FIELD STORIES IN PRECISION AGRICULTURE

Todd Golly

Todd Golly, farmer and co-owner

Golly Farm, Winnebago, Minn. (south-central, established in 1905)

Ag Engineering degree, University of Minnesota.

Farms with brother Tim and parents Tom and Judy Golly, along with wife Mindy and children Tyler, Thomas and Gigi.

- **Crops**: 6,000 acres, corn-soybean rotation (all 15-inch rows). Some identity-preserved crops like soybean seeds and high-oleic soybeans.
- **Soils**: Dark and heavy with good OM, rely on drainage tile. Test every two years.
- **Fertility**: Variable rate by zones (yield and soil).
- **Tillage**: High-speed minimum-till disk (Horsch Joker) once, then field cultivate, then plant.
- **Livestock**: None. Ex-swine producer, and parents had beef herd.
- **Technology**: Mental acuity, Excel spreadsheets (math!), yield monitors, autosteer, RTK guidance, grid soil sampling, sprayer boom shutoff/direct injection, variable-rate fertility, narrow-row crops, whole-farm analysis, in-field research/testing, drone.

Follow Todd's Journey through the 2020 growing season

Meet The Farmer ▾ | In-Season Update | Harvest Scorecard ▾ | Post-Season Evaluation ▾

IN-SEASON UPDATE

Golly Farms Evolution to Precision: A Slow and Strange Summer (Part 2)

(https://d3hid44mqnfbhw.cloudfront.net/precisagms/wp-content/uploads/2020/08/todd_golly_part2_1.jpg)*Southern Minnesota farm applies engineering mindset with economic sensibility to improve new technology adoption decisions.*

Article by Kurt Lawton

“It’s been a quiet week in Lake Wobegon.”

This famous weekly lead-in to the news from a fictional rural Minnesota town on the Prairie Home Companion radio show has felt strangely true as Todd Golly recaps his summer on the family farm.

“As farmers, we’re use to working alone or with family and a few employees, but this year is unlike any other. The summer has seemed slow—no company sales reps or research techs coming by; no equipment companies bringing new technology to test; almost no grain hauling as ethanol plants are closed or barely open; no kids activities; no summer farm shows or county fairs.”

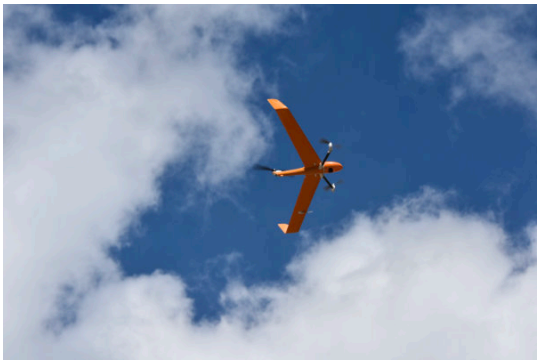
Golly says it’s just not the same when personal visits are replaced by more computer screen time with email and Zoom meetings. “Yet the waterhemp are still hanging around,” he chuckles.

Crop season changes

(https://d3hid44mqnfbhw.cloudfront.net/precisagms/wp-content/uploads/2020/08/todd_golly_part2_2.jpg)On our second visit to Golly Farms near Winnebago, Todd and his drone pilot and previous co-worker Erik Johnson were launching his FlightWave (https://www.flightwave.aero/) Edge, a hybrid tricopter fixed-wing UAS aircraft to get in-season images from a nearby field.

His changes so far this season run the gamut from increased spring tillage and early planting issues to more ground application of herbicides, last-minute dicamba regulation changes, a lack of new technology testing, and the commodity market challenges of ethanol plants closing.

Last year’s late harvest, with some corn being combined in the snow, led to more issues with volunteer corn this spring in soybean fields. Golly says tillage also played a role, as very few acres saw a chisel plow last fall, opting for faster shallow tillage with his Horsch Joker compact disk. “Good news is we’ve got numerous unplanned fields trials now with different tillage types and timing, so I’m hoping for data that will allow a greater shift away from the chisel plow. We would have been in serious trouble without the speed of the Joker combined with a dry spring.”


(https://d3hid44mqnfbhw.cloudfront.net/precisagms/wp-content/uploads/2020/08/todd_golly_part2_3.jpg)The fortunate early planting season—the opposite of 2019—aided the volunteer corn, as Golly says it had not emerged before their early spraying.

Since another herbicide application was needed for volunteer corn, Golly shifted to spray more acres with his ground rig, deciding to add insecticide and fungicide—reducing the need for aerial fungicide application.

And in his annual battle with multiple herbicide-resistant waterhemp, he decided to walk beans in one 40-acre field. “We couldn’t use dicamba due to surrounding fields lacking resistance to the herbicide, and Flexstar just burnt the weeds but they came back. So, we’re just cleaning up that area to protect it until we can get it next year in corn,” he says.

Dicamba rule changes

The biggest agronomic issue was the whole dicamba fiasco this summer, says Golly. “There were a few days we couldn’t spray dicamba because it all of a sudden became illegal, but then the label was re-approved. Plus, the challenge with the cutoff date means we’re scrambling to get acres sprayed, while the small weeds start growing afterwards,” he says.

“We need every tool we can get right now in the fight against waterhemp, as dicamba, Liberty and Enlist are all failing due to increasing resistance. Dicamba is a great tool, but it’s not perfect.”

Record crop storage issues


(https://d3hid44mqnfbhw.cloudfront.net/precisagms/wp-content/uploads/2020/08/todd_golly_part2_4.jpg)In Golly’s area of southern Minnesota, nearly 100% of all corn is marketed through contracts with ethanol plants. Due to Covid keeping a lid on drivers and fuel consumption, the majority of ethanol plants in the area have shuttered. This means farmers haven’t been emptying their on-farm storage at the normal pace, with a big crop looming in the fields.

“We have six ethanol plants, many closed for months, and they have a difficult time restarting,” Golly adds. “We’re still only at 50% capacity, so many are scrambling to figure out what to do.

Like many farmers, Golly doesn’t like to admit to a good crop in hope that prices move up. “The reality is I think Minnesota is going to crush the all-time yield record this year, if we continue to get timely rains to put that last 25% of weight on the grain,” he says. “I hate to jinx it, but we probably have 65-70-bushel beans and 250-bushel corn, which is about 10% more than a very good crop around here.”

USDA Crop ratings agree

In fact, the August 9 USDA crop progress report for Minnesota bears out Golly's thoughts. Both corn and soybean conditions were rated 84% good to excellent. Corn maturity was 12 days ahead of last year and soybeans were 14 days ahead. Soil moisture tells another good story with 74% of topsoil and 79% of subsoil acres rated adequate.

So the challenge becomes, where to put the new crop? Farmers here have also lost buyers outside of the fuel industry, as many local co-op elevators no longer buy and store grain, meaning unit trains don't come through with empty grain cars anymore.

"Between ethanol, the virus and trade issues, we don't know what to plan for right now. China is finally buying their share of grain, but with this giant new crop, it's going to be tough on everybody. Something needs to change or it's going to be a pretty sad winter. It's amazing how all this technology has outpaced the demand, considering how demand continues to grow," he says.

Drone research improves field zones

(https://d3hid44mqnfbhw.cloudfront.net/precisagms/wp-content/uploads/2020/08/todd_golly_part2_5.jpg)Having founded and served as COO for several years of an agtech startup company that used drones to improve field scouting (Aker Technologies), Golly knows how to use drones for research.

He is always looking for the next best thing to be more efficient. As Aker's older drone fleet was getting pretty beat up, since landing a fixed wing is challenging in areas without ditches or roads, he searched UAV shows for better technology. "I love this FlightWave Edge that can takeoff, hover and land like a tricopter and fly like a fixed-wing airplane. And you can buy different payload cameras and sensors for many uses," he says.

During our visit, we watched the FlightWave Edge takeoff vertically, climb to 400 feet to make its field passes, then return to the same spot as takeoff. It flew the pre-programmed flight plan for a 70-acre field in 12 minutes. He says it only takes a quick 15 minutes for full processing with the software.

"During the last three or four years, I've flown all my acres for NDVI. My goal is to combine data from soil samples, NDVI and yield maps to really fine tune fertility zones. Not to necessarily cut back on fertilizer but trying to spend the same amount and put it in the proper locations," he says. "Between the three of them, you can make some nice maps that are pretty accurate all through the season."

Golly conducts a lot of on-farm research every year, but it has slowed this year due to Covid cutting back the ability of company people to travel and help with the plots. He did continue some ongoing fungicide trials in corn and soybeans, along with some work with foliar biostimulants.

He learned the most from a 300-acre corn fungicide trial he conducted several years ago. "Erik and I flew it every single week, and documented how each fungicide changed the plant health," he says.

Golly found it fascinating because each one of the three fungicides showed a different timing of when it affected corn plant health. "One provided a quick burst after application, one produced a burst at the end, and the third one was like an IV producing a low steady drip. Each one kind of changed according to the rainfall we got, too."

His takeaway was excellent knowledge to really fine tune fungicide timing. "I spray fungicide earlier than I ever have because of that plot, and I stick to a certain class of fungicide," he added.

New business ideas continue

The last sentence of Part 1 (Meet the Farmer) “an engineering mind rarely rests” held true during this quiet, odd summer. Todd and some partners are working on a project that, he says, has the potential to benefits many farmers. But he won’t disclose his engineering mind until later this year.

Kurt Lawton has been an agriculture journalist for more than three decades, with a special passion for the technology side of the business. He currently operates his own freelance content firm, Stellar Content, based in Eden Prairie, MN.