

HERBICIDE CARRYOVER RISKS

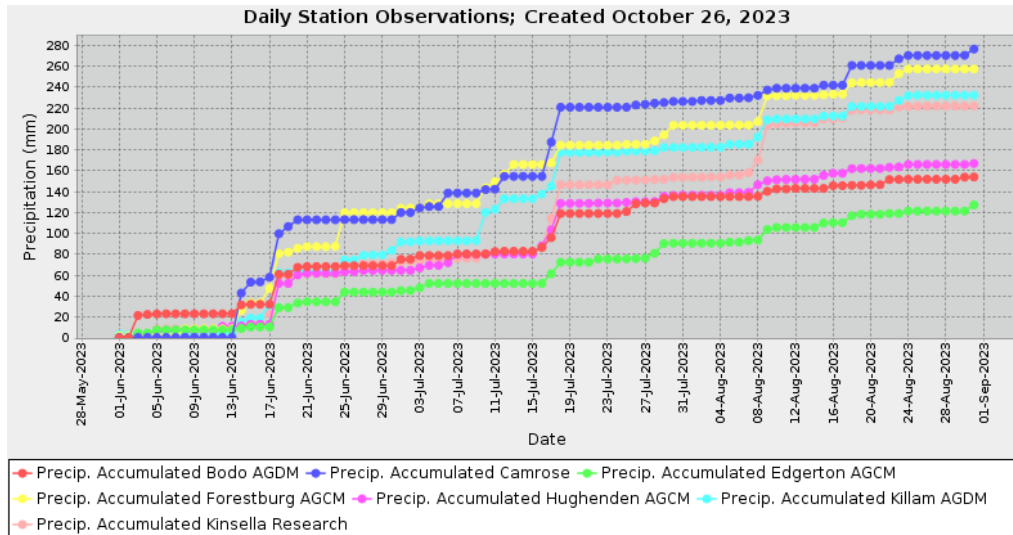


2023 was a drier than normal year across much of the Canadian Prairies and there have been several articles published recently warning of the increased chances of residual herbicide carryover affecting crops in 2024. While the focus of these articles have been on the brown and dark brown soil zones, there are many parts of East Central Alberta that need to be paying attention to this also. Carryover seems to be a frequent concern in our current climate cycle. Every year, at least one part of the Prairies is dealing with drought and the associated risk of herbicide residues which may impact future cropping plans, so I believe it's a good idea to review the basics and link you to some detailed information on the subject.

The herbicides we use in Western Canada break down either through microbial activity or by hydrolysis – or a combination of the two. Both methods have one thing in common; they require enough soil moisture to kick start the process. Therefore rain received from the time of herbicide application until crop maturity is critical in keeping things on schedule. To keep this simple, it is generally accepted that normal herbicide breakdown needs about 150 mm (5.9 in) of precipitation between June 1 and Aug 31. In reality, it's not that simple, as soil texture, pH and organic matter levels will all play a role in herbicide degradation. How impactful each of those variables will be depends on what herbicide you used; so falling below that magical rainfall number of 150 mm, does not necessarily mean you will have a problem, but it does mean you should look into things a little more deeply.

Obviously, the first thing to do is to check rainfall on the farm. Everyone has a rain gauge and these days many producers also have weather stations, so most people have reasonably accurate records of what happened on their farm during the growing season. If for some reason you don't have data on in-season rainfall of your area, you can still get a good idea of precipitation levels by checking the Alberta Ag weather station data at <https://acis.alberta.ca/weather-data-viewer.jsp>. You can choose up to 7 surrounding stations and enter the date range to quickly see what moisture levels were like in the area. The results can be viewed as either a table or a chart.

EAST CENTRAL ALBERTA ACCUMULATED PRECIPITATION (JUNE 1 - AUG 31)



As you can see by this chart, there are producers in some areas that need to be checking out their rainfall levels. Now that you have a general idea on growing season precipitation, it's time to consider those other factors I mentioned before – texture, pH and organic matter. All of this information is available on a soil test – one more reason that soil testing should be a regular part of your management program! If you don't have access to soil tests, you can get a general idea on these variables by checking out your field on the Western Canada Soils and Climate Map. This is a donation based website that provides a wealth of information on soil composition as well as long range weather trends. Be aware that some of this data, such as pH and organic matter is just a snapshot of what was found at the time of testing – the actual levels in your field may be very different. <https://mangomap.com/gis4ag/maps/26449/alberta-soils#>

Now that you have a handle on what your precipitation levels were in 2023 and what your soil's physical properties are, it's time to add in the last variable – what chemicals you used. Do they have residual properties and if so, how well did they break down in your fields? The best place to start is by contacting your chemical supplier or manufacturer's rep. They will have access to the best information on the risk level you are facing in terms of recropping after using their product. In addition to that, probably the best in-depth article I have yet to see on assessing the risk factors of herbicide carryover is found in the Resource Library of the Saskatchewan Pulse Growers Association. Although it was specifically published in response to the widespread drought of 2021, it still contains a wealth of information on how the different chemical groups interact with the soil and is an excellent source of information on the subject. [Herbicide Carryover Risks and Considerations | Saskatchewan Pulse Growers \(saskpulse.com\)](#)

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