Tough 5EC Tank Mixes for Waterhemp Control
Janesville, WI 2025

Trial Information

Trial Sponsor(s):	Belchim USA
Objective:	Evaluate tank mixes of **Tough 5EC*** with atrazine and mesotrione for synergistic POST control of waterhemp in corn
Crop:	Corn
Hybrid:	P9998Q
Weed species (pressure):	waterhemp (high-very high)
Herbicide Application(s):	PRE – 5/14 POST - 6/19 (V5 corn)

***Tough 5EC** (pyridate), a group 6 herbicide, can be used as an alternative to atrazine for synergistic weed control with group 27 (HPPD) herbicides like Callisto (mesotrione).

For the full report see trial #25-ROK-CN19 in the 2025 Wisconsin Weed Science Research Report

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Trt #	Herbicide (rate acre^{-1})	Injury[c] (%)		Waterhemp (%)				Yield[b]
		8 DAT	13 DAT	8 DAT	13 DAT	26 DAT	10/17	bu acre^{-1}
1	Check	0.0	0.0	0	0	0	0	166 -
Two-Pass – PRE* (5/14) *fb* POST (6/19)								
2	Tough 5EC (8 oz) + NIS (0.25%) + AMS[d]	0.0	0.0	21	20	8	15	193 d
3	AAtrex (1 pt) + COC (1%) + AMS[d]	0.0	0.0	36	34	16	24	199 cd
4	Callisto (3 oz) + COC (1%) + AMS[d]	0.0	0.0	89	84	82	90	222 ab
5	Tough 5EC (8 oz) + AAtrex (1 pt) + NIS (0.25%) + AMS[d]	0.0	0.0	71	65	39	27	218 abc
6	Tough 5EC (8 oz) + Callisto (3 oz) + NIS (0.25%) + AMS[d]	0.0	0.0	97	93	87	95	220 abc
7	Callisto (3 oz) + AAtrex (1 pt) + COC (1%) + AMS[d]	0.0	0.0	98	96	93	97	209 bcd
8	Tough 5EC (8 oz) + Callisto (3 oz) + AAtrex (1 pt) + NIS (0.25%) + AMS[d]	0.0	0.0	99	99	97	99	215 abc
9	Callisto (3 oz) + Moxy 2E (1 pt) + COC (1%) + AMS[d]	11.0	9.5	98	97	96	97	232 a
10	Moxy 2E (1 pt) + COC (1%) + AMS[d]	8.5	7.0	16	14	10	11	191 d
	LSD (α=0.10)	**0.8**	**0.8**	**11**	**6**	**8**	**9**	**14**
	p value	**<.001**	**<.001**	**<.001**	**<.001**	**<.001**	**<.001**	**<0.001**

[a]Visual control from 70-100% is illustrated on a color scale with green representing greater weed control values.
[b]Yield values with the same letter are not significantly different.
[c]Crop injury = leaf necrosis (burn)
[d]Liquid AMS (AMSOL) applied at 2.5% v/v.
*Hornet (4 oz/a) was applied PRE to all treatments to supress giant ragweed as the goal of the trial was to evaluate POST waterhemp control.

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Plot pictures taken on 6/27

8 days after the POST application

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

8 days after POST (6/27)
Untreated Check

0%

8 days after POST (6/27)
POST: 8 oz Tough 5EC + NIS + AMS

21%

8 days after POST (6/27)
POST: 1 pt atrazine + COC + AMS

36%

8 days after POST (6/27)
POST: 3 oz Callisto + COC + AMS

89%

8 days after POST (6/27)
POST: 8 oz Tough 5EC + 1 pt atrazine + NIS + AMS

71%

8 days after POST (6/27)
POST: 8 oz Tough 5EC + 3 oz Callisto + NIS + AMS

97%

8 days after POST (6/27)
POST: 3 oz Callisto + 1 pt atrazine + COC + AMS

98%

8 days after POST (6/27)
POST: 8 oz Tough 5EC + 3 oz Callisto + 1 pt atrazine + NIS + AMS

99%

8 days after POST (6/27)
POST: 3 oz Callisto + 1 pt Moxy 2E + COC + AMS

98%

8 days after POST (6/27)
POST: 3 oz Callisto + 1 pt Moxy 2E + COC + AMS

8 days after POST (6/27)
POST: 1 pt Moxy 2E + COC + AMS

16%

8 days after POST (6/27)
POST: 1 pt Moxy 2E + COC + AMS

Tough 5EC Tank Mixes for POST Waterhemp Control in Corn

Waterhemp control 8 days after application

Tough 5EC @ 8 oz

Callisto @ 3 oz

Tough 5EC @ 8 oz
Callisto @ 3 oz

Atrazine @ 1 pt
Callisto @ 3 oz

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*All treatments included recommended adjuvants

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Tough 5EC Tank Mixes for Waterhemp Control
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Plot pictures taken on 7/2

13 days after the POST application

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

13 days after POST (7/2)
Untreated Check

0%

13 days after POST (7/2)
POST: 8 oz Tough 5EC + NIS + AMS

20%

13 days after POST (7/2)
POST: 1 pt atrazine + COC + AMS

34%

13 days after POST (7/2)
POST: 3 oz Callisto + COC + AMS

84%

13 days after POST (7/2)
POST: 8 oz Tough 5EC + 1 pt atrazine + NIS + AMS

65%

13 days after POST (7/2)
POST: 8 oz Tough 5EC + 3 oz Callisto + NIS + AMS

93%

13 days after POST (7/2)
POST: 3 oz Callisto + 1 pt atrazine + COC + AMS

96%

13 days after POST (7/2)
POST: 8 oz Tough 5EC + 3 oz Callisto + 1 pt atrazine + NIS + AMS

99%

13 days after POST (7/2)
POST: 3 oz Callisto + 1 pt Moxy 2E + COC + AMS

97%

13 days after POST (7/2)
POST: 1 pt Moxy 2E + COC + AMS

14%

Tough 5EC Tank Mixes for POST Waterhemp Control in Corn

Waterhemp control 13 days after application

Tough 5EC @ 8 oz

Callisto @ 3 oz

Tough 5EC @ 8 oz
Callisto @ 3 oz

Atrazine @ 1 pt
Callisto @ 3 oz

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*All treatments included recommended adjuvants

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