Mike Ostlie

CARRINGTON RESEARCH EXTENSION CENTER

How is kochia control with Enlist combinations

Trial info

- Kochia sprayed at 2-3"
- 20 GPA for all treatments
- 3 lb/a AMS for all treatments
- Locations in Carrington and Minot (Dr Jenks)

- Non-crop – heavy heavy kochia pressure

- The goal of the trials was to test for antagonism between glyphosate and glufosinate – but Enlist combinations were included

Treatment	Rate	7 DAT	7 DAT	14 DAT	28 DAT
	oz/a	Kochia <2"	kochia >2"	all kochia	all kochia
Check		0.0	0.0	0.0	0.0
Liberty	32	97.0	98.0	90.0	85.0
RoundUp Powermax	28	78.8	77.5	73.8	60.0
Liberty + RoundUp Powermax	32 + 28	97.0	99.0	92.3	88.5
Liberty + RoundUp Powermax	32 + **21**	91.0	98.0	89.8	84.8
Liberty + RoundUp Powermax	**43** + **21**	97.0	99.0	95.8	90.0
Liberty + Enlist Duo	32 + 76	95.8	99.0	91.3	87.5
Liberty + Enlist One	32 + 32	91.3	99.0	85.0	77.5
Enlist Duo	76	70.0	60.0	67.5	61.3
Enlist One	32	16.3	2.5	0.0	0.0
Liberty	**43**	96.8	98.0	91.3	87.5
RoundUp Powermax	**21**	48.8	26.3	42.5	38.8
LSD (0.05)		5.5	3.9	5.8	9.6

All treatments contained 3 lb AMS

The differences

Treatment	Rate		W. buckwheat	W. buckwheat	G. foxtail	Kochia
			7 DAT	21 DAT	21 DAT	48 DAT
Check			0.0	0.0	0.0	0
Liberty	32	FL OZ/A	80.0	60.0	60.0	41.7
RoundUp Powermax	28	FL OZ/A	31.3	83.8	93.8	45.0
Liberty + RoundUp Powermax	32 + 28	FL OZ/A	85.0	86.3	75.0	32.7
Liberty + RoundUp Powermax	32 + 21	FL OZ/A	82.5	85.0	87.5	30.0
Liberty + RoundUp Powermax	43 + 21	FL OZ/A	87.5	88.8	72.5	30.0
Liberty + Enlist Duo	32 + 64	FL OZ/A	91.3	91.3	95.0	38.3
Liberty + Enlist One	32 + 32	FL OZ/A	90.0	90.0	37.5	38.3
Enlist Duo	4	PT/A	32.5	75.0	93.8	50.0
Enlist One	2	PT/A	25.0	27.5	0.0	10.0
LSD (0.05)			6.1	6.2	3.5	9.4

Summary of kochia info

- Increasing the rate of Liberty did not improve kochia control

- Adding Liberty and Powermax together never improved kochia control

    - Control followed the Liberty, potential antagonism at one location

- 2,4-D with or without RoundUp never increased kochia control when added to Liberty

Herbicide Programs for Cover Crops in Corn

How do you plant cover crop mid-season?

Corn cover crop planting

- Planting often occurs last week of June or early July
  - Target is V 4-6
  - No corn yield penalties when cover crops emerge after V6

- Prior to planting cover crops, apply the final herbicide for the season
  - Start cover crops in a clean field
  - A good cover crop stand + herbicide = full season weed suppression
    - Good defense against waterhemp and Palmer amaranth

- Treatments for our study were applied 10 days prior to planting
  - Evaluations occurred 21 and 60 Days after planting

Shade – Lentils – poor tolerance

Shade – Flax – poor tolerance

Shade – Rye – medium tolerant

Shade – Oats – medium or more tolerant

Shade – Crimson Clover – medium tolerant

Shade – Radish – medium tolerant

Shade– Turnip – medium or more tolerant

What affects herbicide injury/persistence?

- Herbicide rate applied
- Time since application/half-life
- Soil organic matter
- Soil pH
- Soil texture
- Soil moisture
- Crop growth rate
- Heat units
- **Microbial activity**

Which corn products are Cover Crop friendly?
(when covers are planted mid-season)

- Products I consider *low risk* alone or in mixture :

  - Any Group I (i.e. clethodim, quizalofop), glyphosate, glufosinate
  - S-metoloachlor (Dual II, etc)
  - MCPA
  - Dimethenamid (Outlook)
  - Acetochlor
  - Saflufenacil (Sharpen)

  - Pyroxasulfone (Zidua) if PRE

Which corn products are Cover Crop friendly?
(when covers are planted mid-season)

- Products that I ***worry a little*** about:
  - Flumioxazin (Valor)

  - Pyroxasulfone (Zidua) applied POST

  - Enlist (2,4-D)

  - Dicamba

Which corn products are cover crop friendly?
(when covers are planted mid-season)

- Products that I am **very cautious** about:
  - Clopyralid (Widematch) – especially *any* legume
  - Mesotrione (Callisto)
  - Isoxaflutole (Balance)
  - Atrazine
  - Topramezone (Armezon/Impact)

  - **Except if you are using flax, oats, or rye (or other cereals)**

Happy Trails!