

Managing Palmer amaranth in dry edible beans without Reflex[®].

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N EXTENSION



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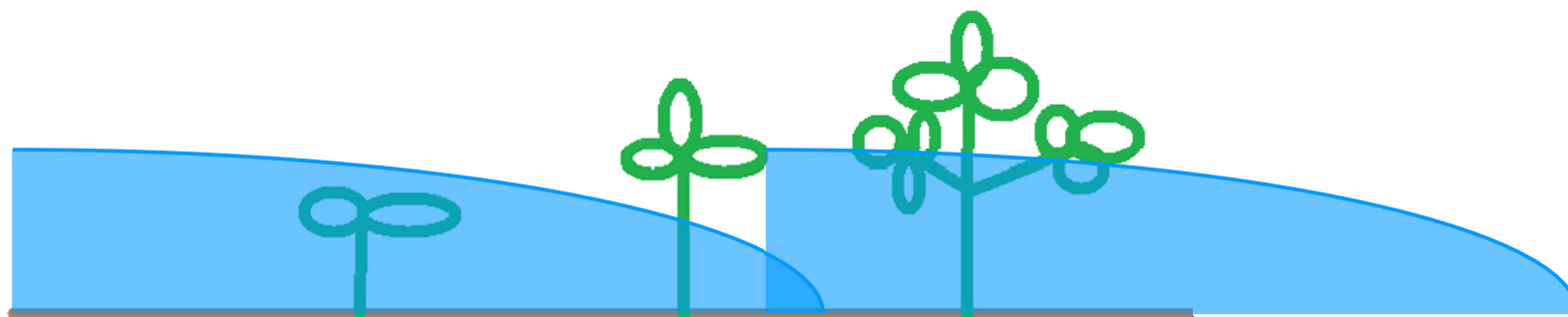
Corn on Corn	Corn Before Dry Beans	Corn Before Sugar Beets	Dry Beans	Sugar Beets
What does Not Work				
<u>POST</u>				
ALS: Permit Resolve Q, etc...			Raptor, Pursuit, Varisto	Glyphosate
Glyphosate			Basagran,	UpBeet
What Works				
<u>PRE</u>				
Group 15s: Warrant, Dual, etc...	Group 15s: Warrant, Dual, etc...	Group 15s: Warrant, Dual, etc...	Outlook, Dual, Eptam	
Acuron (15+5+27)	Accuron (15+5+27)		Sonolan, Prowl	
Atrazine				
Group 27 (Callisto, Balance)				
Group 14 (Sharpen, Valor)	Group 14 (Sharpen, Valor)	Group 14 (Sharpen, Valor)		
<u>POST</u>				
Dicamba / Atrazine / 27	Dicamba	Dicamba	Reflex*	Group 15s as a layby

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- For Palmer control, Reflex is a great product in dry beans.
- Small grains or corn only.
- 10 Months until corn can be planted.
- Overhead Irrigation only.
- 18 month rotation interval to corn starting in 2021.**

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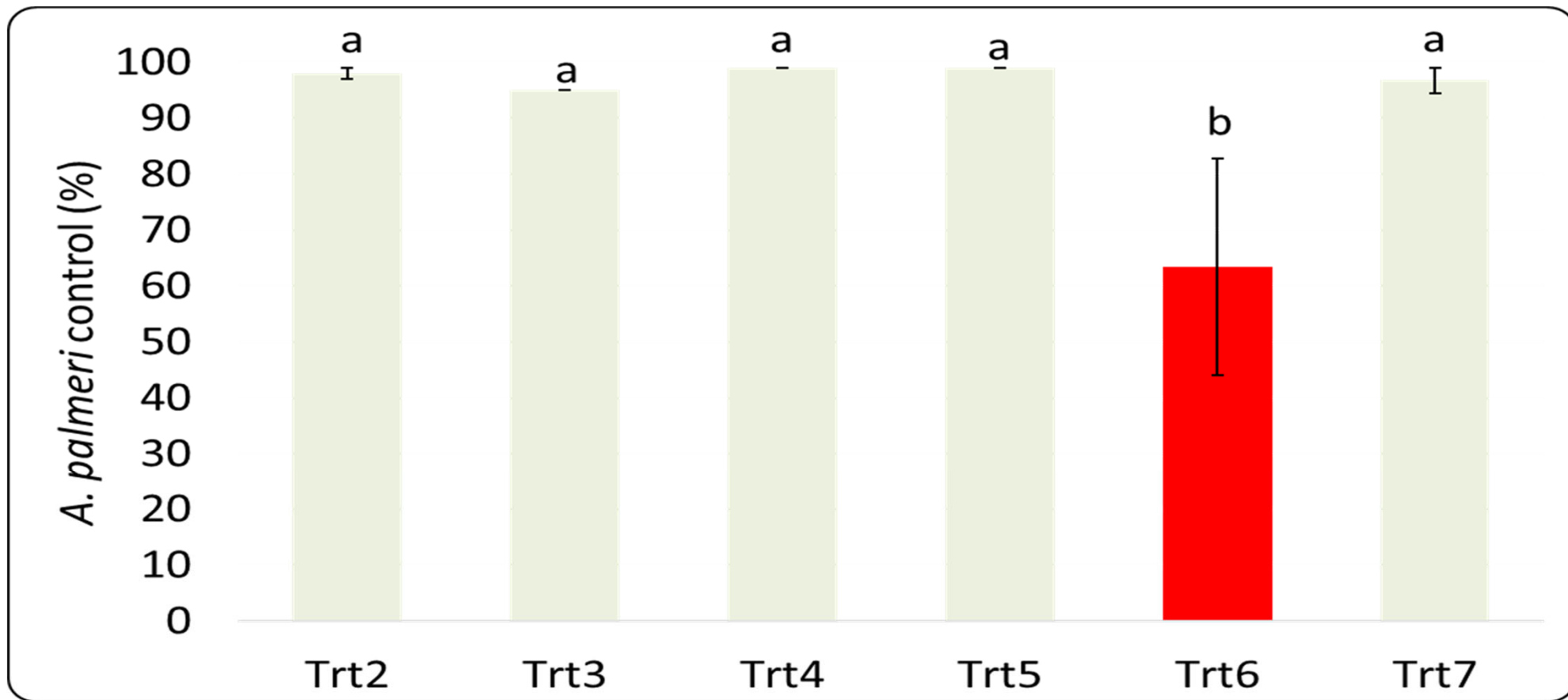


Herbicide	Labeled PRE	Labeled POST
Dual Magnum	YES	NO
Outlook	YES	YES
Zidua	NO	NO
Warrant	NO	NO

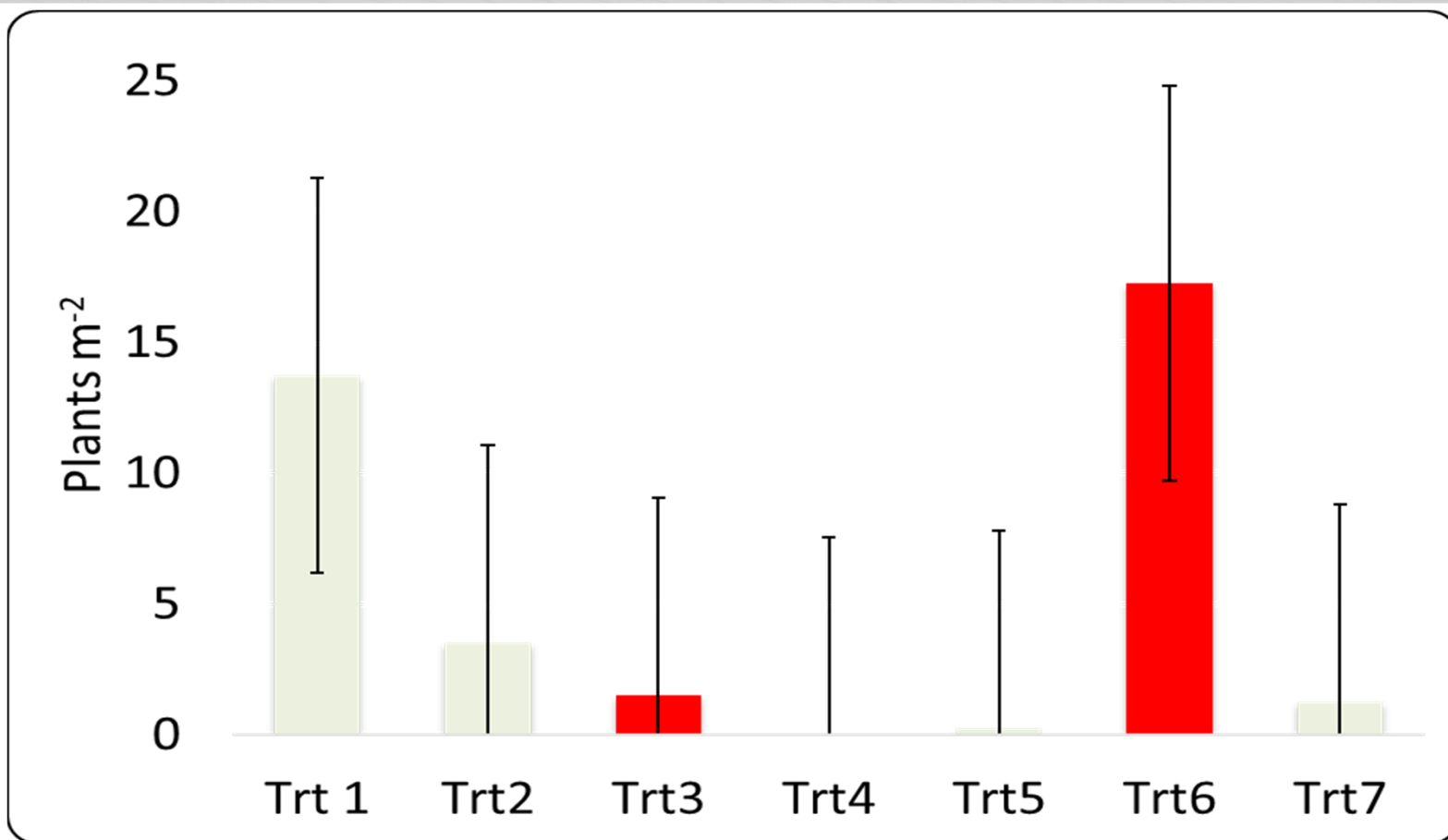
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Trt #	Herbicide Treatment (rate in fl oz an acre)	Application Timing
1	PRE ^A application alone	PRE
2	PRE fb Raptor (4) + Basagran (19) +Reflex (16) ^B	V1
3	PRE fb Outlook (8)	V1
4	PRE fb Raptor (4) + Basagran (19) +Reflex (16)* + Outlook (8)	V1
5	PRE fb Raptor (4) + Basagran (19) +Reflex (16) ^B	V3
6	PRE fb Outlook (8)	V3
7	PRE fb Raptor (4) + Basagran (19) +Reflex (16)* + Outlook (8)	V3

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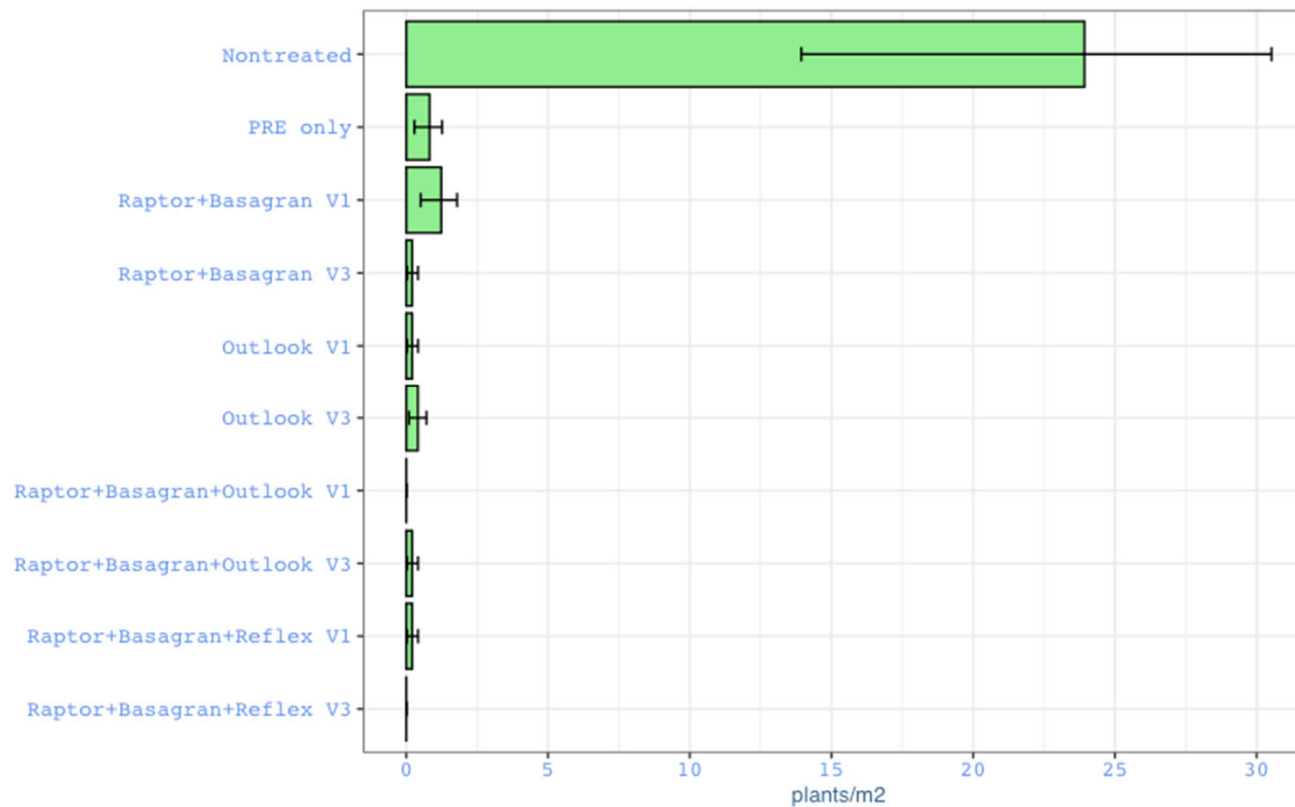
Trt #	Herbicide Treatment (rate in fl oz an acre)	Application Timing
1	PRE ^A application alone	PRE
2	PRE fb Raptor (4) + Basagran (19) +Reflex (16) ^B	V1
3	PRE fb Outlook (8)	V1
4	PRE fb Raptor (4) + Basagran (19) +Reflex (16)* + Outlook (8)	V1
5	PRE fb Raptor (4) + Basagran (19) +Reflex (16) ^B	V3
6	PRE fb Outlook (8)	V3
7	PRE fb Raptor (4) + Basagran (19) +Reflex (16)* + Outlook (8)	V3

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Date	Nontreated	Treatment 3	Treatment 4	Treatment 6
July 22 nd 2019	 A wide-angle photograph of a field with rows of young green plants. The plants are sparse and widely spaced. A white pickup truck is parked in the distance on the left side of the field.	 A wide-angle photograph of a field with rows of young green plants. The plants are more densely packed than in the nontreated field. A white pickup truck is parked in the distance on the left side of the field.	 A wide-angle photograph of a field with rows of young green plants. The plants are very densely packed. A white pickup truck is parked in the distance on the left side of the field.	 A wide-angle photograph of a field with rows of young green plants. The plants are very densely packed. A white pickup truck is parked in the distance on the left side of the field.
August 6 th 2019	 A close-up photograph of the nontreated field. The plants are tall and thin, with significant gaps between them. The leaves are green but appear somewhat sparse.	 A close-up photograph of the Treatment 3 field. The plants are tall and dense, with many leaves visible. The spacing between plants is much closer than in the nontreated field.	 A close-up photograph of the Treatment 4 field. The plants are very tall and very dense, with many leaves visible. The spacing between plants is very close.	 A close-up photograph of the Treatment 6 field. The plants are very tall and very dense, with many leaves visible. The spacing between plants is very close.

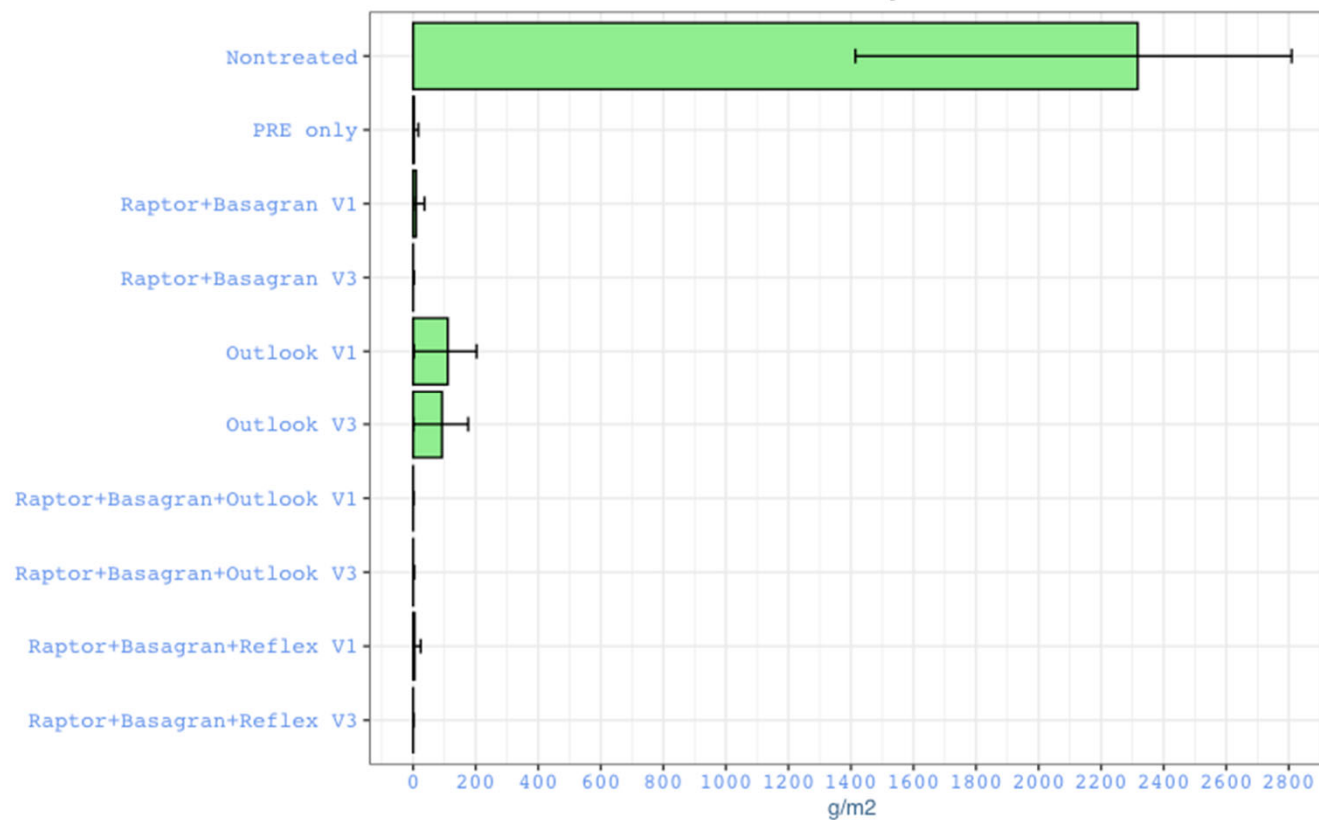
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Palmer Amaranth Density on September 1st



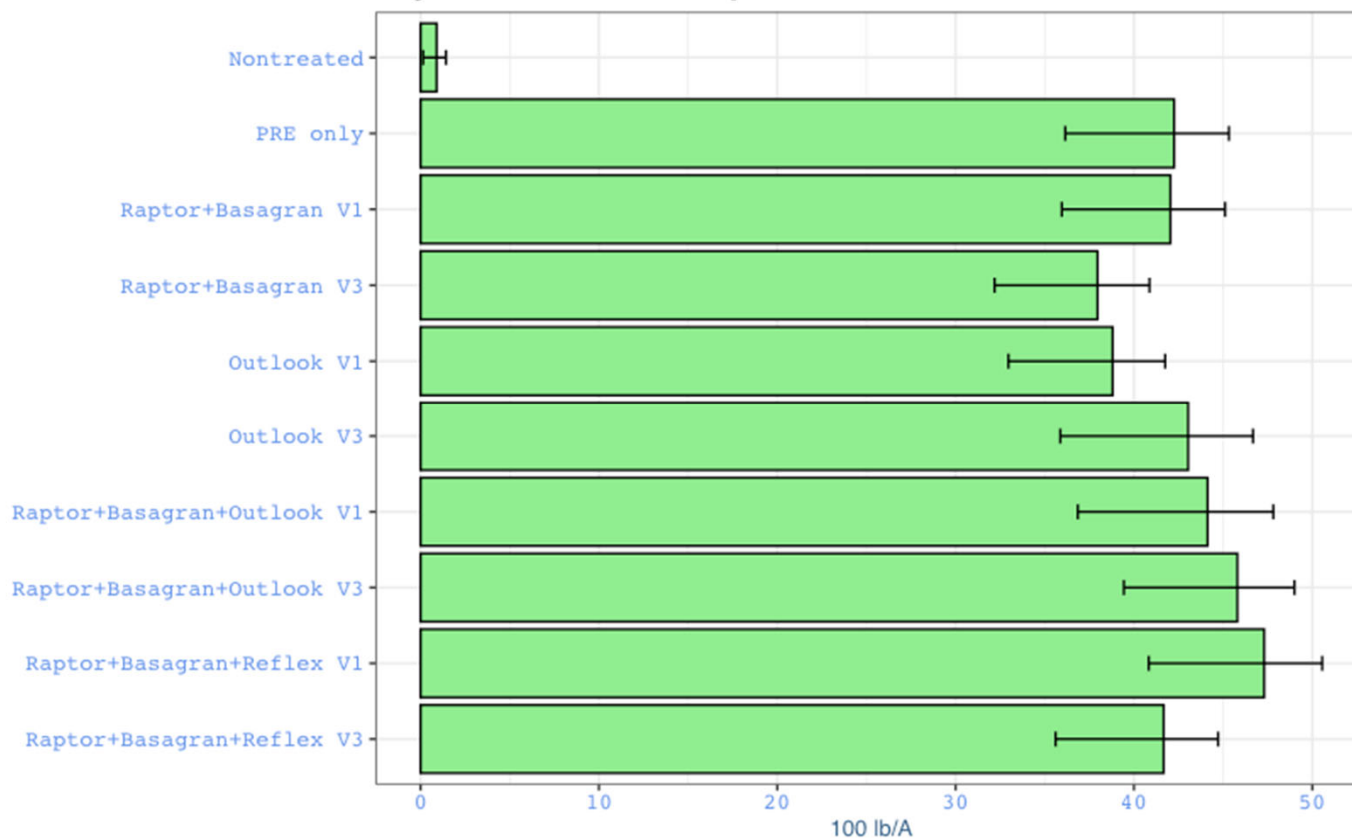
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Palmer Amaranth Biomass on September 1st



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Dry Bean Yield 100 lb per Acre



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N EXTENSION



Non-treated



**Outlook + Prowl PRE
Raptor + Basagran POST**

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N EXTENSION



**Outlook + Prowl PRE
Outlook V1**



**Outlook + Prowl PRE
Outlook V3**

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- Sequential applications of outlook work well to suppress Palmer season-long.
- We need a better understanding of Palmer emergence and Outlook timing.
- Raptor and Basagran, or Varisto, will likely be still needed for most growers.

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- Split applications of Outlook seem to be a good choice for managing Palmer.
- Split applications of Outlook do require a reduced rate of Outlook and may be less effective than using alternative group 15 herbicides.
- Dual II Magnum and Zidua may soon be labeled in dry bean POST.

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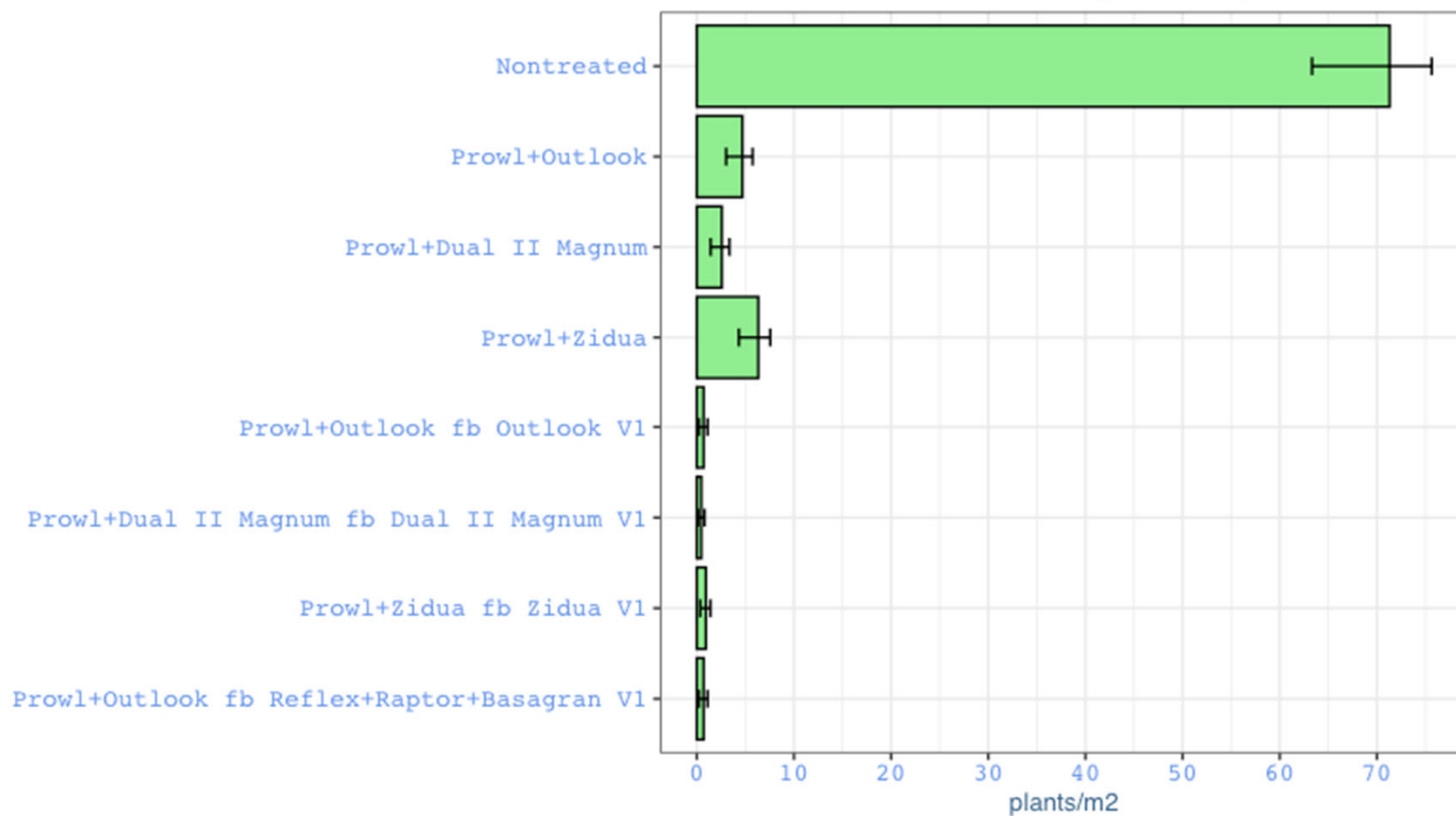


Herbicide treatments to evaluate Group 15 Herbicides

Trt #	Herbicide Treatment (rate in fl oz an acre)	Application Timing
1	Non-treated check	
2	Prowl H2O (32) + Outlook (13)	PRE
3	Prowl H2O (32) + Dual II Magnum (16)	PRE
4	Prowl H2O (32) + Zidua (2.5)	PRE
5	Prowl H2O (32) + Outlook (11) fb Outlook (9)	PRE fb V1
6	Prowl H2O (32) + Dual II Magnum (16) fb Dual II Magnum (12)	PRE fb V1
7	Prowl H2O (32) + Zidua (2.5) fb Zidua (2.5)	PRE fb V1
8	Prowl H2O (32) + Outlook (13) fb Raptor (4) + Basagran (19) +Reflex (16)	PRE fb V1

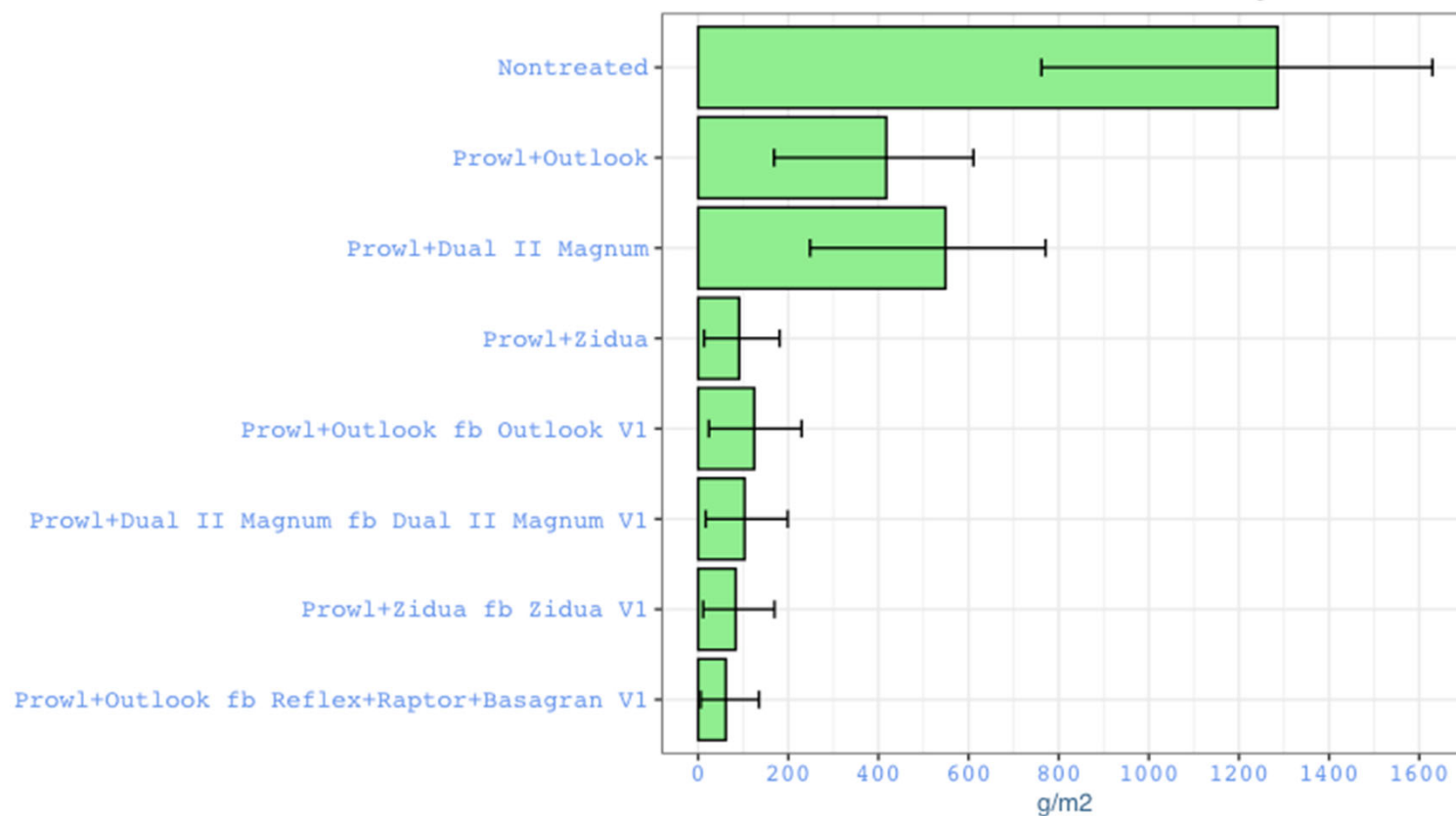
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Palmer Amaranth Density on September 4th



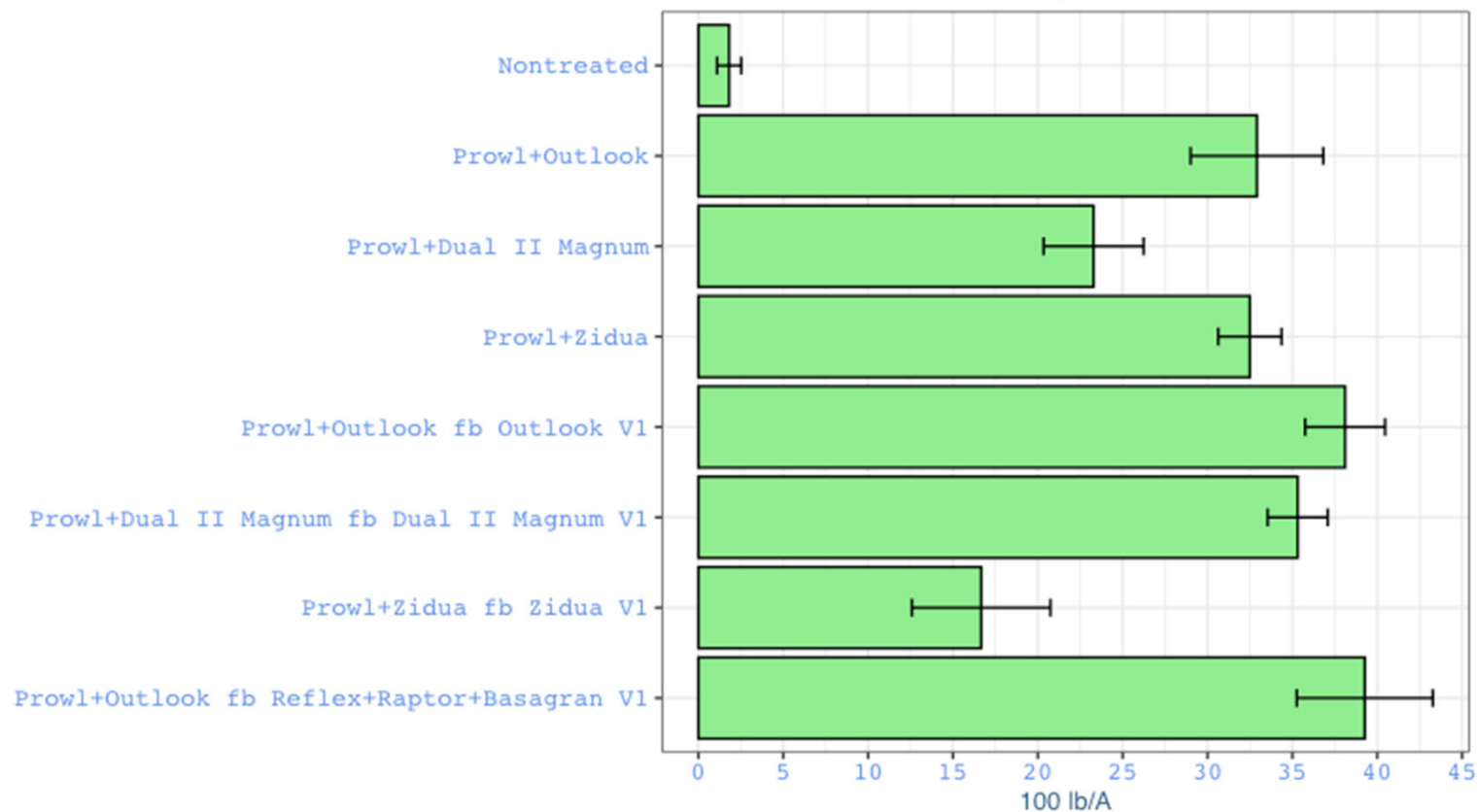
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Palmer Amaranth Biomass on September 4th



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Dry Bean Yield 100 lb per Acre



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N EXTENSION



Dual + Prowl PRE
Dual V1



Zidua + Prowl PRE
Zidua V1

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N EXTENSION



**Outlook + Prowl PRE
Zidua V3**

**Outlook + Prowl PRE
Zidua V5**

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Thank you!

Questions?