2015 360 Y-DROP™ Technical Guide

Issued June 11, 2015

V4

Customer Inquiry Form

This form is to be filled out by the dealer when collecting sprayer information from the farmer. If this information is completed, 360 Yield Center Product Support will be able to help the dealer place the correct order.

Date

Customer Name

Customer Address | **Customer State** | **Customer Zip**

Customer Phone Contact | **Customer Email Address**

Dealer Name | **Dealer Phone Contact**

Sprayer Make | **Customer Model** | **Sprayer Year**

Overall OEM Sprayer Boom Width | ***Verify OEM 1st Fold Width**

*** 360 Y-DROP™ Systems Can ONLY be Mounted on the 1st Fold of any self-propelled Sprayer (See Appendix A for the possible Sprayer Mount Packages on the various boom 1st folds by model)**

How Many 360 Y-DROP™ Units | **Row Width**

*** Please verify all measurements before ordering.**

Other Notes and Information to help in Ordering a 360 Y-DROP™ System

Special Order Form

This form is to be used when a farmer has a sprayer that 360 Yield Center does not have a Sprayer Mount Package (SMP) already pre-planned. Expect 10-12 weeks for 360 Yield Center to complete special orders.

Date

Customer Name

Customer Address | **Customer State** | **Customer Zip**

Customer Phone Contact | **Customer Email Address**

Dealer Name | **Dealer Phone Contact**

Sprayer Make | **Customer Model** | **Sprayer Year**

Overall OEM Sprayer Boom Width | ***Verify OEM 1st Fold Width**

*** 360 Y-DROP™ Systems Can ONLY be Mounted on the 1st Fold of any self-propelled Sprayer (See Appendix A for the possible Sprayer Mount Packages on the various boom 1st folds by model)**

Boom Dimension - Bottom | **Boom Dimension - Top**

How Many 360 Y-DROP™ Units | **Row Width**

- Please take photos of booms folded and unfolded to submit to 360 Yield Center

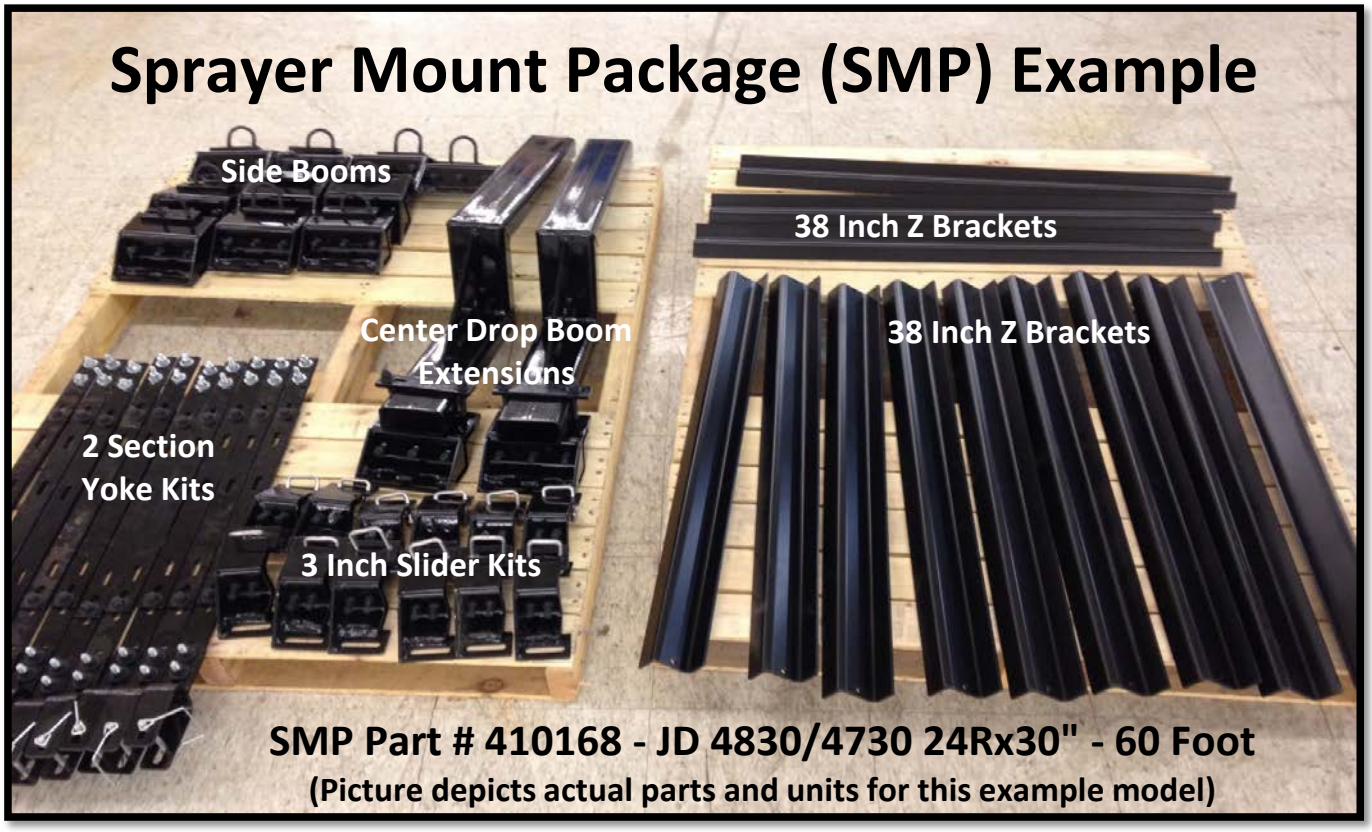
Other Notes and Information to help in Ordering a 360 Y-DROP™ System

360 Y-DROP™ Ordering Steps
These steps are intended to follow the steps in the Order & Retail Price Guide. This guide will provide the technical detail in having a successful 360 Y-DROP™ order placed with 360 Yield Center and should be used in conjunction with the 360 Y-DROP™ price guide.

Order a 360 Y-DROP™ System

STEP 1 - Sprayer Mount Package (SMP)

- **The Sprayer Mount Package (SMP) is a pre-packaged set of parts sold by 360 Yield Center to attach the Y-DROP boom assembly to the sprayer manufacturer's boom. The SMP includes boom mounting brackets, top bracket plates, extension brackets, connectors, and any other hardware to complete an install. Every SMP has differing brackets, hardware, and kits as well as the correct number of such parts. 360 Yield Center will ensure your ordered package includes all parts necessary for a successful mount.**



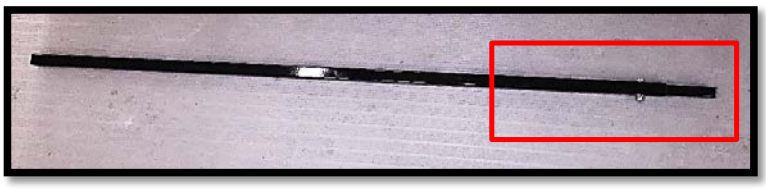
- **Appendix A** (of the Technical guide) provides charts to be used in determining the correct system boom length. Simply find your model, # of rows, and row width (while considering the 1st fold boom size) which will provide you the correct boom length to find your OEM sprayer.
- Find the resulting system boom length in the Price Guide Sprayer Mount Package listing with applicable part number - all hardware and mounting part quantities are all included in a single SMP.
- Reminder: 360 Y-DROP™ Systems Can ONLY be Mounted on the 1st fold of any self-propelled sprayer (**See Appendix A** for the possible Sprayer Mount Packages on the various boom 1st folds by model).

360 Y-DROP™ Ordering Steps
These steps are intended to follow the steps in the Order & Retail Price Guide. This guide will provide the technical detail in having a successful 360 Y-DROP™ order placed with 360 Yield Center and should be used in conjunction with the 360 Y-DROP™ price guide.

Order a 360 Y-DROP™ System

STEP 2 - Boom Assemblies

- **The 360 Y-DROP™ System's boom assembly comes in 5 foot sections that connect together with 12" connectors and hardware. The boom assembly provides a consistent boom for the attachment of the riser mounts. It takes several boom assemblies to fit the entire length of the OEM sprayer boom as noted below.**



- Quantity Needed: (Sprayer Mount Package boom length in feet / 5) + 1 (Round up the results)
  Ex: Sprayer Mount Pkg - JD 4830/4730 24Rx30" or (60' / 5) + 1 = 13 boom assemblies
- Exception: 66' SMP's must include 2 extra boom assemblies (Sprayer Mount Package Boom length in feet / 5) + **2**

SMP Boom Length	Boom Assembly Quantity (Part # 415000)	
	Formula (SMP Ft / 5 + 1)	Formula (SMP Ft / 5 + 2)
30'	7	n/a
38'	9	n/a
40'	9	n/a
44'	10	n/a
51'	12	n/a
59'	13	n/a
60'	13	n/a
66'	n/a	16
75'	16	n/a
76'	17	n/a
80'	17	n/a

- Part number 415000 includes a single 5 foot boom section along with a connector and hardware.

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Order a 360 Y-DROP™ System

STEP 3 - 6" Nozzle Extensions

- **The nozzle extension allows the operator the option to quickly remove the drops. This enables maintenance of a uniform and correct spray pattern without removal of the entire SMP.**

- Quantity Needed: # of spray nozzles on OEM sprayer
- Part number 412051 includes a single 6" extension hose with connections.

STEP 4 - Riser Mount Assemblies

- **The Riser Mount Assembly is the connector that attaches the Riser Tube to the system's Boom Assembly**

- Quantity Needed: # of drops
  Ex: Sprayer Mount Pkg - JD 4830/4730 24Rx30" or 24 row system = 23 riser mounts.
- Part number 416000 includes connector and hardware.

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Order a 360 Y-DROP™ System

STEP 5 - Riser Tube Assemblies

- **The Riser Tube is the long steel tube that attaches the 360 Y-DROP™ Base Unit to the system's Boom Assembly via the Riser Mount.**

- Quantity Needed: # of drops
  Ex: Sprayer Mount Pkg - JD 4830/4730 24Rx30" or 24 row system = 23 riser tube assemblies at 36"
- Note: Some sprayer models sit higher in the center rows, requiring longer risers. It may be necessary to make a visual identification of the sprayer center to determine potential variability in riser sizes on the center section of the sprayer versus the outer boom heights. John Deere R Series and several models of the Miller Sprayers will need to have longer risers for the center section. See picture below:

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Order a 360 Y-DROP™ System

- The Riser length is measured from the bottom of the spring to the top of the 360 Y-DROP™ base unit. See illustration below for actual riser measurements and lengths.

Actual Riser Measurements & Lengths

- See charts below for part numbers corresponding with Riser length, and recommended riser lengths by OEM Maker.

Part Number	Riser Length
416124	24 Inch
416136	36 Inch
416148	48 Inch
416160	60 Inch
416172	72 Inch

OEM Maker	Riser Length
JD	36'
Case	36'
Hagie	48'
Miller	48'

- Each part number includes a single Riser Tube and connectors.

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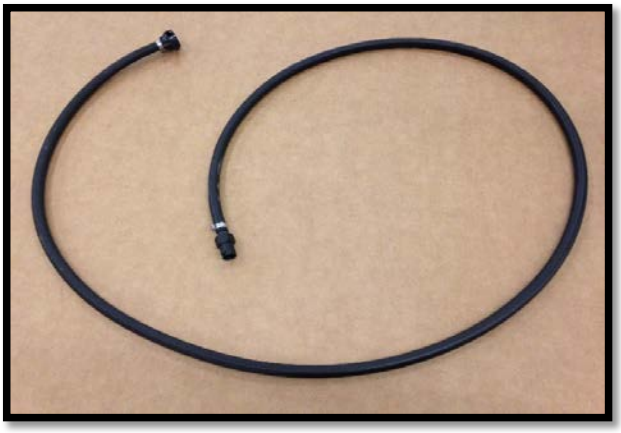
Order a 360 Y-DROP™ System

STEP 6 - Riser Hose Assemblies

- **The Riser Hose Assembly is the hose that liquid flows through from the OEM Sprayer lines to the 360 Y-DROP™ Base Units.**



- Quantity Needed: # of drops
  Ex: Sprayer Mount Pkg - JD 4830/4730 24Rx30" or 24 row system = 23 riser tube assemblies at 36"
- See chart below for the Riser Hoses corresponding with the Riser Tubes.

Riser Tube	Riser Hose Needed	Part Number
24"	66"	416066
36"	78"	416078
48" or 60"	90"	416090
72"	102"	416099

- Each part number includes a single hose with required connectors.

360 Y-DROP™ Ordering Steps
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Order a 360 Y-DROP™ System

STEP 7 - 360 Y-DROP™ Base Unit

- **The 360 Y-DROP™ Base Unit is the molded part at the bottom of the Riser Tube which runs through the field.**

- Quantity Needed: INSIDE ROWS: Conventional (Black): # of drops - 2
  Quantity Needed: OUTSIDE ROWS: High Visibility (Orange): 2
  Ex: Sprayer Mount Package - JD 4830/4730 24Rx30" or 24 row system = 23 drops.
  24 row system = 21 360 Y-DROP™ Conventional Base Units
  + 2 360 Y-DROP™ High Visibility Base Units
  = 23 Total Base Units
- See chart below for the 360 Y-DROP™ Base Unit part numbers.

Part Number	360 Y-DROP™ Base Unit
413000	360 Y-DROP™ Base Unit - Conventional (Black)
413010	360 Y-DROP™ Base Unit - High Visibility (Orange)

- Each part number includes a single 360 Y-DROP™ Base Unit.

360 Y-DROP™ Ordering Steps
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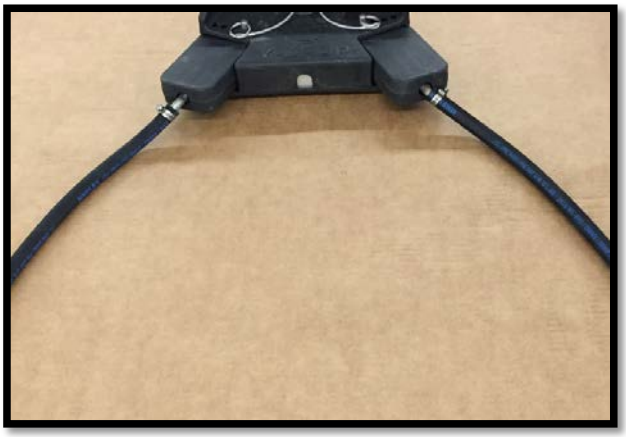
Order a 360 Y-DROP™ System

STEP 8 - Drag Hoses

- **Two Drag Hoses (order singly) attach to each 360 Y-DROP™ Base Unit and precisely apply the liquid nitrogen or other product along the base of the stalk.**



- Quantity Needed: # of drops * 2 hoses per 360 Y-DROP™.
  Ex: Sprayer Mount Pkg - JD 4830/4730 24Rx30" or 24 row system = 23 drops * 2 = 46 drag hoses.
- See chart below for Drag Hoses offered for sale.

Part Number	Drag Hose Length
413124	24 Inch
413130	30 Inch
413136	36 Inch
413148	44 Inch

- Recommendation is that most systems will utilize the 30" hose.
- Each part number includes a single drag hose and connector screw.

360 Y-DROP™ Ordering Steps
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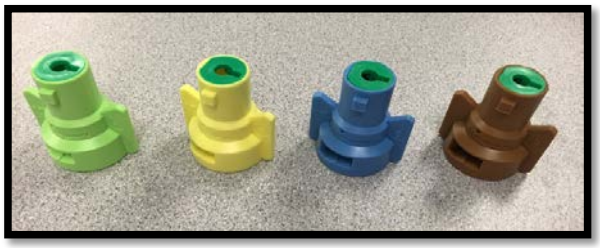
Order a 360 Y-DROP™ System

STEP 9 - Variable Rate Nozzles

- **The Variable Rate Nozzle is utilized to provide a wider flow range than conventional fertilizer nozzles, to allow greater speed changes or true variable rate fertilizer applications.**



Color of nozzle corresponds with size as indicated in chart below

- Quantity needed: INSIDE ROWS: (# of drops * 2) - 2 - Recommended TDVRHB015 or TDVRHB02
  Quantity needed: OUTSIDE ROWS: Two - Recommended TDVRHB03
  Ex: Sprayer Mount Pkg - JD 4830/4730 24Rx30" or 24 row system = 23 drops * 2 = 46 total nozzles.
  24 row system = (23 drops * 2) - 2 = 44 Inside nozzles
  + 2 Outside nozzles
  = 46 Total nozzles
- (See Appendix B) for inside rows nozzle selection - based on flow rates at various row widths and speeds.
- After deciding on inside nozzle, reference chart below for corresponding outside nozzle. The outside nozzle has a larger volume requirement due to outside rows are only fed by one drag house.

INSIDE Nozzle (Select in Appendix B)	OUTSIDE Nozzle (Selection Should Correspond to the Inside Nozzle as Below)
TDVRHB015	TDVRHB03
TDVRHB02	TDVRHB03
TDVRHB03	TDVRHB05

- See chart below for nozzles offered for sale which are manufactured by TURBODROP®.

Part Number	Part Name	Nozzle Size	Color
418015	TDVRHB015	015	Green
418020	TDVRHB02	02	Yellow
418030	TDVRHB03	03	Blue
418050	TDVRHB05	05	Brown

- Each part number includes a single variable rate nozzle.

360 Y-DROP™ Sprayer Mount Packages

Appendix A

John Deere Models R4030, R4038, R4045		90' / 100' OEM Boom (1st Fold 60')	120' OEM Boom (1st Fold 72")
# of Rows (Not Drops)	Row Width	Available 360 Y-DROP™ Sprayer Mount Package (In Feet)	Available 360 Y-DROP™ Sprayer Mount Package (In Feet)
12	30"	30'	30'
12	38"	38'	38'
16	30"	40'	40'
16	38"	51'	51'
24	22"	44'	44'
24	30"	60'	60'
24	38"	Not Available	76'
32	22	59'	59'
32	30	Not Available	80'
36	20"	60'	60'
36	22"	66'	66'
John Deere Models 4930, 4940		90' / 100' OEM Boom (1st Fold 60')	120' OEM Boom (1st Fold 72")
# of Rows (Not Drops)	Row Width	Available 360 Y-DROP™ Sprayer Mount Package (In Feet)	Available 360 Y-DROP™ Sprayer Mount Package (In Feet)
24	30"	60'	60'
24	38"	Not Available	76'
32	22"	60'	60'
32	30"	Not Available	80'
36	20"	60'	60'
36	22"	66'	66'
John Deere Models 4630, 47XX, 4830		80' / 90' / 100' OEM Boom (1st Fold 60')	
# of Rows (Not Drops)	Row Width	Available 360 Y-DROP™ Sprayer Mount Package (In Feet)	
12	30"	30'	
12	38"	38'	
16	30"	40'	
16	38"	51'	
24	22"	44'	
24	30"	60'	
32	22"	59'	
36	20"	60'	
36	22"	66'	
John Deere Models 6000		No Boom Requirement	
# of Rows (Not Drops)	Row Width	Available 360 Y-DROP™ Sprayer Mount Package (In Feet)	
12	30"	30'	
12	38"	38'	
16	30"	40'	

360 Y-DROP™ Sprayer Mount Packages

Appendix A

CASE Models: Confirm AIM Command or not; Hose Mount is different			
Case 4000 Series		90' / 100' / 120' OEM Boom (1st Fold 60')	
# of Rows (Not Drops)	Row Width	Available 360 Y-DROP™ Sprayer Mount Package (In Feet)	
12	30"	30'	
12	38"	38'	
16	30"	40'	
16	38"	51'	
24	22"	44'	
24	30"	60'	
32	22"	59'	
36	20"	60'	
36	22"	66'	
Case 3000 Series		90' / 100' / 120' OEM Boom (1st Fold 60')	
# of Rows (Not Drops)	Row Width	Available 360 Y-DROP™ Sprayer Mount Package (In Feet)	
24	30"	60'	
32	22"	60'	
36	20"	60'	
36	22"	66'	
Case 2000 Series		80' / 90' / 100' OEM Boom (1st Fold 60') Early Models - No Fold	
# of Rows (Not Drops)	Row Width	Available 360 Y-DROP™ Sprayer Mount Package (In Feet)	
12	30"	30'	
12	38"	38'	
16	30"	40'	
16	38"	51'	
24	22"	44'	
24	30"	60'	
32	22"	59'	
36	20"	60'	
36	22"	66'	

360 Y-DROP™ Sprayer Mount Packages

AgCo Rogator 600/700/800/900/1000 series		Straight 80' / 90' / 100' OEM Boom (1st Fold 60')	Straight 80' / 90' / 100' OEM Boom (1st Fold 72')
# of Rows (Not Drops)	Row Width	Available 360 Y-DROP™ Sprayer Mount Package (In Feet)	Available 360 Y-DROP™ Sprayer Mount Package (In Feet)
12	30"	30'	30'
12	38"	38'	38'
16	30"	40'	40'
16	38"	51'	51'
24	22"	44'	44'
24	30"	60'	60'
24	38"	Not Available	76'
32	22"	59'	59'
32	30"	Not Available	80'
36	20"	60'	60'
36	22"	66'	66'
AgCo Rogator 600/700/800/900/1000 series		Combo 60', 90, 120', 132' OEM Boom (1st Fold 60')	Combo 60', 90, 120', 132' OEM Boom (1st Fold 72')
# of Rows (Not Drops)	Row Width	Available 360 Y-DROP™ Sprayer Mount Package (In Feet)	Available 360 Y-DROP™ Sprayer Mount Package (In Feet)
12	30"	30'	30'
12	38"	38'	38'
16	30"	40'	40'
16	38"	51'	51'
24	22"	44'	44'
24	30"	60'	60'
24	38"	Not Available	76'
32	22"	59'	59'
32	30"	Not Available	80'
36	20"	60'	60'
36	22"	66'	66'

360 Y-DROP™ Sprayer Mount Packages

Appendix A

Apache 600/800/900/1000 series		90' / 100' OEM Boom (1st Fold 60')	120' OEM Boom (1st Fold 72')
# of Rows (Not Drops)	Row Width	Available 360 Y-DROP™ Sprayer Mount Package (In Feet)	Available 360 Y-DROP™ Sprayer Mount Package (In Feet)
12	30"	30'	30'
12	38"	38'	38'
16	30"	40'	40'
16	38"	51'	51'
24	22"	44'	44'
24	30"	60'	60'
24	38"	Not Available	76'
32	22"	59'	59'
32	30"	Not Available	80'
36	20"	60'	60'
36	22"	66'	66'
Spra-Coupe 600/800/900/1000 series		90' / 100' OEM Boom (1st Fold 60')	
# of Rows (Not Drops)	Row Width	Available 360 Y-DROP™ Sprayer Mount Package (In Feet)	
12	30"	30'	
12	38"	38'	
16	30"	40'	
16	38"	51'	
24	22"	44'	
24	30"	60'	
32	22"	59'	
36	20"	60'	
36	22"	66'	

360 Y-DROP™ Sprayer Mount Packages

Appendix A

New Holland / Miller Nitro		90' / 100' OEM Boom (1st Fold 60')	120' OEM Boom (1st Fold 72')
# of Rows (Not Drops)	Row Width	Available 360 Y-DROP™ Sprayer Mount Package (In Feet)	Available 360 Y-DROP™ Sprayer Mount Package (In Feet)
12	30"	30'	30'
12	38"	38'	38'
16	30"	40'	40'
16	38"	51'	51'
24	22"	44'	44'
24	30"	60'	60'
24	38"	Not Available	76'
32	22"	59'	59'
32	30"	Not Available	80'
36	20"	60'	60'
36	22"	66'	66'
Hagie		90' / 100' OEM Boom (1st Fold 60')	120' OEM Boom (1st Fold 70')
# of Rows (Not Drops)	Row Width	Available 360 Y-DROP™ Sprayer Mount Package (In Feet)	Available 360 Y-DROP™ Sprayer Mount Package (In Feet)
12	30"	30'	30'
12	38"	38'	38'
16	30"	40'	40'
16	38"	51'	51'
24	22"	44'	44'
24	30"	60'	60'
24	38"	Not Available	76'
32	22"	59'	59'
32	30"	Not Available	80'
36	20"	60'	60'
36	22"	66'	66'

Appendix B

30 Inch Corn	**All Recommendations based on Water Specific Gravity**											
USE THIS CHART INSIDE NOZZLE SELECTION - 30 INCH CORN												
TDVRF 015		Application Rate GPA at MPH Based on 15" Spacing (2 Nozzles Per YDROP)										
Pressure	Flow											
PSI	GPM	5	6	7	8	9	10	11	12	13	14	15
20	0.174	13.8	11.5	9.8	8.6	7.7	6.9	6.3	5.7	5.3	4.9	4.6
30	0.266	21.1	17.6	15.0	13.2	11.7	10.5	9.6	8.8	8.1	7.5	7.0
40	0.350	27.7	23.1	19.8	17.3	15.4	13.9	12.6	11.6	10.7	9.9	9.2
50	0.391	31.0	25.8	22.1	19.4	17.2	15.5	14.1	12.9	11.9	11.1	10.3
60	0.443	35.1	29.2	25.1	21.9	19.5	17.5	15.9	14.6	13.5	12.5	11.7
70	0.483	38.3	31.9	27.3	23.9	21.3	19.1	17.4	15.9	14.7	13.7	12.8
80	0.516	40.9	34.1	29.2	25.5	22.7	20.4	18.6	17.0	15.7	14.6	13.6
90	0.537	42.5	35.4	30.4	26.6	23.6	21.3	19.3	17.7	16.4	15.2	14.2
100	0.566	44.8	37.4	32.0	28.0	24.9	22.4	20.4	18.7	17.2	16.0	14.9
120	0.620	49.1	40.9	35.1	30.7	27.3	24.6	22.3	20.5	18.9	17.5	16.4
140	0.670	53.1	44.2	37.9	33.2	29.5	26.5	24.1	22.1	20.4	19.0	17.7
TDVRF 02		Application Rate GPA at MPH Based on 15" Spacing (2 Nozzles Per YDROP)										
Pressure	Flow											
PSI	GPM	5	6	7	8	9	10	11	12	13	14	15
20	0.251	19.9	16.6	14.2	12.4	11.0	9.9	9.0	8.3	7.6	7.1	6.6
30	0.384	30.4	25.3	21.7	19.0	16.9	15.2	13.8	12.7	11.7	10.9	10.1
40	0.512	40.6	33.8	29.0	25.3	22.5	20.3	18.4	16.9	15.6	14.5	13.5
50	0.575	45.5	38.0	32.5	28.5	25.3	22.8	20.7	19.0	17.5	16.3	15.2
60	0.653	51.7	43.1	36.9	32.3	28.7	25.9	23.5	21.5	19.9	18.5	17.2
70	0.696	55.1	45.9	39.4	34.5	30.6	27.6	25.1	23.0	21.2	19.7	18.4
80	0.744	58.9	49.1	42.1	36.8	32.7	29.5	26.8	24.6	22.7	21.0	19.6
90	0.779	61.7	51.4	44.1	38.6	34.3	30.8	28.0	25.7	23.7	22.0	20.6
100	0.821	65.0	54.2	46.4	40.6	36.1	32.5	29.6	27.1	25.0	23.2	21.7
120	0.900	71.3	59.4	50.9	44.6	39.6	35.6	32.4	29.7	27.4	25.5	23.8
140	0.972	77.0	64.2	55.0	48.1	42.8	38.5	35.0	32.1	29.6	27.5	25.7
TDVRF 03		Application Rate GPA at MPH Based on 15" Spacing (2 Nozzles Per YDROP)										
Pressure	Flow											
PSI	GPM	5	6	7	8	9	10	11	12	13	14	15
20	0.326	25.8	21.5	18.4	16.1	14.3	12.9	11.7	10.8	9.9	9.2	8.6
30	0.492	39.0	32.5	27.8	24.4	21.6	19.5	17.7	16.2	15.0	13.9	13.0
40	0.661	52.4	43.6	37.4	32.7	29.1	26.2	23.8	21.8	20.1	18.7	17.5
50	0.739	58.5	48.8	41.8	36.6	32.5	29.3	26.6	24.4	22.5	20.9	19.5
60	0.825	65.3	54.5	46.7	40.8	36.3	32.7	29.7	27.2	25.1	23.3	21.8
70	0.885	70.1	58.4	50.1	43.8	38.9	35.0	31.9	29.2	27.0	25.0	23.4
80	0.943	74.7	62.2	53.3	46.7	41.5	37.3	33.9	31.1	28.7	26.7	24.9
90	1.000	79.2	66.0	56.6	49.5	44.0	39.6	36.0	33.0	30.5	28.3	26.4
100	1.054	83.5	69.6	59.6	52.2	46.4	41.7	37.9	34.8	32.1	29.8	27.8
120	1.154	91.4	76.2	65.3	57.1	50.8	45.7	41.5	38.1	35.2	32.6	30.5
140	1.247	98.8	82.3	70.5	61.7	54.9	49.4	44.9	41.2	38.0	35.3	32.9
TDVRF 05		Application Rate GPA at MPH Based on 15" Spacing (2 Nozzles Per YDROP)										
Pressure	Flow											
PSI	GPM	5	6	7	8	9	10	11	12	13	14	15
20	0.642	50.8	42.4	36.3	31.8	28.2	25.4	23.1	21.2	19.6	18.2	16.9
30	0.758	60.0	50.0	42.9	37.5	33.4	30.0	27.3	25.0	23.1	21.4	20.0
40	0.930	73.7	61.4	52.6	46.0	40.9	36.8	33.5	30.7	28.3	26.3	24.6
50	1.039	82.3	68.6	58.8	51.4	45.7	41.1	37.4	34.3	31.6	29.4	27.4
60	1.091	86.4	72.0	61.7	54.0	48.0	43.2	39.3	36.0	33.2	30.9	28.8
70	1.269	100.5	83.8	71.8	62.8	55.8	50.3	45.7	41.9	38.7	35.9	33.5
80	1.368	108.3	90.3	77.4	67.7	60.2	54.2	49.2	45.1	41.7	38.7	36.1
90	1.451	114.9	95.8	82.1	71.8	63.8	57.5	52.2	47.9	44.2	41.0	38.3
100	1.530	121.2	101.0	86.6	75.7	67.3	60.6	55.1	50.5	46.6	43.3	40.4
120	1.676	132.7	110.6	94.8	83.0	73.7	66.4	60.3	55.3	51.1	47.4	44.2
140	1.810	143.4	119.5	102.4	89.6	79.6	71.7	65.2	59.7	55.1	51.2	47.8

Most sprayers will allow lower application rates down to 15 PSI.

Appendix B

20 Inch Corn **All Recommendations based on Water Specific Gravity**

USE THIS CHART FOR INSIDE NOZZLE SELECTION - 20 INCH CORN

TDVRF 015		Application Rate GPA at MPH Based on 10" Spacing (2 Nozzles Per YDROP)									
Pressure	Flow										
PSI	GPM	6	7	8	9	10	11	12	13	14	15
20	0.174	17.2	14.8	12.9	11.5	10.3	9.4	8.6	8.0	7.4	6.9
30	0.266	26.3	22.6	19.8	17.6	15.8	14.4	13.2	12.2	11.3	10.5
40	0.350	34.7	29.7	26.0	23.1	20.8	18.9	17.3	16.0	14.9	13.9
50	0.391	38.7	33.2	29.0	25.8	23.2	21.1	19.4	17.9	16.6	15.5
60	0.443	43.9	37.6	32.9	29.2	26.3	23.9	21.9	20.2	18.8	17.5
70	0.483	47.8	41.0	35.9	31.9	28.7	26.1	23.9	22.1	20.5	19.1
80	0.516	51.1	43.8	38.3	34.1	30.7	27.9	25.5	23.6	21.9	20.4
90	0.537	53.2	45.6	39.9	35.4	31.9	29.0	26.6	24.5	22.8	21.3
100	0.566	56.0	48.0	42.0	37.4	33.6	30.6	28.0	25.9	24.0	22.4
120	0.620	61.4	52.6	46.0	40.9	36.8	33.5	30.7	28.3	26.3	24.6
140	0.670	66.3	56.9	49.7	44.2	39.8	36.2	33.2	30.6	28.4	26.5

TDVRF 02		Application Rate GPA at MPH Based on 10" Spacing (2 Nozzles Per YDROP)									
Pressure	Flow										
PSI	GPM	6	7	8	9	10	11	12	13	14	15
20	0.251	24.8	21.3	18.6	16.6	14.9	13.6	12.4	11.5	10.6	9.9
30	0.384	38.0	32.6	28.5	25.3	22.8	20.7	19.0	17.5	16.3	15.2
40	0.512	50.7	43.4	38.0	33.8	30.4	27.6	25.3	23.4	21.7	20.3
50	0.575	56.9	48.8	42.7	38.0	34.2	31.1	28.5	26.3	24.4	22.8
60	0.653	64.6	55.4	48.5	43.1	38.8	35.3	32.3	29.8	27.7	25.9
70	0.696	68.9	59.1	51.7	45.9	41.3	37.6	34.5	31.8	29.5	27.6
80	0.744	73.7	63.1	55.2	49.1	44.2	40.2	36.8	34.0	31.6	29.5
90	0.779	77.1	66.1	57.8	51.4	46.3	42.1	38.6	35.6	33.1	30.8
100	0.821	81.3	69.7	61.0	54.2	48.8	44.3	40.6	37.5	34.8	32.5
120	0.900	89.1	76.4	66.8	59.4	53.5	48.6	44.6	41.1	38.2	35.6
140	0.972	96.2	82.5	72.2	64.2	57.7	52.5	48.1	44.4	41.2	38.5

TDVRF 03		Application Rate GPA at MPH Based on 10" Spacing (2 Nozzles Per YDROP)									
Pressure	Flow										
PSI	GPM	6	7	8	9	10	11	12	13	14	15
20	0.326	32.3	27.7	24.2	21.5	19.4	17.6	16.1	14.9	13.8	12.9
30	0.492	48.7	41.7	36.5	32.5	29.2	26.6	24.4	22.5	20.9	19.5
40	0.661	65.4	56.1	49.1	43.6	39.3	35.7	32.7	30.2	28.0	26.2
50	0.739	73.2	62.7	54.9	48.8	43.9	39.9	36.6	33.8	31.4	29.3
60	0.825	81.7	70.0	61.3	54.5	49.0	44.6	40.8	37.7	35.0	32.7
70	0.885	87.6	75.1	65.7	58.4	52.6	47.8	43.8	40.4	37.5	35.0
80	0.943	93.4	80.0	70.0	62.2	56.0	50.9	46.7	43.1	40.0	37.3
90	1.000	99.0	84.9	74.3	66.0	59.4	54.0	49.5	45.7	42.4	39.6
100	1.054	104.3	89.4	78.3	69.6	62.6	56.9	52.2	48.2	44.7	41.7
120	1.154	114.2	97.9	85.7	76.2	68.5	62.3	57.1	52.7	49.0	45.7
140	1.247	123.5	105.8	92.6	82.3	74.1	67.3	61.7	57.0	52.9	49.4

TDVRF 05		Application Rate GPA at MPH Based on 10" Spacing (2 Nozzles Per YDROP)									
Pressure	Flow										
PSI	GPM	6	7	8	9	10	11	12	13	14	15
20	0.642	63.6	54.5	47.7	42.4	38.1	34.7	31.8	29.3	27.2	25.4
30	0.758	75.0	64.3	56.3	50.0	45.0	40.9	37.5	34.6	32.2	30.0
40	0.930	92.1	78.9	69.1	61.4	55.2	50.2	46.0	42.5	39.5	36.8
50	1.039	102.9	88.2	77.1	68.6	61.7	56.1	51.4	47.5	44.1	41.1
60	1.091	108.0	92.6	81.0	72.0	64.8	58.9	54.0	49.9	46.3	43.2
70	1.269	125.6	107.7	94.2	83.8	75.4	68.5	62.8	58.0	53.8	50.3
80	1.368	135.4	116.1	101.6	90.3	81.3	73.9	67.7	62.5	58.0	54.2
90	1.451	143.6	123.1	107.7	95.8	86.2	78.4	71.8	66.3	61.6	57.5
100	1.530	151.5	129.8	113.6	101.0	90.9	82.6	75.7	69.9	64.9	60.6
120	1.676	165.9	142.2	124.4	110.6	99.6	90.5	83.0	76.6	71.1	66.4
140	1.810	179.2	153.6	134.4	119.5	107.5	97.7	89.6	82.7	76.8	71.7

Most sprayers will allow lower application rates down to 15 PSI.

Appendix B

Spraying Liquids with a Density other than Water

Since all tabulations we have computed are based on spraying water, which weighs 8.34 lbs per USA gallon (1 kilogram per liter) conversion factors must be used when spraying liquids that are heavier or lighter than water. To determine the proper size nozzle for the liquid to be sprayed, first multiply the desired GPM or GPA of liquid by the water rate conversion factor. Then use the new converted GPM or GPA rate to select the proper size nozzle.

Example:
Desired application rate is 20 GPA of 28% N. Determine the correct nozzle size as follows:

GPA (liquid other than water) x Conversion Factor
= GPA

20 GPA (28%) x 1.13
= 22.6 GPA (water)

The applicator should choose a nozzle size that will supply 22.6 GPA of water at the desired pressure.

Weight of Solution	Specific Gravity	Conversion Factor
7.0 lbs/gal.	.84	.92
8.0 lbs/gal.	.96	.88
8.34 lbs/gal.	1.00 - WATER	1.00
9.0 lbs/gal.	1.08	1.04
10.0 lbs/gal.	1.20	1.10
10.65 lbs/gal.	1.28 - 28% nitrogen	1.13
11.0 lbs/gal.	1.32	1.15
12.0 lbs/gal.	1.44	1.20
14.0 lbs/gal.	1.68	1.30