Driving Decisions Newsletter

Issue 17

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app.Cropintel.ca

*** Save the Date! Crop Intelligence Summit – December 13-14th***

Setting Yield Expectations with Crop Intelligence

A common situation across Western Canada this year has been dry weather or drought. Whether you are already in the fields or getting the combines ready, at the end of the year its good look back and bring perspective to the Water Driven Yield Potential. Consider how abiotic (environment) and biotic (pests) stressors have impacted the field's yield potential (positively, negatively, or neutral) throughout the growing season and what might be most limiting to your crop. Below are some tools in Crop Intelligence to help evaluate yield potential before or after harvest:

Soil Moisture Graph

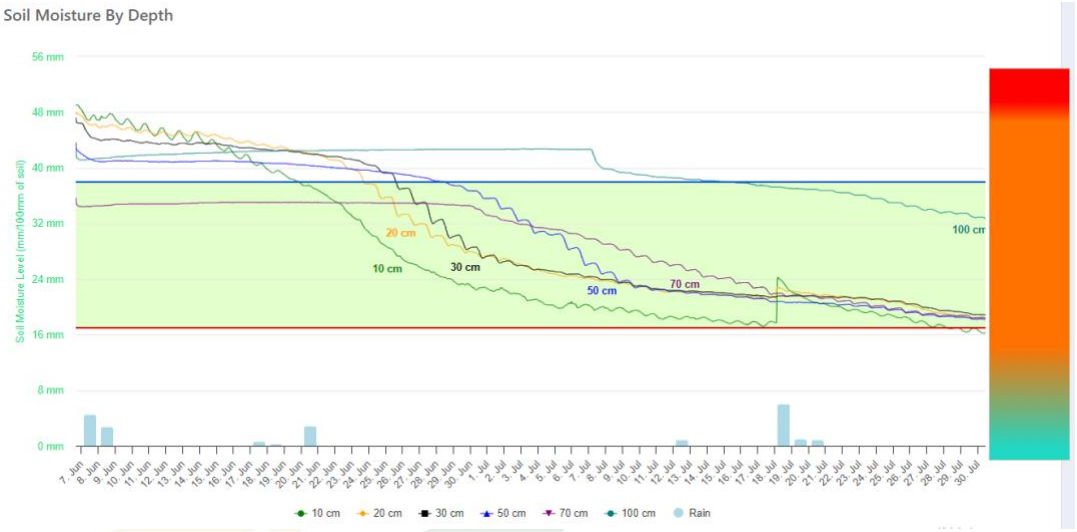
Installing larger diameter probes between the seed rows allows us to learn plant health signatures below ground. As you scroll over the graph, a box with the mm of moisture /100mm of soil per sensor depth appears. This can also be interpreted as % moisture. Where the % moisture starts and ends at the in the season provides insights on the soil texture(s) down the profile and insights into water use at depth.

Stair Stepping: A healthy plant pulls water from the soil profile during the day and then rests at night. When this occurs, it creates a stair step pattern on the graph.

Plant Stress: A flat line, either straight across (no water use) or down (using moisture 24/7) is a good indication of plant stress. These stress signals will occur below ground before symptoms are seen above ground. This stress is typically seen during long periods of significant heat, a sudden drop in temperature, or frost.

Season End: Before the crop ripens, the root graph can indicate when the plant is shutting down. This occurs when all sensor lines level off during maturation of the crop, and ideally occurs within 7 days before or after the estimated season end date (grey vertical line on the Yield Potential graph).

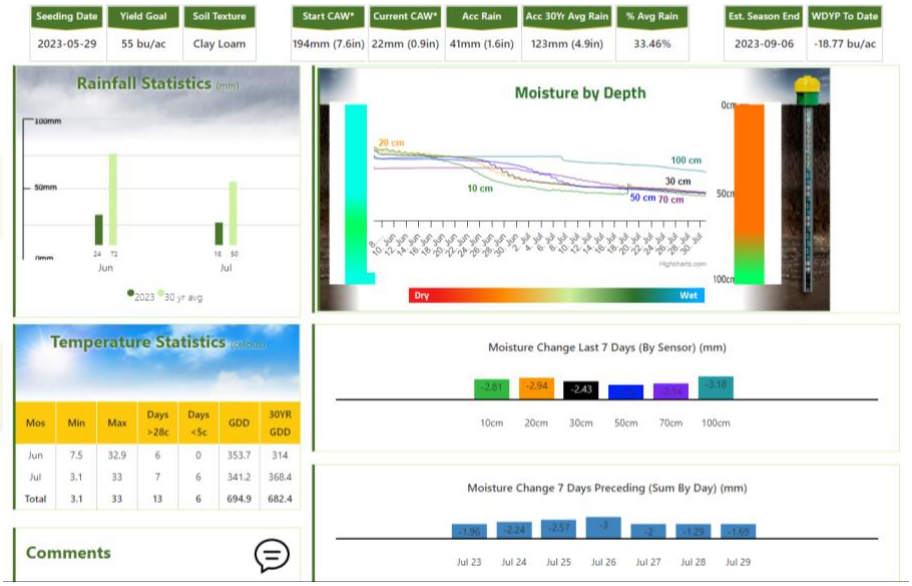
Water Use at Depth: Reviewing water use at depth has been an increasingly strong indicator of yield potential at the end of the season. Soil textures with more clay or crops with shallower root systems (ie. pulses and barley) are not credited with much water use at depth. As the sand content of a soil increases or a crop with greater root biomass is seeded (ie. canola or wheat), the available water at depth increases. The graph below is a canola crop in clay loam soil. In this example, the canola should only use 75% of the crop available water at 70-100 cm, but it has already used 100% of the water from 10-70 cm. This can be indicative of a boost in yield potential, but due to the lack of rainfall, it likely means the crop is stressed and increased its water use at depth out of necessity.



This graph is showing abnormally high-water use at depth in this canola crop.

In-Season Reports

New for this year, in-season reports were autogenerated on a weekly basis for all Crop Intelligence customers. These reports provide a great summary of environmental data, with the soil moisture graph, and water use by the plant.

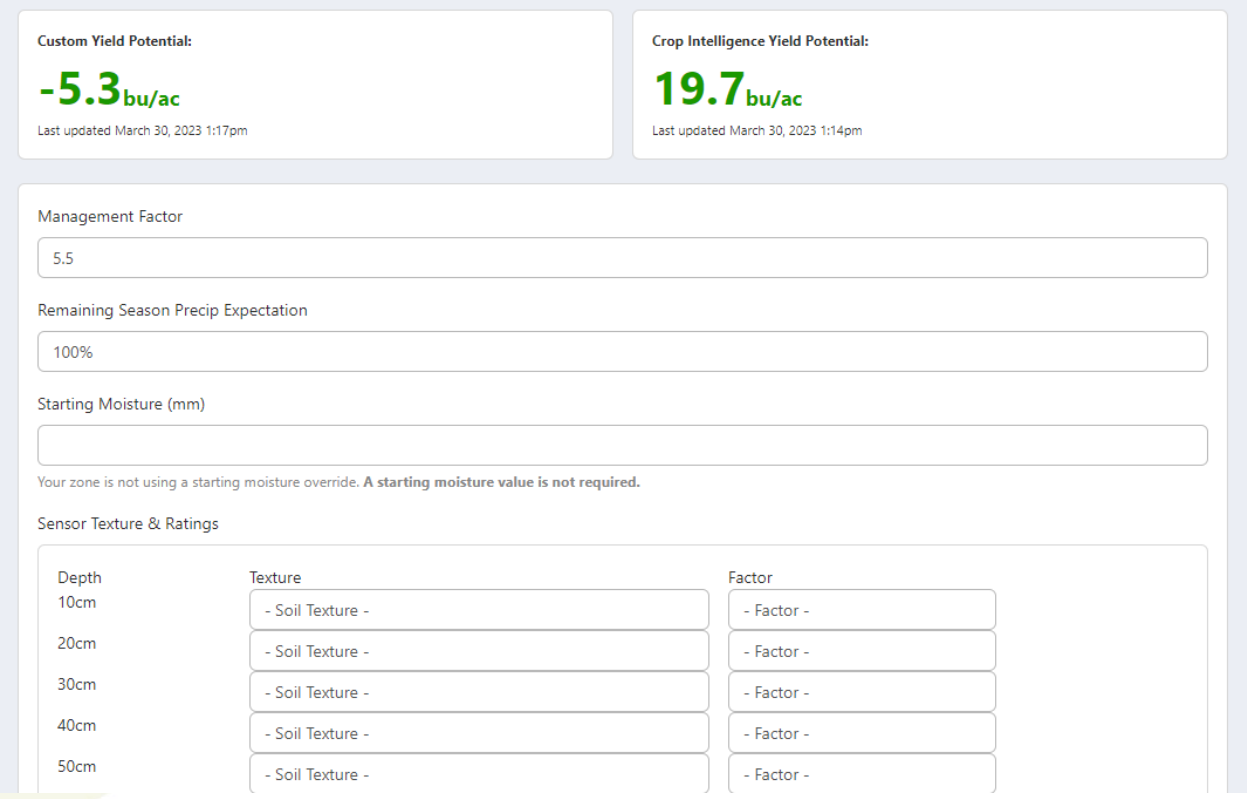


Adjusted Water Driven Yield Potential

Variability in environmental conditions year to year can mean factors, other than water, are more limiting to yield. For example, hail during flowering or seed development stages, or extreme heat for extended periods of time. Crop Intelligence is NOT a yield prediction tool, but if in-field observations suggest greater limiting factors, the Adjust WDYP can now evaluate how that may impact the yield at the end of the season. Factors that can be adjusted include the Management Factor (bu/inch of crop available water), Remaining In-Season Precipitation, Starting Moisture (in the soil), and Soil Texture with associated Factor of available water. The Adjusted WDYP can also be reset to clear any changes.

> *Example:*
> *Farmers John and Jane have a wheat field with a WDYP of +19.7 bu/ac above the yield goal, suggesting a great opportunity to capture more yield this year. Unfortunately, a hailstorm came through the area and the local agronomist estimated there was 30% damage to the yield potential this year.*

In this example, the Crop Intelligence customers went to the 'Adjusted WDYP' tool and moved the Management Factor (bu/inch of water) down 30%. The new yield potential showed -5.3 bu/ac off their yield goal, and they made the decision to remain with the inputs plan they had for the yield goal they had this year.



Crop Intelligence Harvest Data

Harvest data (termination method and date, harvest date, probe area yield, field yield) can be entered on our website or on the app. Harvest data is private to you, Crop Intelligence, and your Crop Intelligence vendor and is only used to validate site selection, optimize settings for your field, and provide feedback into our system.

For both the app and website:

1. Click on your zone or field and go to the 'Yield Potential' graph.
2. At the bottom, click 'Enter Harvest Data'.
3. Enter the season end method and date, harvest date, probe yield, and field yield. Click 'Save Harvest Data' to store it in the system. You can go back as needed to add information or adjust data.

Screenshots of the website and app are included at the end of the newsletter.

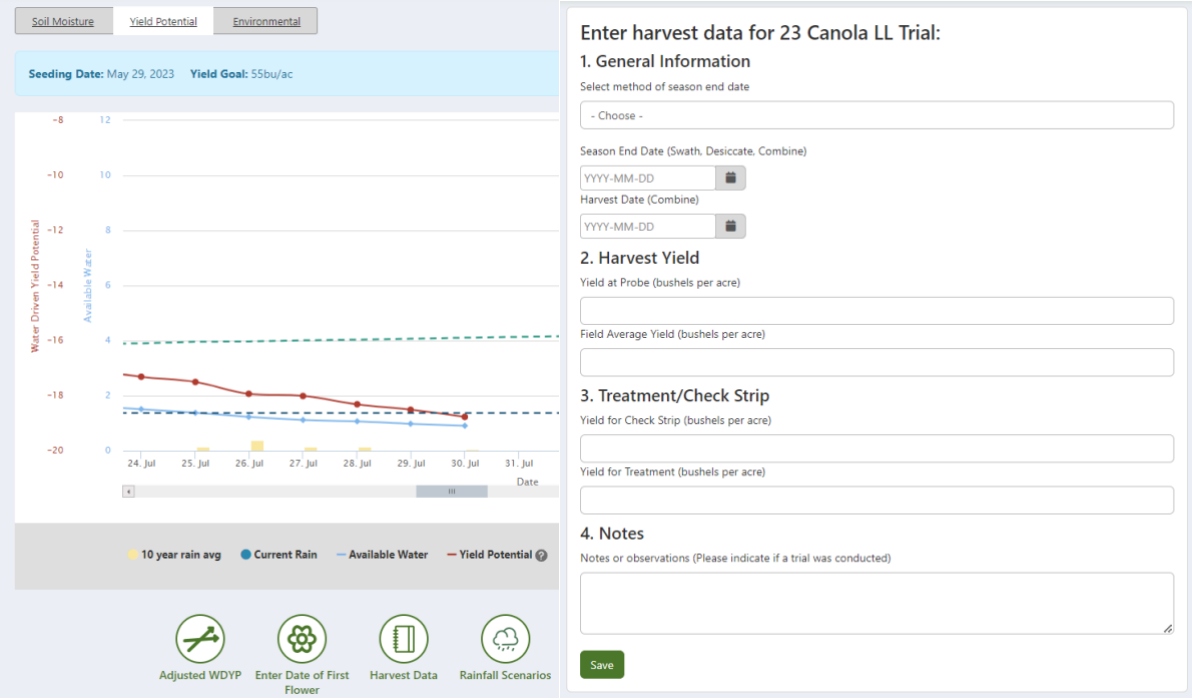
Upcoming Events

5 Production Steps Webinar Series: Harvest – online August 16th

From everyone at Crop Intelligence, we wish all our customers, vendors, and partners a safe harvest season!

Have questions? Reach out to your Crop Intelligence partner for more information or email us at info@cropintel.ca.

Harvest Data Website:



Harvest Data App: