Driving Decisions Newsletter

Issue 18

August 2023

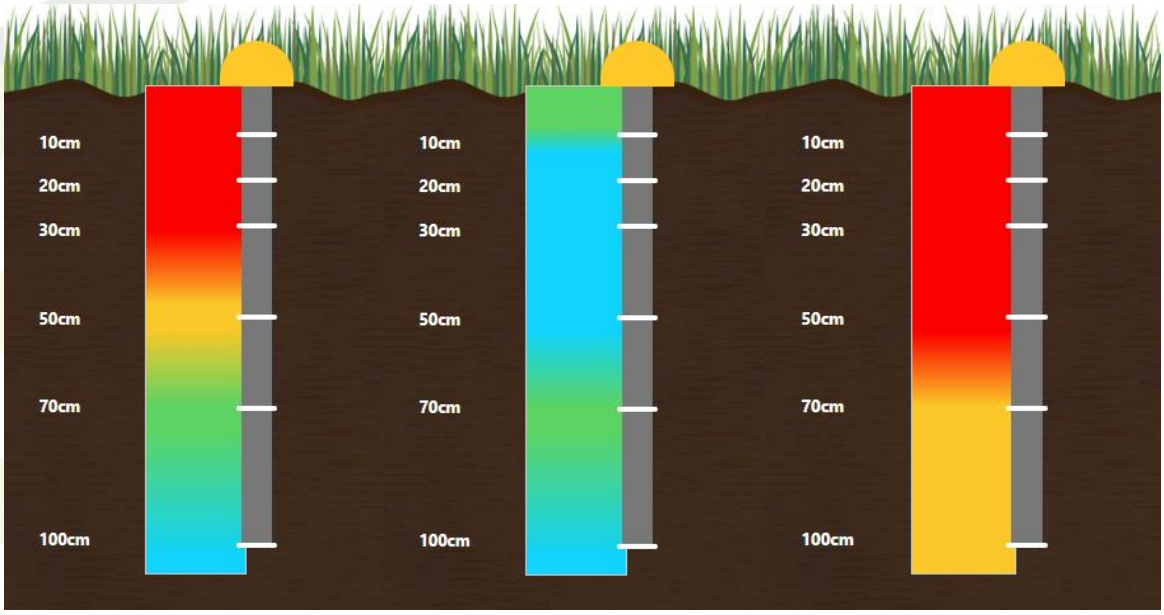
app.Cropintel.ca

Soil Water Holding Capacity and Recharge

The lack of precipitation this season means many soil profiles are drier than normal this fall. While rainfall was below average, the generally warmer spring and cooler summer has allowed crops to use water efficiently. Variability still exists across the landscape and knowing what moisture is left in the ground can support fall decisions around stubble height and tillage. To determine the status of a probe's soil profile, click on 'Yield Potential' tab and then 'Next Year Potentials'. In the potentials, there is a button labelled 'Soil Capacity Rating by Depth' that will generate the image of the probe.

Below are three of the most common soil profile conditions this fall.

1. Dry top half of the soil profile but has decent moisture at depth.
2. Lots of moisture throughout the whole soil profile.
3. Almost no moisture left in the whole soil profile.



Opportunities with a dry fall soil profile:

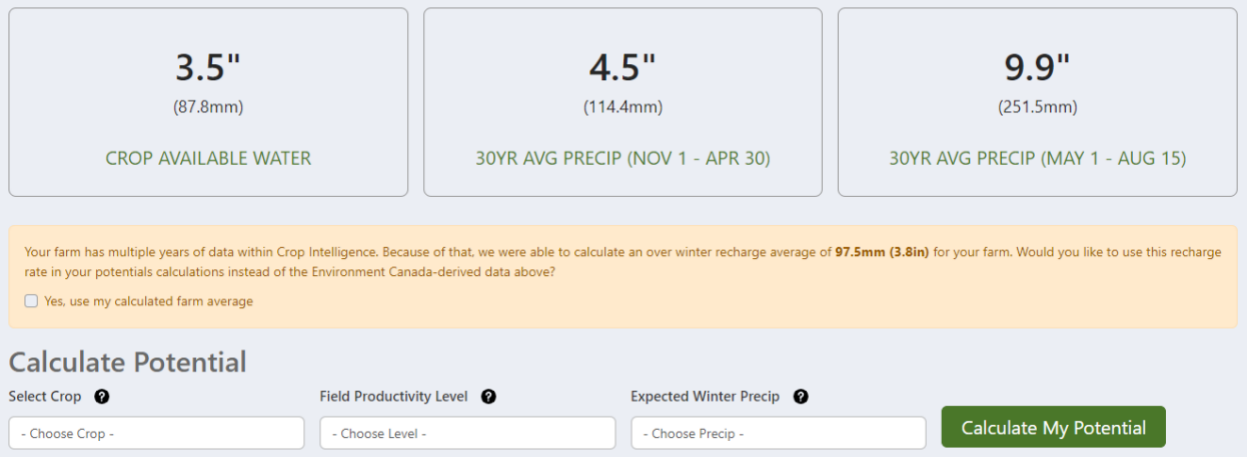
- Increase stubble height at harvest to capture more snow.
- Reduce fall tillage to conserve moisture and stubble.
- Consider snow ridging to further maximize snow catch throughout the winter.
- Break compaction layers that may reduce water infiltration with a strip till tool.

Opportunities with a wet fall soil profile:

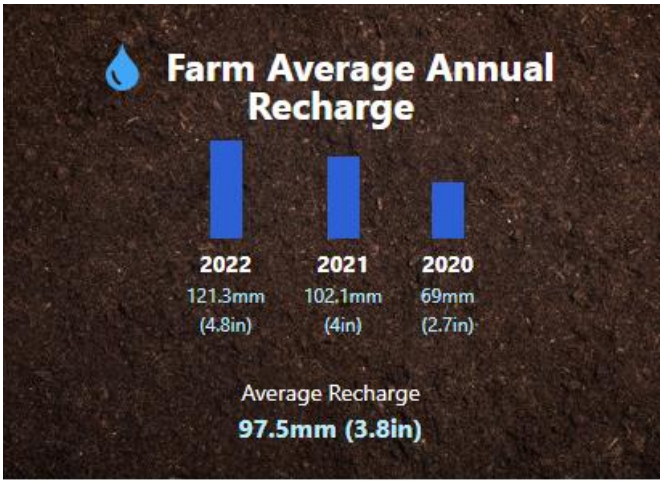
- Reduce stubble height.
- Optimize tillage operations to manage residue – this can aid decomposition and reduce some overwintering ability of crop disease.
- Deep band nutrients for next year – particularly immobile nutrients like phosphorus and potassium.

Next Year Potentials

The Next Year Potentials calculator for 2024 is available on the desktop and app! This calculator takes your current crop available water from the soil, 3.5 inches in the example below, and calculates your next year's yield potentials based on 50%, 75%, 100% or 125% of thirty-year average total winter precipitation (4.5 inches for the field below), in-season rainfall (9.9 inches in the field below), and field productivity level (low, medium, or high). You can also evaluate the potential of 9 different crops: Wheat HRS, Durum, Oats, Barley, Canola, Flax, Lentils, Peas, and Chickpeas. Further explanation of the parameters can be reviewed by clicking on the question mark icon '?'.



Customers with three or more years of data also have the option to use their own over winter recharge average. This is generated by taking the average of the fall to spring change in soil moisture across all sites on the farm and is not field specific. In the Next Year's Potentials example above, the Environment Canada estimate of overwinter precipitation is 4.5 inches, but the farm average in Crop Intelligence is only 3.8 inches. Scenarios can be evaluated for both overwinter recharge values as a risk management tool.



A more detailed report of a farm's overwinter recharge can be found in the Year End Reports that will be autogenerated after harvest. Here it shows the average recharge across the farm each year. In this case, there was greater recharge in 2021 and 2022 than 2020 on this farm. Years with greater recharge appear to be correlated with drier fall soil profiles and lower recharge with wetter fall profiles.

Reminder to Enter 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 the zone 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.

Upcoming Events

5 Production Steps Webinar Series: Preparation – September 13th

Annual Crop Intelligence Summit – December 13-14th in Regina

Early-Bird Ticket Sales open September 15th

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