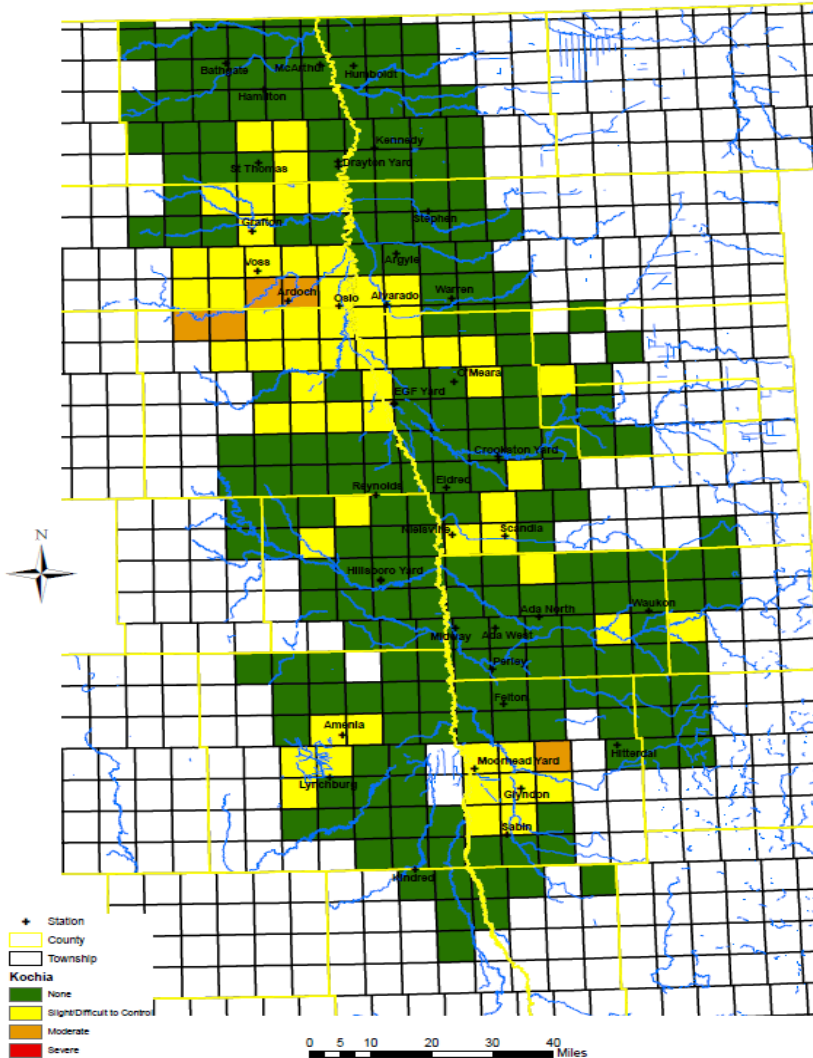


# 2020 Weed Control

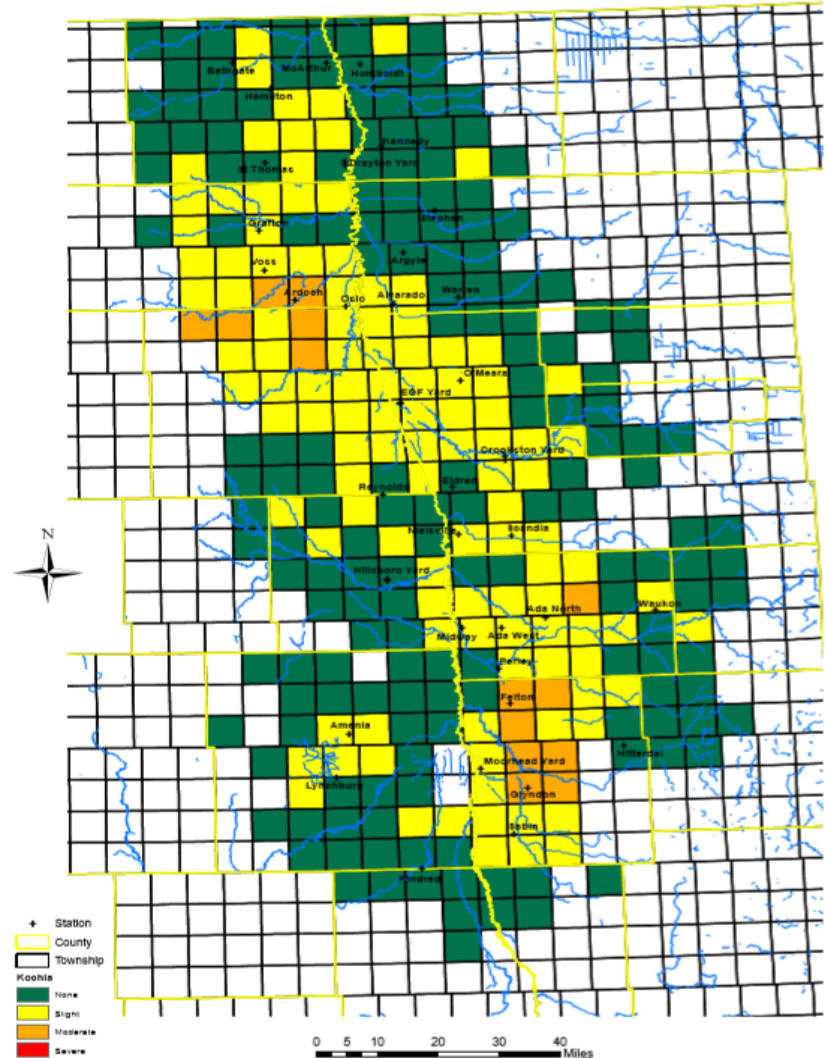


# Weed Control Map Kochia

2017 Weed Control Map - Kochia



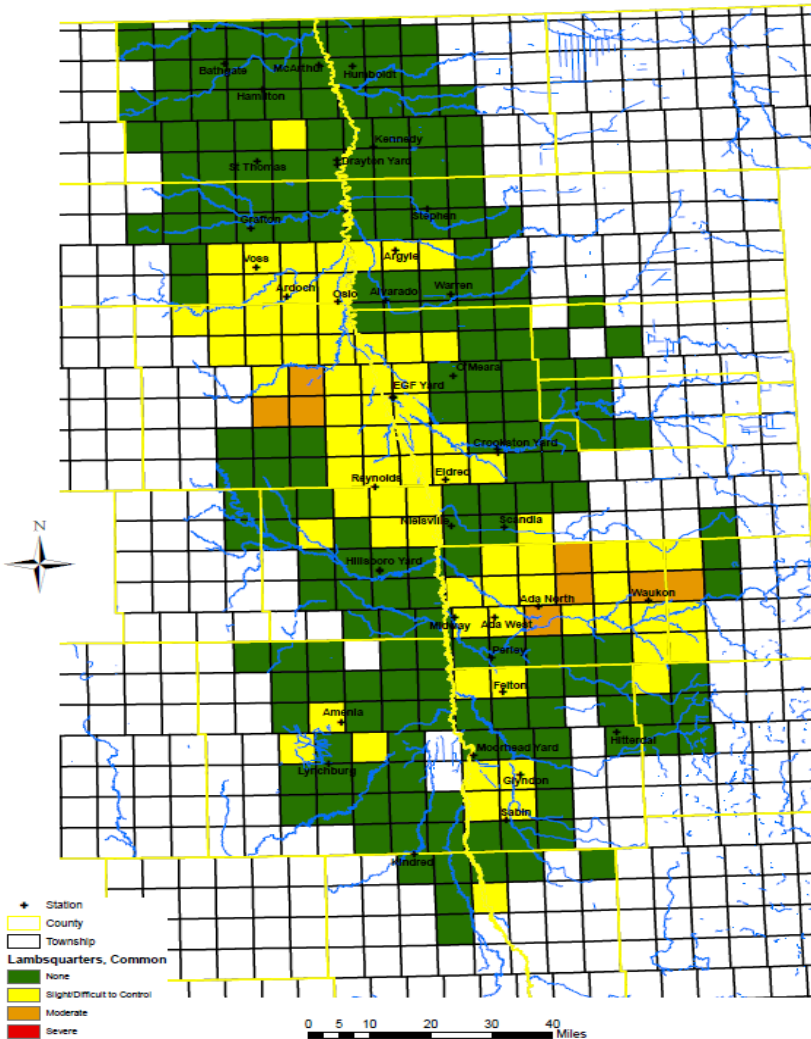
2019 Weed Resistance Map - Kochia



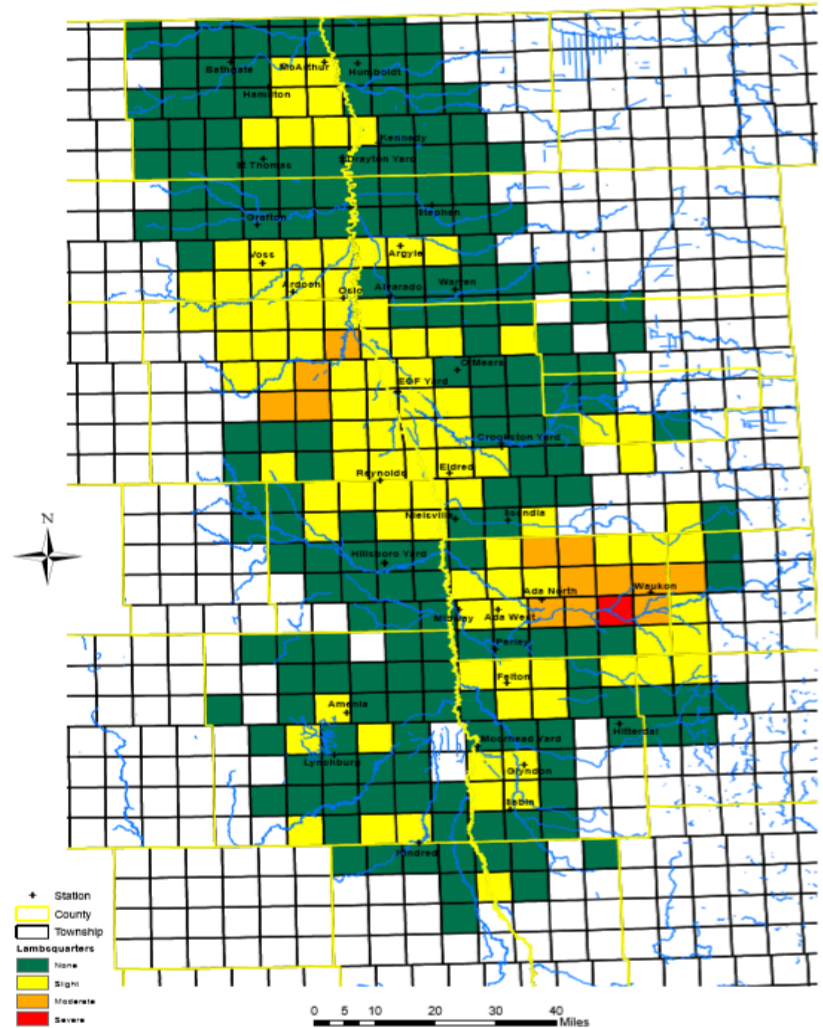


# Weed Control Map Common Lambsquarters

2017 Weed Control Map - Lambsquarters

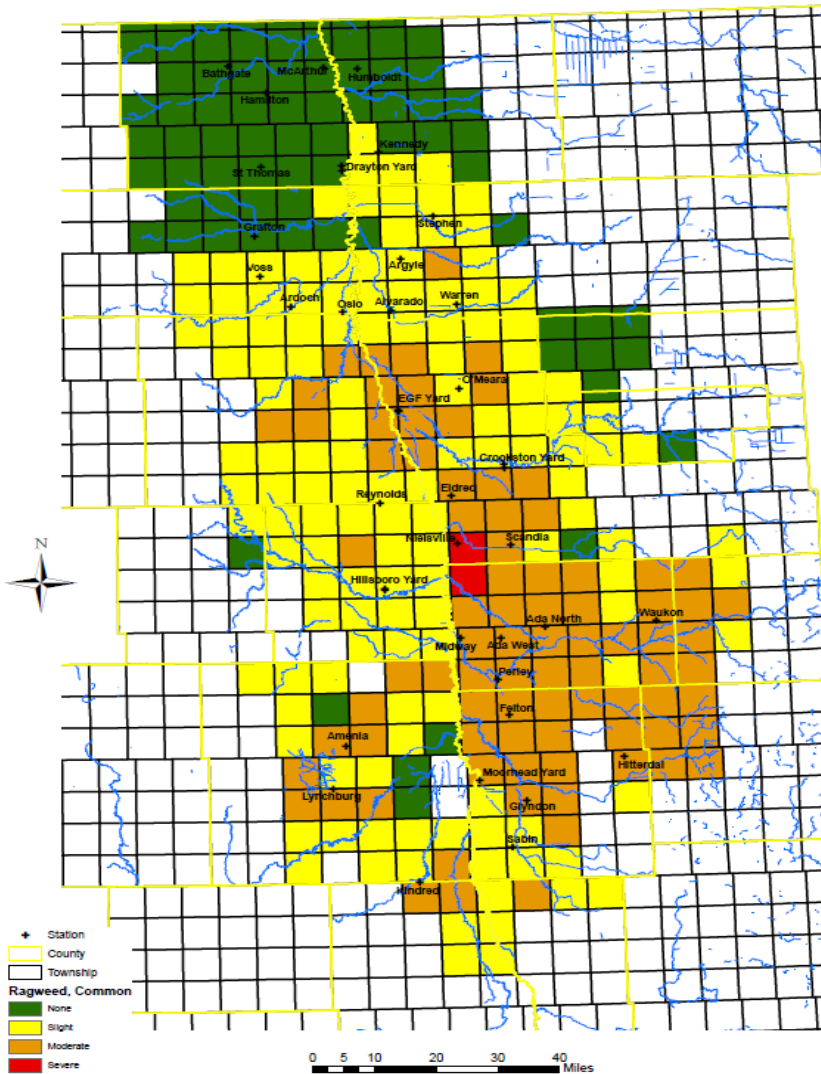


2019 Weed Control Map - Lambsquarters

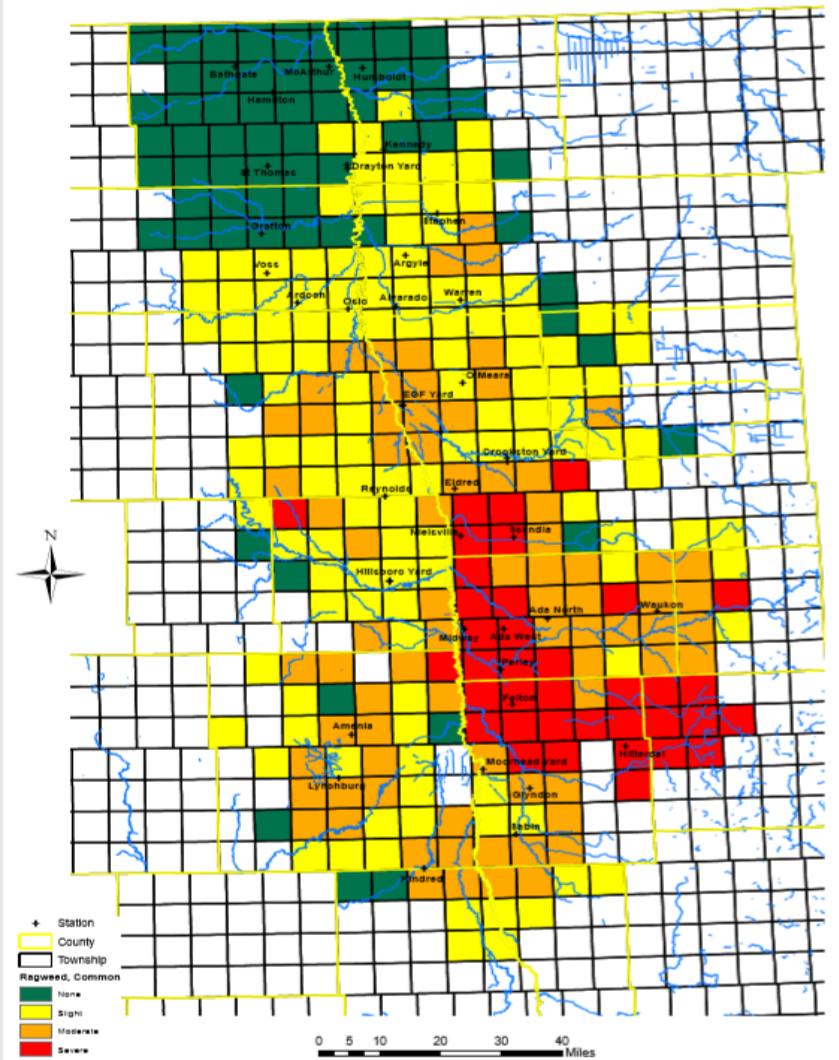


# Weed Resistant Map Common Ragweed

2017 Weed Resistance Map - Ragweed, Common



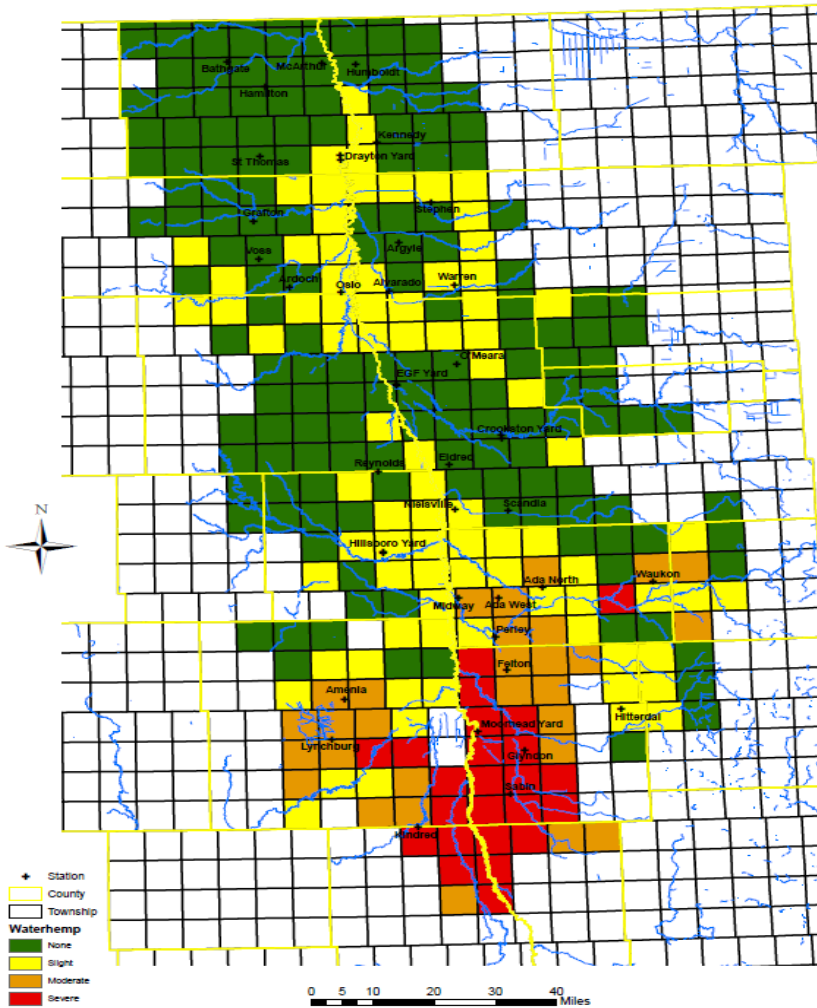
2019 Weed Resistance Map - Ragweed, Common



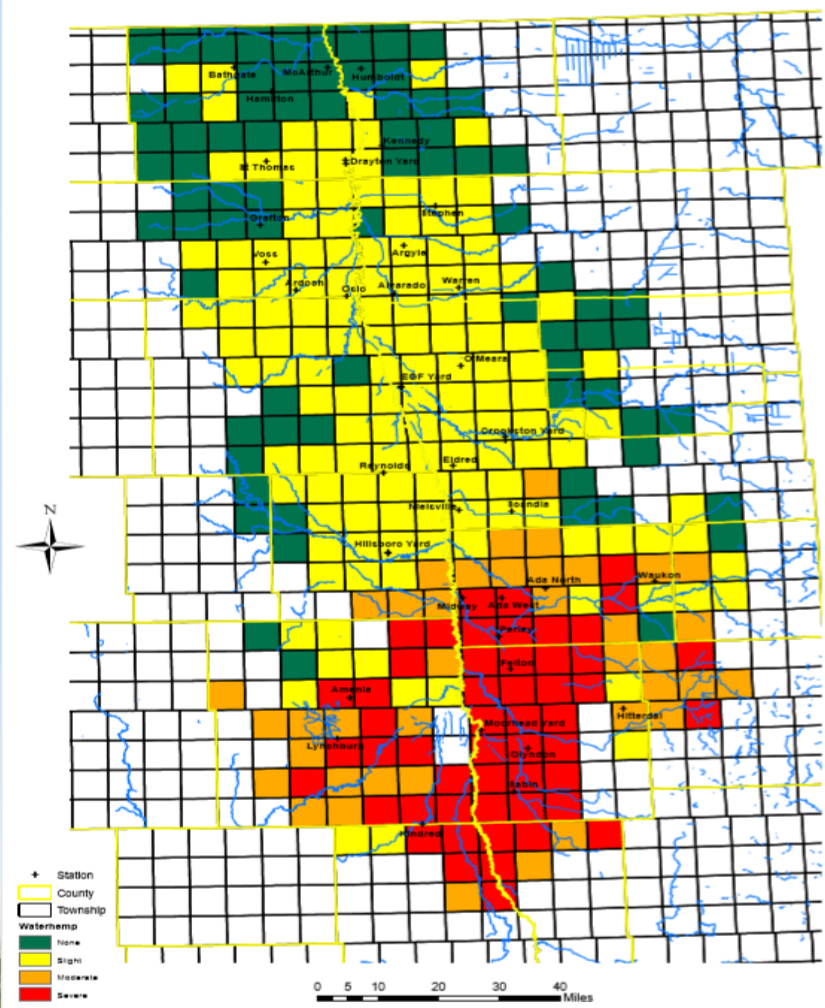


# Waterhemp Resistant Map

2017 Weed Resistance Map - Waterhemp



2019 Weed Resistance Map - Waterhemp



# PPI/PRE Herbicide Usage Notes 2020

- **PPI/PRE**
  - Ethofumesate
    - Up to 10 week residual
    - Application of higher rates, Recommended to follow with Beans or Potatoes
  - Dual Magnum(Syngenta)
    - requires indemnified label signature
      - Generic versions can only be applied Lay-by
  - Recommendation
    - Ethofumesate - 3-7.5 pts/a
    - or
    - Ethofumesate - 1-3 pts/a + Dual Magnum - 0.5 pts/a
    - or
    - Dual Magnum - 0.5-1 pts/a





# Layby Herbicide Usage Notes 2020

- **Lay-by Recommendation**
  - Outlook, Dual Magnum, Warrant
    - Tank mixed with Roundup
    - Split apply to eliminate gaps in residual coverage
    - Rain activation (Outlook, Dual Magnum, Warrant) is needed and emerged weeds will not be controlled
  - Recommendation
    - Outlook - 21 oz/a Or Split apply 12oz/a FB 12oz/a
    - Dual Magnum - 1pt/a
    - Warrant - 3 pts/a



# Sequence Herbicide Usage

- **POST Lay-by**
  - Sequence
    - Is a premix of Glyphosate and Dual Magnum
    - 2.5pts of Sequence contains equivalent of 20oz/a of PowerMAX and 1pt of Dual Magnum
  - When applying Sequence add an additional 8-12oz/a of PowerMAX to achieve the full rate of 28-32oz/a of PowerMAX





# 2019 PPI/PRE & Layby Usage

Contract Factory Name	Herbicide Name	Planted Acres	
		2019	2018
DRAYTON	DUAL MAGNUM	3,386.8	
	NORTRON/ETHO SC/ETHOTRON	514.7	463.40
	<b>Sum:</b>	<b>3,386.8</b>	463.40

EAST GRAND FORKS	DUAL MAGNUM	11,729.2	
	NORTRON/ETHO SC/ETHOTRON	28.4	146.90
	<b>Sum:</b>	<b>11,757.6</b>	146.90

CROOKSTON	DUAL MAGNUM	4,871.7	
	<b>Sum:</b>	<b>4,871.7</b>	-

HILLSBORO	DUAL MAGNUM	52,191.7	16,488.00
	NORTRON/ETHO SC/ETHOTRON	8,791.5	7,387.00
	OUTLOOK/PROPEL/ESTABLISH	4,843.2	2,545.30
	WARRANT	849.5	
	<b>Sum:</b>	<b>66,675.9</b>	26,420.30

MOORHEAD	DUAL MAGNUM	25,043.50	24,128.10
	NORTRON/ETHO SC/ETHOTRON	8,196.5	1,430.90
	OUTLOOK/PROPEL/ESTABLISH	4,021.4	1,065.50
		<b>Sum:</b>	<b>35,817.1</b>



# Recommended Waterhemp Strategy

- **PPI or PRE**
  - Ethofumesate + Dual Magnum
  - Ethofumesate
  - Dual Magnum
- **POST**
  - App #1 Roundup + Ethofumesate + Layby
  - App #2 Roundup + Ethofumesate + Layby
  - App #3 - Roundup
- Betamix can be used in all 3 applications if available
- 12 oz max in-season of Ethofumesate
- Tankmix needs to have HSMOC





## Recommended Ragweed Strategy

- **POST**
  - App #1 - Roundup + Stinger
  - App #2 - Same Treatment
  - App #3 - Same Treatment (if needed)
- Targeting cotyledon to 2 leaf weeds on our first POST application
- Do not use less than 2oz/A of Stinger
- Maximum use rate is 10.6 oz/A per Season/ 45 Day PHI
- Do not apply after the 8 leaf Sugarbeet stage



# Recommended Waterhemp/ Ragweed Combination Strategy

- **PPI or PRE**
  - Ethofumesate + Dual Magnum
  - Ethofumesate
  - Dual Magnum
- **POST**
  - App #1 Roundup + Ethofumesate + Stinger + Layby
  - App #2 - Same Treatment
  - App #3 – Contact agriculturist for recommendation if this application is needed
- Targeting cotyledon to 2 leaf weeds on our first POST application
- Watch PreHarvest Intervals
- Tankmix Needs to Have HSMOC





## Recommended Kochia Strategy

- **PPI/PRE**
  - Ethofumesate
- **POST**
  - App #1 - Roundup + Betamix + Ethofumesate
  - App #2 - Same Treatment
  - App #3 - Same Treatment (if needed)
- We should be targeting dime to quarter size weeds on our first POST application



# Herbicides Preharvest Intervals

- Ethofumesate Products
  - Ethofumesate 4SC (Generic Crop Science)
    - 45 Day
  - Nortron(Bayer), or Ethotron(UPI)
    - 90 Day





# Herbicides Preharvest Intervals

- Chloroacetamide Products
  - Dual Magnum
    - 60 Day
  - Outlook
    - 60 Day to 8LF,
    - 90 Day 9-12LF
  - Warrant
    - 70 Day
  - Sequence
    - 60 Day



# Herbicides Preharvest Intervals

- Glyphosate
  - 30 Day
- Clopyralid
  - Stinger
    - 45 Day
- Phen/Desmedipham
  - Betamix
    - 75 Day





# Weed Removal

- Mowing Or Tilling portions of field/field edges with weed escapes
- Any areas of down out in the field should be kept weed free with tillage
- Hand Weeding/ Removal of plants from field to stop the spread of seeds



# Mechanical Control

- **Cultivation as a rescue**
  - Use on problem fields
  - Done right before canopy closure has shown to reduce weed population
  - If used, still be careful on speed to keep soil away from crown of plant







Christy Sprague, Michigan State University

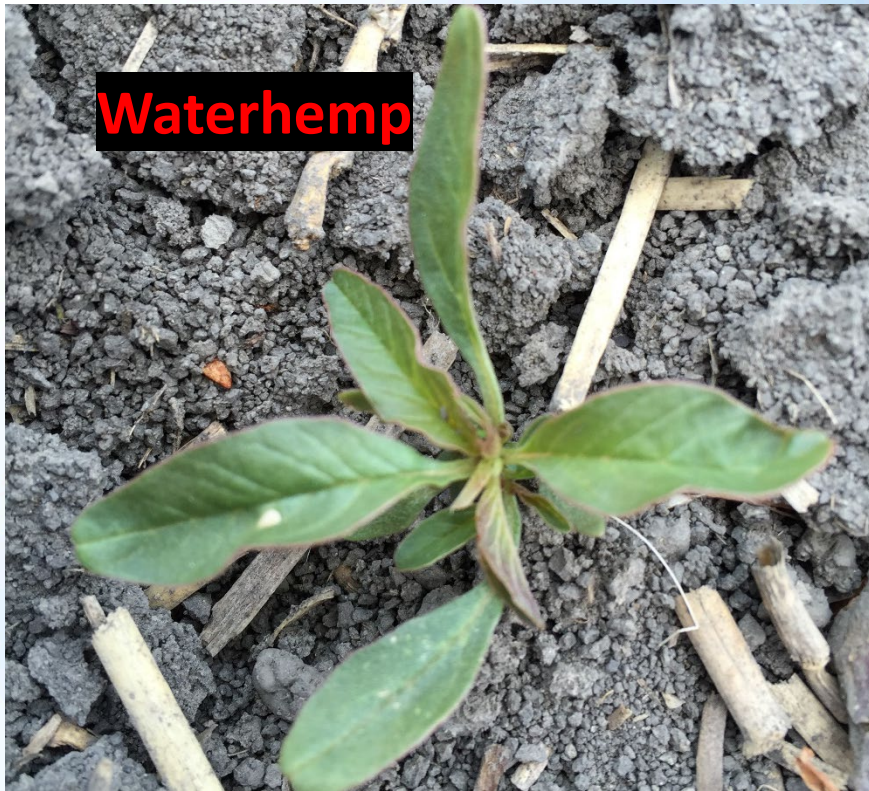


NDSU Photograph

## Palmer Amaranth Identification

- 2-3" per day Growth
- 6-8' Tall Height
- Up to 1 Million Seed production
- Reduced Yield up to 91% in corn/ 79% in Soybeans





## Waterhemp and Pigweed Identificaton

- Leaf Length is longer than wide on Waterhemp Vs. Pigweed
- Waterhemp is completely hairless, Pigweed has hair on stem and petiole



## Summary ▶

- Tough to kill and resistant weeds are present throughout the valley
- PPI/PRE work well when applied prior to weed emergence
- Weed control strategy should include a layered approach of PPI/PRE to avoid coverage gaps in-season
- We had overland flooding in both Spring and Fall of 2019
- Another major flood will spread resistant weed seeds faster and further than now

