



McBride Office

2071 E. Main Street, McBride, MI 48852

Vassar Office

4802 West Caro Road, Vassar, MI 48768

Battle Creek Office

14265 Beadle Lake Road, Battle Creek, MI 49014

989-762-5028

www.MVI.farm

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THE NEWSLETTER FOR THE MICHIGAN AG INDUSTRY

Every spring brings its own unique challenges. Some years it is abundant snow or early rains. Often, we find some components like PVC pipe or aluminum wire with supply problems. This season it is hard to find any product that is not affected by dramatic price increases, lack of availability, and unexplained delays in shipping.

Irrigation materials have been sitting for weeks on container ships in Long Beach and Baltimore without being unloaded. Resin for PVC pipe and wire casings are unavailable. Semi conductor shortages have strangled delivery of everything from computers to pickup trucks.

The bright side is that necessity is the mother of invention, and our wheels are turning. We have been able to achieve creative solutions to problems with assistance from power companies, non typical suppliers, and the ingenuity of our farmers themselves. We are grateful to have a large inventory to supplement the shortfalls of delivery. We are even more grateful for the teamwork and cooperation amongst the agricultural community. While we are often competitors in our markets, we will benefit as a whole when the agricultural community sticks together to see each other through.

JOHN M. MCGEE
PRESIDENT



EMPLOYEE SPOTLIGHT

Welcome **Emily Portell!** Emily joined Michigan Valley in January 2021 after completing her Associates Degree from Montcalm Community College and her Agriculture Operating Certificate from MSU in December 2020. She brings a wealth of ag experience growing up on a dairy farm in Gowen and working on her grandfather's cash crop farm. In her spare time, she enjoys restoring antique tractors and gardening. She will very likely be the friendly voice answering calls in McBride.

UNDERSTANDING SPRINKLER UNIFORMITY

Throughout the years, sprinkler manufacturers have been talking about sprinkler spacing and placement, pressure usage, and the recommendations go on. In this newsletter, let's talk a little bit about sprinkler uniformity.

In comparison to other states Michigan is fortunate. While most states still fight for a bit of extra water, Michigan has more water, and the weather is more forgiving than desert states. As technology expands, with the push of a button from miles away, the system can start and will run at optimal pressure and speed in no time.

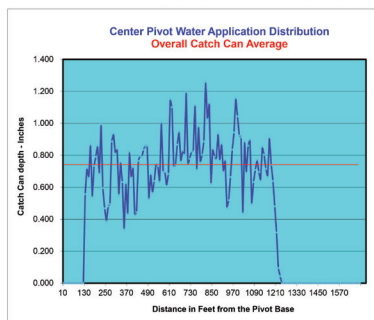
Now that it is possible to control our systems more easily, making sure the sprinkler package is more uniform is important too. As of today, companies are working towards a more uniform sprinkler package, achieving 70-90% uniformity in field tests. This means, if the system is set to put .5" of water the test should catch .5" 70-95% of the time. Having a more uniform sprinkler package will result in more even applications, which will translate to being able to more effectively apply fertigation as well as chemigation directly from the pivot.

One must consider the pump curves, span sizes, wheels and motor specification, as well as field topography and crop rotation, to design an effective sprinkler package. With all those inputs, the software can be used to design a uniformity closer to 95-98%. There are two different ways to calculate uniformity: one by software and another by field testing following ASABE standards. The first calculation will give an idea how uniform the sprinkler package will perform, and the other is a field test showing the actual uniformity at the given time.

The ASABE standard catch can test says to place rain gauges every 10ft in the ground. After the system is fully pressurized, the amount of water in the rain gauge is transferred to a spreadsheet based on ASABE standards. In the example below, two different fields are running similar parameters (size, area, close pressure but different sprinkler packages).

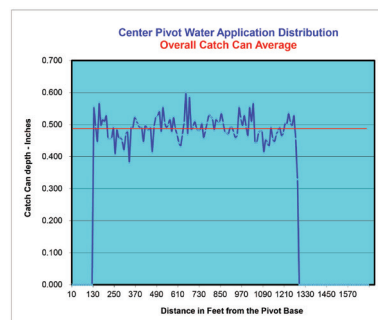
Here are their results:

Uniformity is the consistency of the application across the pattern of the sprinkler as it travels across the field.



Impact Test

Test Date: 5/24/18
Date Sprinklers Installed: 7/2004
Range .34" to 1.26"
Can Avg (Water Caught) .74"
Uniformity 78%



Distributor Style Test

Test Date: 6/14/18
Date Sprinklers Installed: 8/2017
Range .38 to .60
Can Avg (Water Caught) .49"
Uniformity 94%

Results grouped much closer to the mean!

Comparing the first test done with impact style sprinklers, versus the second test done with distribution devices like the Komet Precision Twister, shows that a modern sprinkler package will be able to provide much better uniformity. This 16% makes a huge difference in the evenness of application of water as well fertilizers and chemicals through the pivot.

With sprinkler technology, it is especially important to maintain over 90% uniformity. Komet irrigation can help maintain that uniformity, but that is only one part of the equation and we cannot do it alone. The experts at Michigan Valley Irrigation will be able to assess your system and help you upgrade to maintain everything we have discussed today.

FELIPE ALVES

TECHNICAL SALES MANAGER FOR KOMET IRRIGATION



ABOUT THE AUTHOR

Felipe is an Agricultural Engineer who graduated from the University of Nebraska in 2015. He has been working for Komet Irrigation as Technical Sales Manager since 2018. Felipe has focused his career on relaying information to farmers about the importance of understanding our soils and saving water.

TOP 4 REASONS TO UPDATE YOUR SPRINKLER PACKAGE

"The sprinkler package on your center pivot is the most important component of the system" says Josh Wolter, CID (Certified Irrigation Designer) at Michigan Valley Irrigation. It determines the efficiency and gallons per minute per acre applied to the field. It also determines droplet size and pattern that can be key to uniformity, wind drift and soil compaction.

1. TIP AND SPRINKLER WEAR



Tip and Sprinkler wear is real. Over time orifices can wear and become larger and misshaped. Sprinklers can become worn and spin or wobble in a different pattern than the new device. When water volume and designed sprinkler motion changes, so does the flow rate and pattern that were used to calculate your water application.

2. LOSS OF UNIFORMITY

Complex calculations are made based on many inputs to determine the spacing and orifice size for your sprinkler chart. When changes in your system occur which impact the GPM or PSI at the nozzle, uniformity will be lost. Poor uniformity results in under or over watering, both of which can be expensive due to crop stress or nutrient availability. With precise application rates and good uniformity, options to take watering to the next level with variable rate irrigation are available. Optimizing yields and lowering irrigation expenses are potential results.

3. SPRINKLER LOCATION TO CROP CANOPY

Sprinkler location to the crop canopy can play a significant role in optimizing yield. Drift can be a problem when open fields are watered on windy days with your sprinklers a long distance above the crop canopy. Streaking can occur when your sprinklers are dragging through the crop causing gaps between watered plants. Having the right sprinkler location for the crop or crops in each field is important, and options are available for multiple crop situations.

4. OBSOLESCENCE

New sprinkler technology is arriving at an exciting rate. Over the last 20 years sprinkler efficiency has improved nearly 30%. Efficiency is the amount of water available to the plant as a percentage of water pumped to your system. Doesn't it make sense to pay a small amount to reduce your operating cost and water use by 30%?



**PETE PHILLIPS
MARKETING**

MVI Newsletter Spring Edition 2021



ANY SPRINKLER PACKAGES MORE THAN 10 YEARS OLD?

Pumping more water + Less uniformity = More Cost

MVI will help you update with **25% off** and a chance to win a free package!

1. Choose your pivot to update.
2. Select the manufacturer.
3. Choose the model and location (top or drop)
4. Place your order and enter the drawing!



*Free package less than or equal to purchased package. Limit one free package per customer. One drawing entry for each package purchased. Labor is not included. This promo ends August 31st.

MULTIPLE DRAWINGS!

Vassar

Phone: 989-673-6741

McBride

Phone: 989-762-5028

Battle Creek

Phone: 269-565-4426



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