




Nutrien

Solutions



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Iowa Weed Commissioners - 2022

Class A Noxious Weeds

For
Eradication

Palmer Amaranth

Class B Noxious Weeds

For
Control or Eradication

Canada Thistle	Musk Thistle
Bull Thistle	Plumeless Thistle
Leafy Spurge	Teasel
Field Bindweed	Multiflora Rose
Sericea Lespedeza	Poison Hemlock
Japanese Knotweed	
Honeysuckle	

Surfactant Type/Use

Using a good quality surfactant or penetrating type surfactant (90% or 100% NIS) at .25% by volume (1 quart per 100 gallons water) is normal labeled recommendations on many products

Some labels may recommend the use of MSO (Methylated Seed Oil) Surfactants

These are normally used at per acre rates (1 to 2 pints) or if by volume then .50% to 1% by volume (2 quarts to 1 gallon per 100-gallon rates) depending upon application rates per acre

Remember – MSO Surfactant can increase non-target grass or non-target vegetation damages when used in dry or adverse weather conditions and grasses are already under stress

Some Non-Ionic **penetrating** surfactants can somewhat mimic MSO Surfactants with less grass damages, especially in adverse weather conditions

Thistles (All)

Canada Thistle



Musk Thistle



Bull Thistle



Plumeless Thistle



Canada Thistle, Musk Thistle, Bull Thistle, Plumeless - Herbicide Control

TerraVue Herbicide

Is a mixture of Milestone Herbicide (aminopyralid) and Rinskor Herbicide (florpyrauxifn-benzyl)

Use sites include but not limited to – rights-a-ways, roadsides, utility and electric power rights-of ways, railroads, storage areas, military sites, airports, gravel pits, industrial sites, natural areas including campgrounds, parks, prairie management, trailheads and trails, recreation areas, wildlife openings, wildlife habitat and management areas, CRP sites, rangeland sites, permanent grass pasture (including grasses grown for hay*), seasonally dry flood plains, deltas, marshes, prairie potholes or vernal pools including grazed areas in and around these sites.

**Does have the aminopyralid Hay and Manure use restrictions like the Milestone Herbicide (consult the label for these)

Has no restrictions on grazing or grass hay harvesting after applications but they do **request waiting 14 days after applications** on hay harvesting (time for the product to work on treated plants)

Max use rate per acre per year on hayed or grazed sites is 2.85 ounces per acre, non-grazed/hayed sites up to 5.7 ounces per year

TerraVue Herbicide can be used up to waters edge, “**Do Not**” apply directly to water or standing water, can not be used to treat vegetation standing in water

Take precautions to minimize incidental overspray to the adjacent water

Is permissible to treat target weeds within dry non-irrigation ditches and seasonally dry transitional areas between upland and lowland sites (such as flood plains, deltas, marshes, prairie potholes or vernal pools)

But only if those sites are forecasted to remain dry for 2 weeks following applications.

Use rates range from 2 to 2.85 ounces per acre for most all types of Thistle control with 2.5 ounces per acre being the most popular use rate (about 6 ounces Milestone equivalent)

TerraVue will also help to improve brush control on species such as Alder, Aspen, Blackberry, Boxelder, Cherry, Conifers, Cottonwood, Elm, Maple, Poplar, Oak, Hackberry, Russian and autumn Olive, Salt Cedar and others when added to your brush control mixes

TerraVue Herbicide has 17 of your listed noxious/invasive weeds listed on it's label

Additional Weeds – Palmer Amaranth, Teasel, Multiflora Rose, Japanese Knotweed, Poison Hemlock, Russian Knapweed, Perennial Sowthistle, Horse Nettle, Cocklebur, Wild Carrot, Buckhorn Plantain, Wild Sunflower

Use Rate for Bull, Musk and Plumeless Thistles

TerraVue Herbicide at 2 to 2.85 ounces per acre rates
Liberate Surfactant at 1 quart per 100 gallons water

In the spring to early summer to rosette or bolting plants or in the fall to seedlings and rosette plants, also apply at 2 to 2.85 ounces per acre when plants are at late bolt through early flower growth stages

and the addition of

Freelexx Herbicide at 1 quart (1 lb. ae) should be tank mixed with TerraVue starting at late bud stages to early flower stages on these plants to improve control (you gain Field Bindweed control with Freelexx added)

Use Rate for Canada Thistle

TerraVue Herbicide at 2 to 2.85 ounces per acre (most are using 2.5 ounces per acre rate)
Liberate Surfactant at 1 quart per 100 gallons water

In spring after all plants have fully emerged (some plants at this time may be budding) up until the oldest plants are in full flower stage, use the higher rates when applying to the flower stage

TerraVue applications are also effective in the fall on new rosette and established plants before a killing frost

Use higher rates on older/dense stands for longer residual control

Spring and fall applications work well with TerraVue Herbicide

Canada Thistle, Musk Thistle, Bull Thistle, Plumeless Thistle

Transline Herbicide

Use sites include but not limited to – non-crop sites, forest sites, industrial manufacturing and storage sites, rights-of-way such as roadsides, utility, railroads, wildlife openings, tree plantations, Range and permanent grass pastures including grazed areas on these sites.

Can be used to waters edge but **“DO NOT”** apply directly to water, to areas where surface water is Present, or to intertidal areas below the mean high-water mark.

Has no haying or grazing restrictions when used at labeled rates

Has supplemental labeling for use in, around and over the top applications on many tree species

(Ponderosa Pine, Scotch Pine, White Pine, Norway Spruce, Douglas Fir, Eastern and Western Red Cedar, White Spruce, Green Ash, White Ash, Choke Cherry, Cherry, Cottonwood, Crab Apple, Hackberry, Sugar Maple, Bur Oak, Red Oak, White Oak, Russian Olive, Sumac, Black Walnut and many more)

Do Not apply around or under legume species of trees or shrubs and is very active on legume species of plants

Use Rates for Canada Thistle, Musk Thistle, Bull Thistle, Plumeless Thistle

Transline Herbicide at 12 to 21 ounces per acre
Liberate Surfactant at 1 quart per 100 gallons water

Non-Ionic surfactant should be added at 1 to 2 quarts per 100 gallons water (Liberate Surfactant)

Lower labeled rates can be used when weeds are no larger than 3” to 6” tall

Higher labeled rates should be used on these weeds listed above;

Canada Thistle should be at 16 to 21 ounces per acre rates when it is the primary weed for control

If you are dealing with Canada Thistle or any of these thistles in tree belts than Transline Herbicide could be a good choice here

Would be a safer choice in this situation than Milestone Herbicide or TerraVue Herbicide

Again, watch applications around or under legume species of trees and shrubs

Additional Weeds – Russian Knapweed, Perennial Sowthistle, Common Teasel

Use Rates for Canada Thistle, Musk Thistle, Bull Thistle, Plumeless Thistle

Aquatic Sites or Wetland Type Sites

If applying close to or around water or wetland sites and are concerned about hitting the waters than you might consider one of the following programs

Freelexx Herbicide	at 2 quarts per acre (has aquatic labeling)
Liberate Surfactant	at 1 quart per 100 gallons water (has aquatic labeling)

Freelexx does have a very good aquatic label section in it's label.

Opensight Herbicide	at 3.3 ounces per acre
Pre-Mix of Milestone Herbicide and MSM Herbicide (Escort)	
Liberate Surfactant	at 1 quart per 100 gallons water

Opensight has a unique paragraph in it's label

It is permissible to treat non-irrigation ditch banks, seasonally dry wetlands (such as flood plains, deltas, marshes, swamps, or bogs), and transitional areas between upland and lowland sites only when dry. **Opensight can be used to waters edge, DO NOT apply directly to water and take precautions to minimize overspray to open water when treating target vegetation in and around non-flowing, quiescent, or transient water. When making applications to control unwanted plants on banks or shorelines of flowing water, minimize overspray to open water.**

Use Rates for Canada Thistle, Musk Thistle, Bull Thistle, Plumeless Thistle

Aquatic Sites or Wetland Type Sites

AquaSweep Herbicide - could also be a choice for controlling these weeds as well as others around or in waters, can be used on but not limited to rangelands, pastures, non-irrigation ditch banks, roadsides, rights-a-ways, ornamental turf, as well as many aquatic sites

Is a mixture of 2,4-D amine and Triclopyr (amine formulation), has a very good aquatic label as well as terrestrial labeling, maximum of 5.5 pints per acre per application

Can do 2 applications per year with 30-day interval between (11 pints max per acre per year)
(Max your 2,4-D amine rate per acre at this)

AquaSweep Herbicide	at 5.5 pints per acre (88 ounces)
Liberate Surfactant	at 1 quart per 100 gallons water (aquatic labeling)

Also has Multiflora Rose, Honeysuckle, Cocklebur, Docks, Field Bindweed, Plantains, Wild Carrot on label if these weeds are a problem in wet sites

Leafy Spurge Herbicide Control



Leafy Spurge

Method 240 SL Herbicide - Method 240 SL Herbicide is a straight aminocyclopyrachlor (was the base product in Perspective or Streamline Herbicides)

Can be used on but not limited to - private, public and military lands, right-a-ways, fence rows, farmyards, natural areas such as wildlife management areas, wildlife openings, wildlife habitats, highways/roadsides, railroad, pipeline and utility rights-of-ways, non-irrigation ditch banks, restoration areas and unimproved industrial turf on these types of sites

Does have a haying and grazing restriction of 365 days from application date, is Caution labeled, is a non-restrictive use product, **is currently the most positive Leafy Spurge control the we have seen**

Method 240 SL Herbicide may be applied to terrestrial non-crop sites that contain areas of temporary surface water, caused by collection of water in equipment ruts or in other depressions created by management activities.

It is permissible to treat intermittently flooded low lying sites, seasonally dry flood plains, and transitional areas between upland and lowland sites when no water is present and is permissible to treat marshes, swamps and bogs after water has receded, as well as seasonally dry flood deltas.

Can be used to waters edge, take precautions to minimize overspray to open water when treating vegetation near water's edge

Additional Weeds – Canada Thistle, Teasel, Field Bindweed, Musk Thistle, Bull Thistle, Sericea Lespedeza, Poison Hemlock, Honeysuckle, Horse Nettle, Russian Knapweed, Buckthorn, Cocklebur, Wild Carrot

Use Rate for Leafy Spurge

Method 240 SL Herbicide at 6 ounces to 8 ounces per acre
with most “NOT” going above 8 ounces per acre

Liberate Surfactant at 1 quart per 100 gallons water
(Liberate is a 100% non-ionic penetrating surfactant, replaces MSO)

Leafy Spurge has small leaves and stems so higher water volumes on applications help with better coverage and control (25 to 30 gallons per acre)

Applications are showing Leafy Spurge control for 2 to 3 years before re-treatments are necessary (may not be the case in all instances)

Will be tough on some species of trees and shrubs, be careful around these, especially spruce, pine, conifer species and legume species but, no more than we have seen with Tordon 22K Herbicide applications

Can be somewhat selective on some forbs and shrubs in treated areas as well

Stutsman County, ND - 1 year after treatment
Method 240 SL Herbicide - 8 ounces per acre
Liberate Surfactant - 1 quart per 100 gal. water

Dead Canes from old plants





Leafy Spurge

Plateau Herbicide - (Imazapic) – may be used on but not limited to CRP lands, noncropland areas including noncropland areas that may be used for haying and grazing, highways rights-a-way, utility, railroad, pipeline rights-a-ways, Non-agriculture Fence rows, storage areas, non-irrigation ditch banks, prairie sites, industrial turf and other sites as listed on the label

Is a Caution labeled product and is a non-restricted use product, can be used to waters edge but “Do Not” apply directly to water or to Areas where surface water is present or to areas below the mean high-water mark

Many perennial grasses (especially warm season) are tolerant to Plateau, can stunt or damage cool season grasses at the higher rates

Many established forbs and wildflowers are tolerant to Plateau Herbicide at 4 ounce to 8 ounce per acre rates and some up to 12 ounce per acre rates

Many tree species have good tolerance to Plateau Herbicide for applications around and under, watch sandy soils when applying near Cottonwood or Poplar species, you will get more damage on these in the lighter soils

Do Not apply around or under Lilacs, you can severely injure or kill these

Will also give you control of many annual grasses in the treated sites

Additional Weeds – Cocklebur, Wild Mustard, Shattercane, Field Bindweed, Poison Hemlock, Russian Knapweed, Common Teasel, Bull Thistle, Musk Thistle

Use Rate for Leafy Spurge

Plateau Herbicide at 8 to 12 ounces per acre
MSO Surfactant at 32 ounces (1 quart) per acre

Plateau at 8 ounces per acre being the most common rate used and safest on the grasses and surrounding vegetation

Fall applications only with this program starting sometime in mid to late August up until the Latex Sap in the plant dries up, if the sap is not present, don't spray with Plateau

Spring Treatment - North Dakota mixture = 16 ounces (1 pint) Tordon 22K Herbicide, 4 ounces Plateau Herbicide, 16 ounces (1 pint) 2,4-D amine Herbicide and 1 quart MSO per acre, sometimes the 2,4-D amine is dropped out

Plateau and 2,4-D type products can be antagonistic (don't play well together) so watch the mixing of these

If sandy or light soils, then consider dropping rate down to 6 ounces Plateau per acre rates

When applied properly will give approximately 2 years or so control of Leafy Spurge

High-rate applications can and will cause grass damages and grass suppression in the next years spring, especially if grasses are already under stress

Leafy Spurge

Facet L Herbicide – (Quinclorac) may be used on Rights-of-ways, Roadsides, Fence lines, Pastures, (Including pasture grown for hay), CRP and has crops labeling as well

Can be applied to waters edge, **DO NOT** apply directly or indirectly to water, areas where surface water is present, or to intertidal areas below the mean high-water mark

Facet L Herbicide does have good safety around and under trees, good for tree belts with Leafy Spurge Problems, will also help in controlling Field Bindweed and Canada Thistle (somewhat) in these sites

Is very slow to show symptoms and may not be evident for several weeks after application and full effect may not be evident for 3 to 6 months on perennial weeds

Facet L Herbicide is used in some sensitive sites where Prairie Orchid is present in North Dakota (Sheyenne National Grass Lands)

Application with Facet L can be expensive and cost up to \$60.00 plus per acre

Additional Weeds – Field Bindweed, Canada Thistle,

Use Rate for Leafy Spurge

Facet L Herbicide at 32** to 64 ounces per acre

MSO Surfactant at 32 ounces per acre

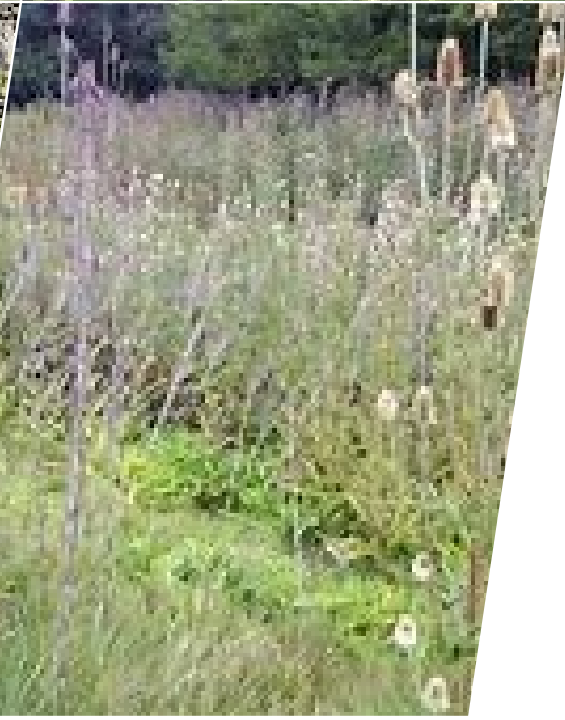
Most use the 48 to 64 ounce per acre rates for Leafy Spurge control

If applying Facet L at the **32 ounce per acre rates than it is suggested to add Overdrive Herbicide at 4 to 6 ounces per acre as well

If you add Overdrive Herbicide (dicamba based herbicide), you will lose the tree safety and you might have to deal with possible volatility issues from the dicamba as well near sensitive crops

Apply in spring at yellow bract growth stage (prebloom or before true flower)

Apply in fall before the first killing frost and latex is still flowing in the Leafy Spurge



Teasel Herbicide Control

Teasel

Is a biennial plant so we want to try and spray in the first year's growth or when in rosette Stages

TerraVue Herbicide	at 2.5 to 2.85 ounces per acre
Liberate Surfactant	at 1 quart per 100 gallons water

Spray rosettes or small 2nd year plants, once they start to bolt up and form flower control will drop drastically

Should get some residual from the TerraVue at the upper rates

If small patches than you can spot apply TerraVue Herbicide at 5.7 ounces per acre rates but no more than 50% of an acre can be treated at that rate

Should give you some longer residual if using the 2X rate for spot spraying

Or - for non-crop areas that are **“NOT” grazed or hayed**, apply TerraVue at 2.85 ounces per application, limited to 2 applications per year, minimum of 30 days apart, do not broadcast more than 2.85 ounces Per application, do not apply more than a total of 5.7 ounces per acre per year.

Teasel

Milestone Herbicide	at 7 ounces per acre
Escort XP	at 1 ounce per acre
Liberate Surfactant	at 1 quart per 100 gallons water

Many of you are already using one or both in your spray programs

Both products have Teasel on the label, so you are getting the benefit of two labeled products on the same weed

You will have some residual with the higher rate of Milestone and depending upon soil pH also from Escort XP (higher pH soils will give you longer residual with SU chemistries)

Additional weeds with this mix – Canada Thistle, Teasel, Multiflora Rose, Field Bindweed, Musk Thistle, Bull Thistle, Plumeless Thistle, Sericea Lespedeza, Japanese Knotweed, Poison Hemlock, Perennial Sowthistle, Horse Nettle, Russian Knapweed, Cocklebur, Wild Carrot, Buckhorn Plantain, Wild Sunflower

Field Bindweed Herbicide Control

In most cases dicamba products or dicamba/2,4-D products will do a good job of controlling Field Bindweed

Normally once the Field Bindweed is actively growing and stems are at least 12” long it can be sprayed,

When it starts to flower is the best application period (from my own personal experience)

Also, that can be the worst application period due to sensitive crops or plants growing at that time

If close to sensitive crops than Freelexx Herbicide might be a good choice, while it does not have any dicamba in it, it does have Field Bindweed control on it's label.

Fall applications could be done with the dicamba type products after sensitive crops are out.



Field Bindweed

My preference would be to add 2 quarts of Freelexx Herbicide to TerraVue Herbicide or Milestone Herbicide if you are already using to get the Field Bindweed in needed sites

Freelexx Herbicide – is a 2,4-D amine, is a choline-based product, very low to no odor, is a non-volatile 2,4-D amine product, has all non-crop labeling needed, has ornamental turfgrass labeling, has full aquatic labeling, CRP, Pasture, Rangeland, Forestry, Roadsides, Right-A-Ways, Drainage Ditches and other sites.

Freelexx Herbicide	at 2 quarts per acre
Liberate Surfactant	at 1 quart per 100 gallons water

Has a 7 days haying restriction, if grazing the site than apply no more than 4.21 pints Freelexx per application, maximum rate per acre per year is 8.42 pints (4 quarts, 6 ounces, in round numbers)

There are many different Dicamba products, **Overdrive Herbicide**, **Clash Herbicide (DGA dicamba)**, **Diablo Herbicide (dicamba)**, **Weedmaster (dicamba + 2,4-D)**, **Rifle D (dicamba + 2,4-D)** and many others

Overdrive Herbicide -is a dicamba plus diflufenzopyr – the diflufenzopyr works like a high-powered surfactant and make the dicamba work better at lower rates but is not considered a surfactant.

Overdrive Herbicide	at 4 to 6 ounces per acre
Liberate Surfactant	at 1 quart per 100 gallons water

Has all labeling needed for your sites, watch heat, will volatize

Products and Rates for Field Bindweed Herbicide Control

Dicamba / 2,4-D Products

Rifle D at 4 pints per acre (2 quarts)

Liberate Surfactant at 1 quart per 100 gallons water

Has all crop and non-crop labeling, max use rates is 5.5 quarts per treated acre, watch heat, will volatilize

Clash, Diablo, Rifle (straight dicamba products)

I really would not recommend these in your sites or situations but if you want to take the risk then use rates are.

Clash Herbicide at 16 ounces per acre (smaller Bindweed you could drop down to 12 ounces)

Liberate Surfactant at 1 quart per 100 gallons water

Max use rate is 32 ounces per acre, volatility issues will start at about 70 degrees, might be a late fall type application, product does have right-a-way labeling

Dicamba products are positive on Field Bindweed for control, but can be tricky with applications, temperature, weather, sensitive crops and sensitive vegetation and grasses

Products and Rates for Field Bindweed Herbicide Control

Facet L Herbicide at 22 to 32 ounces per acre

MSO Surfactant at 1 quart per acre

Facet L is also a very good product for controlling Field Bindweed

Normal application timing with Facet L is the fall before a killing frost, plants should be actively growing and at least 4" long

Facet L is slow acting and can take 7 to 14 days for any symptoms to appear, but does provide excellent long-term control, may still take several applications

Again, this is an expensive application, if using 32 ounces per acre costs can be around \$33.00 per acre

Will be much safer in and around trees, will also get some annual grass control if applied earlier, no grazing restrictions and a 7-day haying restriction after application



Multiflora Rose Herbicide Control

If you are already using TerraVue Herbicide as your standard weed control product than you can just add in some Escort XP to help with control of Multiflora Rose

While TerraVue does have Multiflora Rose on its label, it does suggest for better control to add Garlon 4 Ultra at 16 to 32 ounces per acre

I would just opt to add the Escort XP, it also has Multiflora Rose on its label at 1 ounce per acre

Less volatility issues with the Escort XP during warmer temperatures, Garlon 4 Ultra could have some volatility issues

Multiflora Rose Herbicide Control

TerraVue Herbicide at 2.85 ounces per acre
Escort XP Herbicide at 1 ounce per acre
Liberate Surfactant at 1 quart per 100 gallons water

If using Milestone as your based than again, add Escort XP at 1 ounce per acre to help with the Multiflora Rose, Milestone Herbicide does not have Multiflora listed but the addition of Escort XP will help you pickup that plant.

Milestone Herbicide at 7 ounces per acre
Escort XP Herbicide at 1 ounce per acre
Liberate Surfactant at 1 quart per 100 gallons water

Liberate Surfactant will help products penetrate the thin bark, stems and leaves of the Multiflora Rose for better herbicide intake into the plants

If running a foliar brush program with any Escort XP in it, you should pickup the Multiflora Rose while spraying other brush species

Vastlan Herbicide at 2 quarts per 100 gal.
Escort XP Herbicide at 1.5 to 2 ounces per 100 gal.
Milestone Herbicide at 7 ounces per 100 gal.
Liberate Surfactant qt 1 to 2 quarts per 100 gal.

Method 240 SL Herbicide at 10 ounces per 100 gal.
Escort XP Herbicide at 1.5 to 2 ounces per 100 gal.
Milestone Herbicide at 7 ounces per 100 gal.
Liberate Surfactant at 1 to 2 quarts per 100 gal.

Poison Hemlock, Wild Carrot or Queen Ann's Lace, Wild Parsnip Herbicide Control

Poison Hemlock



Wild Parsnip



Wild Carrot, Queen Ann's Lace



Poison Hemlock, Wild Carrot (Queen Ann's Lace), Wild Parsnip

All of these can be controlled with the use of TerraVue Herbicide, Milestone Herbicide/Escort XP Herbicides or Opensight Herbicide if you are already using them in your spray programs

TerraVue Herbicide at 2.5 to 2.85 ounces per acre
Liberate Surfactant at 1 quart per 100 gallons water

If you want to get a faster burndown, then add **Freelexx Herbicide** at 1 quart per acre, also adding Escort XP at 1 ounce per acre to the mix to increase control

Milestone Herbicide at 5 to 7 ounces per acre
Escort XP Herbicide at 1 ounce per acre
Liberate Surfactant at 1 quart per 100 gallons water

If you want to get a faster burndown, then add **Freelexx Herbicide** at 1 quart per acre

Opensight Herbicide at 3.3 ounces per acre = 7 ounces Milestone and ½ ounce MSM/Escort
Escort XP Herbicide at 1 ounce per acre
Liberate Surfactant at 1 quart per 100 gallons water

If you want better control on the carrot species add ½ to 1 ounce Escort XP per acre

If you want to get a faster burndown, then add **Freelexx Herbicide** at 1 quart per acre

Japanese Knotweed Herbicide Control



Japanese Knotweed Herbicide Control

TerraVue Herbicide	at 2.85 ounces per acre broadcast /5.7 ounces per acre spot spraying
Liberate Surfactant	at 1 to 2 quarts per 100 gallons water
Or	
MSO Surfactant	at 2 to 4 quarts per 100 gallons water

If in roadsides with other vegetation interspersed, I would suggest the TerraVue Herbicide, if in areas that you can use the higher spot spray rate than do

Plants should be at least 3 to 4 feet tall at time of application, using high volumes of water gives better control, 100 gallons per acre plus, applications in the summer seem to work well or mowing in summer than applying in the fall after allowing to regrow to at least 3 feet is also very effective

Arsenal Herbicide (Imazapyr)	at 3 to 4 pints per acre
MSO Surfactant	at 2 pints per acre or 1% solution by volume (1 gallon per 100 gallons if using high volume spraying)

Arsenal does have aquatic labeling if applications are near or in water, will be positive for control but will kill everything it hits or drifts on with a longer residual.

Results can be slow and take up to a year to show full effects, sites might be limited as to where Arsenal applications could be used, if looking at restoration after applications than that might be up to 2 plus years later

Glyphosate Products

If around aquatic sites or water than use the following

Roundup Custom	at 1 gallon per 100 gallons water (or any aquatic labeled glyphosate)
LI 700 Surfactant	at 2 quarts per 100 gallons water (acidifying / penetrating surfactant)
Choice weather Master	at 2 quarts per 100 gallons water (water conditioner)
Reign	at 1 quart per 100 gallons water (drift control and deposition/adhesion aid)

If not around aquatic sites or water

Roundup Pro Concentrate	at 1 gallon per 100 gallons water (or any aquatic labeled glyphosate)
LI 700 Surfactant	at 2 quarts per 100 gallons water
Choice weather Master	at 2 quarts per 100 gallons water
Reign	at 1 quart per 100 gallons water

Should be applied with high water volumes for through plant coverages, 100 gallons per acre plus, if plants are over 4 ft. tall than you will have to use column acres as well as ground acres for good control and to figure applications

Can do restoration projects sooner with this program

Can be safe around and under trees, keep off green foliage, thin bark trees and any suckers at base of trees



Sericea Lespedeza Herbicide Control

Sericea Lespedeza Herbicide Control

If you are already using TerraVue Herbicide, Milestone Herbicide than just add 1 ounce Escort XP to the mix, and you will get the Sericea Lespedeza

Opensight Herbicide	at 3 ounces per acre
Escort XP Herbicide	at .5 to 1 ounce per acre
Liberate Surfactant	at 1 quart per 100 gallons water

TerraVue Herbicide	at 2.5 ounces per acre rate
Escort XP Herbicide	at 1 ounce per acre rate
Liberate Surfactant	at 1 quart per 100 gallons water

Milestone Herbicide	at 5 to 7 ounces per acre rate
Escort XP Herbicide	at 1 ounce per acre rate
Liberate Surfactant	at 1 quart per 100 gallons water

Apply beginning at flower bud initiation and through the full bloom stage of growth

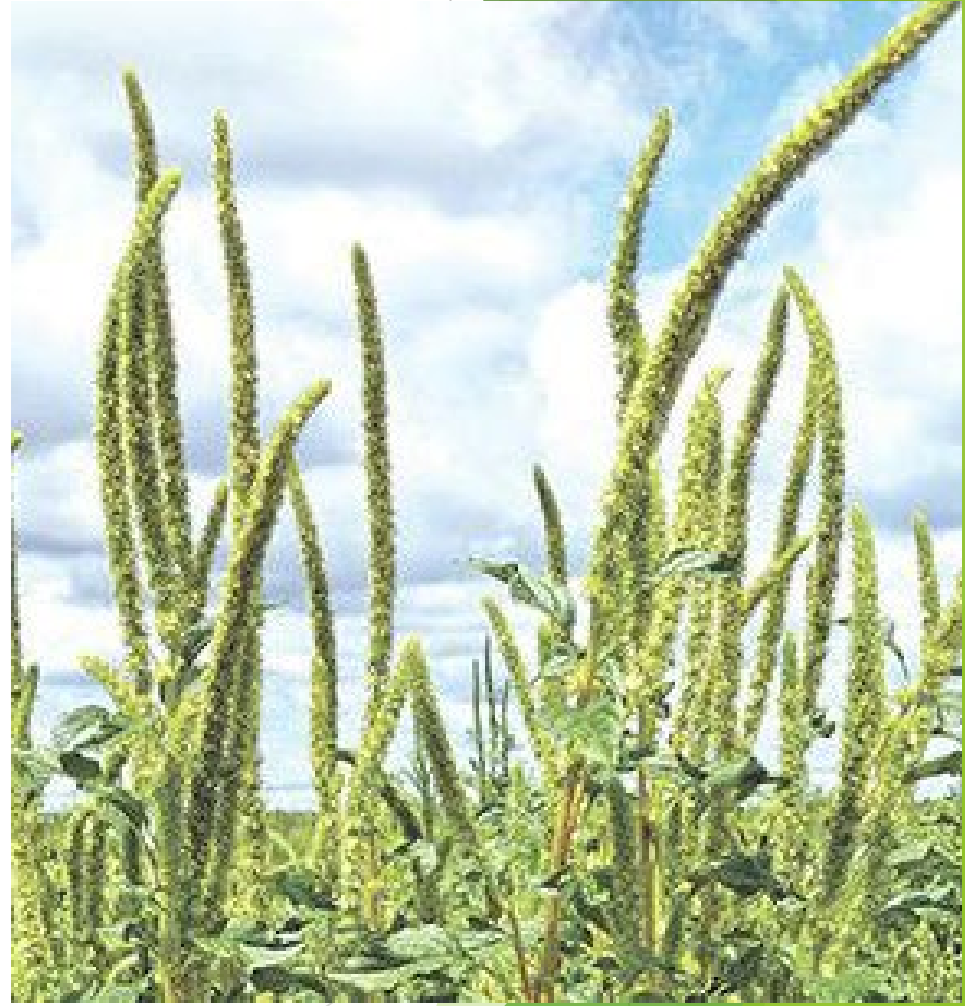
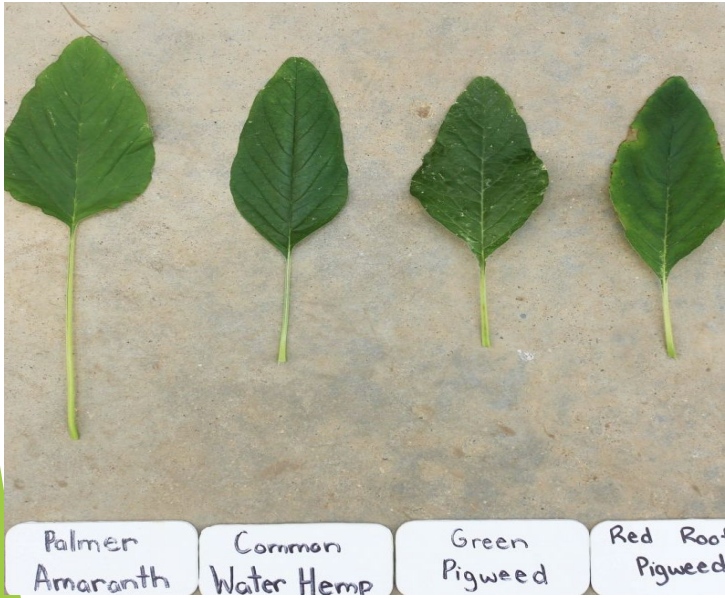
Also **1 ounce of Escort XP Herbicide** will control Sericea Lespedeza with **Liberate Surfactant**, will be slow in showing treated plants, stay patient for a couple of weeks to see results.

Labels on all products mentioned can be gotten at - www.cdms.net



Palmer Amaranth





Our Sites of Concern for Control

Our sites we were concerned with included:

Tree Belts

Buffers along the Crop Fields (Fence lines, Field access points)

County Road Ditches Running Along Infested Fields

Private Road Ditches on the Farm/Ranch

Cattle Yards and Paddocks

Feed Roads Along the Cattle Yards and Paddocks

Gravel Pit Area and Roads Leading into this Site

Pasture Feed Bunk Areas

Cattle Paths and Milling Areas in Pasture Sites

Low Lying Wet Areas Next to Crop Fields and Interior Roads

And any Other area Considered a Non-Crop Type Area

The following products have Palmer Amaranth on the label for control:

Overdrive Herbicide Suggested 8 ounces per acre rates (dicamba product)

***Distinct Herbicide is the crop lands equivalent to Overdrive Herbicide

DuraCor Herbicide Should use the 20 ounce per acre rate

TerraVue Herbicide Should use the 2.85 ounce per acre rate

Detail Herbicide 2 to 4 ounces per acre rate, 6 ounce per acre rate (maximum) for residual control.

***Sharpen Herbicide is the crop lands equivalent to Detail Herbicide

The following products have Pigweeds on the label but do not specifically state Palmer Amaranth on the label

E-2 Herbicide Suggested 3 to 5 pints per acre rates
2,4-D Amine, Dicamba and Fluroxypyr pre-mix product

Plateau Herbicide Suggested 6 to 8 ounces per acre rates
Could possibly help in giving some extended control (Grass/Alfalfa Stands)

Freelexx Herbicide Suggested 2 to 3 quarts per acre rates (max at 4 quarts per acre per year)
Choline 2,4-D Amine

***Tordon 22K Herbicide** Suggested 1 quart per acre rate along with 1 quart 2,4-D Amine or
1-quart Freelexx Herbicide

The Following Products have Palmer Amaranth on the label or Pigweeds on the Label and could when added with one of the other products listed, could give extended control as well.

Payload or Promenade Herbicide - Use 8 ounces per acre rates along with one of the burndown products listed

Fierce Herbicide - is the crop lands equivalent to Payload or Promenade (3 oz on Corn, 3.5 oz on Soybeans)

Sureguard Herbicide - is the ornamental and non-crop equivalent to Payload or Promenade Herbicides (Use 12 ounces per acre rate on established ornamentals and trees)

Rejuvra Herbicide - Use 5 to 7 ounces per acre rates with one of the burndown products listed

While Rejuvra Herbicide has Pigweeds on the label it does not specifically state Palmer Amaranth, it has shown to control annual broadleaf weeds when sprayed for invasive weed grasses in rangelands and permanent grass pastures.

Surfactant was added to all programs, Liberate 100% non-ionic penetrating surfactant was recommended at 1 quart per 100 gallons water (.25% by VV)

County Road Ditches Running Along Fields, Private Road ditches on the Farm/Ranch

Option One:

If working along corn fields and soybean fields are not close than

Overdrive Herbicide at 8 ounces per acre rates (max rate) for post emerge control

Liberate surfactant at 1 quart per 100 gal. water

Remember that Overdrive is a dicamba product so volatility issues could be a problem so stay well away from bean fields or other sensitive broadleaf crops and watch your heat

If you want post emerge control and possibly some pre-emerge control after you spray than you could add Payload Herbicide at 8 ounces per acre to the Overdrive at 8 ounces per acre as well

Payload does not really control, or damage existing perennial grasses and you would be good with adding this (also used for pre-emerge control of Puncturevine out west) in perennial grass roadsides

County Road Ditches Running Along Fields, Private Road ditches on the Farm/Ranch

Option two: (This option was used in some of the ditches)

DuraCor Herbicide at 20 ounces per acre rates for post emerge

Liberate surfactant at 1 quart per 100 gal. water.

Volatility issues are greatly reduced with this mix, and you could encroach closer to any Soybean fields but watch physical drift issues, this will take beans out and other broadleaf crops if you drift on them.

Again, Payload Herbicide should help give you some residual on Palmer Amaranth to possibly help in controlling any new seedlings that might come after the initial treatments.

You might also try some Esplanade 200 SC in place of the Payload to possibly get some extended control as well

Esplanade 200 SC does not have Palmer Amaranth on the label, but it does have Pigweeds (same family), use at 5 to 7 ounces per acre rates

This one is expensive, but they say possibly up to two to three years control with Esplanade 200 SC on weeds it will control, safe on existing perennial grasses as well.

DuraCor Herbicide Site Before Application 8-6-21



DuraCor Herbicide 20 oz. acre rate with
Liberate at 1 quart per 100 gal. water, 8-30-
21, 24 days after application



DuraCor Herbicide 20 oz acre rate,
September 21, 2021, 45 days after
application



Cattle Yards and Paddocks, Feed Roads along the Cattle Yards and Paddocks

E-2 Herbicide at 5 pints per acre (max application rate per application)

(max use rate per acre per year is 10 pints or 2 applications at 5 pints each)

Payload Herbicide at 10 ounces per acre

Liberate Surfactant at 1 quart per 100 gal. water

Palmer Amaranth is not on the E-2 label, but Pigweeds are, Palmer Amaranth is on the Payload Herbicide label

Applied in the paddock lots, corrals and surrounding areas, feed roads and edges, road tops and other open areas

We were not concerned about grazing labeling, when we looked at these, they were scraping these to bareground anyway

This mix would give you a bit more bite on most all broadleaf weeds as well

E-2 Herbicide and Payload Site, Before
Application, August 6, 2021



E-2 Herbicide, Payload Herbicide, Liberate Surfactant,
6 days after application





E-2 Herbicide at 5 pints per acre rates
Payload Herbicide at 10 ounces
Liberate Surfactant at 1 quart per 100 gallons water
24 days after treatment

Cattle Yards and Paddocks, Feed Roads along the Cattle Yards and Paddocks, Gravel Pit Area and Roads Leading Into, Low Lying Wet areas next to Crop Fields and Interior Roads

E-2 Herbicide at 5 pints per acre

Rejuvra Herbicide at 7 ounces per acre

Liberate Surfactant at 1 quart per 100 gal. water

This mix was also applied to some of the above areas to see how it compared to the Payload Herbicide

Rejuvra Herbicide does have grazing labeling at 5 ounces per acre or less

Has shown residual activity up to 3 years on many species it does control

Does have Pigweeds on the label but does not state Palmer Amaranth specifically

Rejuvra Herbicide is currently being used on thousands of acres for annual grassy weeds and some annual broadleaf weed, does not hurt existing perennial grasses



Rejuvra Herbicide, E-2 Herbicide, Liberate Surfactant
site day of application, August 6, 2021

E-2 Herbicide, Rejuvra Herbicide, Liberate Surfactant in gravel pit area, August 12, 2021, 6 days after application



Showing how quickly E-2
Herbicide is shutting down these
plants (6 days after application)

E-2 Herbicide at 5 pints plus other
products

2,4-D amine, Dicamba and
Fluroxypyr



Conclusions: 2021 Work

In observations it seems even with Palmer Amaranth on the *DuraCor Herbicide label and using the 20 ounce per acre rate it seemed not to control even after 45 days

Suggestion would be to couple it with something else to improve control
(Freelexx Herbicide, 2,4-D Amine Herbicide)

*E-2 Herbicide at max rate per application (5 pints per acre) seems to have a very good burndown and control effect on Palmer Amaranth for initial control

*Payload Herbicide and *Rejuvra Herbicide seem to help with some extended control with observations of no re-growth in the applied areas of Palmer Amaranth this year

45 days after applications (when last looked)

Will be watching these areas in 2022 to see if these products help extend that long and slowing or stopping new growth will be the real answer

Timing of application could be sooner - Applications were done in early August in 2021

Timing in 2021 was based on plant growth to a larger height for better identification and plants growing as well

If in a known site than possibly applying when plants are much smaller - 3" to 4" height or June time frame to possibly start applications

Water carrier (rates per acre) should be 25 gallons or more per acre for better coverages (the higher the better)

These plants are tall and bushy, higher water volumes will give you the coverage needed for better control (no matter what you are using)

We had several areas of concern not showing any Palmer Amaranth growth in 2021, these areas will be observed again in 2022 for any possible Palmer Amaranth growing

Thank You Any Questions

Approximately 76% grade to go down, up the other side was about the same
“But” you had to make a left turn then a right on the way up

