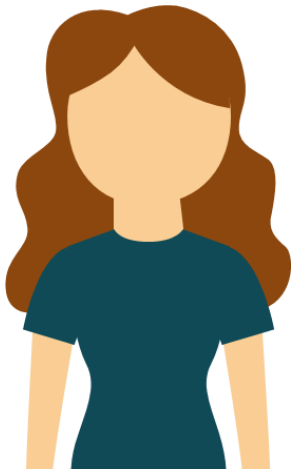


A 4R Focus on

Low Disturbance Manure Injection

Starting the Conversation...

How to start a conversation with a farmer about low disturbance manure injection (LDI).



Advising Farms On LDI

Good relationships and dialogue between farmer and advisory team are key

Farms are not willing to sacrifice yield, but they **are** willing to experiment

Management and monitoring will need to evolve as practice is adopted & implemented

What's the ammonium-N concentration in your manure? Let's calculate how much nitrogen you're losing to volatilization & see if manure injection will pay.

Thanks for sharing your 3-5 year farm business goals. We should chat about what regulation will ask of you in that time frame to see what new BMPs you should be considering *and* what funding might be available for those practices.

Do you worry about the amount of nitrogen that is lost from a manure application? Injection could result in 2-3 times more nitrogen being available from your application. The savings could be significant.

Do your neighbors or landowners complain about odor when you spread manure? Injection could make those relationships better by reducing odor.

How is the Phosphorus Index affecting your manure application plans? Low Disturbance manure injection can be helpful tool in long-term phosphorus management strategies.



By the Numbers: A Case Study on LDI & Advanced N Management

Operational Overview

Farm Location: Schuylkill County, PA

- 600 cropland acres
- 250 acres injected annually
- 5-years continuous no-till
- 2,400-hog finishing operation
- 60-head finishing cows

Environmental / Nitrogen Use Efficiency (NUE)

	B BASIC <i>no till system + surface application + traditional nitrogen applications</i>	I INTERMEDIATE <i>no till system + LDI injection + at planting N</i>	A ADVANCED <i>no till system + LDI injection + adaptive management</i>
Total Manure N	171	171	171
Available Manure N	43	117	117
Starter N	45	45	0
Sidedress N	100	0	0
Residual N	70	70	70
Total N Load	386	286	241
Total N NUE	1.90	1.50	1.26
% improvement		21%	34%

Economic

In this scenario, "Sourced Funding" includes CSP payments & REAP credits. Other grants/funding opportunities may exist, depending on the operation.

	B BASIC <i>no till system + surface application + traditional nitrogen applications</i>	I INTERMEDIATE <i>no till system + LDI injection + at planting N</i>	A ADVANCED <i>no till system + LDI injection + adaptive management</i>
Injector + maintenance	\$0	\$45.55	\$45.55
Increased Labor & Fuel	\$0	\$7.50	\$7.50
Fertilizer	\$59.46	\$18.24	\$0
Sidedress Application	\$10.00	\$0	\$0
Adaptive Management	\$0	\$0	\$10
Regulatory Compliance	\$1.00	\$1.25	\$1.25
Annual Cost yrs 1-5	\$70.50	\$73.70	\$65.50
Sourced Funding yrs 1-5		(\$42.00)	(\$42.00)
Out of Pocket yrs 1-5	\$70.50	\$31.70	\$23.50
Annual Cost yrs 6+	\$70.50	\$37.00	\$28.80