

Fact Sheet for Best Organic No-Till Practices

Based upon farmer findings from the USDA Conservation Innovation Grant 2019-2021

Practice & Description	Project Findings
Solarization <i>Utilizes clear plastic tarps to burn weeds, cover crops, and crop residues, effectively managing weeds and residues without soil disturbance. Faster than occultation but may harm soil biology at the soil surface due to increased temperatures.</i>	Targeted use of tarps for crop transitions enabled farmer to dramatically reduce the use of rototiller
Occultation <i>Use of opaque plastic to keep soil covered between crop transitions and suppress weeds without tillage. Used to terminate cover crops, weeds, and speed digestion of crop residues. Slower than solarization but may be less damaging to soil biology</i>	Targeted use of tarps for crop transitions enabled farmer to dramatically reduce the use of rototiller
Interseeding for Weed Control <i>Low growing clover was interseeded as a perennial understory to grain crop to help control weeds</i>	Legume crops were heavily browsed by deer; intercropping was ineffective until deer fence was installed
Seed Drill <i>Seed drill was used to increase days in living cover by drilling cover crops into crop residues without requiring the use of a harrow for incorporation</i>	Acquisition and use of a seed drill enabled farmer to triple his days in cover crop living cover
Board Crimping <i>Board crimping kills living cover crops by flattening the cover crop, making it easier to plant than in mowed cover crops with moveable plant material that may clog planting equipment</i>	Trialing board crimping on one field led to adoption on more of the farm's fields for the third year of the project
Cover crops <i>Cover crops maintain soil cover to minimize soil disturbance and exposure. Utilizing board crimping and occultation for termination offers a no-till method to kill living cover to plant cash crops</i>	Soil Carbon Proxy test results showing low soil structure and dryness, combined with other farmers' experiences, helped farmers decide to rely less on compost for soil cover and to integrate cover cropping into their soil health strategy and farming practices, with excellent results
Mulches <i>Use of heavy mulches, including leaf mulch, for weed suppression and to maintain soil cover</i>	Use of heavy mulches allowed farmer to eliminate major disturbance through cultivation passes, which lead to flattening of near-permanent beds