When one plus one plus one equals zero

by Hugh Maynard

Farmers like Gary Chipps, who have adopted reduced tillage methods, have done so primarily to eliminate soil erosion. Once the first step is accomplished, however, the inclination seems to be to go one step further and reduce inputs as well.

Chipps, who farms in Cortland, on the sandy-loam soils of south-western Ontario near Tillsonburg, had tried just about every kind of tillage alternative to the mouldboard plow in order to keep the wind from taking the top soil over to the neighbour's - and beyond. To-day, with a notill system and crop rotation in place, he's ready for the "3-no" system.

"Our ultimate goal is no-till, no fertilizer and no herbicide. We may not be able to do it all the time on all the fields, but we will be doing it on some fields this year," he says.

Chipps runs a dairy operation with his wife Lois, brother Keith and his wife Connie. They grow just about all the feed they need - corn, soybeans, oats and alfalfa -for the 42 milking Holsteins on 350 acres of arable land. Winter ground cover, crop rotation and manure are the keys to Chipps'3-no plan.

Trial & trial again

Chipps' elusive search for a tillage system that worked went from mouldboard plowing followed by a packer to chisel plowing to off-set disks. After attending meetings of the Ontario Soil Conservation and Improvement Association (OSCIA), he rigged up some courters on his corn planter and went into no-till.

``Having a good set of forward courters to cut the trash and make the opening for the seed is very important, especially for corn," he says. No-till means only three passes over the field in the spring - one each for manure application, planting and cultivation.

Chipps uses a 30-year old 110 hp Farmall for the primary operations, smaller tractors for the rest. He points out that it only has 2200 hours of work, reflecting the reduced time and fuel spent in field work. "With the dairy herd we've got better things to do than sit on a tractor all day," he remarks.

Although Chipps does quite nicely from patching together equipment, he says that one item that would be handy would be something to adjust corn populations on the go. He has some sandy ridges which don't have enough summer moisture to support the high plant populations that can be seeded on the rest of the field. He believes a hydraulically

operated mechanism with a cab monitor could be paid for easily in time saved and improved yields.

Similarly, Chipps has adapted a regular spring-toothed harrow for only a few hundred dollars as the row cultivator. The dry summer conditions of the south-west made herbicides a temperamental choice for weed control, and so he had few reservations about going to cultivation as much as possible. "Herbicides don't always work, depending on when they are applied. But with the cultivator, nothing gets in its way, everything gets taken out as it goes along," Chipps says.

``If there's no quackgrass, I can easily do without herbicide," he points out, but adds that if the weed is not controlled, "it can give a lot of grief.' Chipps also uses fall planted rye as ground cover and a mulch to control weeds, but will resort to a herbicide like Roundup to keep on top of emerging weed problems.

Biggest step

This spring will be the inauguration of the third "no" for Chipps. The dairy barn was extended last year and a liquid manure pit was constructed at the same time. The plan is to inject the manure into the soil between the rows, reducing leaching and making the nutrients available when the crop needs them. With legumes in the rotation to fix nitrogen and covercrops like rye to build up organic matter, Chipps figures to bring down fertilizer applications to the same status as herbicides - break glass only in case of emergency.

Located on what are judged to be the best soil conditions for no-till, and in the best farm climate in the country, Chipps says that the early spring allows him to follow the no-till sequence of operations without too much trouble, something that may pose problems for farmers with a shorter spring work period. "We can get away with a lot of things in the fall and spring," he says, noting that he has seeded fall rye as late as November and still have it take.

"But then again, if it's a dry summer, we're cooked," Chipps says, which is just another reason for making sure his soil is in top shape to prevent crop losses - both in Yield and input costs - in touch seasons.