



Harness® MAX Herbicide for Pre-emergence Weed Control

Trial Objective

- Harness® MAX is a pre-mix herbicide containing acetochlor (Harness® herbicide) plus mesotrione. Harness® MAX has a flexible application window including pre-plant, pre-emergence, and post-emergence up to 11-inch corn.
- There are multiple premixes available that contain different combinations of mesotrione with a group 15 herbicide, and these products have a range of use rates listed on the label.
- The objective of this study was to compare weed control and yield from Harness® MAX and competitor herbicides applied pre-emergence across a range of use rates.

Research Site Details

Location	Soil Type	Previous Crop	Tillage Type	Planting Date	Corn Product	Seeding Rate (seeds/acre)	Herbicide Application Date
Gothenburg, NE	Clay loam	Soybean	Conventional	05/01/18	114 RM	34K	05/02/18

- The trial was arranged in a split-plot design with three replications.
- Herbicide treatments are listed in Table 1.
- Kochia was emerged at planting, so kochia control assessments reflect both the foliar efficacy of the treatments in addition to residual control of kochia that emerged after planting and herbicide application.
- Palmer amaranth and kochia pressure was extremely high (Figure 1).

Table 1. Herbicide treatments.

Treatment	Herbicide	Active Ingredients	Use Rate/Acre
1	Harness® Xtra	Acetochlor + Atrazine	2.6 qt
2	Resicore®	Acetochlor + Mesotrione + Clopyralid	3 qt
3	Acuron®	S-metolachlor + Mesotrione + Bicyclopyrone + Atrazine	3 qt
4	Harness® MAX	Acetochlor + Mesotrione	75 fl oz
5	Harness® MAX + Atrazine	Acetochlor + Mesotrione + Atrazine	75 fl oz + 1 qt
6	Harness® Xtra	Acetochlor + Atrazine	2.2 qt
7	Resicore®	Acetochlor + Mesotrione + Clopyralid	2.375 qt
8	Acuron®	S-metolachlor + Mesotrione + Bicyclopyrone + Atrazine	2.75 qt
9	Harness® MAX	Acetochlor + Mesotrione	64 fl oz
10	Harness® MAX + Atrazine	Acetochlor + Mesotrione + Atrazine	64 fl oz + 1 qt
11	Harness® Xtra	Acetochlor + Atrazine	1.8 qt
12	Resicore®	Acetochlor + Mesotrione + Clopyralid	2.25 qt
13	Acuron®	S-metolachlor + Mesotrione + Bicyclopyrone + Atrazine	2.5 qt
14	Harness® MAX	Acetochlor + Mesotrione	55 fl oz
15	Harness® MAX + Atrazine	Acetochlor + Mesotrione + Atrazine	55 fl oz + 1 qt



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Figure 1. Non-treated plot containing Palmer amaranth and kochia.

Understanding the Results

- No crop injury was observed from any of the herbicide treatments.
- Numerical differences were observed in weed control between the different treatments for all species assessed, but significant differences were only observed for Palmer amaranth control ($P = 0.06$) (Figure 2).
- There were no significant differences in weed control between the herbicide treatments at the mid and high rates (Treatments 1-10).
- The addition of atrazine to Harness® MAX numerically improved weed control, and this treatment numerically provided the greatest level of control of all weed species compared to Harness® MAX alone, Acuron®, Resicore®, or Harness® Xtra.
- Harness® MAX provided statistically greater Palmer amaranth control and numerically greater kochia control compared to Resicore®.
- No significant differences in corn yield were observed ($P = 0.14$) (Figure 3).

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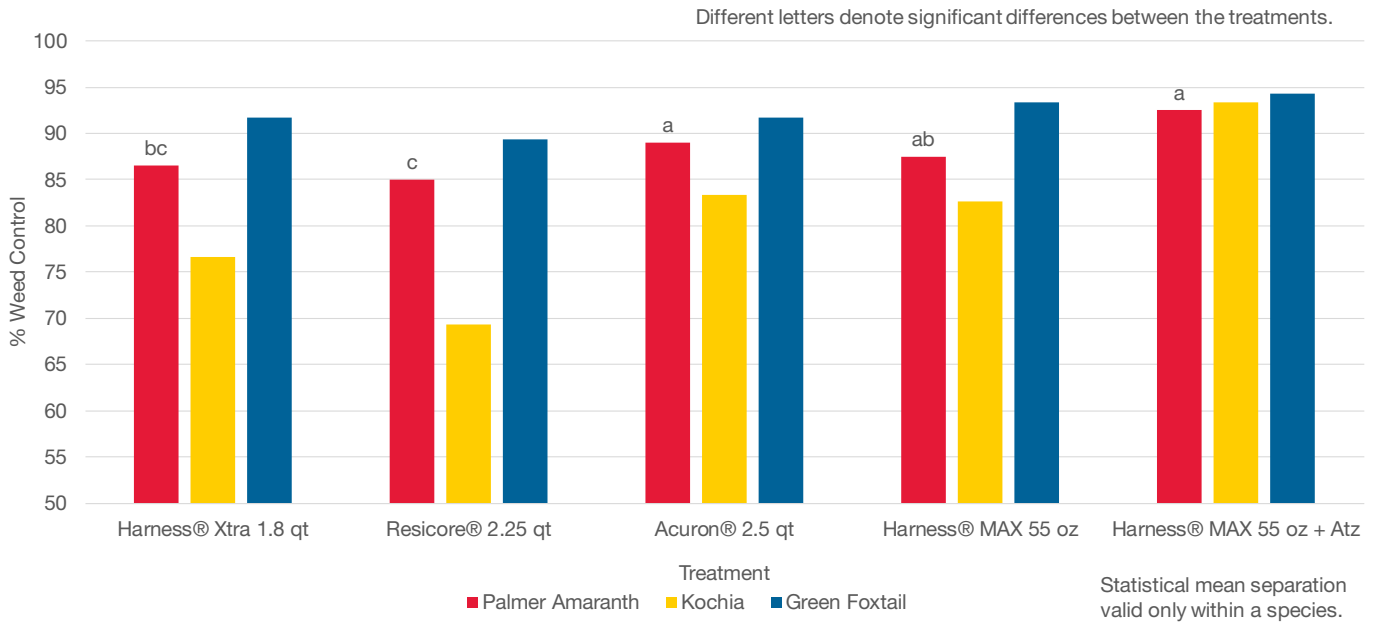


Figure 2. Weed control 55 days after the treatments (only the lower-end rates are shown).

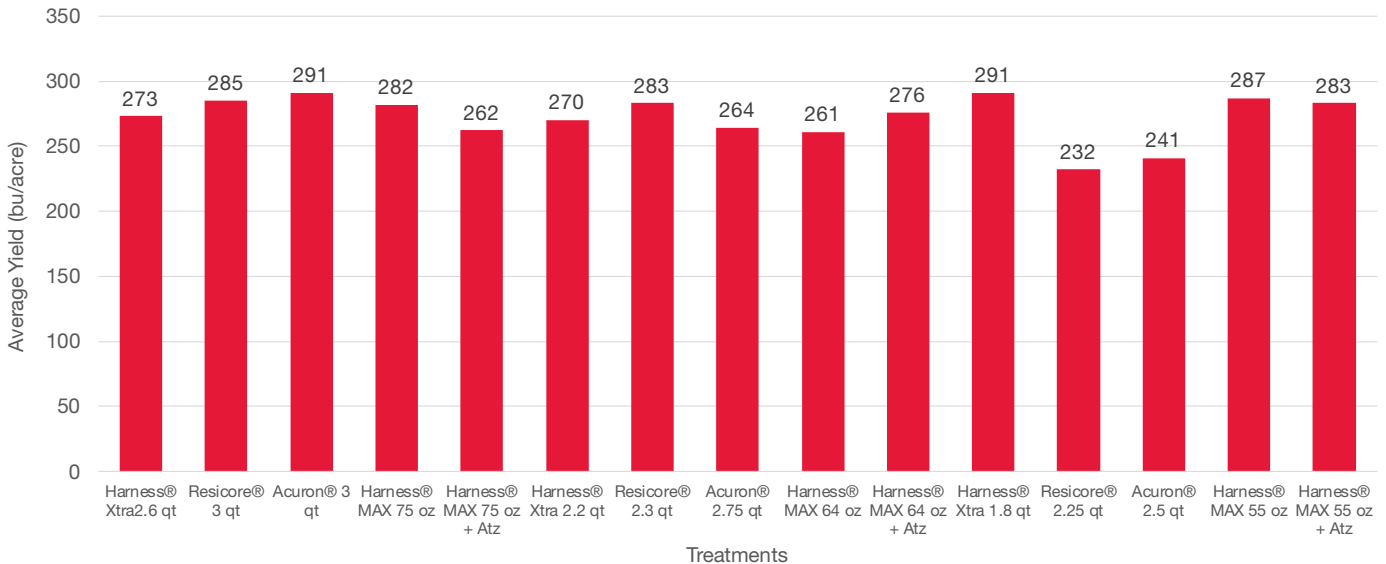


Figure 3. Average corn yield resulting from the different herbicide treatments.



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What Does This Mean for Your Farm?

- Problematic weeds, such as Palmer amaranth and kochia, necessitate the use of pre-emergence and post-emergence herbicides with both foliar and soil activity.
- At the lower end of use rates assessed, Harness® MAX plus atrazine provided the greatest control of Palmer amaranth, kochia, and green foxtail relative to competitive herbicide treatments.

Legal Statements

The information discussed in this report is from a single site, replicated demonstration. This information piece is designed to report the results of this demonstration and is not intended to infer any confirmed trends. Please use this information accordingly.

Performance may vary, from location to location and from year to year, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on the grower's fields.

Always read and follow IRM, where applicable, grain marketing and all other stewardship practices and pesticide label directions.

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