Why is Sprayer Clean-Out Getting Harder?

Precision Laboratories, LLC

Sprayer Cross Contamination

- Changes in herbicides

  more active and oil-soluble

- New formulations (SC, C

  more instability

- More tank mixing

  more incompatibility

- Complicated sprayers

  technique & technology

Mixing Order Matters!

AMS

2,4-D ester

Atrazine 4L

Crop Oil

Roundup®

ASMUS FARM SUPPLY

Mix Tank App

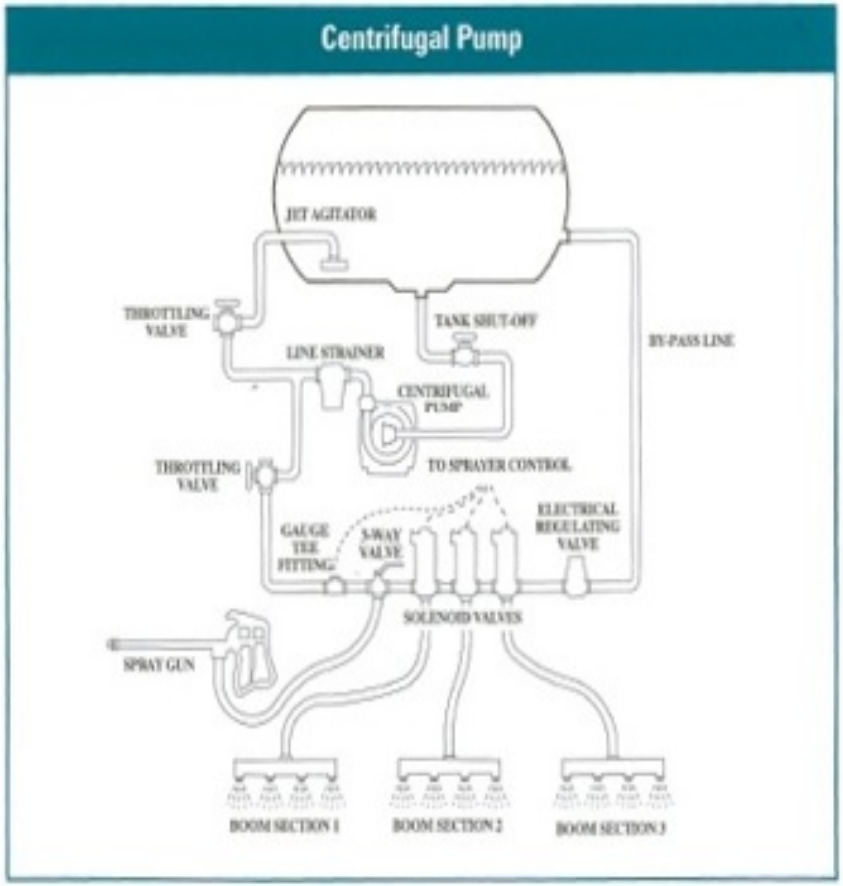
- Available for the iPhone, iPod touch and Android platforms
- Eliminates costly mixing errors
- Database of more than 1000 crop protection products from 20 manufacturers
- Mixing sequence & record keeping in one location
- Online version at:

www.mixtankapp.com

Tank Mixing Best Practices

- Conduct compatibility tests or use the Mix Tank App
- Mix in a minimum of 20-25% of intended spray volume
- Follow the appropriate mixing order & WAIT
- Use the inductor as a FUNNEL not a MIXING VAT

Old Sprayer Wet-System Schematic



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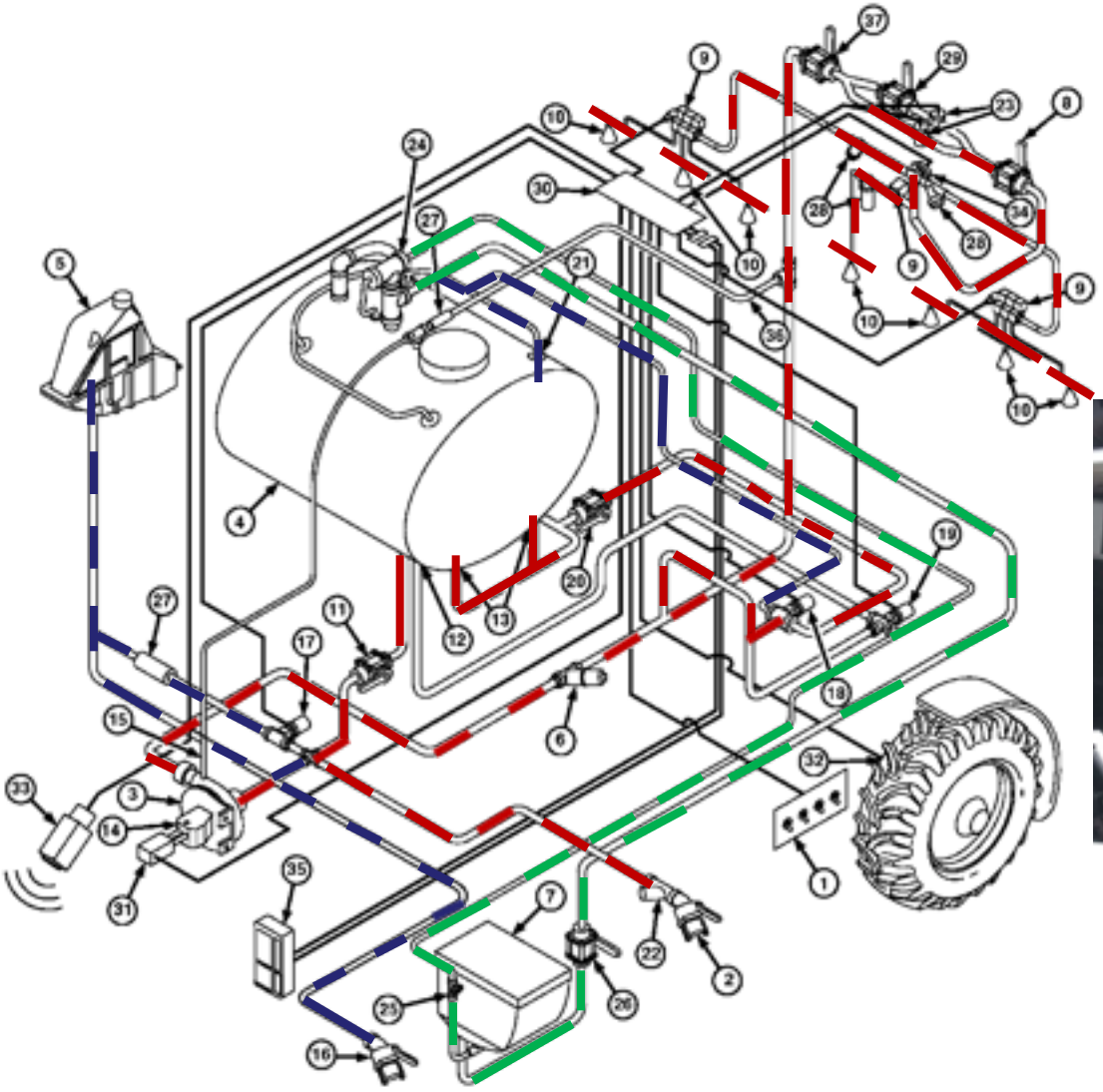
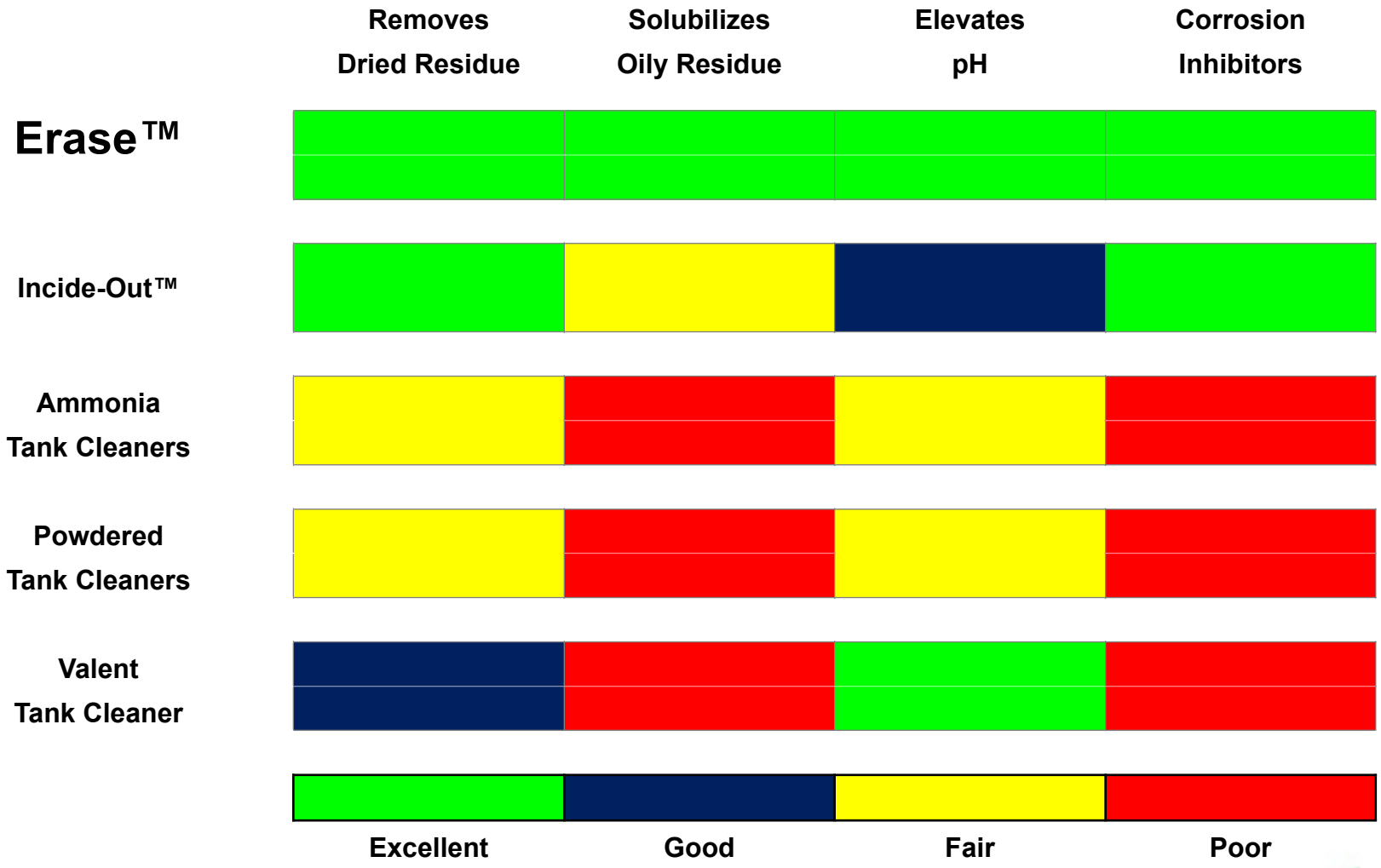
New Sprayer Wet-System Schematic



Does It Make Sense?

- Equipment changed
- Tank-mixes have changed
- Herbicides have changed
- **Tank cleaners haven't**

Features Comparison



Tank Mix Residue Removal

Border Xtra 8L™
Flexstar®
Roundup PowerMAX®
Persist® Ultra

ASMUS FARM SUPPLY

Erase™

- 2X + stronger than Incide-Out
- Elevates and holds pH levels
- Over 3X more surfactant than Valent Tank Cleaner
- 33% more oil-eating detergency than Incide-Out
- Better coverage and penetration of residues

ASMUS FARM SUPPLY

Think Outside the Tank

- Use the best mixing order & compatibility agents
- Be the best at chemical "hide & seek" - remove end caps & flush sprayer booms at end of each day
- Use the best clean-out technique: Pre-flush, Clean & Rinse, Repeat , Clean-rinse
- Use Erase @ 2 qts /100

ASMUS FARM SUPPLY

“Best of Class” AMS Products

PRECISION LABORATORIES

Results. Expect it.

Border™ Xtra 8L

- True AMS-Delivers more consistent control over a wider range of hard-to-control weed species and conditions
- No need to additional NIS
- HPG polymer technology prevents droplet bounce and increases coverage and retention on leaf surface
- Best in Class drift control
- A great recommendation anytime herbicides require AMS and drift control is a concern
- Antifoam system prevents foaming problems

ASMUS FARM SUPPLY

Border™ AQ

- HPG polymer technology prevents droplet bounce and increases coverage and retention on leaf surface
- Zwitter-ionic surfactant chemistry can adjust its charge based on the tank mix to allow it to adapt and complement the tank mix partners
- Easy to use, handle and store
- Widest range of compatibility with fertilizers, low pH solutions and crop protection products
- Easy clean out
- Superior spray droplet management

Deliver™

- True AMS-Liquid formulation saves time over dumping bags of AMS
- With NIS in the product, no need to add additional surfactant
- Easy to mix and anti-foam system prevents foaming problems
- Ties up hard water ions and improves uptake by hard to control nitrogen-responsive weed species
- Better weed control results in fewer performance complaints

AMS Product Conversion Chart

Border™ Xtra 8L	Use Rate	AMS lbs / 100	NIS Equivalent / 100	Low Foaming	Drift Retardant	pH Adjuster
Liquid AMS, NIS, HPG Polymer (drift control & retention), Defoamer	2.5 gl / 100*	8.5 lbs	32 oz	Yes	Yes	No
	2.0 gl / 100	6.8 lbs	25.6 oz	Yes	Yes	No
	1.75 gl / 100	5.95 lbs	22.4 oz	Yes	Yes	No
	1.5 gl / 100	5.1 lbs	19.2 oz	Yes	Yes	No
Border™ AQ	**Use Rate**	**AMS lbs / 100**	**NIS Equivalent / 100**	**Low Foaming**	**Drift Retardant**	**pH Adjuster**
Liquid AMS, NIS, HPG Polymer (drift control & retention), Defoamer	1 gl / 400-500	0.6 lbs	8 oz	Yes	Yes	No
Deliver™	**Use Rate**	**AMS lbs / 100**	**NIS Equivalent / 100**	**Low Foaming**	**Drift Retardant**	**pH Adjuster**
Liquid AMS, NIS, Defoamer	2.5 gl / 100**	8.5 lbs	64 oz	Yes	No	No
	2.0 gl / 100	6.8 lbs	51.2 oz	Yes	No	No
	1.75 gl / 100	5.95 lbs	44.8 oz	Yes	No	No
	1.5 gl / 100	5.1 lbs	38.4 oz	Yes	No	No
	1.25 gl / 100	4.25 lbs	32 oz	Yes	No	No
	1.0 gl / 100	3.4 lbs	25.6 oz	Yes	No	No

*Maximum use rate (2.5 gl / 100) limited by HPG Polymer
**Maximum use rate (2.5 gl / 100) limited by NIS