

Weed Control Options for 2011

YWTG



Weed Control With Conventional Herbicides



PPI/PRE Herbicides & Availability

Herbicides

Availability

Nortron

Limited

Roneet

Limited

Eptam

Limited

Dual

Unlimited

Fargo

Unlimited

Layby Products

Product

Availability

Dual

Unlimited

Outlook

Unlimited

Treflan

Unlimited

Post Emergence Products

<u>Product</u>	<u>Availability</u>
Betamix	Adequate if Broadcast Unlimited if Banded
Stinger	Unlimited
Upbeet	Very Adequate
Progress	Very Little Inventory 1 pint= .92 pints Betamix + 2.4 oz. Nortron SC
Betanex	Almost None

Before Planting Strategies

- Use high plant populations for best crop competition - use narrower seed spacing
- Maximize weed control with pre-plant tillage
- Ideal seedbed preparation critical
 - Fast germination
 - Fast emergence
 - Beets compete best if emerge ahead of weeds
- Starter fertilizer for rapid early growth

Pre-plant Incorporated Strategies

Pre-plant Incorporated Strategies		
<u>Product</u>	<u>Injury Risk</u>	<u>Cost</u>
Dual	High	Low
Roneet	Low	Moderate
Eptam	Moderate	Low
Nortron	Low	High
Fargo	Low	Moderate

PPI Benefits

- Reduce early competition
- Maximize weed control
- May reduce POST applications
- Improve POST applied product efficacy
- Weather insurance for POST applied timing

PPI Risks

- Crop injury
- Dry out seedbed
- Poorer beet stand sometimes
- Cover crop use
- Plant back restrictions – Nortron (12 mo.-beans)

Nortron Carryover on Wheat-Safest to Follow With Soybeans



Efficacy of PPI/PRE Herbicides

Herbicide	K O C H I A	L A M B S Q U A R T E R S	P I G W E E D	S M A R T W E E D	C. R A G E E D	W. B U C K W H E A T
Dual Magnum	P	F	G-E	P	P-F	P
Eptam	F	F-G	F-G	P	F	P-F
Nortron	F-G	P-F	G-E	G	P	F-G
Roneet	P	F-G	F-G	P	F	P-F

PPI Fargo Use –
Primarily for Resistant Wild Oats
(ACCCase- Puma, Select, etc.)

PRE/PPI Dual Magnum

- Must sign waiver to release Syngenta of all liability
- Contact agriculturist for assistance

Glyphosate/Paraquat Use

- Strongly consider an application just before Beet emergence
- Adds flexibility for 1st POST application
- Beets get ahead of weed competition

Microrate Use Tips

Must always include:

- Betamix/Progress/Betanex
- Upbeet
- Stinger – nearly always
- MSO / basic blends
- Grass herbicide as needed
- Apply at 40 psi and 10 gpa or more

Microrate Use Tips - Adjuvants

MSO – 1.5 % - v/v

Basic Blend – 1.5 % - v/v (Ex. Quad 7, Newtone, Linkage, Transactive)

- Either MSO or Basic Blend
- Don't use less than 1 pint/acre
- If droughty conditions MSO often better than basic blends
- 50/50 mix performs well - 1% v/v of each

Microrate Mixing Order

1. Begin with a clean tank
2. Fill tank $\frac{1}{3}$ full of water
3. Adjust pH to 8.0 – 9.0 with use of Basic Blend adjuvants or 2% v/v household ammonia. Basic Blend not needed by air (use 2 pints MSO).

Microrate Mixing Order (Con't)

4. Slurry Upbeet in warm/hot water
5. Add Upbeet to tank
6. Fill tank $\frac{2}{3}$ full with water
7. Add Nortron if using it
8. Add B/B/P

Microrate Mixing Order (Con't)

9. Add Stinger
10. Add Outlook if desired
11. Add grass herbicide
12. Fill tank with water
13. Add remaining required MSO or Basic Blend

Microrate Use – Measures to Reduce Nozzle Plugging

1. Clean the sprayer frequently
2. Mix the herbicides in warm water or at least let the water warm to air temperature before adding herbicides rather than mixing in cold well water

Microrate use – Measures to Reduce Nozzle Plugging (Con't)

3. Increase the pH of the spray solution by using ammonia or a Basic Blend Adjuvant

Option 1 – use household non-sudsing ammonia with a 2% concentration (1 gallon/100 gallons of water)

Option 2 – Use a Basic blend Adjuvant i.e. **Quad 7, Linkage, Newtone or Transactive** (1% v/v)

4. Spray out the tank load immediately after mixing. Spray until the tank is empty and flush the sprayer with water before any spray residue can dry in the sprayer

Microrate use – Measures to Reduce Nozzle Plugging (Con't)

5. All of the grass herbicides reduced nozzle plugging **Assure II** had more effect than **Poast, Select**
6. Use the minimum amount of agitation needed to keep the solution mixed.

Microrate Use – Measures to Reduce Nozzle Plugging (Con't)

7. Tests show that nozzle plugging is less with **Betamix** than **Betanex**
8. Flush sprayer with clean water after every application

Microrate Use Strategies

- Apply first POST application to cotyledon weeds
- Repeat applications every 5-7 days
- Increase B/B/P rates as needed after first application
- GDD timing option on Crystal website

crystalsugar.com choose ag tools, choose pest alert, choose NDAWN links, and choose predictive leaf stages and GDD

Standard Microrate Mix

<u>Product</u>	<u>Rate/A</u>
Betamix	8 oz. – 12 oz.
Upbeet	1/8 oz.
Stinger	1.3 oz.
MSO	1.5 % v/v (max 2 pt.)
Select Max if Needed	4-8 oz.

Standard Mid-Rate Program

<u>Product</u>	<u>Rate/A</u>
Betamix	12 – 16 oz.
Upbeet	1/8 oz.
Stinger	2.6 oz.
MSO	1.5% v/v (max 2 pt.)
Select Max	4- 8 oz.

Weeds Stinger Improves Control On

Canada Thistle
Wild Sunflower
Lanceleaf Sage
Nightshades
Smartweeds
Biennial Wormwood
V. Soybean

Wild Buckwheat
Cocklebur
Buffalo Bur
Common Ragweed
Marshelder
Russian Thistle
Common Lambsquarters

Weeds Upbeet Improves Control On

Pigweed

Nightshades

Venice Mallow

V. Canola

Velvetleaf

C. Mallow

Non-Resistant Kochia

Nightflowering Catchfly

Other Considerations

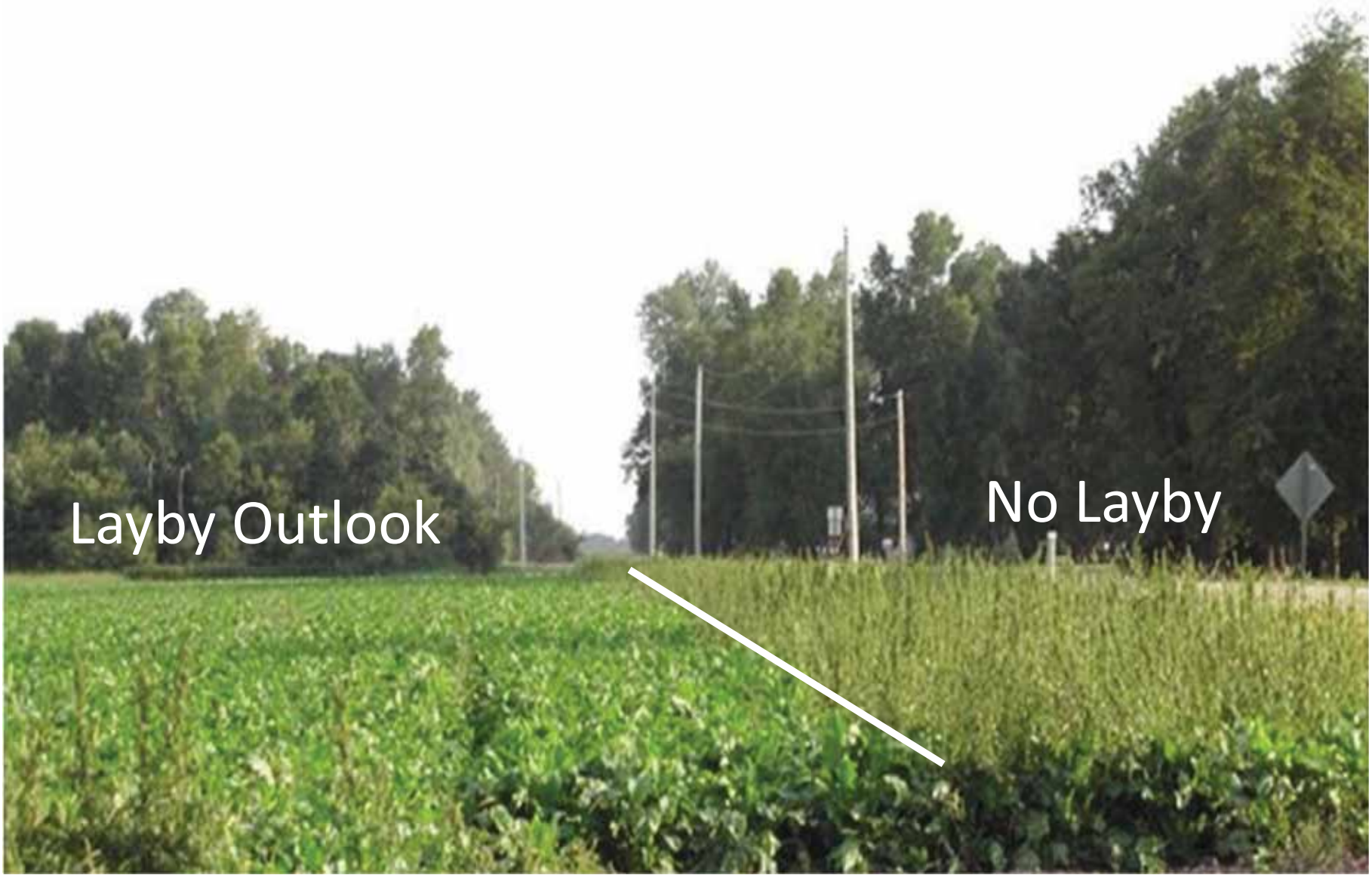
- Reduce POST rates if soil applied herbicide is used
- Early morning spraying increases activity reduces crop safety
- Late afternoon spraying reduces herbicide activity - increases crop safety
- Don't spray 1-2 days before frost = less weed control and more crop injury

Other Considerations (Con't)

- Rapid change from cool to hot weather increases injury risk
- Never mix POST conventional herbicides with Quadris
- May reduce rates if high pressure or aerial application
- Maintain higher rates if droughty conditions persist

Layby Herbicides

- Outlook – Dual Magnum – Treflan
- Can be included with microrate but injury risk increases
- Improve Pigweed control in particular
- Do **NOT** apply over top of Nortron
- Less rainfall to activate Outlook than Dual



Layby Outlook

No Layby

Lay-by Rates

Dual Magnum

Apply to 4 leaf beets 1.0 pt. (coarse) 1.33 pt. (med)
1.67 pt. (fine) maximum of 2.67 pt. split applied

Outlook

2-8 leaf beets (more injury on small beets) 12-18 oz.
(coarse), 18-21 oz. (med-fine) maximum of 24 fl. oz.
if split applied

Treflan

1.5 pt./A, 2-6 leaf beet stage, root injury risk if on
root or crown

Much More Information Available

- See 2010 Sugarbeet Research and Extension Reports – pages 25-44
- See 2011 Pocket Production Guide
- See 2011 North Dakota Weed Control Guide
- Contact your Agriculturist
- Go to crystalsugar.com

Weed Control In Roundup Ready Beets

Avoid Competition With Proper Timing

Weed Pressure	Recommended Timing
Light	2-4 Leaf Beets
Moderate	2 Leaf Beets
Heavy	Cotyledon – 2 Leaf Beets



← *Yes, this was a beet field*

Roundup Rate Selection

One rate of glyphosate does not fit all situations. Select rates based on a number of factors including the following considerations:

- Weed species present
- Environmental conditions
- Weed growth stage
- Possible weed tolerance or resistance to glyphosate

Maximize Glyphosate Effectiveness

Situation	Rate (4.5 lb/Gal. Acid Equiv)
Small weeds, very favorable environment	22 oz/acre
Less favorable environment or larger weeds	28 oz/acre
Unfavorable environment, very large weeds, hard to control weed species, suspected tolerance to glyphosate	32 oz/acre

Timing the Second Application

- The label states it must be 10 days or more after the first application
- Determine if sufficient weeds have emerged
- Determine when weed size, species and density justify spraying
- Most second applications will be from 14 to 28 days after the initial application

Tips on Maximizing Weed Control With Roundup

- Best control is from 10 a.m. to 4 p.m.
- Add 8.5 to 17 lbs. of AMS per 100 gallons of spray solution (or reputable AMS replacement)
- Control is often better with lower spray volumes
- Rain within 6 hours after application may reduce weed control

Tips on Maximizing Weed Control With Roundup (Con't)

- Avoid spraying with dust on plants
- Avoid spraying with dew on plants
- Cool weather slows activity and time needed to kill weeds
- Frost before application will reduce control

Tips on Maximizing Weed Control With Roundup (Con't)

- Drought slows weed growth, reduces Roundup activity
- Delay cultivation **at least 3 days** after Roundup use to maximize control
- Air temperature over 85° F during application can reduce weed control
- Don't spray after sunset-weed control can be reduced

Know Your Acid Equivalents

Over 50 Glyphosate formulations were available in 2010

Be sure you use correct rates

When to Tank Mix Stinger and Glyphosate

- For volunteer soybeans
- For Glyphosate resistant Common Ragweed
- For Wild Buckwheat
- For Biennial Wormwood

Tips For Controlling Volunteer Roundup Ready Canola

- Use $\frac{1}{4}$ to $\frac{1}{2}$ oz. of Upbeet (costly)
- Use microrate as 1st application on RR beets
- Pull resistant plants if population is low
- Control in other crops whenever possible

