

# Tips to Keep Roundup Ready® Technology Working In Your Sugarbeet Fields

## Strategies to Combat Resistant Weeds

- Tank mix herbicides with multiple MOA (Modes Of Action). Rotate different MOA in consecutive years.
- Prevent weed seed production **in all locations including field, ditches, shelterbelts and old yards.**
- Scout fields to identify escapes.
- Rotate crops to enable different MOA.
- Use labor and mechanical weed control.

### What You Can Do

- Keep small grains in your rotation.
- Use Pre-Emerge Herbicides in Rotational Crops (corn & soybeans).
- Tank-mix other herbicides with Glyphosate/Roundup.
- Use Liberty Link® corn and/or soybean varieties.

February 2017

AG  
**GOLD**  
STANDARDS



## 1<sup>st</sup> Two RR Beet Sprays Up To 8-leaf Stage

- Use 28 oz./acre Roundup PowerMax Rate (0.98 lbs./acre Acid Equivalent).  
-OR- Use 32 oz./acre 1<sup>st</sup> spray and 24 oz./acre 2<sup>nd</sup> spray Roundup PowerMax (1.125 lbs and 0.84 lbs./acre Acid Equivalents).
- Tank-mix 2-4 oz./acre of Stinger (in presence of common ragweed).
- Refer to Roundup label for ways to maximize control.
- If resistant weed populations are present, consult your agriculturist for more aggressive strategies including:
  - PPI or Pre Nortron and Post Roundup tank mixes with Betamix, Nortron and a **HSMOC** adjuvant.

## Pre-Emerge & Post Herbicide Options in RR Corn

Tank Mixes to Apply with Glyphosate to Control Glyphosate Resistant Weeds								
Pre-Emergence Herbicides for RR Corn	Site of Action	Formulation	Sugarbeet Rotation Restrictions	Common Ragweed	Redroot Pigweed	Lambsquarters	Kochia	Waterhemp
Verdict	14,15	EC	NCS (4-9 mth)	G/E	G	E	E	E
Sharpen	14	SC	6 mth	G/E	G/E	E	E	G/E
Dicamba	4	SL	NCS	E	F/E	G/E	G/E	F/G
Resicore	4,15,27	SC	18	E	E	E	G	G/E
Post Tank Mixes with Glyphosate for RR Corn								
Status	4,19	WDG	4 mth	E	G/E	G/E	G/E	G/E
Armezon Pro	5,27	SC	18 mth	E	E	E	E	E
Halex GT	9,15,27	SC	18 mth	E	E	E	E	G/E
Impact	27	SC	18 mth	E	E	E	E	G/E
Laudis	27	SC	18 mth see label	E	E	E	E	E
Callisto Xtra	27	SC	18 mth	F	E	E	E	E

## Pre-Emerge & Post Herbicide Options in RR Soybeans

Pre-Emergence Herbicides for RR Soybeans	Site of Action	Formulation	Sugarbeet Rotation Restrictions	Common Ragweed	Redroot Pigweed	Lambsquarters	Kochia	Waterhemp
Valor	14	WDG	4-10 mth	P	G/E	F/E	P/G	G
Verdict	14,15	EC	NCS	P/F	G	F/G	P	F/G
Boundary (Sencor+Dual)	5,15	EC	18 mth	P/F	G/E	G	F/G	G/E
Metribuzin	5	DF	18 mth	P/F	G/E	P/G	F/G	F/G
Zidua	15	WDG	15 mth	P	G/E	F/E	F/E	G/E
Fierce (Valor+Zidua)	14,15	WDG	15 mth	P	G/E	F/E	F/E	G/E
Post Tank Mixes with Glyphosate for RR Soybeans								
Flexstar	14	EC	18 mth	P/E	G	P/F	G/E	P/E
Cadet	14	EC	NR	N	P	F/G	P/F	P/G
Cobra	14	EC	NCS	P/E	G	N	P/F	P/G

NCS = Next Cropping Season; NR = No Restrictions N = None P = Poor F = Fair G = Good E = Excellent  
EC = Emulsifiable Concentrate; SC = Suspension Concentrate; SL = Soluble Liquid; WDG = Water Dispersible Granule; DF = Dry Flowable

\*Liberty Link Corn and Xtendimax Soybeans are options also.  
\*See 2017 NDSU Weed Control Guide for additional information.

# General Pesticide Tank Mixing Order

**\*\*Read product labels for specific mixing instructions.\*\***

To help manage Roundup resistance, it is important to tank mix other pesticides with different modes of action. Use this as a guide to make sure tank mixing of pesticides is done in the correct order based on the product's formulation to avoid any problems in the tank and booms as well as to maintain product efficacy. Performing a jar test of tank mix partners can help in testing for compatibility issues.

Always have water circulating in sprayer tank to ensure continuous agitation. Always give time to every component to dissolve in the water. Adjuvants are added in the same sequence as pesticides, that is, ammonium sulfate is a soluble powder, oil adjuvants are emulsifiable concentrates, and most surfactants are solutions. Within each group, usually add the pesticide before the adjuvant.

1. Fill the tank 50% with water
2. Buffer agent, pH adjusters
3. Water Dispersible Granules (WDG) – Soluble Powder. Continue Agitation and allow plenty of time to dissolve.
4. Wettable Powder (pre-slurry)
5. Suspension Concentrate (SC) – Flowable Concentrate
6. Emulsifiable Concentrate (EC)
7. Crop Oil
8. Soluble Liquid (SL) – Glyphosate
9. Surfactant
10. Top off tank with water
11. Spray as soon as possible

## General Sprayer Cleaning Guidelines

**\*\*Read product labels for specific sprayer cleaning instructions.\*\***

When tank mixing pesticides with different modes of action for resistance management, it is critical to effectively clean the sprayer when switching between crops to avoid crop injury.

1. Clean sprayer as soon as possible after use. Dried material is difficult to remove. Residues build up over time and trap additional residues.
2. Drain the tank and all herbicide solution. Rinse down the inside and outside walls of the tank and flush out the booms and nozzles.
3. Fill the tank half full of water (preferably warm) and add tank cleaners recommended on the herbicide label (commercial tank cleaner, detergent or ammonia).
4. Circulate for a few minutes and flush out some of the solution through the boom and nozzles (open boom end caps/valves).
5. Allow the remainder of the solution to stand in the tank for the period of time recommended for the herbicide (overnight is desirable).
6. Pump the remaining solution through the boom and nozzles (open boom end caps/valves).
7. With clean water flush out the tank, lines, boom and nozzles once more (open boom end caps/valves).
8. Remove and clean strainers, nozzle tips and screens and in-line screens.



**It may be advantageous to have separate nozzle tips, screens and in-line screens for each crop that the sprayer is being used in.**