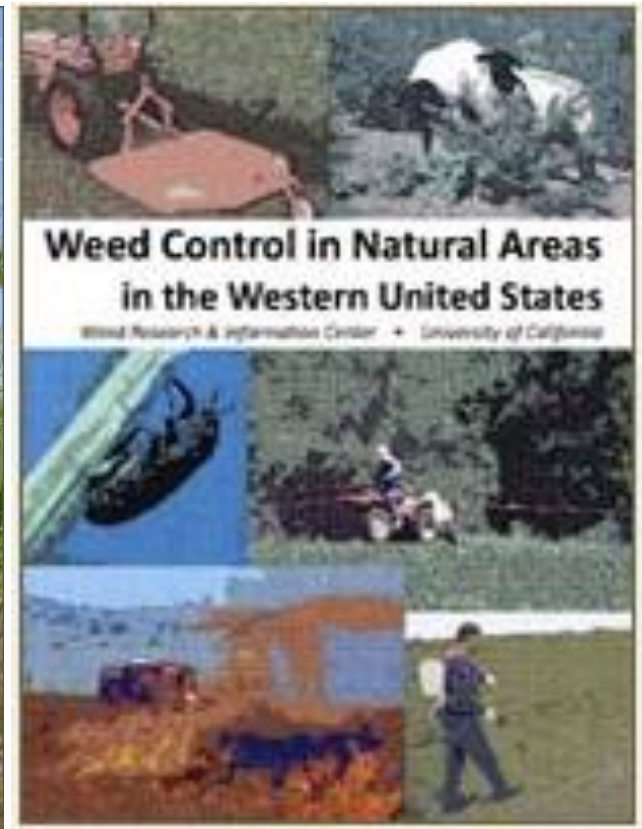
JOSEPH M. DETOMASO
Weed Science Program
Department of Plant Sciences
University of California, Davis, CA

KIRK W. DAVIES
Eastern Oregon Agricultural
Research Center, Burns, OR

JOSH S. DAVY
University of California Cooperative
Extension, Tehama County, CA

BRENDA S. SMITH
Eastern Oregon Agricultural
Research Center, Burns, OR

PDF
only



Weed Control in Natural Areas in the Western United States

Weed Research & Information Center • University of California

Halogeton



Halogeton Control

- Telar[®] (chlorsulfuron)
 - 0.5 to 1.0 oz/acre labeled rate + 0.25% v/v NIS
 - CSU research 0.2 to 0.5 oz/acre more than adequate; optimum timing late spring to early summer plants 1 to 3 inches tall
 - Injury to Nuttall's saltbush rates higher than 0.25 oz
 - Halogeton very sensitive to Telar[®] in drought years
- Escort[®] (metsulfuron)
 - 0.5 to 1.0 oz/acre + 0.25% v/v NIS
 - Same timing as Telar[®]; not as effective

Dr George Beck

Bayer CropScience

Halogeton



Perspective Herbicide

3 – 4.5 oz/A

Streamline Herbicide

4.75 oz/A

Yellow Starthistle



Method[®] 4 – 8 fl ozs/A
240SL



Perspective[®] 3 – 4.5 ozs/A



Streamline[®] 4.75 oz/A



Telar[®] *1 – 2.6 ozs/A *suppression
XP

Rabbit Brush



Streamline[®]

Test work



Purple and Iberian Starthistle

(Weed Control in Natural Areas in the Western United States)



Aminocyclopyrachlor +
chlorsulfuron
Perspective

Rate: 4.75 to 8 oz product (*Perspective*)/acre

Timing: Postemergence and preemergence. Postemergence applications are most effective when applied to plants from the seedling to the mid-rosette stage.

Remarks: Aminocyclopyrachlor gives control of many members of the genus *Centaurea*, including purple starthistle. Its effect is similar to aminopyralid. *Perspective* provides broad-spectrum control of many broadleaf species. Although generally safe to grasses, it may suppress or injure certain annual and perennial grass species. Do not treat in the root zone of desirable trees and shrubs. Do not apply more than 11 oz product/acre per year. At this high rate, cool-season grasses will be damaged, including bluebunch wheatgrass. Not yet labeled for grazing lands. Add an adjuvant to the spray solution. This product is not approved for use in California and some counties of Colorado (San Luis Valley).

Sulfometuron
Oust and others

Rate: 3 to 5 oz product/acre (2.25 to 3.75 oz a.i./acre)

Timing: Preemergence or early postemergence, before or during the rainy season when weeds are germinating and actively growing.

Remarks: Treated soil should be left undisturbed to reduce the potential movement of the herbicide by soil erosion due to wind or water. Treatment of powdery, dry soil or light, sandy soil when there is little likelihood of rainfall soon after treatment may result in off target movement when soil particles are moved by wind or water.

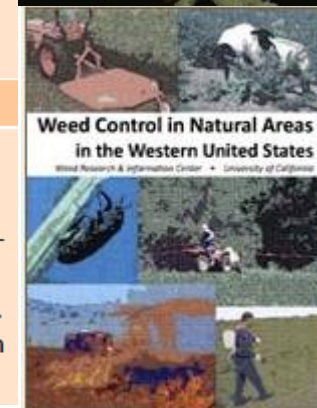
Photosynthetic inhibitors

Hexazinone
Velpar L

Rate: 1 to 2.5 gal product/acre (2 to 5 lb a.i./acre)

Timing: Preemergence or postemergence when weeds are germinating or actively growing.

Remarks: *Centaurea* control is only registered for uncultivated non-agricultural areas (such as rights-of-way), uncultivated agricultural areas (non-crop producing which includes uses such as farmyards and barrier strips), and industrial sites. Use lower rate on coarse-textured soils (sand to sandy loam). Use the higher rate on fine-textured soils (clay loam to clay) and on soils high in organic matter. High rates of hexazinone can create bare ground, so only use high rates in spot treatments.



WhiteTop/Perennial Pepperweed

Perspective 3 – 4.5 oz/A

Streamline 4.75 oz/A



Hoary Cress and Perennial Pepperweed Control

- Escort[®] (metsulfuron)
 - 1.0 oz product/acre + 0.25% v/v NIS
- Telar[®] (chlorsulfuron)
 - 1.0 oz product/acre + 0.25% v/v NIS
 - Will provide residual control for germinating seedlings
 - Optimum timing bud to early flower

Dr George Beck

***Tall whitetop infestation at the University
of Nevada – Reno’s “S Bar S Ranch”
North of Fernley, NV***



***Tall whitetop infestation at the S Bar S Ranch
Fernley, Nevada***



Backpack Application of Telar DF Herbicide

Livestock Grazing:
herded Cattle, sheep, & goats

Controlled Fires

Drove Mowers

Sprayed Telar DF herbicide alone

Sprayed Escort XP herbicide alone
and in combo with 2,4-D

Sprayed 2,4-D herbicide near
water's edge



Reclaimed pastureland at University of Nevada-Reno's "S Bar S Ranch"

Utilizing Telar or Escort Herbicides.



Pyramid Lake, Truckee River System



**NASA
Satellite
image
showing
distribution**

**Of tall
whitetop
along the
Truckee
River.**

MedusaHead Control: **Apply in Fall best**



Pre Rate: 5-7 fl oz/A



Sulfometuron +
chlorsulfuron

Landmark XP

Rate: 1.5 to 2.25 oz product/acre

Cost (2014)³ : \$13/oz (~\$19 to \$29 per acre)

Timing: Preemergence, in fall or after soil thaws in spring.

Safety on established perennial grasses: Minor injury possible

Plantback interval: 3 to 6 months

Grazing restriction: 1 year

Remarks: See sulfometuron.

Aminocyclopyrachlor +
chlorsulfuron

Perspective

Rate: 5 oz product/acre (2 oz aminocyclopyrachlor + 0.8 oz chlorsulfuron/acre)

Cost (2014)¹ : \$80/lb (~\$25/acre)

Timing: Preemergence to early postemergence

Safety on established perennial grasses: Safe, but can injure young grasses. Some other young annual grasses may be injured, but most major forage grasses are not affected.

Plantback interval: 12 months

Grazing restriction: Under current label, do not graze treated forage; this may change on future labels.

Remarks: Newly registered; check with your county to make sure your intended use is permitted. A broadleaf-selective herbicide – very effective on thistles – that is safe on most grasses. Can injure trees if applied in the root zone. Aminocyclopyrachlor is also available in a mix with metsulfuron (*Streamline* – not registered for use in California).

Likely, CA

Fall Matrix at 4 oz/A

Likely, CA

Fall Landmark at 1 oz/A

Source: Rob Wilson, Univ CA Tulelake Research Station

Field Bindweed



Method 240 SL 12 – 18 fl ozs

Or

Perspective 4.75 – 11 ozs



Or Streamline 4.75-9.5 oz/A

Russian Knapweed Control



Method 240SL 8 – 12 fl oz/A

Perspective 4.75 oz/A (Fall or Spring)

Streamline 4.75 – 9.5 oz/A

- Telar[®] (chlorsulfuron)
 - 1.0 to 2.6 oz/acre + 0.25% v/v non-ionic surfactant (NIS; 1.0 qt/100 gal)
 - 1.0 oz/acre typical use rate
 - Fall to early winter “dormant” best timing

Dr George Beck



Method[®]
240SL

8 – 12 fl ozs



**Streamline 4.75 –
9.5oz/A**



Diffuse and Spotted Knapweed Control

- Perspective[®] (aminocyclopyrachlor + chlorsulfuron)
 - *Non-crop only*
 - 4.75 to 8.0 oz/acre + 0.25% v/v NIS
 - 5.5 oz/acre for diffuse and spotted knapweeds
 - Spring to rosettes
 - Fall

Dr George Beck



Method[®]
240SL

8 – 12 fl ozs



Streamline 4.75 – 9.5 oz/A

Canada Thistle Control

- Perspective[®] (aminocyclopyrachlor + chlorsulfuron)
 - *Non-crop only*
 - 4.75 to 8.0 oz/acre + 0.25% v/v NIS
 - 5.5 oz/acre for Canada thistle
 - Spring rosette to bud
 - Fall regrowth

Dr George Beck



Yellow Toadflax Control

- Telar[®] (chlorsulfuron)
 - 2.0 to 2.6 oz/acre + 0.25% v/v NIS *or* 1.0 to 1.5 pt/acre MSO
 - Optimum timing post flowering into senescence when adventitious root bud growth accelerates

Dr George Beck

Dalmatian Toadflax



Method 8-12 oz/A

Streamline 4.75oz/A



Dalmatian Toadflax Control

- Perspective[®] (aminocyclopyrachlor + chlorsulfuron)
 - 4.0 to 6.0 oz/acre + 0.25% v/v NIS
 - Flowering into fall

Dr George Beck

Method 8-18 fl oz/A

Or

Streamline 4.75oz – 9.5oz/A



Leafy Spurge Control

- Perspective[®] (aminocyclopyrachlor + chlorsulfuron)
 - *Non-crop only*
 - 4.75 to 8.0 oz/acre + 0.25% v/v NIS
 - 5.5 oz/acre for leafy spurge
 - Spring at flowering or fall

Dr George Beck

Product Stewardship....



Always Read and Understand Herbicide Product labels.

Please do not exceed maximum labeled Use rates.

**Keep Aminocyclopyrachlor herbicides
away from the roots of desirable trees.**



Questions ?



Frank Aulgur

Bayer Vegetation Management

VM Area Sales Manager, CA, NV, HI



530-650-5594

Frank.Aulgur@bayer.com

www.backedbybayer.com

