



# 21<sup>st</sup> Century Equipment, LLC. Sprayer Masters

Winter 2023



JOHN DEERE

## Roadmap

**What's new from Deere?**

**Optimization & Nozzles**

**New Machine Walkaround**

**ExactApply™ Spray Table**



# Application Portfolio

## Offerings for Early, In-Season and Late Season Application

- **John Deere 400 & 600 Series**
  - R4023, 408R, 410R, 412R, 612R, 616R
- **NEW Hagie STS**
  - STS12, STS16, STS20
- **John Deere 800R Chassis**
  - AB30, DS35 G4 or G5, LS20







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# NEW 400 & 600 SERIES SPRAYERS



# What's new?

## John Deere 400 Series Sprayers

- New Features:
  - Cabs
  - Comfort & Convenience Packages
  - Visibility Packages
  - BoomTrac Pro 2
  - Pressure Recirculation & Product Reclaim with ExactApply



# What's new?

## John Deere 600 Series Sprayers

- New Features:
  - Cabs
  - Comfort & Convenience Packages
  - Visibility Packages
  - BoomTrac Pro 2
  - Pressure Recirculation & Product Reclaim with ExactApply





# What's new?

## Pressure Recirculation & Product Reclaim

- System keeps chemical in suspension in boom and system while machine is and is not spraying.
- Recirculation during rinsing removes any chemical that settled out of suspension while spraying



# Model Specifications

	R4023	408R	410R	412R	612R	616R
Engine						
Rated Power	129 kW 173 hp	209 kW 280 hp	231 kW 310 hp	243 kW 325 hp	265 kW 355 hp	280 kW 375 hp
Fuel Tank Capacity	310 L 82 gal.	492.1 L 130 gal.	586.7 L 155 gal.			
Diesel Exhaust Fluid (DEF) Tank Capacity	17 L 4.5 gal.	29.5 L 7.8 gal.				
Solution System						
Solution Tank Capacity	2,300 L 600 gal.	3,028 L 800 gal.	3,800 L 1000 gal.	4,542 L 1200 gal.		6,057 L 1600 gal.
Rinse Tank Capacity	265 L 70 gal.	454.2 L 120 gal.		646 L 170 gal.		606 L 160 gal.
Chemical Injection	—	Direct Injection (option)		—	Direct Injection (option)	—
Drivetrain						
Transport Speed, Maximum	43 km/h 27 mph	48.3 km/h 30 mph	56.3 km/h 35 mph			



## Carbon Fiber Boom

- Improve front to back weight distribution and reduce compaction with lighter carbon fiber.

## Why it Matters to Customers

- Decrease soil compaction with lighter booms. With a:
  - 39% weight reduction with a 39.6 m (120 ft.) carbon fiber boom when compared to a 39.6 m (120 ft.) steel boom.
  - 35% wing weight reduction with a 40.2 m (132 ft.) carbon fiber boom when compared to a 39.6 m (120 ft.) steel boom.

### WITH CARBON FIBER BOOMS



### WITH STEEL BOOMS



TOTAL WEIGHT CHART	R4030	R4038	R4044	R4045	R4060
Steel Boom 36.5 m (120 ft.)	13,890 kg 30,558 lb.	14,345 kg 31,559 lb.	14,424 kg 31,800 lb.	16,400 kg 36,080 lb.	16,548 kg 36,482 lb.
Carbon Fiber 36.5 m (120 ft.)	12,684 kg 27,963 lb.	13,304 kg 29,330 lb.	13,877 kg 30,594 lb.	15,444 kg 34,048 lb.	16,001 kg 35,276 lb.
Carbon Fiber 40 m (132 ft.)	12,739 kg 28,084 lb.	13,359 kg 29,451 lb.	13,915 kg 30,678 lb.	15,499 kg 34,169 lb.	16,039 kg 35,360 lb.

# 400 & 600 Series Versatility

## Convertible Dry Nutrient Spinner

- Sourced from New Leader
- Two Models DS20 & DS30
  - Or Salford 6700 Airboom

Compatibility	400R	408R	410R	412R	600R	612R	616R
DS20	×	×	×	×	×	×	×
DS30					×	×	×



MultApplier Box Options	DS20		DS30
Compatible Sprayers	400R, 408R, 410R, 412R	612R, 616R	612R, 616R
Size	5.6 m <sup>3</sup> (200 ft <sup>3</sup> )		8.5 m <sup>3</sup> (300 ft <sup>3</sup> )
Fertilizer Capacity	5.98 t (6.6 tons)		9 t (10 tons)
Ag Lime Capacity	---	9 t (10 tons)	---
Spread Width*	Up to 32 m (105 ft.)		Up to 32 m (105 ft.)



# Why ExactApply?

## Consistent Spray, Even on Turns

- Turn Compensation\*:
  - Allows correct spray rate across the full length of the boom.
  - Maintains proper rate and spray pattern for each nozzle to account for the varying speeds during a turn.

## Apply at High Flow Rates

- Industry exclusive high flow rate of up to 467.7 L/ha at 24.1 kph (50 gal/acre at 15 mph).

## Why it Matters to Customers

- Vary application rates automatically along the entire boom width to decrease over application on the inside of the turn, and under application on the outside of the turn.
- Decrease input cost and crop damage due to over application or underapplication, which can lead to weed escapes or herbicide resistance.



# ExactApply Care

- A rinse is still recommended every day to keep the system clean.
- Not all nozzles are compatible with EA.
  - Parts books reference which nozzles are compatible with which modes.



ExactApply™ Compatibility	
15 Hz PWM	No
30 Hz PWM	No
AutoSelect A/B	Yes
Conventional	Yes

ExactApply™ Compatibility	
15Hz PWM	Yes
30Hz PWM	Yes
AutoSelect A/B	Yes
Conventional	Yes





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SEE IT. SPRAY IT.  
KILL IT.



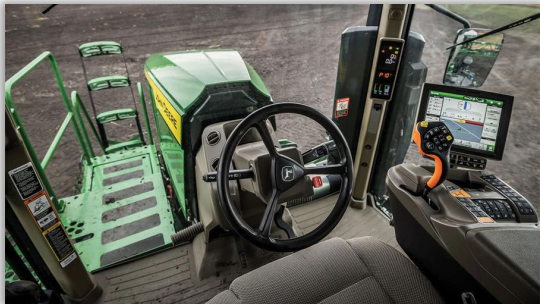




# What's new?

## John Deere See & Spray Select

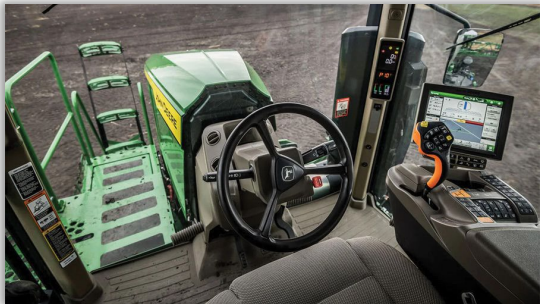
- New Features:
  - Green on Brown weed detection
  - Ability to lay down residual chemistries and increase rate where weeds are seen.
  - 77% Reduction in Chemical



# What's new?

## John Deere See & Spray Ultimate

- New Features:
  - Green on Green weed detection
  - Split solution tank allows for targeted spray and broadcast in one pass
  - Targets weeds as small as 1/4" x 1/4"





# See & Spray Ultimate In-Cab Operation

- Similar interface as conventional ExactApply sprayer



# Mapping with See & Spray Ultimate

- Post application weed pressure map allows for ability to







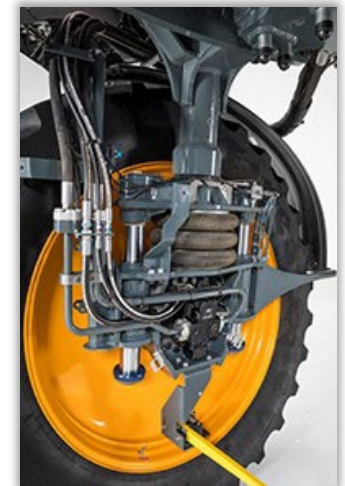
# HAGIE STS SPRAYERS

FROM JOHN DEERE



# Hagie STS Sprayers

- New Features:
  - Up-Front Hybrid Boom 90' – 132'
  - John Deere Integrated 4600 Display
  - John Deere ExactApply
  - Pressure Recirculation and Product Reclaim
  - 1,200 to 2,000 Gal Capacity
  - RowSense 20"-22" & 30"-40"
  - All Wheel Steer





# Hagie: Cab and Controls

## Features:

- Premium & Ultimate Cabs
- John Deere 4600 Display
- Machine Control Display
- New Common Hydro Handle Control Handle Controls



# Model Specifications

	STS12	STS16	STS20
Engine			
Make	John Deere PowerTech™ PSS 9.0L		
Peak Rated Power	221 kW 300 hp	298 kW 400 hp	298 kW 400 hp
Fuel Tank Capacity	492 L 130 gal.		
PowrSpray™ Solution System			
Solution Tank Capacity	4542 L 1200 gal.	6057 L 1600 gal.	7570 L 2000 gal.
Rinse Tank Capacity	454 L 120 gal.	606 L 160 gal.	757 L 200 gal.
Chemical Injection	Optional		NA
Drivetrain	CommandDrive™		
Transport Speed, Maximum*	56 km/h 35 mph		
Field Speed, Maximum	40 km/h 25 mph		

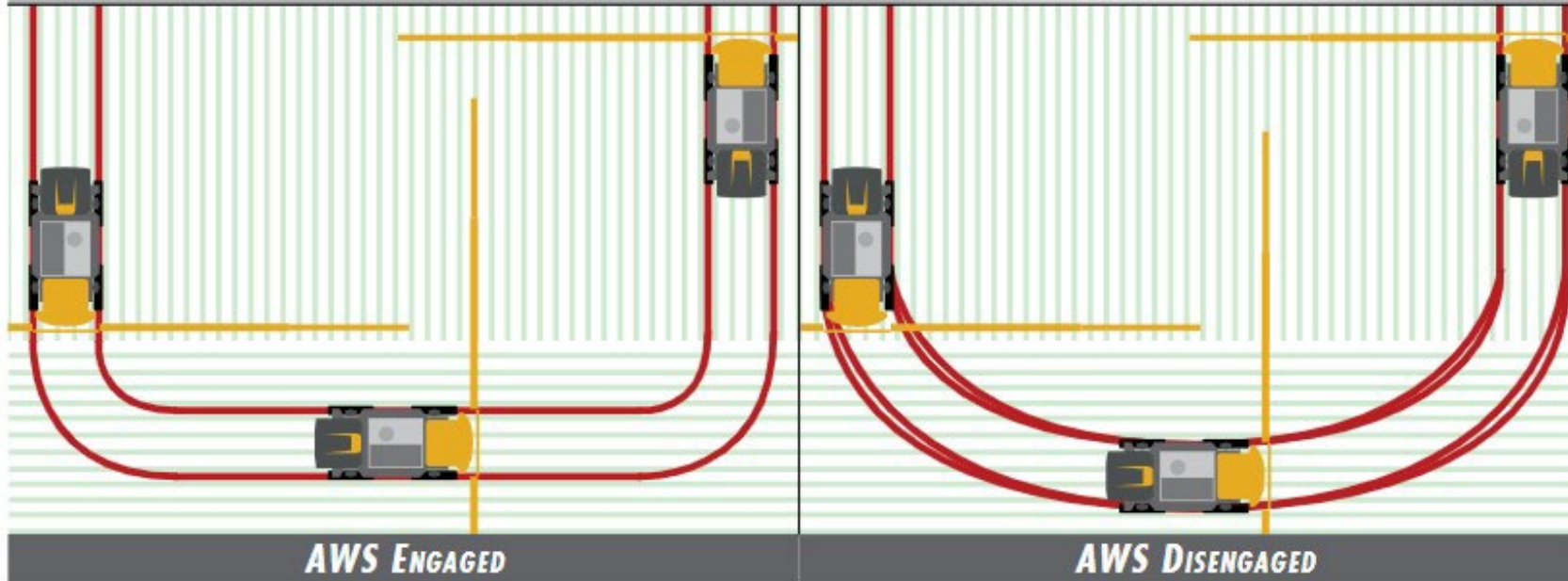
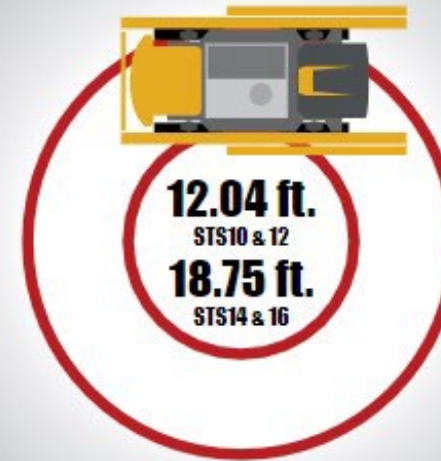


## All Wheel Steer Advantage

The All Wheel Steering (AWS) is designed so the front and rear wheels are coordinated to follow the same path to minimize crop damage and ground disturbance.

Allows boom to be squared up to rows prior to entering rows.

When used with AutoTrac, All Wheel Steer can be used to acquire the next guidance line.



# Hagie: All Season Versatility

- **Nurture, Feed, & Protect**
  - Nitrogen Tool Bars
  - 360 Yield Center Y-Drops
  - Pre/Post Emergence Spraying
  - In-Season Fungicide Applications
  - Data shows that Fungicide Applications with a Hagie are more effective than an Aerial Application







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**800R FLOATER:  
COVER MORE ACRES**



# What's new?

## All new John Deere 800R

- Features:
  - New Cabs
  - New Visibility Packages
  - Updated Application Skids
  - 90' Booms Largest in the industry
  - Built to get acres covered faster.





# John Deere 800R Versatility





# ***Sprayer Optimization***





# Nozzles and Machine Optimization





# Nozzles and Machine Optimization





# Nozzles and Machine Optimization





# Nozzles and Machine Optimization



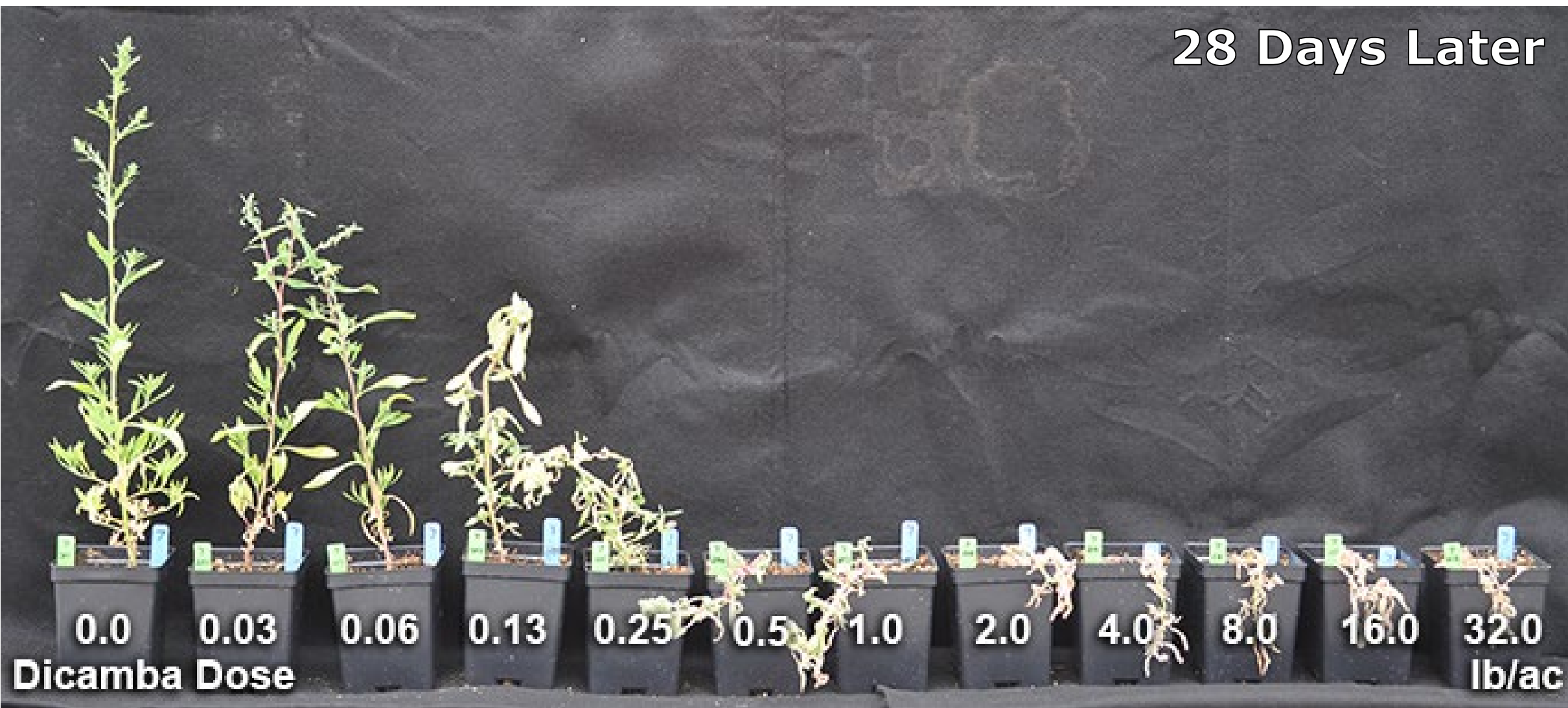


# Nozzles and Machine Optimization



# Nozzles and Machine Optimization

28 Days Later





# Nozzles

## The most overlooked piece of a sprayer!

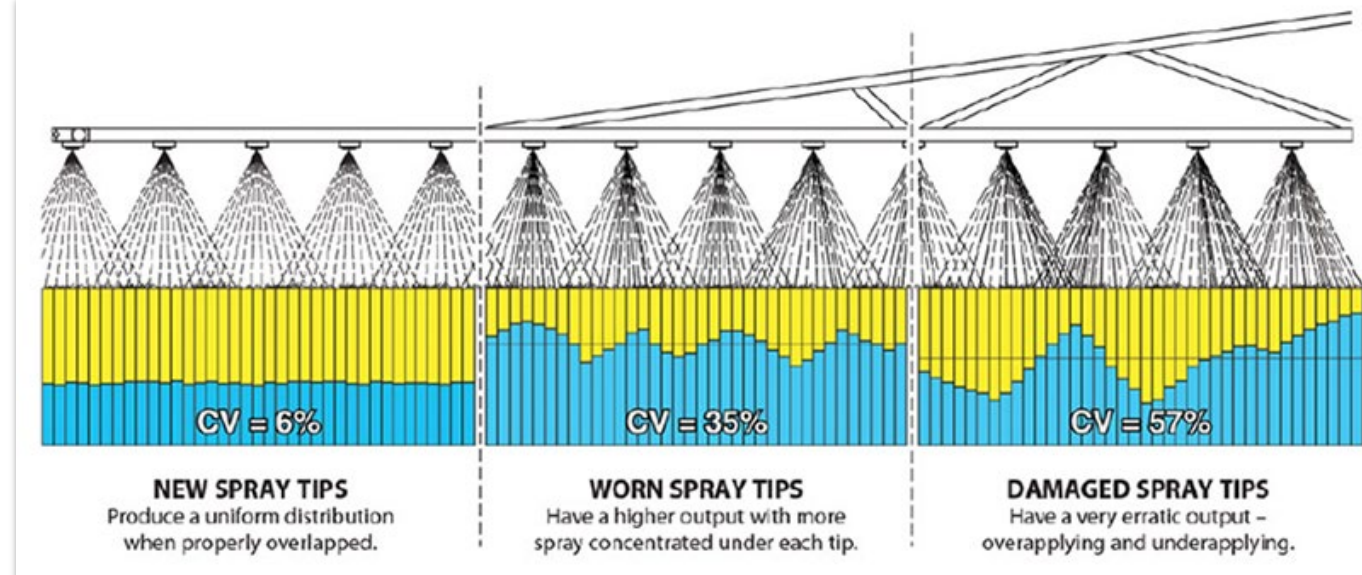
- Why do they matter??
  - 4 R's:
    - Right Product
    - Right Rate
    - Right Place
    - Right Time
  - Control what you can **CONTROL!**



# Nozzles

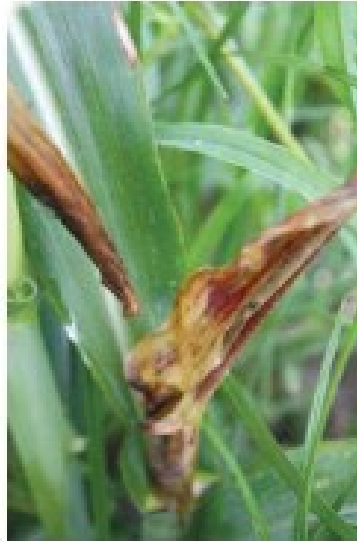
## The most overlooked piece of a sprayer!

- What happens when we under apply certain weeds, and under apply others??
  - We are encouraging resistance...





# Nozzles



- We have all had mess ups from over applying... and or drift
  - We are limiting our yield potential.

# Nozzles

## The most overlooked piece of a sprayer!

- Why do they matter??
  - 4 R's:
    - Right Product
    - Right Rate
    - Right Place
    - Right Time
  - Control what you can **CONTROL!**





# ***Solutions that Apply***





# Machine Walk-Around

## Goals

- Gain familiarity of 400 & 600 Series machines.
  - Advantages Over Competitors
  - Service Points
  - ExactApply Nozzle Tear Down
  - Understanding Pressure Recirculation
  - Common wear items
  - Operation of Solution Command Controls





# Roadmap

**What's new from Deere?**

**Optimization & Nozzles**

**Integrated Solutions**

**New Machine Walkaround**





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