



**Spring 2019**

**Palo Pinto County  
Extension Office**

**221 South 5th Ave.**

**Palo Pinto, TX 76484**

**940-659-1228**

**Jason Westbrook**  
County Extension Agent  
Agriculture & Natural Resources

**Website:**

**[www.palopinto.agrilife.org](http://www.palopinto.agrilife.org)**

**Facebook:**

**Palo Pinto County 4-H and Texas  
A&M AgriLife Extension Service  
Palo Pinto County**

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**UPCOMING PROGRAMS**

- 3/28/19 Ag. Advisory Meeting
- 4/6/19 Gardening Made Easy the Earth-Kind Way
- 4/8/19 Water Well Testing
- 4/11/19 General Lawn Maintenance Program

**\*Call 940-659-1228 for more info**

**Khaki Weed and Nuisance Weeds in  
Bermuda Grass**

**Texas A&M Agrilife Extension Service Palo Pinto County  
Cooperators: Dow Turf Grass  
Jason Westbrook And Raymond Miller**

**Summary**

Khaki weed is one of the most prevalent weeds effecting turf grass, lawns and playgrounds. Khaki weed and nuisance weeds overtake these areas that are used for athletics events, playgrounds and aesthetic value and can overtake these areas choking out Bermuda grass. Khaki weed has a sharp sticker that attaches to shoes, tires and anything that comes in contact with the seed head and can be carried to other locations for germination. Dow turf grass is in the process of developing a new product to eliminate khaki weed and other nuisance weeds that grow well in Bermuda grass areas. Khaki weed dominance can lead to millions of dollars in cost related to treating and re-planting in these areas.

**Objective**

To assist the Dow Turf Grass representative in treating randomized plots with two new products Relzar and Game On and document the effects of control on khaki weed and other nuisance weeds.

**Materials and Methods**

9- 20'x25' plots were measured out. 3 plots were randomly selected for treatment with Game On, 3 plots were randomly selected for treatment with Relzar and 3 plots were left as untreated. Match weed, khaki weed, knot weed, sprawling horse weed, spurge and mallow were found in the plots with khaki weed being

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### ***Khaki Weed and Nuisance Weeds in Bermuda Grass***

the most prevalent. The intent of the demonstration is to determine the effects of Relzar and Game On products on these nuisance turf grass weeds. Game On plots were treated with 3 pints per acre. Relzar Plots were treated with 0.72 ounces per acre. Both of these products are currently being registered to be put on the market.

### **Results and Discussion**

#### Plot Map

3 M,K,SH	2 K,Sp	1 K,SH,Sp,KN	2 K,SH,KN, Sp	3 K,SH,Sp	1 K,SH	2 K,Sp
1 M,K,KN	3 K,Sp					

#### Plot Map

- 1 Untreated Plot
- 2 Game On- 3 pints per acre
- 3 Relzar- 0.72 ounces per acre

#### **Plot Weeds Identified in Plot Map**

M-Match weed  
K-Khaki weed  
KN-Knot weed  
SH-Sprawling Horse Weed  
Sp-Spurge  
Ma-Mallow



*Illustration 1*





***Illustration 2***





## **Conclusions**

At 3 days the Game On showed visible signs of yellowing and wilting of the plants. The buffalo grass was also brown at day 3 in Game On plot. At 5 days Relzar showed yellowing of khaki weed but spurge was not affected. Drought stressed plots showed quicker response of wilting and drying up at 5 days.

2 week results showed that khaki weed, knot weed, spurge, sprawling horse weed and buffalo grass were all killed if the product came in contact with it (Illustration 2). We received 5 inches of rain during that time period and new khaki weed emerged in the same plots. Relzar showed yellowing of khaki weed but after rain khaki weed continue to grow and came out of yellowing.

3 week results showed that Game On controlled khaki weed, spurge, knotweed and sprawling horseweed in each plot where the plants were represented. We received several inches of rain in week 2, khaki weed reemerged in the plots (Illustration 1). Our conclusion was that if Game On came in contact khaki weed and other nuisance weeds mentioned that it will control these weeds without damage to Bermuda grass. It will also kill buffalo grass. However, with adequate water khaki weed may reemerge and need to be treated again. Relzar showed no signs of death on any of the above mentioned weeds at 3 weeks with the rate of herbicide we used.

## **Acknowledgements**

The following acknowledgements for this demonstration are made possible by Raymond Miller- Dow Turf Specialist, Palo Pinto County Master Gardeners, Palo Pinto Ag Committee and Palo Pinto County for access to the plot sites.



## Ground Broadcast Treatments of Prickly Pear with MezaVue Rate Study

Site Locations: Mills, Eastland, Parker, Palo Pinto and Callahan Counties

**Cooperators:** Schunke Ranch, Kelly West, Weatherford College, Johnson League Ranch and Chase Goldsmith

**Authors:** James Jackson, Extension Program Specialist, Stephenville  
Tom Guthrie, County Extension Agent, Mills County  
T.J. Cummings, County Extension Agent, Eastland County  
Jay Kingston, County Extension Agent, Parker County  
Jason Westbrook, County Extension Agent, Palo Pinto County  
Karl Winge, County Extension Agent, Callahan County

### Summary

Sites were established in 2017 to research the efficacy of Dow AgroSciences' new product MezaVue (GF-2969) at various rates on prickly pear. The objectives of this study are to determine what rates MezaVue offer equivalent or superior control on prickly pear when compared to the current standards of Surmount and Tordon 22K. All treatments were mixed with MSO at a rate of 1.0% v/v. Evaluations will be conducted at 4, 8, 12 and 24 months after treatment to analyze percent desiccation of prickly pear at each treatment. Evaluations will be made with comparisons to the current standards of Tordon 22K and Surmount to determine what rate of MezaVue delivers the highest level of mortality at the quickest rate on prickly pear.

### Objective

Prickly pear may interfere with movement and handling of livestock, with forage utilization, cause serious livestock health problems, and compete with desirable forage plants. These plants are extremely tolerant of drought and harsh conditions and are protected from grazing animals, to some extent, by their spines. Prickly pear thrives in the central and western half of Texas, both in rural pastures and urban lots. They can grow and increase in abundance very rapidly. The herbicide currently recommended by the Brush Busters program for prickly pear control is Surmount (active ingredients: picloram and fluroxypyr), which can take up to two 2 years to reach a high rate of mortality on the prickly pear. Tordon 22K (active ingredient: Picloram) is also an effective herbicide on prickly pear; however, this treatment takes an extended period, as well to see any results. MezaVue Corteva AgroSciences newest herbicide contains three active ingredients picloram, fluroxypyr and aminopyralid. By containing all three actives, it offers faster control at lower rates than Surmount or Tordon 22K. The objective of this project is to analyze the effects of various rates MezaVue on Prickly Pear.

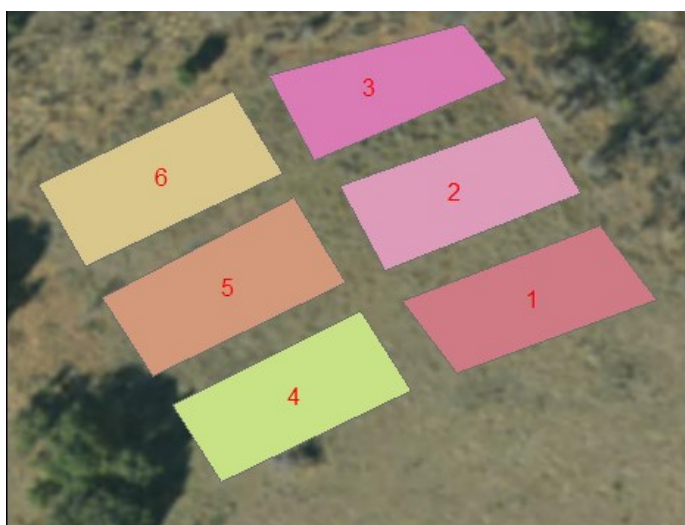
## Prickly Pear

### Materials and Methods

Two sites were established in 2017 in Mills and Eastland Counties, along with an additional 3 sites in 2018 to research MezaVue at various rates and determine what rates deliver a high rate of control on prickly pear. The sites received 6 treatments which consisted of four different rates of MezaVue and the standard treatments of Surmount and Tordon 22K with plot sizes of 56 X 100. The treatments were sprayed with Teejet AI11002VS air induced nozzles on 18 inches spacing that was spraying approximately 12-18" above the pads at a rate of 20 gallons per acre. Evaluations were made at 4, 8, 12 and 24 months after treatment and will continue to be made at 36 months after treatment if needed. Table 1 contains the environmental conditions on the day of application and Table 2 gives the treatment details of each location. Figure 1 is the layout of Eastland site and Figure 2 is the plot layout in Mills County.

**Table 1:** Environmental conditions on the day of application for prickly pear ground broadcast trials established in 2017.

Site	Date	Spray Time	Wind Speed/ Direction	Soil Temp.	Air Temp.	Soil Type/ Moisture	RH
2017 Sites							
Mills	4/26/17	10:00-12:00	18 mph NNW		76	Rocky/Wet	37
Eastland	5/6/17	12:00-1:00	13 mph SSE	69	73	Palo Pinto/Low	59
2018 Sites							
Parker	3/20/18	11:00-12:00	NNW 15 mph		56	Thurber/Mod	40
Palo Pinto	4/20/18	10:00-12:00	Calm	52	50	Thurber/Mod	37
Callahan	5/29/18	10:30-12:00	Calm		93	Low	36



**Figure 1 & 2.** 2017 MezaVue ground broadcast rate studies in Eastland on Kelly West Property (left) and Schunke Ranch in Mills County (right).



**Figure 3,4 & 5.** Map of Ground broadcast prickly pear plots put out in 2018 in Parker County at Weatherford College (left), Palo Pinto County on the Johnson League Ranch (Center) and then in Callahan County on the Chase Goldsmith ranch.

<b>Table 2:</b> Herbicides, rates, and application data for prickly pear ground broadcast trials established in 2015 and 2016. MSO at 1.0% v/v was added to all treatments								
Treatment No.		Herbicide	Oz/acre	Material/plot		TSV/Plot		
Mills Co.								
1		Tordon 22K MSO	32 6	141.11 mL 26.46 mL		3 gal		
2		Surmount MSO	64 6	282.22 mL 26.46 mL		3 gal		
3		MezaVue MSO	8 6	35.28 mL 26.46 mL		3 gal		
4		MezaVue MSO	16 6	70.56 mL 26.46 mL		3 gal		
5		MezaVue MSO	24 6	105.83 mL 26.46 mL		3 gal		
6		MezaVue MSO	32 6	141.11 mL 26.46 mL		3 gal		
Eastland Co.								
1		Tordon 22K MSO	32 6	141.11 mL 26.46 mL		3 gal		
2		Surmount MSO	64 6	282.22 mL 26.46 mL		3 gal		
3		MezaVue MSO	8 6	35.28 mL 26.46 mL		3 gal		
4		MezaVue MSO	16 6	70.56 mL 26.46 mL		3 gal		
5		MezaVue MSO	24 6	105.83 mL 26.46 mL		3 gal		
6		MezaVue MSO	32 6	141.11 mL 26.46 mL		3 gal		
Parker Co.								
1		Tordon 22K MSO	32 6	141.11 mL 26.46 mL		3 gal		
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**Table 2:** Herbicides, rates, and application data for prickly pear ground broadcast trials established in 2015 and 2016. MSO at 1.0% v/v was added to all treatments

Treatment No.	Herbicide	Oz/acre	Material/plot	TSV/Plot
4	MezaVue	16	70.56 mL	3 gal
	MSO	6	26.46 mL	
5	MezaVue	24	105.83 mL	3 gal
	MSO	6	26.46 mL	
6	MezaVue	32	141.11 mL	3 gal
	MSO	6	26.46 mL	
Palo Pinto Co.				
1	Tordon 22K	32	141.11 mL	3 gal
	MSO	6	26.46 mL	
2	Surmount	64	282.22 mL	3 gal
	MSO	6	26.46 mL	
3	MezaVue	8	35.28 mL	3 gal
	MSO	6	26.46 mL	
4	MezaVue	16	70.56 mL	3 gal
	MSO	6	26.46 mL	
5	MezaVue	24	105.83 mL	3 gal
	MSO	6	26.46 mL	
6	MezaVue	32	141.11 mL	3 gal
	MSO	6	26.46 mL	
Callahan Co.				
1	Tordon 22K	32	141.11 mL	3 gal
	MSO	6	26.46 mL	
2	Surmount	64	282.22 mL	3 gal
	MSO	6	26.46 mL	
3	MezaVue	8	35.28 mL	3 gal
	MSO	6	26.46 mL	
4	MezaVue	16	70.56 mL	3 gal
	MSO	6	26.46 mL	
5	MezaVue	24	105.83 mL	3 gal
	MSO	6	26.46 mL	
6	MezaVue	32	141.11 mL	3 gal
	MSO	6	26.46 mL	

### **Results and Discussion**

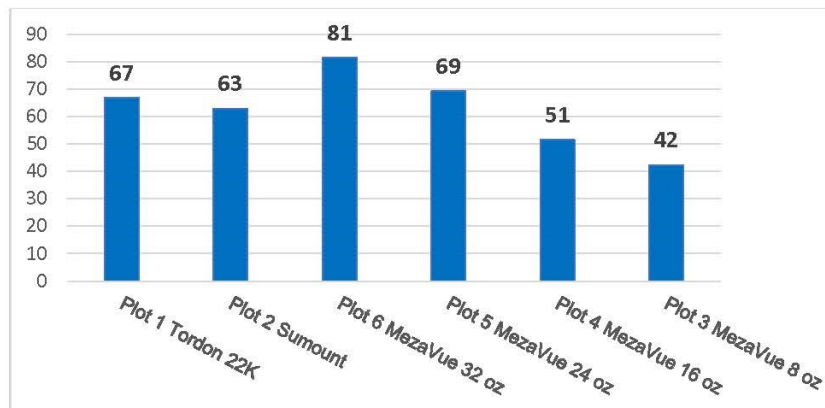
Plot evaluations have been made at 4, 8 and 12 months after treatment on the 2017 sites and the final evaluation will be conducted at 24 months after treatment. On the 2018 sites, evaluations have been conducted at 4 months after treatment and will continue at 8, 12 and 24 months after treatment. The 4 months after treatment evaluation on the 2017 sites was conducted by transect evaluations. All other evaluations were conducted by visually estimating percent yellow and percent desiccation. All evaluation data is listed in Table 3 and Figure 4 is the average desiccation at 12 months after treatment for the 2017 sites and Figure 5 is the 4-month average desiccation for the 2018 sites.

**Table 3:** Results of evaluations for percent desiccation at 4, 8 and 12 months after treatment for ground broadcast treatments established in Mills and Eastland Counties in 2017. And for 4 months after treatment for ground broadcast treatments established in 2018 in Parker, Palo Pinto and Callahan.

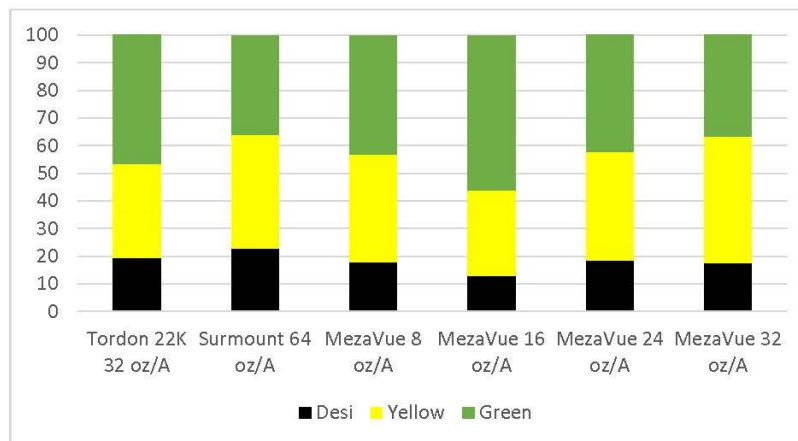
Herbicide	Rate oz./A	4 MAT % desiccation	8 MAT % desiccation	12 MAT % desiccation	24 MAT % desiccation
Mills					
Tordon 22K	32	15.6		62	
MSO	6				
Surmount	64	0		63	
MSO	6				
MezaVue	8	47.1		37	
MSO	6				
MezaVue	16	13.9		56	
MSO	6				
MezaVue	24	44.3		78	
MSO	6				
MezaVue	32	19.6		91	
MSO	6				
Eastland					
Tordon 22K	32	0		71	
MSO	6				
Surmount	64	0		63	
MSO	6				
MezaVue	8	34		71	
MSO	6				
MezaVue	16	69.7		60	
MSO	6				
MezaVue	24	18		47	
MSO	6				
MezaVue	32	0.3		48	
MSO	6				
Parker					
Tordon 22K	32	28.5			
MSO	6				
Surmount	64	31.1			
MSO	6				
MezaVue	8	18			
MSO	6				
MezaVue	16	16			
MSO	6				
MezaVue	24	31			
MSO	6				
MezaVue	32	20			
MSO	6				
Palo Pinto					
Tordon 22K	32	26			
MSO	6				
Surmount	64	32			
MSO	6				
MezaVue	8	16			
MSO	6				
MezaVue	16	24			
MSO	6				
MezaVue	24	15			



Herbicide	Rate oz./A	4 MAT % desiccation	8 MAT % desiccation	12 MAT % desiccation	24 MAT % desiccation
MSO	6				
MezaVue	32				
MSO	6	20			
Callahan					
Tordon 22K	32				
MSO	6	3			
Surmount	64				
MSO	6	10			
MezaVue	8				
MSO	6	25			
MezaVue	16				
MSO	6	0.5			
MezaVue	24				
MSO	6	9			
MezaVue	32				
MSO	6	12			



**Figure 4.** 2017 Desiccation on ground broadcast prickly pear trials at 12 months after treatment in Eastland and Mills County



**Figure 5.** 2018 Ground broadcast prickly pear trials in Parker, Palo Pinto and Callahan data depicted in graph is average of 3 sites.

## **Acknowledgements**

This project was supported by Corteva AgroSciences, Eastland, Mills, Parker, Palo Pinto and Callahan Counties and the cooperating landowners.

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