

# Result Demonstration Report

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## Pigweed Control in Grain Sorghum Using Peak. 1996 to 1999

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### Summary

Studies were conducted from 1996 to 1999 to evaluate pigweed control in grain sorghum using Peak and Peak tank mixes. In 1996 the highest level of control was achieved by tank mixing Peak @ 0.5 oz with atrazine and COC while Peak alone had marginal control. In 1997 and 1998 Peak plus atrazine again provided the best control with ratings above 90%. Peak alone in these studies provided fair to poor control. In 1999 Peak was applied alone and with Aim at different rates and provided marginal control except with the high rate tank mix which provided good control with ratings above 80%. These studies indicate Peak should be applied with atrazine for consistent control of pigweed.

### Introduction and Objectives

Pigweed species continue to provide competition for grain sorghum in the Texas Panhandle. Traditional chemicals such as Banvel and 2,4-D provide control but have little or no residual and can injure certain varieties of sorghum. Peak has good broadleaf activity and will not injure sorghum. The purpose of these studies was to compare Peak alone to Peak tank mixes for pigweed control in sorghum.

### Materials and Methods

In 1996 applications were made to 10 inch sorghum of an unknown variety and 2-4 inch pigweed. In 1997 applications were made to 8 inch SG942 sorghum and 2-4 inch pigweed. Applications were made to sorghum of unknown variety and size and to 1-12 inch pigweed in 1998, and to 5 inch Pioneer 84G62 milo and 1-12 inch pigweed in 1999. All applications were made with a tractor mounted CO<sub>2</sub> sprayer at 3 mph and 10 gpa. Ratings were taken on a 0 to 100% scale to evaluate crop injury and weed control. 0 = no control or no injury and 100 = complete control and crop kill. Ratings were taken at different timings each year. The pigweed species evaluated in these trials was Palmer amaranth.

### Results

*See following tables.*

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**Table 1. 1996 Peak control of pigweed in sorghum.**

Treatment	Rate Product/Ac	Timing	Pigweed Control 1 WAT <sup>1)</sup>	Pigweed Control 3 WAT	Pigweed Control 7 WAT	Crop Injury 3 WAT
Peak	1 oz	Pre	55	40	43	0
Peak + COC	0.5 oz 1 qt	Post	50	42	45	0
Peak + COC	0.75 oz 1 qt	Post	62	58	55	2
Peak + COC	1 oz 1 qt	Post	58	42	42	0
Peak + Atrazine + COC	0.5 oz 12 oz 1 qt	Post	100	100	95	0
Peak + Atrazine + COC	0.5 oz 24 oz 1 qt	Post	100	100	95	2
Peak + Atrazine + COC	0.5 oz 32 oz 1 qt	Post	98	100	92	0
Peak + Banvel + X-77	0.5 oz 8 oz 0.25% v/v	Post	62	73	80	22

<sup>1)</sup> WAT = Weeks after post treatment application.

**Table 2. 1997 Peak control of pigweed in sorghums.**

Treatments	Rate Product/Ac	% Pigweed Control		
		1 WAT <sup>1)</sup>	3 WAT	5 WAT
Peak + COC	0.75 oz + 1 qt	68	75	74
Peak + COC	0.75 oz + 2 qt	63	73	70
Peak + COC	1.0 oz + 1 qt	69	76	81
Peak + COC	1.0 oz + 1 qt	75	80	80
Peak + atrazine + COC	0.5 oz + 0.75 qt + 2 qt	91	96	99
Peak + Banvel + COC	0.5 oz + 2.0 oz + 2 qt	74	76	83
Peak + Buctril + COC	0.5 oz + 1.0 pt + 2 qt	80	74	78
Peak + Methylated Oil	0.75 oz + 1 pt	78	88	93

<sup>1)</sup> WAT = Weeks after treatment application.

**Table 3. 1998 Peak control of pigweed in sorghum..**

Treatment	Rate Product/Ac	Pigweed Control 7 DAT <sup>1)</sup>	Pigweed Control 22 DAT
Peak + COC	0.75 oz + 1 qt	38	55
Peak + atrazine + COC	0.24 oz + 1.0 qt + 1.0 qt	53	90
Peak + atrazine + COC	0.5 oz + 0.75 qt + 1.0 qt	44	78
Peak + atrazine + COC	0.5 oz + 1.0 qt + 1.0 qt	49	91
Peak + Buctril + COC	0.5 oz + 1.0 pt + 1.0 qt	44	58
Peak + 2,4-D LV6 + COC	0.5 oz + 6 oz + 1.0 qt	55	75
Peak + Banvel + COC	0.5 oz + 4 oz + 1.0 qt	55	78

<sup>1)</sup>DAT = Days after treatment application.

**Table 4. 1999 Peak control of pigweed in sorghum.**

Treatment	Rate Product/Ac	Pigweed Control 3 WAT <sup>1)</sup>	Pigweed Control 6 WAT
Peak + NIS	0.25 oz	65	75
Peak + NIS	0.5 oz	69	78
Peak + Aim + NIS	0.25 oz + 0.16 oz	64	79
Peak + Aim + NIS	0.5 oz + 0.16 oz	68	76
Peak + Aim + NIS	0.25 oz + 0.32 oz	70	79
Peak + Aim + NIS	0.5 oz + 0.32 oz	81	86

<sup>1)</sup>WAT = Weeks after treatment application.

### Conclusions

In 1996 Peak alone had poor control of pigweed at all ratings. Peak + atrazine provided good to excellent control at any rate. Peak + Banvel provided only marginal control and caused crop injury. In 1997 Peak alone had better control than the previous year, but was still marginal. The exception was Peak + methylated seed oil which provided over 90% control by the late rating. Again, when Peak was combined with atrazine good to excellent control was obtained. Crop injury was insignificant (data not shown). In 1998 Peak alone had poor control of pigweed with a rating of only 55% by the late rating. At the early rating all treatments had poor control, but by the late rating Peak + atrazine achieved 90% control. In 1999 Peak was applied alone and with Aim, a relatively new broadleaf herbicide for sorghum and corn. At 6 WAT, Peak alone at both rates provided over 75% control of pigweed. Peak + Aim at all rates provided over 75% control, but no advantage was seen from adding Aim except when the high rates of both chemicals were used. Overall, Peak provided marginal control of pigweed when applied alone. Peak needs a tank mix partner such as atrazine to provide an acceptable level of control.