INMC Meeting Notes

September 12, 2019

Members present: Michael Shepherd, Colleen Hudak-Wise, Joe Hudyncia, David Hardy, David Crouse, Stephanie Kulesza, Luke Gatiboni, Deanna Osmond and Christine Lawson

1. Introduction to the new soil fertility specialist, Luke Gabiboni

    a. Luke comes to NC State from Brazil where he's worked as a soil fertility specialist for over 15 years. Welcome Luke.

2. RYE and N rate for corn and wheat (Deanna)

    Wheat: Shelby Rajkovich's work was presented (4 site years wheat). We looked at optimum N rates which were about the same or lower than RYE N rates. Johns soils wheat yield increased 60 bu/ac, while Portsmouth soil wheat yield increased 80 bu/ac, and Lloyd soil (two years of data) wheat yield increased 50 bu/ac over RYE yield. Data from Engoke demonstrated Plymouth soil wheat yield increased 30 and 60 bu/ac, while Goldsboro soil wheat yield increased 55 and 15 bu/ac over RYE. With the 60 site year of data trials, yield increase was 15 bu/ac. Lastly the average yield for the variety trial data is 84 bu/ac. The average yield increase of our data using the linear plateau model and looking at additional data suggests an increase of 50 bu/ac for wheat.

    Corn: Shelby Rajkovich's work was presented (6 site years of corn). We looked at optimum N rates which were about the same or lower than RYE N rates. Lynchburg soil corn yield increased 50 bu/ac, while Portsmouth soil corn yields increased 25 bu/ac. The Lloyd soil one year had a 25 bu/ac increase but another year the yield difference was -60 bu/ac (drought year). On the Comus soil corn yields and RYE were the same, while the Codorus soil yield increase was 80 bu/ac greater than RYE. We also looked at variety trial data and data from our recent five-year N rate study and from this study we found corn was about 30 bu/ac greater than RYE. For corn, we know that yield increases an average about 2 bu/yr based just on genetics and it's been about 10 years since we've updated the RYE table so this would be 20 bu/ac. The average yield increase of our data using the linear plateau model and looking at additional data suggests an increase of 30 bu/ac corn.

    We combined these data sources and decided that we would increase wheat yields to a state average of 50 bu/ac and the state average corn yield by 30 bu/ac. David Crouse will determine the average database RYE for corn and for wheat and then determine the % yield increase based on the wheat and corn increases the INMC determined. These % yield increases will be applied to each soil series. Since yield is increasing but N rates are staying the same, N factors will change downward. The exception to this method is a few bottom land mountain soils where we already set very high RYEs.

3. Animal waste content (Steph)

    a. Steph presented the animal waste content data and based on her analysis, our current book values are adequate and fairly representative. She found, just as Karl Shaffer had learned, that the waste value numbers are highly variable with very skewed distributions and in order to determine median values, significant data cleaning has to occur. The INMC decided that the level of effort was not appropriate.

4. Cover crop PAN rates (Steph)

    a. There is a 5 lb discrepancy between the 1217 rule of 30 lb N/ac application to overseed or cover crops and the 25lb N/ac that the software determines. It was decided that Michael would determine whether the programmers could fix the Nutrient Management software to reflect the 30 lbs of N.

    b. The INMC discussed whether a cover crop mixture with a legume should be adjusted. The four adjustments are, 1) reduce allowable PAN, b) increase the N credit from the cover crop, c) both a and b, d) none of the above. The INMC agreed to leave the N reduction as a flat rate of 30 lb N/ac because there's no way to determine if the legume provides additional N.

5. Crabgrass nutrient management plans. Do we have data yet? (Steph)

    a. The first version of the software had RYE by county for crabgrass. As soon as those values are found, Steph will compare them to the new research crabgrass .

6. PLAT refresher training: Iredell (Sept 18), Sampson (Sept 19), NCSU (October 11)

    a. All classes are full

7. Nutrient Management Training –October 7-11, 2019 (Steph)

8. Nutrient Management Training – March 9-13, 2020 (Steph)

9. The November INMC meeting is cancelled. Our next potential meeting will be January 2020.