Practical No-Till and Cover Crop Implementation Field Day

Rutgers Snyder Research Farm | 140 Locust Grove Rd Pittstown, NJ
Thursday, October 21, 2021

Time	Activity
8:45 - 9:00	**Check-in** Participants check-in, sign in for certification credits *Lead: North Jersey RC&D Staff*
9:00 - 9:05	**Introductions and Welcome** Introduction to NJRCD and overview of field day activities *Lead: North Jersey RC&D Staff*
9:05 - 9:15	**Activity: Meet other participants** To facilitate networking and collaboration, participants will be asked to break up into groups of 5 to introduce themselves, discuss their primary activities, and one thing they learned through their career/experience, that they wish more agricultural service providers knew. *Lead: B Hilshey*
9:15 - 9:30	**Breakout groups discussion aboutww** Participants will be asked to self-segregate based on their experience level into three groups. In small breakout groups, participants will be asked to discuss a prompt for 10 minutes. ● Beginner: What topics do agricultural service providers need training on to work more effectively with farmers in implementing soil health? ● Intermediate: What are the impediments to soil health practice implementation? ● Advanced: What creative or innovative methods have you (or your organization) used to encourage greater soil health practice implementation. What do you see are the biggest opportunities? After 10 minutes of discussion, groups will share their "take-away points" *Lead: C Bench and B Hilshey*
9:30 - 9:50	**Lecture: Talking to Farmers about Soil Health** Bench will share how he talks to farmers about no-till and cover crop, how to approach conversations around these topics, and farmers' most common questions *Lead: C Bench*

9:50 - 10:00	**Activity: Key Points** Participants will break up into small groups. Each will be assigned a scenario and will be asked to outline key points of their discussion. ● Beginner: What is the best cover crop for after corn/beans in corn/bean rotation? How can you reduce cover crop seed costs? ● Intermediate: If a farmer wants to start using multispecies cover crop, how can they get it in on time? What application options and rotations make multispecies possible? ● Advanced: A farmer transitioned to no-till and the stand emergence is even and population poor? *Lead: B Hilshey*
10:00 - 10:20	**Discussion: No-Till and Cover Crop Horror Stories** We learn more from our failures than our successes. Leads will share stories of no-till and cover crop failures and under what conditions these practices can prove difficult or even nightmarish! ● Vetch -- Love it or hate it ● Uneven and Rough Field Transitioned to No-till ● Forgot the test pH prior to transition ● No-till after grazing cover crop with a lot of residues Lead: Groff, Bench, and Hilshey
10:20- 11:05	**Supporting Farmers Pursuing Soil Health: Needs and Opportunities: Lecture** What are the barriers to greater soil health implementation and how can agricultural service providers better support farmers interested in improving soil health? *Lead Steve Groff*
11:05 - 12:00	**Lecture: Soil Health Innovations Around The Country:** The field of agriculture is changing fast; Groff will discuss how leading farmers are innovating, including (1) Planting Green, (2) Roller Crimping, (3) Livestock Integration, (4) Intercropping, and (5) Other topics. During a Q&A at the end, moderators will select questions from participants *Lead Steve Groff*

12:00 - 1:00	**LUNCH and Mini-Stations** **While participants each, lunch they will have the option of visiting several stations:** ● Participants can view planter and drill with labels describing each item ● Another display will have a variety of temporary fence options ● Another display will contain a variety of soil sampling and measurement equipment, sample test results from 10 labs, and information on using drones and satellites to monitor crops ● Another display will have roller crimpers, and data/photos from the research trial focus on roller crimping.
1:00 - 2:00	**Grazing cover crops – bang or bust?** Grazing cover crops could help increase the benefits acquired from cover crops and is a great way to integrate livestock back into our cropping systems. However, there is also concern that grazing might cause undesirable soil compaction. We studied grazing cover crops on 4 farms in southcentral Pennsylvania from 2019-2021. The farmers used permanent no-till and Management Intensive Grazing (MIG) practices, moving their beef cows daily. We measured soil health impacts of grazing, i.e. infiltration rate, bulk density, aggregate stability, total soil carbon and nitrogen, active carbon, and CO2-burst, as well as grazed cover crop biomass and residue left for soil health maintenance. We did not find that grazing had a detrimental effect on soil compaction, but it did not improve soil biological health either. Grazed biomass constituted a significant amount of high-quality feed for the animals, for a sizeable economic return. Our study shows that grazing cover crops in permanent no-tillage cropping systems using MIG does not cause detrimental soil compaction while increasing economic return. *Lead: Dr. Sjoerd Willem Duiker*
1:50 - 2:50	**Demonstration: Planting Conditions and Considerations** Demonstration of planting into various planting conditions: ● Varying Cover Crops: No-till killed cover crop, no-till planting green, and no-till without cover crop, ● Varying Soil Moisture: wet conditions, dry conditions, ● Varying Residues: heavy residue conditions. While the planting is taking place, Bench will discuss how the planting conditions impact planting and what strategies farmers can take to be more successful under various conditions. During the Demonstration Bench will discuss: Grain farmers only have about 40 opportunities to plant their seeds each year. When considering any conservation practice, it's important to understand how

	it will impact a farmer's ability to plant the crop. The lecture will discuss features of a "good planting", and why it matters. Potential topics to be covered include: ● Fertilization (in-furrow and 2x2) ● Residue Removal and hairpinning ● Slot depth and down pressure ● Slot closure ● Stand population and germination evenness and yield. *Lead: Bench*
2:50 - 3:15	**Cover Crop Termination and Weed Control** The lecture will discuss how to maximize herbicide effectiveness, types of herbicides and their efficacy on cover crops and weeds, the difference between pre-emerge and post- emerge, GMOs and herbicides, and alternatives to herbicides. *Lead: Bench and Other*
3:15 - 3:30	**Conclusion and Questions**