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Introduction

- Giant Ragweed (*Ambrosia trifida* L.) is a vigorous weed resulting upto 13.6% grain yield loss in corn at a density of 1 plant per 10 m⁻² (Harrison et al. 2001).
- No-till corn production is widely adopted by growers due to reduced soil erosion, improved water retention and low fuel and labor cost, leaving herbicides as the only weed control option
- The reduced emergence of summer annual weeds is achieved by using residual herbicides such as chlorimuron, tribenuron and sulfentrazone.
- A Pre-packed tank mixture of thiencazone- methyl plus iodosulfuron- methyl (Autumn™ Super) has been recently registered for post-harvest burndown and early spring control prior to planting corn and soybean.
- Burndown activity of the herbicide can be enhanced by tank mixing it with 2,4-D, glyphosate, dicamba and metribuzin.

Objectives

- To determine the influence of thiencazone- methyl plus iodosulfuron- methyl applied in fall and early spring in controlling glyphosate resistant giant ragweed in no-till corn.
- To compare the efficacy when tank mixed with 2,4-D, dicamba and metribuzin.

Material and Methods

- Field experiment was conducted at Clay County, NE in a field infested with glyphosate-resistant giant ragweed.
- Herbicide treatments were applied at recommended rate in fall of 2012 or early spring of 2013 or with a split application in fall and early spring at least 30 days prior to planting no-till corn.
- Randomized complete block design was followed with four replications and twelve treatments (including nontreated control).
- All treatments include blanket application of Thiencazone-methyl plus isoxaflutole at 78 g ai/ha + Atrazine at 560 g ai/ha applied as pre-emergence *fb* Tembotrione at 92 g ai/ha + atrazine at 560 g ai/ha applied as post emergence.
- Data was subjected to ANOVA using PROC MIXED procedure in SAS.

Table 1. Details of treatments

Herbicide	Application timing	Code	Rate g ae or ai ha ⁻¹
Nontreated control	-	1	-
Thiencazone plus Iodosulfuron	Fall	2	17.9
Thiencazone plus Iodosulfuron	Early Spring	3	17.9
Thiencazone plus Iodosulfuron <i>fb</i>	Fall	4	8.9
Thiencazone plus Iodosulfuron	Early Spring		8.9
Dicamba <i>fb</i>	Fall	5	560
Dicamba	Early Spring		560
Thiencazone plus Iodosulfuron+dicamba <i>fb</i>	Fall	6	8.9 + 560
Thiencazone plus Iodosulfuron+dicamba	Early Spring		8.9 + 560
2,4- D <i>fb</i>	Fall	7	830
2,4-D	Early Spring		830
Thiencazone plus Iodosulfuron+2,4- D <i>fb</i>	Fall	8	8.9 + 830
Thiencazone plus Iodosulfuron+2,4- D	Early Spring		8.9 + 830
Glyphosate	Fall	9	840
Thiencazone plus Iodosulfuron+Glyphosate <i>fb</i>	Fall	10	8.9 + 840
Thiencazone plus Iodosulfuron+Glyphosate	Early Spring		8.9 + 840
Metribuzin	Fall	11	315
Thiencazone plus Iodosulfuron+Metribuzin <i>fb</i>	Fall	12	8.9 + 315
Thiencazone plus Iodosulfuron+Metribuzin	Early Spring		8.9 + 315



Results

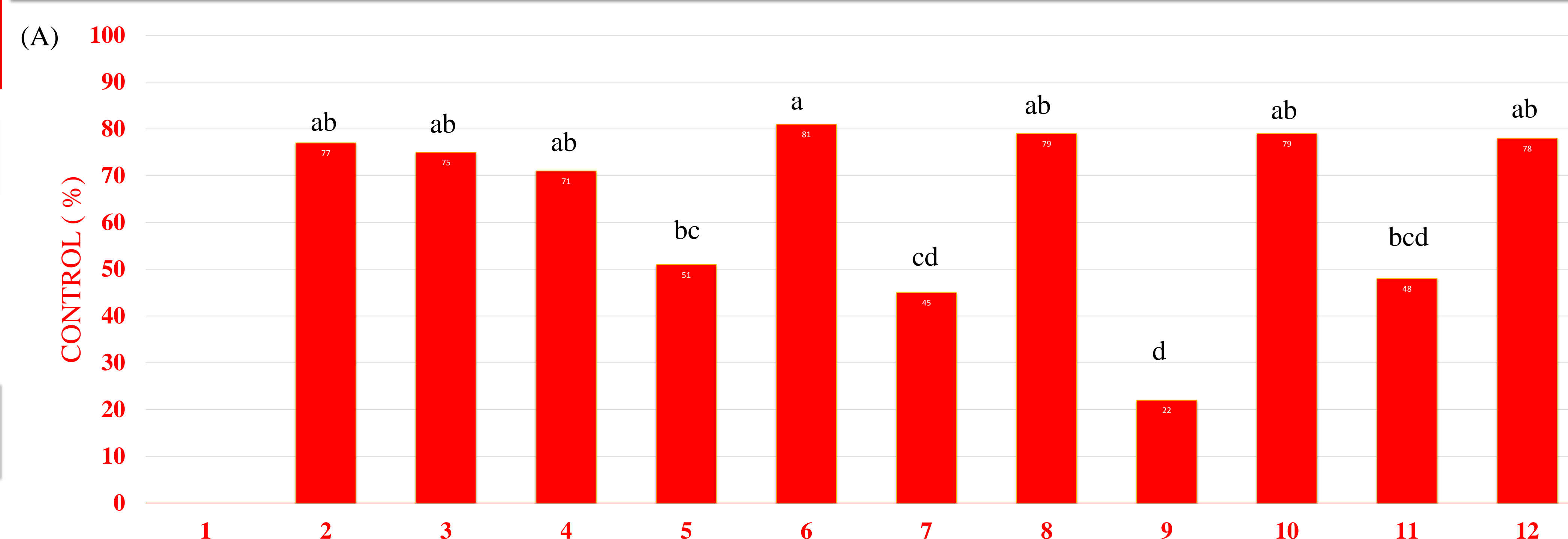
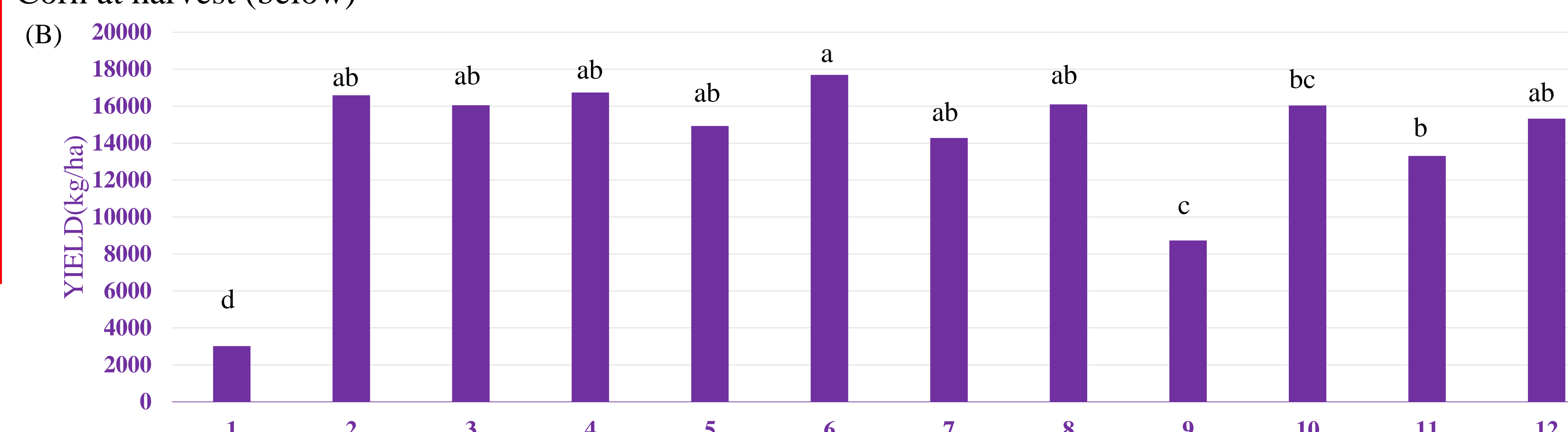


Fig.1. (A) Control of glyphosate-resistant giant ragweed at 21 Days after Early Spring treatment (B) Yield of Corn at harvest (below)



Nontreated control

Thiencazone plus iodosulfuron
(Early spring)

Metribuzin (Fall)

Conclusions

- Thiencazone plus iodosulfuron tank mixed with 2,4-D, dicamba, or metribuzin provided >95% control of giant ragweed and other winter annuals including tansy mustard, henbit, and field pennycress compared with treatments without thiencazone- methyl plus iodosulfuron- methyl.



Thiencazone plus iodosulfuron
+ dicamba (Fall and early spring)

Thiencazone plus iodosulfuron
+ 2,4- D (Fall and early spring)

Thiencazone plus iodosulfuron
+ metribuzin (Fall and early spring)