

Patchy Fields

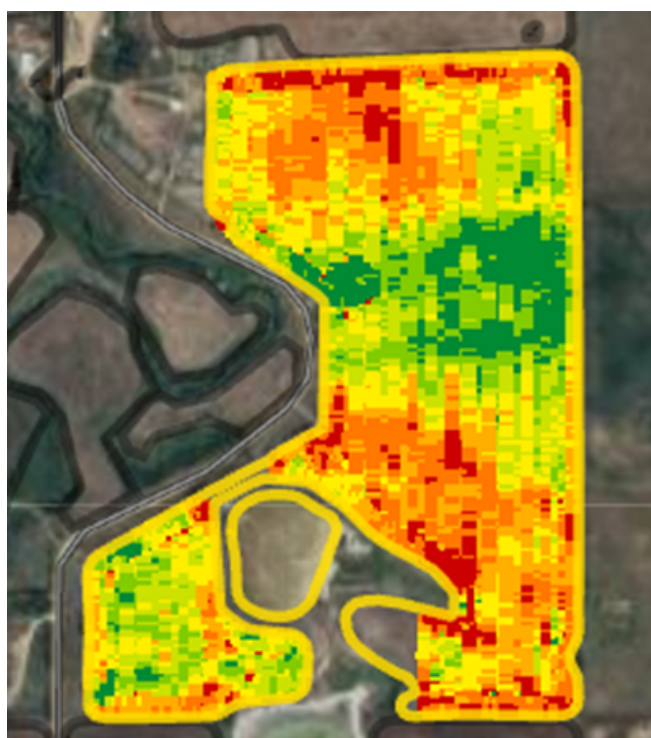
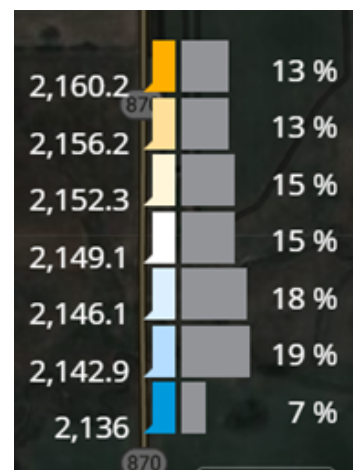
This year, many crops in East Central Alberta have been subjected to a variety of stresses; most notably the extreme heat we saw during the critical flowering period. This was then exacerbated by a lack of timely rains in a lot of the area. Under such conditions, it's not unusual to see patterns start to emerge across the fields, generally following differences in soil type, organic matter, or even management practices.

Barley regrowth on a side hill; August 27, 2024



While nobody likes to see these patches, they do represent an opportunity to learn. Sometimes the cause is obvious - for example, side hill sand patches and eroded knolls just don't have a lot of water holding capacity, and solonchic soils don't easily allow roots to penetrate to depth. Other times, you can see dramatic changes in a crop's ability to handle stress on what appears to be the same soil and in the same slope position. One plant may be stunted and showing lots of aborted seed, while another only a few feet away shows only a fraction of that damage, with the reasons not always easily understood. One possible thing to consider is micro nutrient availability, but determining micro nutrient deficiencies is tough and getting an economic response to their applications can be inconsistent. As Dr. Jeff Schoenau, professor of Soil Science at the University of Saskatchewan said in a March 2024 Top Crop Manager Article; *"Micronutrients can be rather ghostly. Deficiencies show up and disappear, and they are masters of disguises. Symptoms are easily confused with other forms of stress, and responses to fertilization are often small, fleeting and variable."*

As the name implies, micronutrients are only required in very small quantities by a crop and availability can vary greatly across a field; with deficiencies often appearing in sandy, peaty or eroded soils. Symptoms tend to appear in patches and may be more apparent in years when the A Horizon of the soil profile (where almost all the micronutrients reside) dries out to the point that the plant roots there go dormant. Because of this patchy nature, micronutrient deficiencies are well suited for both investigation and prescription applications based on yield maps and satellite imagery. So if you are dealing with some of these fields this fall, take a few minutes to ensure your combine yield monitor is properly calibrated so you can get a clear picture of where these patches are. This may help identify future sites for both soil and tissue tests. And depending what you find, they may also be the basis of a future prescription map to apply a micronutrient or soil amendment such as lime. (Images below generated by MyJohnDeere Operations Center)



Yield



Elevation

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