

# AGRONOMY UPDATE

**September 2019**



## Prescription Herbicide Applications



**When John Deere launched its ExactApply sprayer technology, the goal was to offer customers an option that would help improve sprayer accuracy. The benefits of John Deere ExactApply includes individual nozzle control, high pulse rate modulation to help reduce drift, and sprayer turn compensation that allows consistent application across the boom while turning corners.**

## However, There Are Additional Potential Benefits That We Are Just Beginning To Appreciate



**With the ability to turn individual nozzles on and off on demand, and the accurate geolocation that is offered by RTK technology, we now have the tools to look seriously at prescription spraying.**

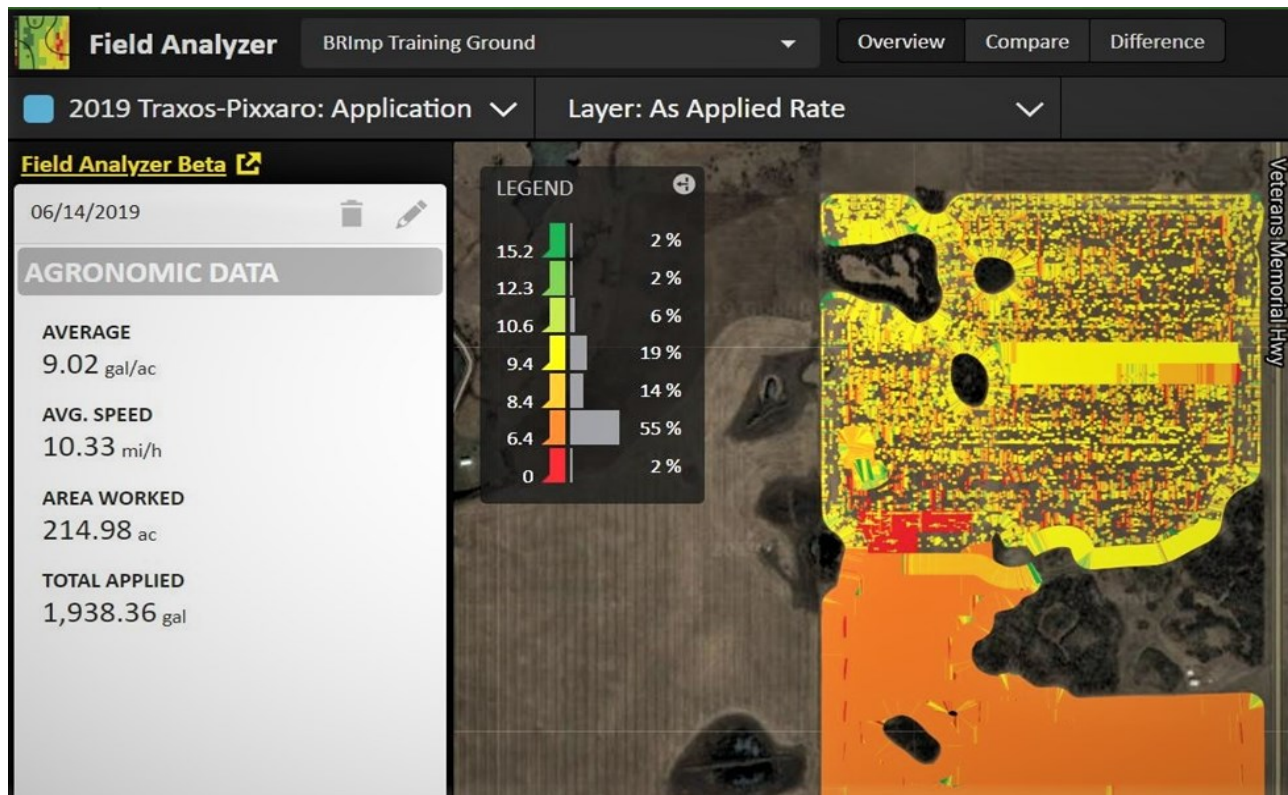
**The challenge in getting there is being able to differentiate between the crop and the weeds, geolocate those weeds in the field, and then turn the nozzle on at the appropriate time to spray them.**

**This year, Battle River Implements Ltd. partnered with a company out of Minnesota called Sentera Inc.**

Sentera presently uses drones that are RTK compatible to produce plant population and weed pressure reports, mostly in corn and soybean crops. With their help we launched a pilot project on the Battle River Training Field south of Killam where we attempted to identify and geolocate weeds in a wheat field and then produce a prescription that would allow us to spray only where the weeds are.



We flew a portion of the field a few days before spraying and produced a prescription map that we downloaded to the sprayer. When we were done spraying the north end of the field that a prescription was generated for, the “as applied” map looked like this...



## The Prescription Area Accounted For 122 Acres Of The Field

We did a check strip of over 8 acres right in the middle, which is the solid yellow part of the map. So out of the roughly 114 acres that we applied the prescription to, we actually applied 62 acres worth of product, cutting our herbicide usage by 46% for a *savings of about \$11 per acre*. The check strip plus the part of the field traditionally applied will allow us to judge what impact the use of the prescription had on yield and dockage when we harvest.

The potential for this technology to impact input costs is obvious and very exciting. However, this is still a pilot project and there are some kinks to work out. Machine learning technology is involved in identifying the weeds, which led to less than ideal results on specific weeds that should be improved next year. There are also logistical hurdles that still need to be addressed, such as how fast can we generate and install the prescription for a field. In other words, what is the turnaround time between flying the field and the ability to spray the field?

*In a future update, I will report on the yield and dockage and also detail some of the other projects we had going on the field in 2019. Next year, we intend to prescription spray the majority of the pea crop that is going in this field. I also plan on doing a weed density study next year to see if the prescription vs traditional spraying impacted the total weed density or the species composition.*

At the moment, we are also looking into whether or not this technology could allow us to identify and geolocate herbicide resistant wild oat patches in mature crops. This could possibly allow us to create prescriptions for post-harvest or pre-seed Avadex or Edge applications. Stay tuned for updates!

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