

# Evaluation of PRE Soybean Herbicides for Waterhemp Control (Fon du Lac, WI 2019)

## Trial Information

Trial Sponsors: BASF, Bayer, FMC, Syngenta, Valent, Wisconsin Soybean Marketing Board

Objective: Evaluate and demonstrate the effectiveness of multiple PRE-emergence soybean herbicides

Crop: Soybean

Variety: NK S20-J5X

Weed species (pressure): Glyphosate-resistant waterhemp (moderate-high)

Herbicide Application(s): PRE – 6/11

For the full report see the [2019 Wisconsin Weed Science Research Report](#)



Cropping Systems Weed Science  
UNIVERSITY OF WISCONSIN-MADISON

 **BASF**  
We create chemistry



**FMC**

The Syngenta logo, featuring the word 'syngenta' in blue lowercase letters with a green leaf icon above the 'g'.

**VALENT®**



The Wisconsin Soybean Marketing Board logo, featuring the word 'SOYBEAN' in large blue letters with a green circle around the 'O', and 'WISCONSIN' above and 'MARKETING BOARD' below in smaller blue letters.

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## Key Take Home Points from 2019 Data:

- Higher OM% soil than other waterhemp locations (5.2% vs ~2%)
- Several PRE-emergence soybean herbicides provided good levels of waterhemp 27-42 days after application.
- Group 2 herbicides (e.g., Pursuit, Classic, First Rate) applied alone were NOT effective on waterhemp.
- Half rates were included in addition to full rates of Group 15 herbicides as some may look to reduce rates to save on overall herbicide costs. The results from these experiments indicate the importance of using full rates as the full rates often improved the overall residual control compared to half rates.
- Soil properties including soil texture, percent organic matter, pH, and geographic restrictions should be considered when selecting products and determining rates as these can have an impact on the efficacy of herbicides with residual activity and potential carryover into subsequent crops
- PRE-emergence herbicide programs containing multiple effective sites of action are recommended to broaden weed control spectrum and to lower selection for additional herbicide resistance.

Waterhemp Control %			
Herbicide	Rate	27 DAT	42 DAT
Pursuit	4 fl oz	29	23
FirstRate	0.75 oz	15	20
Tricor DF	1 lb	93	89
Spartan	12 fl oz	98	95
Valor SX	3 oz	76	68
Sharpen	1 fl oz	68	54
Warrant (half)	24 fl oz	34	34
Warrant (full)	48 fl oz	68	49
Dual II Magnum (half)	0.84 pt	57	36
Dual II Magnum (full)	1.67 pt	86	71
Outlook (half)	9 fl oz	71	61
Outlook (full)	18 fl oz	89	70
Zidua (half)	1.5 oz	63	37
Zidua (full)	3 oz	89	81
Authority Assist	12 fl oz	98	94
Sonic	6.45 oz	99	96
Surveil	3.5 oz	72	57
BroadAxe XC	30 fl oz	98	93
Authority MTZ	18 oz	99	96
Authority Supreme	10 fl oz	99	96
Verdict	5 fl oz	82	68
Prefix	2 pt	92	83
Fierce	3.75 oz	82	80
Boundary	1.8 pt	91	79
Afforia	2.5 oz	74	71
Zidua PRO	6 fl oz	93	87
Fierce MTZ	1.25 pt	82	84

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Plot pictures taken on 7/8  
27 days after the PRE application

The number in the upper right-hand corner is the average % waterhemp control of 4 replications

There was also common lambsquarters and velvetleaf present in the plots

Waterhemp pressure was variable among replications so the picture shown may not be entirely representative of the average control %

27 days after PRE (7/8)

0%

Untreated Check



27 days after PRE (7/8)

Pursuit – 4 fl oz

29%



27 days after PRE (7/8)

FirstRate – 0.75 oz

15%



27 days after PRE (7/8)

Tricor DF – 1 lb

93%



27 days after PRE (7/8)

Spartan – 12 fl oz

98%



27 days after PRE (7/8)

Valor SX – 3 oz

76%



27 days after PRE (7/8)

Sharpen – 1 fl oz

68%



27 days after PRE (7/8)

Warrant – 24 fl oz

34%



27 days after PRE (7/8)

Warrant – 48 fl oz

68%



27 days after PRE (7/8)  
Dual II Magnum – 0.84 pt

57%



27 days after PRE (7/8)  
Dual II Magnum – 1.67 pt

86%



27 days after PRE (7/8)

71%

Outlook – 9 fl oz



27 days after PRE (7/8)

Outlook – 18 fl oz

89%



27 days after PRE (7/8)

Zidua – 1.5 oz

63%



27 days after PRE (7/8)

Zidua – 3 oz

89%





27 days after PRE (7/8)

Sonic – 6.45 oz

99%



27 days after PRE (7/8)

Surveil – 3.5 oz

72%



27 days after PRE (7/8)

BroadAxe XC – 30 fl oz

98%







27 days after PRE (7/8)

82%

Verdict – 5 fl oz



27 days after PRE (7/8)

92%

Prefix – 2 pt



27 days after PRE (7/8)

Fierce – 3.75 oz

82%



27 days after PRE (7/8)  
Boundary – 1.8 pt

91%



27 days after PRE (7/8)

Afforia – 2.5 oz

74%



27 days after PRE (7/8)

Zidua PRO – 6 fl oz

93%



27 days after PRE (7/8)  
Fierce MTZ – 1.25 pt

82%

