First Person

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.

(https://www.precisionagalliance.com)

Follow Todd's Journey through the 2020 growing season

HARVEST SCORECARD & POST SEASON EVALUATION

Golly Farms Evolution to Precision: Harvest Data Empowers 2021 Decisions (Part 3)

Southern Minnesota farm applies engineering mindset with economic sensibility to improve new technology adoption decisions.

Article by Kurt Lawton

Ideal weather—aside from a six-inch October snow—helped deliver record yields and more improved data during 2020 for southern Minnesota farmer Todd Golly.

We caught up with Golly on November 5th as he and his brother Tim were piloting their two Case IH combines across their last field of 2020. “We had best-ever yields in corn and soybeans, with cornfields ranging from 240 to 260 bushels per acre and soybeans exceeding 60 bushels.”

Aside from losing about five harvest days and some subsequent higher grain moisture due to the early blizzard, fall harvest weather was warm and cooperative. On top of that, the market came through with higher grain prices.

Beyond equipment and weather, Golly faced a Covid-19 virus scare from an employee in the middle of harvest, when the two closest hospitals had no available beds. “Fortunately, he quarantined and recovered, but it makes you quickly adjust to thinking about employee and family safety, as well as future planning thoughts regarding additional employees,” he says.

Reviews data in the cab

Golly’s analytical engineer’s mind rarely rests during the long hours in the combine seat. Thanks to auto-steer and data flowing into his iPad from his Climate software, he watches yields of hybrids and varieties by management zone to formulate seed, fertilizer and weed control input decisions for 2021.

To calculate his interest in newer hybrids, usually in short supply during early order, he analyzes his current seed lineup by field to find the good, the bad and the ugly. “I look at true side-by-side data by individual field because it’s unfair to compare numbers across different fields that are better or worse,” he adds.

Since Golly grows corn in 15-inch rows, he pays more attention to hybrids at the top and bottom of test plots, looking for tendencies since 30-inch row yields don’t equate to 15-inch farming. “I also look for more vertical leaf structure to take more advantage of the sun given narrow rows.”

His seed company advisors also play an important role. “Once they understand my fields, my likes and dislikes, they provide good advice. Then I match their recommendations with my knowledge to make final decisions,” Golly says.

In the cab, Golly also reviews soil samples and prescription maps in the various yield zones. “I need to make sure we keep the variable-rate fertilizer being spread in order to follow that with my shallow tillage,” he says.

Trait selection and plant populations

As the combine chews through every acre, Golly looks for weed control issues to adjust herbicide-resistant seed traits used in 2021.

“Enlist may be the best technology, but the bean yields aren’t there yet for this area, but it’s getting close. Dicamba plus a residual didn’t work quite as well this year, so I will shift my soybean traits to the Liberty program to add flexibility and fight waterhemp resistance.”

To complete his seed technology calculations by field, he looks at results of this year’s maturity groups and plant populations. “I have a tendency to plant later varieties than anyone else in this area (110-113 day), mostly because our data shows it pays off, and I have an updated dryer with no fear of using it.”

Regarding seeding populations for his 15-in. rows, Golly plants 155,000 soybean seeds per acre to finish at 120,000. “I used 36,000 population for corn this year, but with the good weather we had, I probably could have pushed it to 38,000 or 40,000. It seems like hybrids are getting better at higher populations to increase yield, given the right environment and management.”

In this 15-in row environment, Golly is a firm believer in 100% use of foliar fungicides on corn and soybeans, proven by his years of data delivering good ROI. “For 2021, I’m shifting some acres from Delaro to the new Delaro Complete because of the added plant health benefits. The addition of better roots and better plant protection is fantastic in a drought year if 2021 predictions come true,” he says.

One technology he’s keeping his eye on is the short-stature corn from Bayer. “I was intrigued when I saw a nearby field plot this summer. If it will yield with only half the residue, that would be great.”

Constant field zone improvements

Golly doesn’t plan on any fertility adjustments for this year, other than continuing to tweak his management zones based on more data. He is comfortable with his variable-rate prescriptions that drive up yields more rapidly in the good areas while delivering acceptable smaller gains in lower-yielding zones.

“Yield really comes down to topography that changes the moisture profile during the season, and Mother Nature controls that moisture content. You can always throw more money (fertilizer) at it to get more yield, but not necessarily more profit. By adding more data layers—soil samples, yield history, SmartFirmer data, manure analysis—we can adjust zones to increase profit margins. Our testing, and going the extra mile with management and inputs, gives us a leg up on the competition.”

Tillage also plays into greater profit margins at Golly Farms. Once a chisel plow loyalist, Golly began conducting some side-by-side yield and residue tillage trials with a shallow high-speed Horsch Joker disk.

“What we found over several years is it costs us 66% less to run the Joker versus the chisel, which is a big time and cost savings,” he says. “We continue to see no yield drop, and residue management is very good. Headlands will still be chiseled due to compaction if there is time after harvest.”

Precision technology data gains

Golly began the season by collecting new data in the planter furrow, testing Precision Planting’s SmartFirmer. He likes gaining data during planting, rather than doing a separate pass across the field, like a Veris tool. “I was impressed with the EC and soil moisture/temperature data. The organic matter and CEC maps were shockingly good, so I can’t wait to get another year or two of data from it. It looks like it will provide more valuable data layers to improve my zones and prescriptions,” he adds.

He ended the crop year with a demo of a new Case IH combine with Harvest Command automation system. One combine is getting old with more than 5 million bushels run through it, so it may be time to trade soon, he says.

“The sample in the grain tank was so clean it was amazing. The sensors and cameras and automation—it was fascinating to watch settings change as harvest conditions and hybrids changed,” Golly says. “Even though we don’t necessarily get paid for clean grain, if this technology saves time, some bushels and improves soybean storage with less mold potential, the value is probably worth it just for that protection. But only when it is time to replace a combine.”

Unfortunately, due to Covid, Golly could not test some coming technology in the AI space, due to companies canceling travel and farmer meetings. “My engineering mind loves to work with companies on their autonomous technology to help get it market-ready. I’m also intrigued by the next generation sprayer boom technology like John Deere’s See and Spray System. It could be a huge game-changer for farmers and the environment when individual weeds are the only thing that gets sprayed.”

Grain bin technology value

One precision technology that saved Golly a lot of time and grain this harvest is his OPI grain storage management system. He watched and managed 750,000 bushels from his smartphone, where he also receives texts when the temperature changes by five degrees.

“It’s been a very tough year for storage, as early grain went in hot with our 70-degree weather, so we had to cool it in stages until the night temperatures dropped. The bin sensors and fan automation handled the temperature and moisture extremes well, with grain coming out close to 15% moisture. This technology has come down in price so much that I’d highly recommend growers look at it—even if only using one sensor in the middle of a smaller bin,” he adds.

Golly Farms uses the technology to manage three bin sites with varying bin sizes that use from 1 to 7 sensors per bin. The farm delivers from 50,000-75,000 bushels per month, ranging from ethanol plants to food-grade soybean facilities. And they don’t fear identity-preserved grain, growing seed and food-grade grains during years when they can secure added profit.

Software technology and Excel brilliance

As the proud developer of a massive, customized Excel spreadsheet that tracks and evaluates his entire farm business, this computer time is where Golly’s engineering mind geeks out on his dozens of formulas that continuously fine-tune ROI and profit.

His spreadsheet began with the goal to easily prepare information for the banker every year—the cash flows and balance sheets. It features sections for cash flow, projections for the coming year, yields by field, grain marketing contracts, inventories, loans, scale tickets, planting plan, land values, land rents and formulas designed to tie everything together.

Since learning is a constant, it drives him to check out other management software. “I’m a fan of Pioneer’s mobile app software that accurately estimates yield by taking a photo of ears of corn. That led me to examine its Granular farm management software this year.” Golly was impressed with their satellite image technology; the basic analytics for planting dates, hybrids and soil types; the potential for nitrogen and more. “It got my attention, so I will continue to use it.”

He also plans to demo Harvest Profit business software this winter. Eventually, Golly would like an easy program to pass on to the next generation, print nice-looking reports, pull in cash and futures markets and be accessible from the cloud on other devices. This is what he lacks on his Excel spreadsheet, along with instruction on how to use it.

Expand learning with peer group

Another crucial part of his continuous learning mantra, Golly missed the in-person interaction with his farmer peer group that usually met quarterly until Covid happened. “Farmers need interaction to get through tough times together, especially since we’re normally isolated on our farms. Texting, email, phone calls, even Zoom meetings, it’s just not the same,” he adds.

Golly has been part of this technology-loving farmer group for 25 years, initially started by the University of Minnesota. “I highly recommend that all farmers look beyond their local area for peers who can challenge each other honestly and help each other grow. We have a group that trusts one another, gives honest feedback, conducts research and has a lot of fun together.”

Continued learning over 40 harvests

While Golly realizes he only has 40 crops in a lifetime, his engineering mind won’t allow him to make drastic changes from year to year. “I don’t make rash decisions based on one year’s data, but if it looks good, I will expand my acres until it is proven and adopted across all fields where appropriate.”

He believes in a slow process of making sure you are right because big mistakes can be costly, especially when you are a first-adopter of technology. “You hope your children can learn from your slow and steady progressive improvement, instead of from your mistakes.”

Lawton has been an agriculture journalist for four 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.