Fine-Tuning

by Matt Hagny

The original story on Palen appeared in the Sept. '03 issue.

Having had 10 years of continuous no-till under his belt already in 2003, you might think Doug Palen would be merely coasting by now. Yet he has found many aspects that needed some tuning to keep 'er running smoothly.

The most fundamental changes occurred in crop rotations as Palen came to understand the need for much greater intensity. While he dabbled in double-cropping during the drought of 2000 to '05, he dramatically ramped up from '06 onward as rainfall became more plentiful again: Almost every acre of wheat stubble going to corn or milo the next year was double-cropped or cover-cropped during '06 – '08.

Sunflowers are Palen's double-crop of choice, but he has also used milo, soybeans, proso millet (on fields going to corn), and pearl millet ('08 was the first attempt, and it's very unhappy due to excess moisture). Palen enjoyed some highly profitable double-crops in '07, but the true goal is simply to break-even while preparing the field for corn or milo the following year by using excess moisture from the subsoil, which sunflowers are adept at doing. Palen explains: "I was seeing too much water coming off of fields, especially in carry-over wheat stubble. [After watching for several years] I'm more comfortable with ramping up the intensity with double-cropping and covers. We need to utilize the moisture whenever it falls. I feel strongly that this is the direction we need to go."

Otherwise, Palen has tended to adhere to his rotation of 2 wheat crops (plus a double-crop after the 2d wheat), followed by 2 – 3 milo crops, and a single year of soybeans (stacked soybeans were quickly dropped from his system due to reductions in mulch cover). Some fields only get a single year of milo due to shattercane. And sometimes 1 – 2 years of corn are used instead of milo. Palen has grown field peas instead of soybeans on some acres in '07 (good results) and '08 (poor results): "The jury's still out." The following wheat does benefit from peas instead of soybeans, although the non-crop period after pea harvest is a bit of an issue due to rapid residue decomposition.

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Palen says that all this additional cropping and diversity creates some real management challenges. Hiring his harvesting helps, but other logistical and timeliness issues haven't entirely been overcome by moving up to an air drill (a 30-ft Deere 1890), a 16-row planter, a JD 4920 sprayer, and semis to tend the seeders and the sprayer.

One of Palen's nagging concerns has been rill erosion: "My residue just doesn't last as long as it once did." Along with the greatly increased cropping intensity, he has initiated several other strategies, including planting a cover-crop cocktail (bin-run sunflowers, mung beans, and sudan) between stacked wheat crops on 200 acres. Those fields will get beef feedlot manure applied onto the living covers, which will then be terminated 3 – 4 weeks before wheat seeding. Palen says, "We need something growing to keep the soil active and put more roots in the soil. We can improve infiltration by using the water from the soil."

Another tactic has been to revisit using stripper heads—Palen had 2 of the 3 combines used in the '08 wheat harvest running stripper heads. Palen reports, "My reason for going that route is erosion control. In the past, if we didn't do covers or double-crops, the stripper head created issues with the straw detaching and drifting into piles. I'm now of the opinion that we need to do everything possible to get covers and double-crops planted in all the wheat stubble [to be carried over]." Palen notes that stripper heads do require more management in terms of adjustments and being timely with harvest (shattering from the rotor is greatly reduced if the wheat isn't tinder dry). However, he likes what he sees in planter and drill performance in the stripper-harvested stubble, and weed pressure is reduced due to shading (although the double-crops don't particularly like the shading either).

While a bit taxing at times, Palen clearly enjoys these adventures: "We need to continue to learn and try." Then he adds, "But only experiment at a level where you can handle a loss, and at a level where you can reasonably evaluate the effects."