

REDUCED TILL CABBAGE: INCREASING DROUGHT TOLERANCE AND REDUCING ADDICTION TO TILLAGE

Casey Kunes
Hemdale Farms
Seneca Castle, NY 14547

At Hemdale Farms we have been zone building cabbage for two years. Our program starts in the fall with a deep ripper operating at approximately 14 inches deep pulling an Aerway behind. On our shallow soils with a high concentration of stones we'll run at 12" deep, and we have some recently rented heavy soils where we'll run at 16". The Aerway helps loosen the soil surface between the shanks for better water infiltration.

In the spring we make our zone building pass in the same path as the falls pass at approximately ten inches deep. We also will apply liquid fertilizer in the slot. Next we incorporate Treflan with a field cultivator. We then plant with the transplanter over the zone. The transplanter is equipped with a Great Plains Turbo Till coulter in front of each shoe. All field passes are coordinated with GPS.

This past spring we tried transplanting directly behind the zone builder. Where the field was relatively level, the planter stayed on the zone okay. But when the field began to roll the additional load draft and tractor drift would then cause an over correction and it was very hard for the transplanter to stay on the zone. We ran our herbicide incorporation pass ahead of the transplanter on the rest of the field and the transplanter went right back to following the zones. We also feel we still need Treflan in our weed control program and that is another reason we are making one pass with a field cultivator.

We have been deep tilling in the fall for 10-15 years. This practice coupled with spring ZT I believe has created a uniform soil profile that allows for good water movement, both down after a rain and then up later in the growing season. I believe this capability helped our cabbage fields withstand this past year's summer heat and dry period. I saw evidence of this when we transplanted cabbage in early July on a spring plowed field (rented land-only field plowed this year) and then moved directly onto a field that had our normal spring ZT and herbicide incorporation pass. I was concerned about transplant shock and plant loss in the heat. We did experience some stand loss in the plowed field and although the ZT field looked stressed for several days the plants bounced back and we had no appreciable stand loss.

We see more evidence of soil health in the fall during harvest. After a heavy rain I don't see ponding of water on our fields and harvest operations aren't the struggle they were years ago. I can compare this also with the one plowed field that we happened to be in when we received 2" of rain. We left deep ruts as we finished harvesting that field. We moved directly onto one of our ZT fields and did not cut in. This is a real eye opener to anyone questioning the value of zone tillage.

Besides our tillage practices there are other factors that contribute to overall soil health reducing soils addiction to tillage. We use several types of cover crops in our rotation and are very displined and patient when working the soil to avoid compaction. We will not do tillage if the soil is too wet. We have enough resources to complete the operations when the conditions are right. And we utilize equipment that helps manage compaction. Our manure tank spreader is on 8 large tires and that some undercarriage is used with a dumpster in the fall, pulled by a tracked tractor.

These factors and experiences have made us true believers in reduced tillage in commercial cabbage production.