

# Chemigation Label Requirements



Lyndon Kelley



MSU Extension / Purdue University Irrigation Management Educator

St. Joseph Co. MSU Extension, 612 E. Main St., Centreville, MI 49032

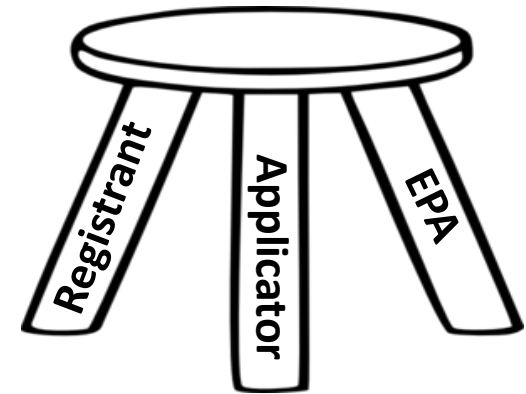
Cell: 269-535-0343 [kelleyl@msu.edu](mailto:kelleyl@msu.edu) Office: 269-467-5511

<https://www.canr.msu.edu/irrigation/>

<https://engineering.purdue.edu/ABE/Engagement/Irrigation>

<http://www.egr.msu.edu/bae/water/>

Chemigation label provide specific mixing, application and safety precautions.



# Headline AMP<sup>®</sup>

Fungicide

For use in disease control and plant health in corn and sugarcane

**Active Ingredients:**

pyraclostrobin*: (carbamic acid, [2-[[[1-(4-chlorophenyl)-1H-pyrazol-3-yl]oxy]methyl]phenyl]methoxy-methyl ester) .....	13.64%
metconazole**: 5-[[4-chlorophenyl)methyl]-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol .....	5.14%
<b>Other Ingredients:</b> .....	<u>81.22%</u>
<b>Total:</b> .....	100.00%

\*Equivalent to 1.22 pounds of pyraclostrobin per gallon.

\*\*Equivalent to 0.46 pound of metconazole per gallon.

EPA Reg. No. 7969-291

EPA Est. No.

**KEEP OUT OF REACH OF CHILDREN  
WARNING/AVISO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand this label, find someone to explain it to you in detail.)

See inside for complete **First Aid, Precautionary Statements, Directions For Use, Conditions of Sale and Warranty**, and state-specific crop and/or use site restrictions.

In case of an **emergency endangering life or property involving this product, call day or night 1-800-832-HELP (4357).**

**Net Contents:**

BASF Corporation  
26 Davis Drive, Research Triangle Park, NC 27709

<http://www.cdms.net/ldat/ld9AM004.pdf>

PROPICONAZOLE GROUP 9 FUNGICIDE | BENZOVINDIFLUPYR GROUP 7 FUNGICIDE | AZOXYSTROBIN GROUP 11 FUNGICIDE | PULL HERE TO OPEN ▶



# Trivapro<sup>®</sup>

Fungicide

syngenta.

**Active Ingredients:**

Benzovindiflupyr*:	2.9%
Azoxystrobin**:	10.5%
Propiconazole***:	11.9%

<b>Other Ingredients:</b>	74.7%
<b>Total:</b>	100.0%

\*CAS No. 1072957-71-1  
\*\*CAS No. 131860-33-8  
\*\*\*CAS No. 60207-90-1

Trivapro Fungicide is formulated as a suspo-emulsion and contains 0.25 lb of benzovindiflupyr, 0.92 lb of azoxystrobin, and 1.04 lb of propiconazole active ingredients per gallon.

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See additional precautionary statements and directions for use inside booklet.

See First Aid statement inside booklet and on container label.

EPA Reg. No. 100-1613  
EPA Est. 100-NE-001  
SCP 1613A-L1E 0219  
4107409

**2.5 gallons**  
Net Contents

<https://www.syngenta-us.com/current-label/trivapro>

## Use Directions For Sprinkler Irrigation Applications, con't

**DO NOT** exceed 1/2 inch (13,577 gallons) per acre. In stationary or non-continuous moving systems, inject the product/water mixture in the last 15 to 30 minutes of each set allowing sufficient time for all of the required pesticide to be applied by all the sprinkler heads and applying the labeled rate per acre for that crop. (Headline AMP label)

- In general, best performance via irrigation is 0.1 to 0.25 inches of water per acre. Center-Pivot Irrigation (Trivapro label)

Is the pesticide effective if it is on the soil surface or in the ground?



**Drip/trickle, subsurface drip  
or flood irrigation**



Is the pivot capable of the needed application?

Dealer Name : HOPKINS FARM SE Serial No. or B No. : S029524			GROSS APPLICATION (INCHES)	MAIN PANEL TIMER (PERCENT)	REVOLUTION TIME (HOURS)
Last Tower Tire Size :	14.9 x 24		0.17	100.0	6.2
Last Tower Motor Speed :	43.0	RPM	0.17	100.0	6.2
Feet per Minute @ 100% :	10.20	fpm	0.20	83.5	7.4
Flowrate :	500	gpm	0.30	55.7	11.2
Pivot Pressure :	31	psi	0.40	41.8	14.9
% of Pivot Revolution :	100%		0.50	33.4	18.6
Length to Last Tower :	606	ft	0.60	27.8	22.3
Total System Length :	651	ft	0.70	23.9	26.1
Range of End Gun :	105	ft	0.80	20.9	29.8
Total Length w/Endgun :	755	ft	0.90	18.6	33.5
Date :	04/09/13		1.00	16.7	37.2
			1.10	15.2	41.0
			1.20	13.9	44.7
			1.30	12.8	48.4
			1.40	11.9	52.1
			1.50	11.1	55.8
			1.60	10.4	59.6
			1.70	9.8	63.3
			1.80	9.3	67.0
			1.90	8.8	70.7
			2.00	8.4	74.5

	<b>FieldBoss &amp; FieldVision Inputs:</b> 500 gpm 373 min 755 ft	
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**GROWSMART**  
BY LINDSAY

This chart is an estimate of the performance of your Zimmatic center pivot system.

System Length <u>655</u> ft.	System Serial # <u>384-1414</u>	System Gallonage <u>500 @ 35</u>				
Water Applied	<u>0.29</u> IN MM	<u>0.5</u> IN 10.0 MM	<u>0.75</u> IN 15.0 MM	<u>1.0</u> IN 20.0 MM	<u>1.25</u> IN 25.0 MM	<u>1.5</u> IN 30.0 MM
Timer Setting Add 20% if 50 Hz.	<u>100%</u>	<u>57</u>	<u>38</u>	<u>29</u>	<u>23</u>	<u>19</u>
Hours To Apply	<u>11</u>	<u>19</u>	<u>29</u>	<u>38</u>	<u>48</u>	<u>57</u>
TIRE SIZE Last Tower 'S' tower SAC	<u>11.2 x 24</u>	Gear Ratio 'S' Timer Setting	<u>60:1</u>	End Gun Model	<u>SRNY100</u>	

It is estimated that corn at tassel will hold 0.07" of water in the foliage.

Another 0.03" is held by the soil surface.

Resulting in 0.10" of water from each application never making it to the root zone.

Small application (0.07" - 0.14") are good for pesticide application, but not for Nitrogen application.

## Use Directions For Sprinkler Irrigation Applications, continued...

**DO NOT** apply when wind speed favors drift beyond the area intended for treatment. (Trivapro label)

Off target application are violation of label, Michigan Irrigation GAAMP, and Indiana /Michigan Pesticide regulations



## Use Directions For Sprinkler Irrigation Applications, continued...

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water. Thorough coverage of foliage is required for good control. (Headline AMP label)

Restrictions: (1) Use only with drive systems which provide uniform water distribution. (2) **Do not use end guns** when chemigating Trivapro Fungicide through center pivot systems because of non-uniform application. (Trivapro label)

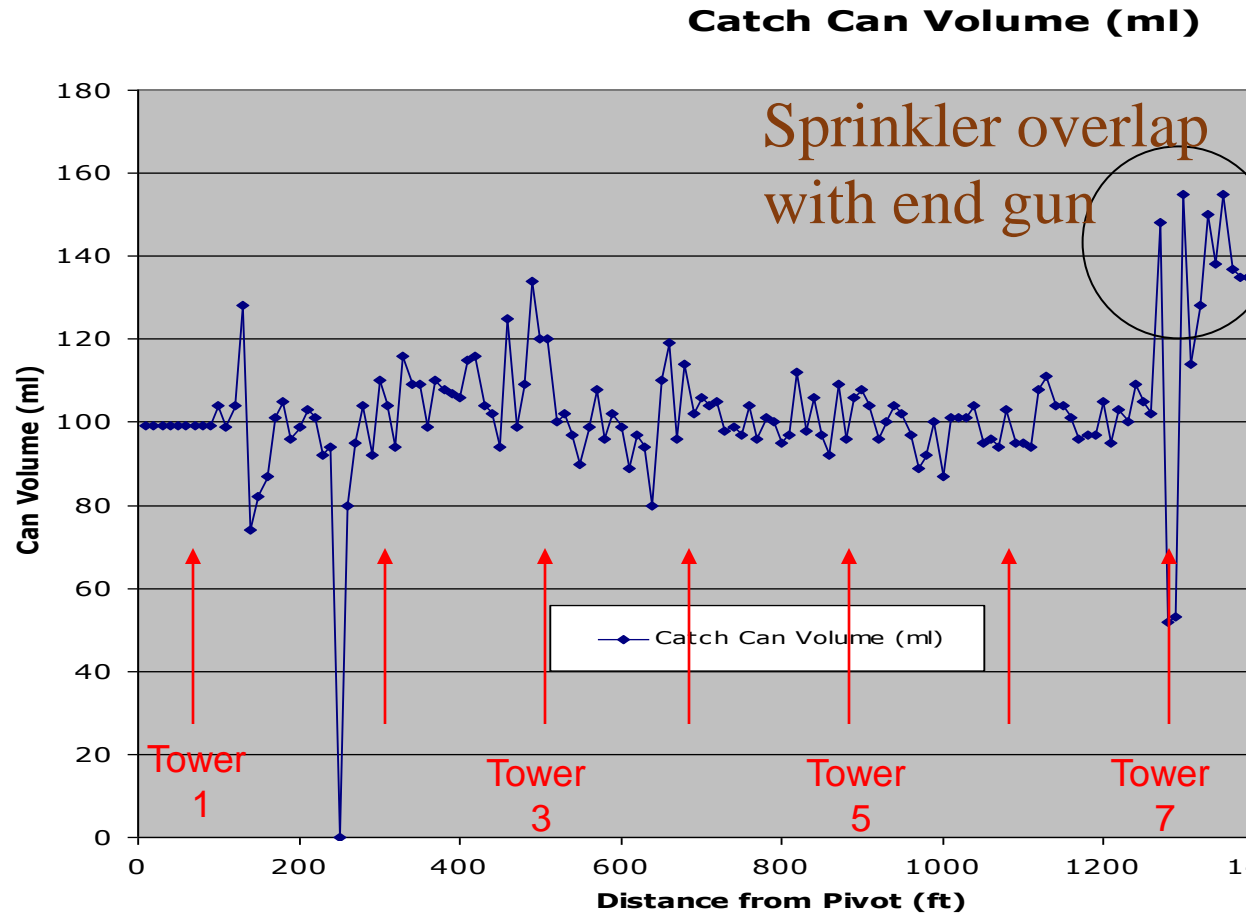


# Uniform Application Inspect and Repair Equipment First



About a 20 x over application

# Uniform Water application essential for uniform fertigation/chemigation





# Suggested Minimum Performance to Chemigation/Fertigation

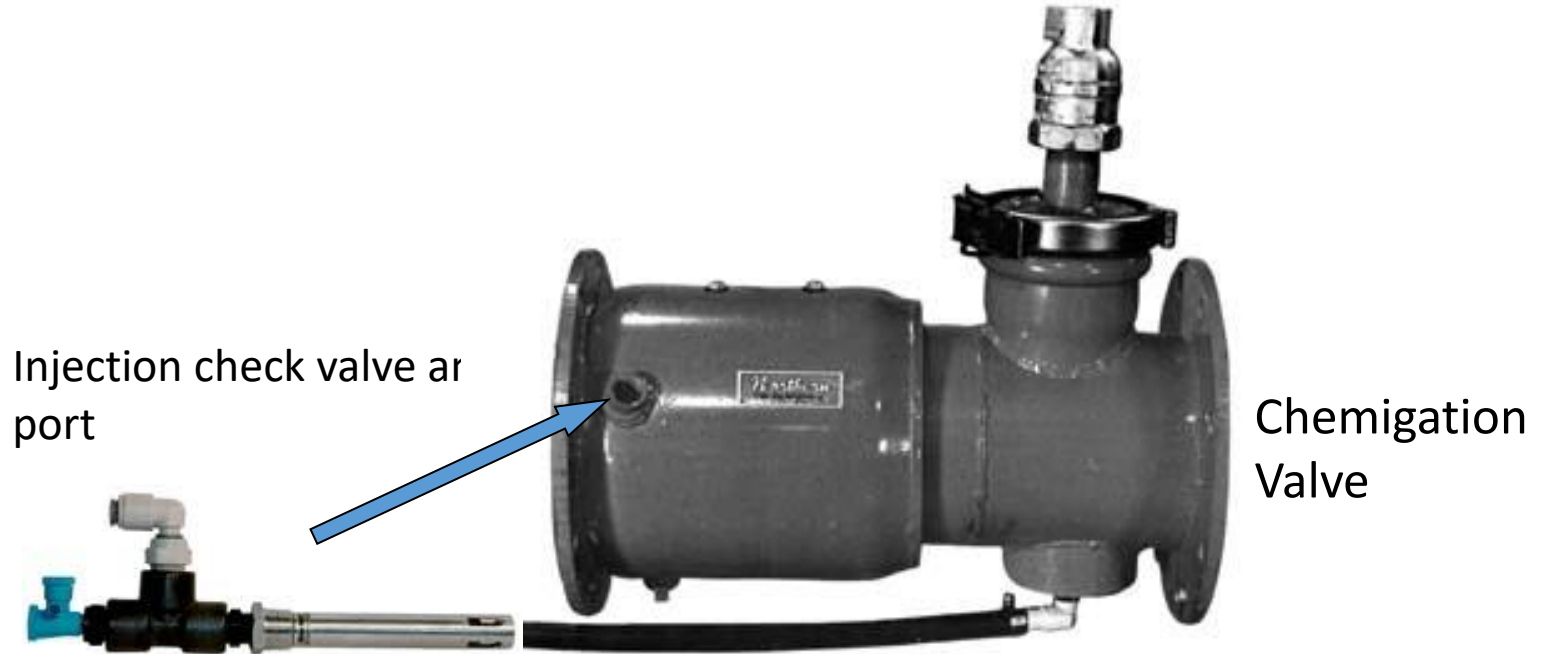
- System capable of the application volume needed
- System uniformity evaluation 85% or greater

----- or at a minimum-

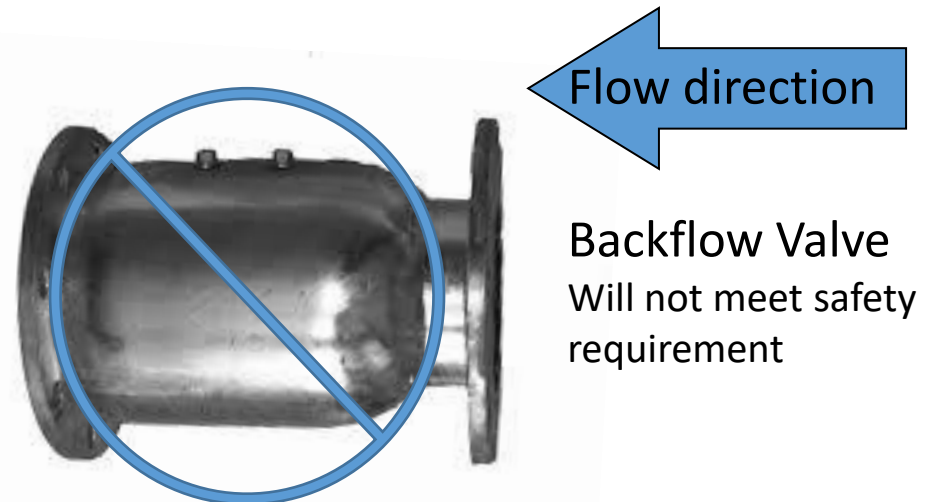
Pivot point and last sprinkler pressure within 10% of sprinkler package specifications

- Required backflow protection in place and functional
- No major leaks or repair needed
- No major runoff issues
- No 2X or greater over application areas
- Interlock shut off system in place and functional

- The system must contain a functional check valve, vacuum-relief valve, and low-pressure drain appropriately located on the irrigation pipeline to prevent water-source contamination from backflow.

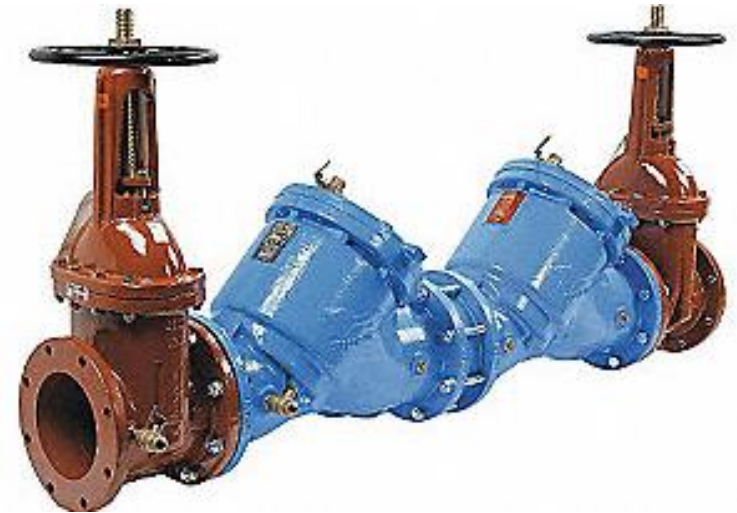
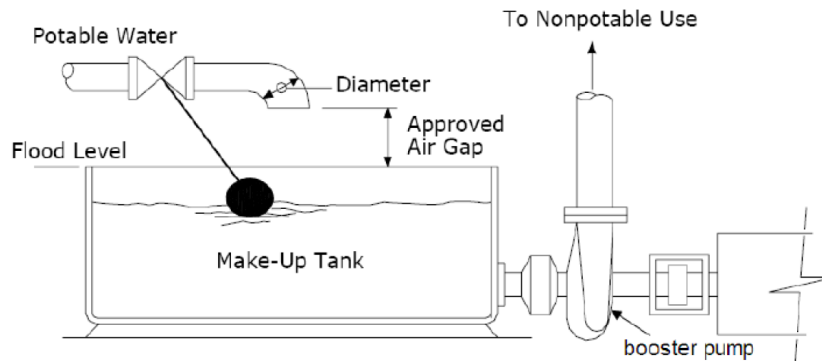


- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.



# A few of the additional requirements if irrigation water supply is a public water supply

- **DO NOT** connect an irrigation system (Including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place. (Headline AMP label)



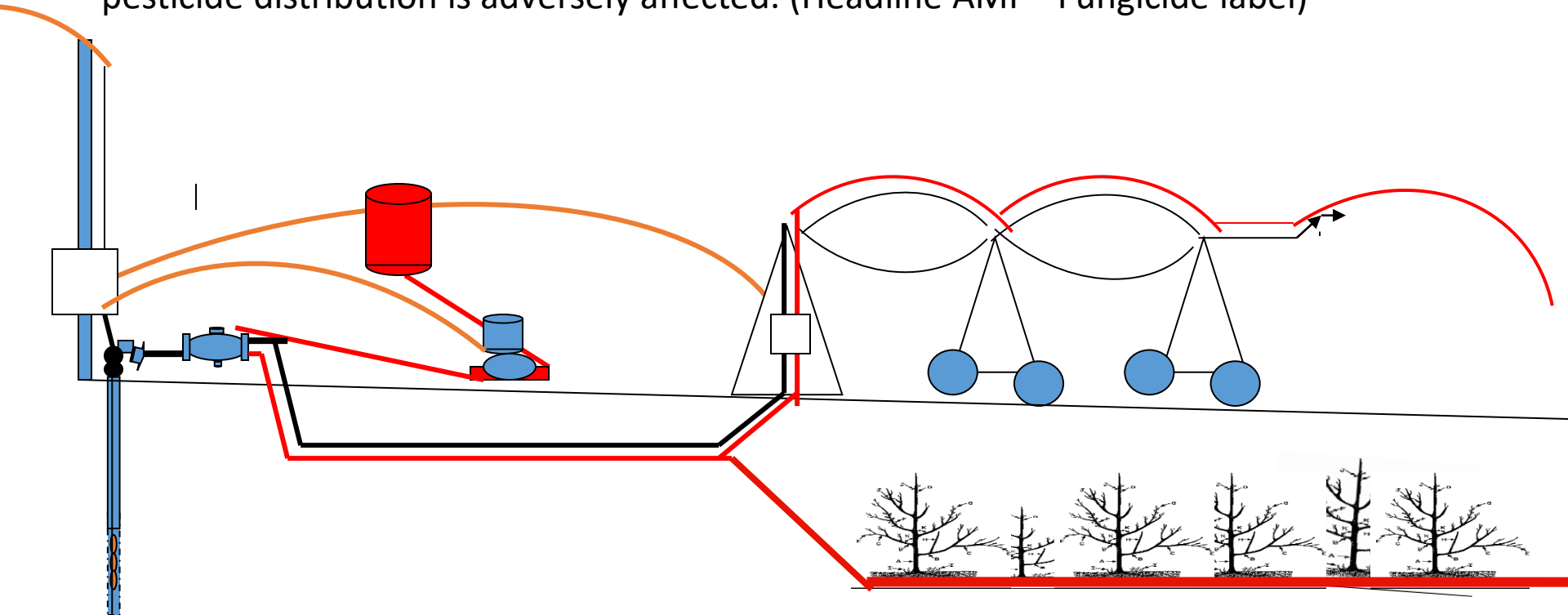
Note: Air gaps must be twice the diameter of the inlet pipe, at least 1", but no greater than 12."



reduced-pressure zone, back-flow preventer (RPZ) or a reservoir tank the diameter filled by a pipe from public water supply with a air gap twice size of fill pipe.

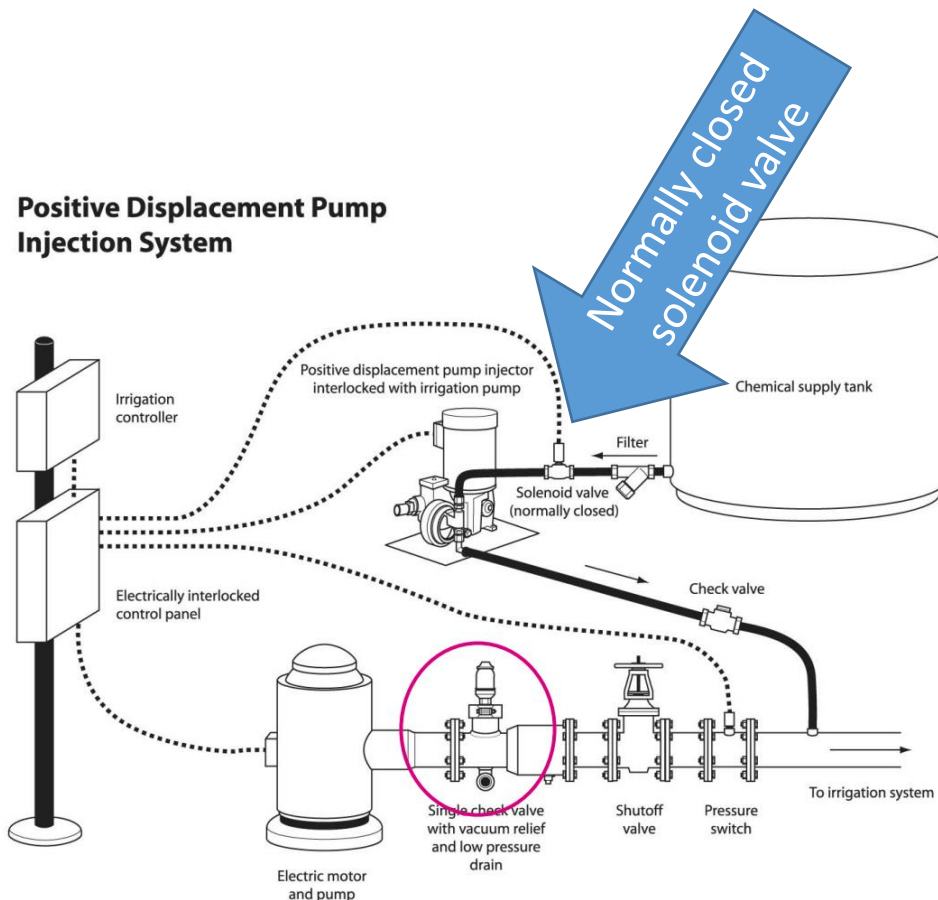
# Safety Interlock - Pivot movement, water pump and injection pump need to be interlocked so if any one of them stops, all are shut down.

- The system must contain functional interlocking controls to automatically shut off the pesticide-injection pump when the water pump motor stops.
- The irrigation line or water pump must include a functional pressure switch that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected. (Headline AMP® Fungicide label)



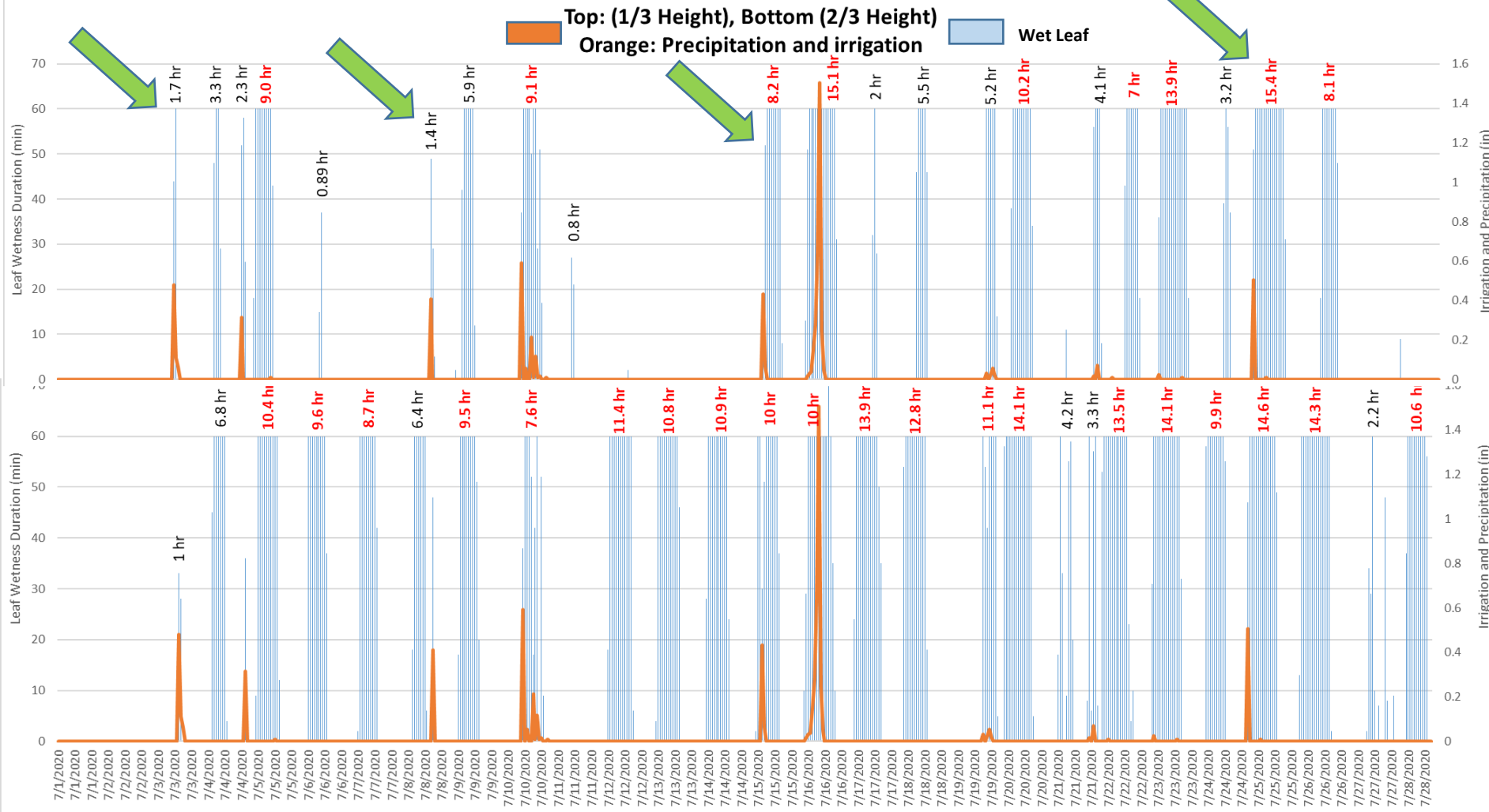
- Normally closed, solenoid-operated valve between the injection pump and supply tank interlocked to prevent withdrawal from the supply tank when the irrigation system is shut down. (Headline AMP® Fungicide label)
- Good agitation should be maintained during the entire application period. (Headline AMP® Fungicide label)

### Positive Displacement Pump Injection System



# Managing Irrigation to minimize disease

Irrigation application differ in their role in disease potential



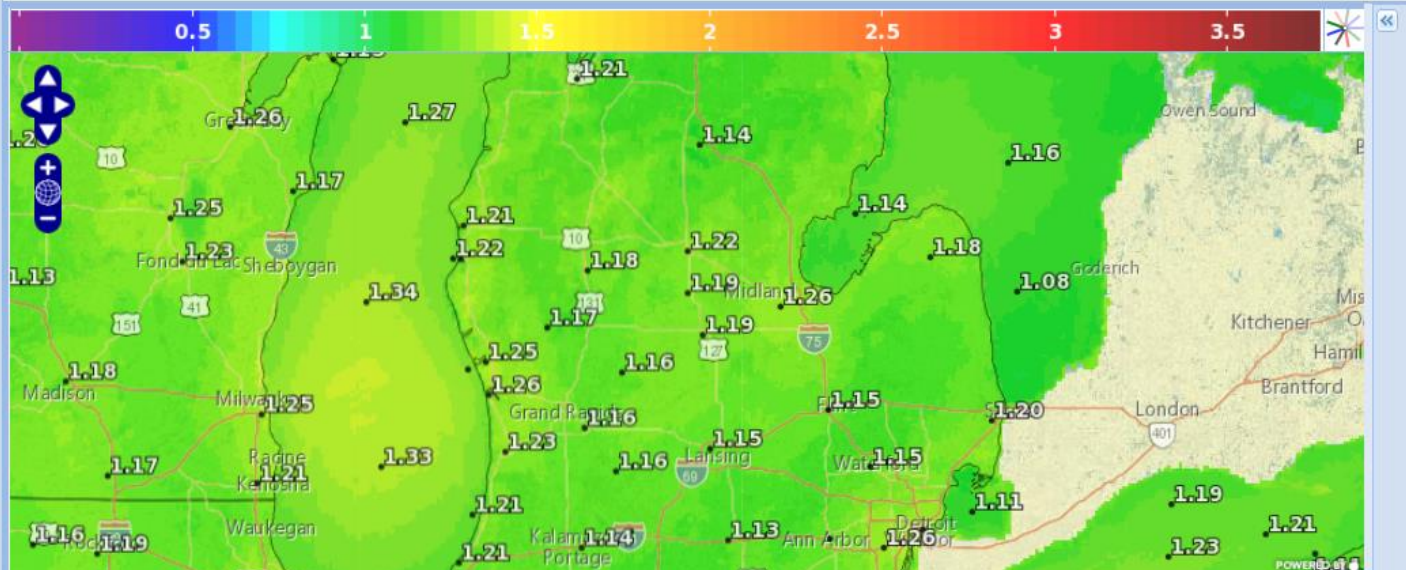
## Graphical Forecasts

Weather.gov - National Digital Forecast Database Graphical Forecasts

National Weather Service  
National Headquarters

### National Digital Forecast Database Display

National (CONUS) Total Weekly FRET (in) Ending Aug 5, 8 PM EDT



**FRET – expected rainfall x Kc corn 115% x 110 % for evaporative loss = needed application**  
**(1.20 – no rain                      x 1.15)                      x 110%                      = 1.65”**

**Irrigation scheduling:**

**Irrigate only when you can increase yield and quality, or reduce risk**

# *Large Irrigation Application Volumes Deliver More Effective Water To Crop with Less Wetting*

- A typical **Corn or Soybean** crop will use 6.3” of water in August, average August rainfall is 3.2” in SW Michigan resulting in a 3.1” of needed irrigation
- Evaporation varies greatly by canopy, crop residue and soil type
- First 0.05-0.12” of each overhead application will evaporate from soil surface and crop canopy
- Given: 0.08” evaporative loss, 3.1” irrigation need

## **Evaporative Loss , Effective water and number of wetting events**

Based on 3” of irrigation, 0.10” evaporation / application

	<b>Water evaporated from crop canopy &amp; soil surface</b>	<b>Effective water available for crop transpiration</b>	<b>Number of irrigation wetting events</b>
<b>Three applications of 1.0”</b>	<b>0.3”</b>	<b>2.7”</b>	<b>3</b>
<b>Six applications of 0.5”</b>	<b>0.5”</b>	<b>2.5”</b>	<b>6</b>
<b>Twelve applications of 0.25”</b>	<b>1.2”</b>	<b>1.8”</b>	<b>12</b>



Any questions?

Please call or E-mail  
I would be glad to help



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