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NO-TILL FARMING....THE REST OF THE STORY

The work with conservation tillage equipment began in the Tobias area in Saline County in 1975. There was less than 100 acres of farm ground that was planted using a leased Buffalo no-till planter provided by the Chevron Chemical Company. Floyd Herman, north of Wilber, was also perfecting a Buffalo planter ridge plant system on furrow irrigated ground along the Big Blue River.

Fran Brakhage, Fran's Feed Store, Tobias, handled the equipment and served as instructor for local farm users. In 1979 a six-row Buffalo planter was made available by the Lower Big Blue NRD through a lease purchase agreement. The two planters were leased to local farmers for \$3.50 per acre. The keys to success with no-till farming began with the proper setting of the planting equipment and commercial applicators using the proper herbicide coverage to control weeds.

By the fall of 1982, I was fresh out of UNL, and I took a temporary position for a very talented county agent by the name of Jim Emal. Jim was on a one-year temporary assignment to teach farmers and faculty at UNL about microcomputers and their implications for agriculture. I was invited to help with a no-till farming tour that fall and I met Fran Brakhage, Chevron representative Jerry Adams, and approximately twenty-five area no-till farmers who were harvesting 7,000 acres of no-till milo, corn and soybeans.

Soil moisture was not a concern that year. In fact, excessive rainfall occurred with multiple severe storms in the Tobias area of 4, 5, and 7 inch rainfalls within a 40-day period. A total of 35 inches of rain fell during the year. On conventional plowed and disked fields, topsoil erosion was quite severe. In several instances entire hillsides were "scalped" down to the tillage layer. There were some reports of soil losses up to or exceeding 100 tons per acre.

We knew back then with the equipment we had, the no-till farming system worked well with milo, corn and soybeans in the years following wheat as well as in double cropping with soybeans or sunflowers immediately following wheat harvest. Crop rotation schemes were very beneficial aiding in weed control. Roundup herbicide had not been invented yet. These farmers were successful in raising crops with herbicide combinations that were multi-modes of action, exactly what is taught about today to prevent resistance in weeds. Paraquat herbicide provided burn down of weeds with a spreader sticker and other herbicides in combination as a preplant herbicide treatment.

Jim Emal had consistently measured more moisture in the top 3-foot profile of soil in no-till fields compared to tilled even in wet years. He observed less soil erosion and ag runoff and it allowed some farmers to switch to corn vs milo. In 1989 and 1990 I had five farmers with side-by-side tillage comparisons that measured on average an 8.8 bushel yield increase of no-till milo into soybean stubble compared to tilling the ground once or twice. Milo yields really responded to no-till farming. Back then there were perennial weeds like milkweed, dogbane and bind weed that would show up in fields, but they were not a major yield reduction factor. The reduced labor and machinery requirement, fuel and moisture savings were driving the new way to farm. Area hunters enjoyed finding more pheasants in this area of the county.



What I didn't understand back then, but I certainly do now, we would be building soil organic matter in our soils over time. Tillage breaks down organic matter in soils more so than in no-till farmed soils. It's the higher rate of organic matter that gives our soils more resilience to weather extremes and increases soil fertility. There is a long list of advantages to higher soil organic matter levels including improvement of soil structure, soil particle aggregation, water retention, soil biodiversity, absorption and retention of pollutants, buffering capacity, and the cycling and storage of plant nutrients.

It is amazing how far we have come and we can thank those early innovators for what they did to foster positive change in agriculture.

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