AGRICULTURAL BEET

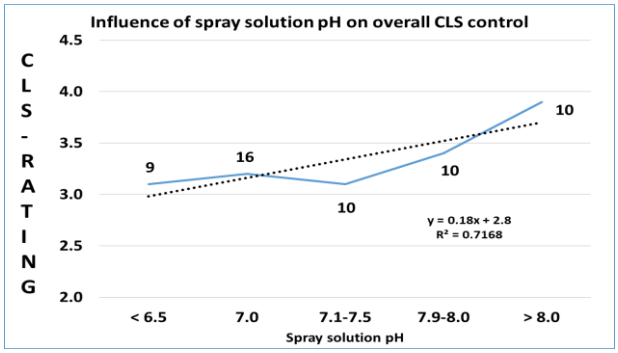
June 23rd, 2020

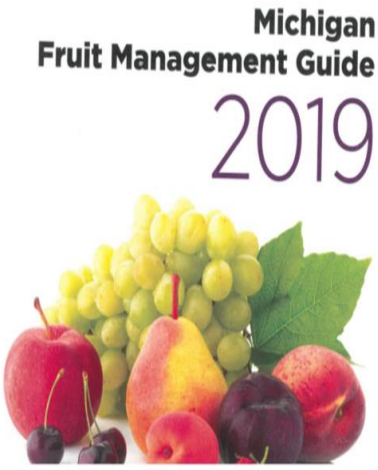
Southern Minnesota Beet Sugar Cooperative
Renville, MN
www.smbsc.com | 320.329.8305

Foresight is 2020

Special Edition on Fungicide Spray Solution Acidification.

The issue of reducing spray solution pH to increase Mancozeb performance has been at the core of several questions we've received since the release of the SMBSC database observations relating to Cercospora Leafspot (CLS) control strategies in 2019. The idea that lower pH can increase Mancozeb half-life was referenced from the Michigan State University Extension *2019 Michigan Fruit Management Guide*: Extension Bulletin E154. Further, the results of the SMBSC database (found to the right) were generally supportive of the extension bulletin guidelines that lower spray solution pH resulted in increased performance.





Here are a few important bullet points mentioned in the MSU publication…

- Mancozeb half-life (the time it takes for one half of the amount of a pesticide in water to degrade) is generally considered to be 17 hours at pH 7.0 and increases to 20 days if/when the pH is reduced to 5.0.
- **Although a pH of 5.0 may be optimal, a achieving a 6.0 is likely satisfactory.**
- The process involved with adjusting pH of a spray solution if/when desired…
  - Find out the pH of your current water source.
  - "If … your water has a pH of 7.5 or greater, consider lowering pH, especially if … applying a pesticide that is sensitive to high pH."
  - "Adjust water pH by using a commercially available acidifying/buffering agent before adding the pesticide."
  - Granulated food-grade citric acid may be the most convenient and inexpensive acidifying material.
- The citric acid recommendation given was for 2 dry ounces of the citric acid per 100 gallons of water to reduce the water in their test from 8.3 to 5.4

However, to avoid confusion at the retail or farm gate there are a few other important points that require addressing.

- **EBDC's were effective for CLS at SMBSC prior to any knowledge of the influence of pH on spray mixture half-life or performance. These observations relate to information from the Michigan State University publication and the general 2019 shareholder database results found above. It DOES NOT represent an SMBSC recommendation.**
- MN water sources appear to be more resistant to pH change requiring more product than the suggested rates.
- Local water tests have suggested the need for 2X to 3X the rates mentioned above to obtain desired pH range.
- **WALK BEFORE YOU RUN!** We do not want anyone to encounter any unforeseen difficulties due to this practice.
  - **DO NOT acidify Copper fungicides or risk crop response!**
  - **Start with subtle pH changes to products such as tin-based fungicides until comfortable with results!**
- There are a lot of product representatives claiming to have products with acidification properties. BE CAREFUL THAT THESE PRODUCTS DO NOT BRING EXTRA BAGGAGE such as a poor surfactant system or performing other functions that are capable of negatively influencing the essential products that you are relying upon to control CLS.

Steve Roehl – Ag Strategy Manager