

Final Summary

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2010

## Improving weed control in peanuts with pre-emergence herbicides, 2010

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### Highlights

- Pre-emergence herbicides are valuable and necessary to improve control of many weeds, including pigweed species, yellow nutsedge, and morningglories.
- Valor SX® applied pre-emergence improved control of many broadleaf weeds, including pigweed and morningglory species. Valor SX must be applied soil surface prior to peanut emergence to avoid crop injury and should be applied with additional PRE herbicides to improve control of other weeds, including grasses.

### Introduction

Weed control continues to be a challenge for peanut producers in Oklahoma. Several pre-emergence (PRE) herbicides are available for use at planting or as lay-by treatments with early-post-emergence (POST) treatments to improve early-season weed control. PRE herbicides are also useful for controlling weeds that have developed resistance to other PRE and POST herbicides, such as ALS-resistant pigweed species. To evaluate these PRE herbicides, a study was conducted at the OSU Ft. Cobb Research Station in 2010.

### Materials and methods

'TamSpan 90' was planted on May 24, 2010 at 80 lbs/acre. PRE treatments were applied immediately after planting and were incorporated with irrigation. Visual estimates of crop injury and weed control were collected at four weeks after planting.

### Results and discussion

Valor SX® (active ingredient: flumioxazin) is a PRE herbicide used to improve control of many broadleaf weeds in peanuts. Valor SX belongs to the PPO inhibitor herbicide mode of action and is an excellent alternative to Cadre® or Strongarm® for controlling ALS-resistant pigweed species. Furthermore, since Valor SX must be applied to the soil surface prior to peanut emergence, it will provide early-season residual weed control and reduce the number of weeds present during POST treatments. In this trial, Valor SX provided the best weed control when used in combination with Dual Magnum® or Prowl H2O®. Valor SX is not particularly effective on grass weeds (63% control) and should be applied with other PRE herbicides to improve grass control.

Spartan® (sulfentrazone), when used in combination with Dual Magnum® or Prowl H2O®, provided excellent control of Palmer amaranth, yellow nutsedge, and morningglory (98-99% control); however, this product is currently not labeled for use in peanuts in Oklahoma because of the potential for crop injury.

### Acknowledgements

Thank you to the Oklahoma Peanut Commission for providing funding for this research.

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# Improving Weed Control in Peanuts with Pre-emergence Herbicides

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## *2010 progress made possible through OPC and NPB support*

- Pre-emergence herbicides are valuable and necessary to improve control of many weeds, including pigweed species, yellow nutsedge and morningglories.
- Valor SX® applied pre-emergence improved control of many broadleaf weeds, including pigweed and morningglory species. Valor SX® must be applied to the soil surface prior to peanut emergence to avoid crop injury and should be applied with additional pre-emergence (PRE) herbicides to improve control of other weeds, including grasses.

## Introduction

Weed control continues to be a challenge for peanut production in Oklahoma. Several pre-emergence herbicides are available for use at planting or as lay-by treatments with early-post-emergence (POST) treatments to improve early-season weed control. Pre-emergence herbicides also are useful for controlling weeds that have developed resistance to other PRE and POST herbicides, such as acetolactate synthase-resistant (ALS) pigweed species. To evaluate these PRE herbicides, a study was conducted at the OSU Fort Cobb Research Station in 2010.

## Materials and Methods

TamSpan 90 was planted May 24 at 80 pounds per acre. Pre-emergence treatments were applied immediately after planting and were incorporated with

irrigation. Visual estimates of crop injury and weed control were collected at four weeks after planting.

## Results and Discussion

Valor SX® (active ingredient: flumioxazin) is a PRE herbicide used to improve control of many broadleaf weeds in peanuts. Valor SX® belongs to the PPO inhibitor herbicide mode of action and is an excellent alternative for controlling ALS-resistant pigweed species. Furthermore, since Valor SX® must be applied to the soil surface prior to peanut emergence, it will provide early-season residual weed control and reduce the number of weeds present during POST treatments. In this trial, Valor SX® provided the best weed control when used in combination with Dual Magnum® or Prowl H<sub>2</sub>O®. Valor SX®

is not particularly good at controlling grasses and should be applied with other PRE herbicides to improve grass control.

Spartan® (sulfentrazone) provided excellent control of Palmer amaranth, yellow nutsedge and morningglory; however, this product is currently not labeled for use in peanuts in Oklahoma because of potential crop injury.

Weed control trials will be conducted again during 2011 to evaluate PRE herbicides to further improve weed control in Oklahoma peanut production.

#### Acknowledgements

Thank you to the OPC for providing funding for this research.

**Table 6. Visual estimates of crop injury and weed control at four weeks after planting for various pre-emergence herbicides and herbicide combinations for use in peanut production in Oklahoma.**

Treatment	Timing	Rate (per acre)	% Crop Injury and Weed Control				
			Injury	Annual Grasses	Yellow Nutsedge	Palmer Amaranth	Morningglory
Valor SX®	PRE	2 oz	5	63	64	70	96
Dual Magnum®	PRE	1.33 pt	1	61	96	96	91
Prowl H <sub>2</sub> O®	PRE	2 pt	3	80	79	79	81
Valor SX® + Prowl H <sub>2</sub> O®	PRE	2 oz + 2 pt	7	84	81	99	73
Valor SX® + Dual Magnum® + Prowl H <sub>2</sub> O®	PRE	2 oz + 0.8 pt + 1.5 pt	3	92	93	98	97
Outlook®	PRE	16 fl oz	1	98	81	95	89
Dual Magnum® + Spartan® <sup>a</sup>	PRE	1.33 pt + 4 fl oz	11	84	98	99	98
Prowl H <sub>2</sub> O® + Spartan® <sup>a</sup>	PRE	2 pt + 4 fl oz	33	90	98	99	99
Untreated			0	0	0	0	0
LSD <sup>a</sup> (5%)			7	20	19	17	19

<sup>a</sup> LSD = least significant difference.