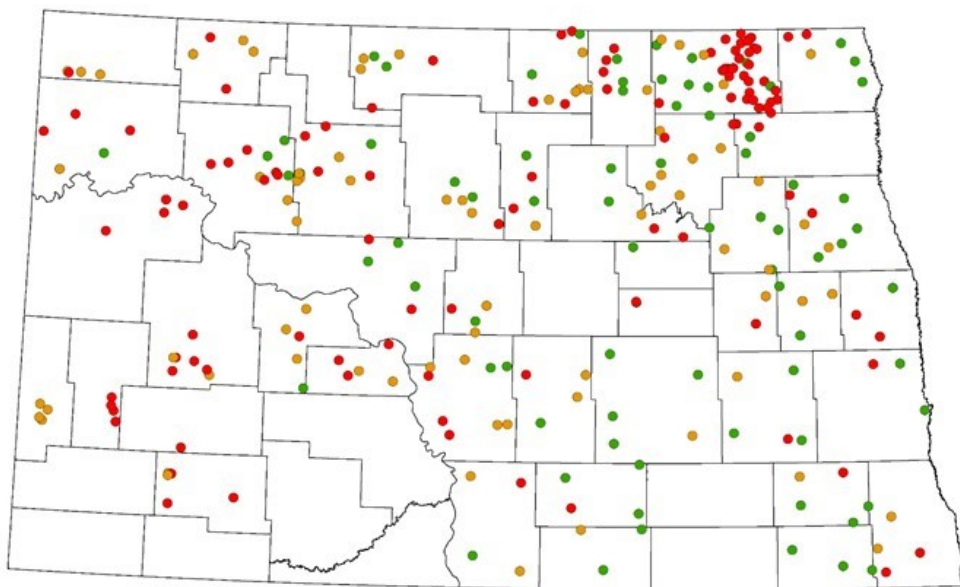


# Soil pH-Map of North Dakota-2020

## Soil pH



pH

● 4 - 6.6    ● 6.6 - 7    ● > 7

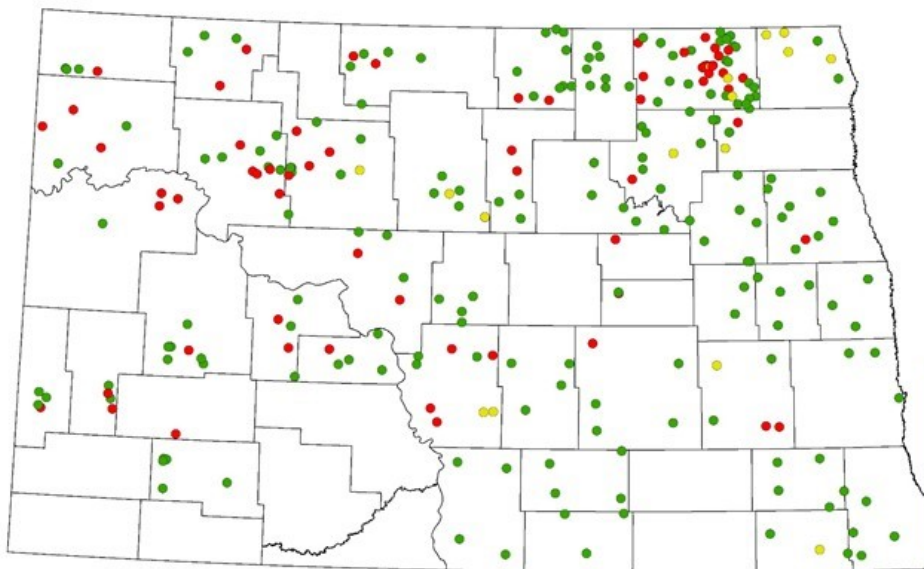
4 - 6.6 – Fields with Acidic pH  
6.6 - 7.2 – Neutral pH  
> 7.2 – Basic pH

Note: Clubroot Pathogen  
*Plasmodiophora brassicae*  
prefers acidic soils but can be  
found in Neutral pH soils also

Drs. Chapara, Liu, Prochaska, Kalil, Jingwei, Shi, Del  
Rio, Teboh, Knodel and Honggang

Clubroot spores per gram of soil found in various counties in North Dakota

## 2020 Clubroot Survey in North Dakota



Spores in Soil per Gram

● 0    ● 1 - 80,000    ● > 80,001

Note on Spores/g of soil:  
> 80,000 will show symptoms  
under field conditions if the soil  
has acidic pH and susceptible  
canola variety

Drs. Chapara, Liu, Prochaska, Kalil, Jingwei, Shi, Del  
Rio, Teboh, Knodel and Honggang

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