

Q1. Of the methods listed below, which effectively reduce soil compaction AND are considered best management practices for soil health?

Answer Choices	Responses-PRE	Responses-POST		
Deep ripping	0.00%	0	0.00%	0
Deep ripping twice with a second pass at a 90 degree angle	0.00%	0	0.00%	0
Planting a cover crop	100.00%	26	100.00%	18
Allow the freeze/thaw cycle to take care of it	11.54%	3	33.33%	6
Use equipment with tracks rather than tires	26.92%	7	27.78%	5
Answered		26	Answered	18
Skipped		0	Skipped	0

Q2. When converting from conventional (annual) tillage to continuous no-till, what are the biggest benefits when first starting?

Answer Choices	Responses-PRE	Responses-POST		
Prevents erosion by leaving residue cover	84.62%	22	94.44%	17
Increases biological activity in the soil	69.23%	18	66.67%	12
Increases crop yields	3.85%	1	5.56%	1
Decreases fuel costs	88.46%	23	88.89%	16
Answered		26	Answered	18
Skipped		0	Skipped	0

Q3. In general, how long does it typically take to see soil improvements when using no-till/strip till and cover crops together?

Answer Choices	Responses-PRE	Responses-POST		
One year	23.08%	6	5.56%	1
3-5 years	80.77%	21	100.00%	18
More than 10 years	0.00%	0	0.00%	0
Lesson Learned: TIME IS KEY		Answered	26	Answered
		Skipped	0	Skipped
			18	0

Q4. According to recent studies, how much, on average, can organic matter be expected to increase under no-till and cover crops?

Answer Choices	Responses-PRE	Responses-POST		
1% per year in the top 7 inches	0.00%	0	0.00%	0
1% per year in the top 3 inches	4.35%	1	0.00%	0
0.2% per year in the top 7 inches	34.78%	8	37.50%	6
0.2% per year in the top 3 inches	65.22%	15	62.50%	10
Answered		23	Answered	16
Skipped		3	Skipped	2

Q5. Does applying manure help in building healthy soil?

Answer Choices	Responses-PRE	Responses-POST		
Yes, manure provides the humic and fluvic acids which promote soil health	100.00%	23	100.00%	18
No, manure provides no additional benefits over commercial fertilizer	0.00%	0	0.00%	0
No, manure may kill the cover crops	0.00%	0	0.00%	0

Yes, and the more the better!	8.70%	2	11.11%	2
	Answered	23	Answered	18
	Skipped	3	Skipped	0

Q6. Of the following tests, which measure(s) physical, chemical and biological properties of the soil?

Answer Choices	Responses-PRE	Responses-POST		
Cornell	94.74%	18	64.71%	11
Haney	31.58%	6	76.47%	13
Solvita	26.32%	5	29.41%	5
Earthfort	5.26%	1	11.76%	2
Learned: Less skipped, general knowledge on tests increased	Answered	19	Answered	17
	Skipped	7	Skipped	1

Q7. What is a good method to determine if soil compaction is an issue in a given field?

Answer Choices	Responses-PRE	Responses-POST		
Using a soil penetrometer	92.00%	23	88.89%	16
Digging a soil pit	60.00%	15	83.33%	15
Testing for compaction with a tile probe	36.00%	9	61.11%	11
Inspecting root growth and soil structure with a shovel	96.00%	24	83.33%	15
	Answered	25	Answered	18
	Skipped	1	Skipped	0

Q8. One of the most familiar players in the soil food web, earthworms perform which of these important functions?

Answer Choices	Responses-PRE	Responses-POST		
Blending together different components of the soil	73.08%	19	83.33%	15
Consume dead vegetation	80.77%	21	83.33%	15
Opening air pockets in the soil	100.00%	26	100.00%	18
Increasing microbe populations	26.92%	7	55.56%	10
Provide critical pollinator links	0.00%	0	0.00%	0
	Answered	26	Answered	18
	Skipped	0	Skipped	0

Q9. Protozoa are single-celled organisms that prey largely on bacteria. When protozoa consume soil bacteria:

Answer Choices	Responses-PRE	Responses-POST		
The soil smells like spoiled milk	4.76%	1	6.67%	1
Protozoa grow a second cell	0.00%	0	13.33%	2
Key nutrient nitrogen is released	80.95%	17	80.00%	12
Bacteria populations dramatically decrease	23.81%	5	26.67%	4
	Answered	21	Answered	15
	Skipped	5	Skipped	3

Q10. Mycorrhizal fungi have hyphae which do what?

Answer Choices	Responses-PRE	Responses-POST		
Nothing	0.00%	0	0.00%	0

Transport nutrients to the plant that otherwise would not be av	95.83%	23	100.00%	17
Improve corn stand-ability	8.33%	2	5.88%	1
Reduce nutrient uptake	0.00%	0	0.00%	0
Make more soil water available to the plant	50.00%	12	76.47%	13
Aid in disease suppression	16.67%	4	52.94%	9
Lesson: DISEASE RESISTANCE	Answered	24	Answered	17
	Skipped	2	Skipped	1

Q11. Legumes fix nitrogen from the air. When does maximum N fixation occur?

Answer Choices	Responses-PRE	Responses-POST		
Pre-bud (just before the legume blooms)	60.87%	14	35.71%	5
7-14 days after it is in full bloom	39.13%	9	64.29%	9
Immediately after burn down	0.00%	0	0.00%	0
When glyphosate is used to terminate legumes	0.00%	0	0.00%	0
Learned: MUST BLOOM	Answered	23	Answered	14
	Skipped	3	Skipped	4

Q12. When is nitrogen that has been scavenged by a grass cover crop typically available to the following cash crop?

Answer Choices	Responses-PRE	Responses-POST		
Immediately after burn down	0.00%	0	0.00%	0
About 2-3 weeks after burn down	12.50%	3	5.56%	1
Not until residue is nearly completely broken down	25.00%	6	22.22%	4
Not until the following year	0.00%	0	5.56%	1
Depends on the C:N ration	79.17%	19	83.33%	15
	Answered	24	Answered	18
	Skipped	2	Skipped	0

Q13. Which element is most important in improving soil function?

Answer Choices	Responses-PRE	Responses-POST		
Nitrogen	4.35%	1	0.00%	0
Carbon	69.57%	16	77.78%	14
Phosphorus	0.00%	0	0.00%	0
Oxygen	39.13%	9	22.22%	4
Learned: CARBON IS KEY	Answered	23	Answered	18
	Skipped	3	Skipped	0

Q14. Which of the following factors must be considered when planning for nutrient management on farms with very active soil biology?

Answer Choices	Responses-PRE	Responses-POST		
Traditional NPK testing may show fertility deficiencies because	83.33%	20	61.11%	11
C:N ratios at the time of planting	50.00%	12	50.00%	9
The "4R's" no longer apply	0.00%	0	0.00%	0
"Starter" or "pop up" fertilizer becomes more important with de	45.83%	11	66.67%	12
	Answered	24	Answered	18
	Skipped	2	Skipped	0

Q15. There are 17 "essential plant elements". Of the following 8, which are NOT derived from soil?

Answer Choices	Responses-PRE	Responses-POST		
Potassium	0.00%	0	0.00%	0
Carbon	36.36%	8	56.25%	9
Oxygen	86.36%	19	93.75%	15
Zinc	0.00%	0	0.00%	0
Phosphorus	0.00%	0	0.00%	0
Boron	4.55%	1	0.00%	0
Hydrogen	81.82%	18	81.25%	13
Sulfur	4.55%	1	0.00%	0
	Answered	22	Answered	16
	Skipped	4	Skipped	2

Q16. When is an appropriate time to plant warm season cover crops?

Answer Choices	Responses-PRE	Responses-POST		
Immediately after soybean harvest	37.50%	9	11.11%	2
Within 3-4 weeks after wheat harvest	70.83%	17	88.89%	16
Interseeded when corn is at V5 growth stage	29.17%	7	44.44%	8
Immediately after corn harvest	16.67%	4	5.56%	1
On prevent plant acres	75.00%	18	61.11%	11
	Answered	24	Answered	18
	Skipped	2	Skipped	0

Q17. When seeding cover crops prior to corn harvest, how do you know the best time to do the seeding?

Answer Choices	Responses-PRE	Responses-POST		
Not recommended because too much cover crop seed gets caught	0.00%	0	0.00%	0
When there is about 75% of sunlight hitting the ground at noon	19.23%	5	23.53%	4
When there is about 50% of sunlight hitting the ground at noon	65.38%	17	70.59%	12
About 6 weeks prior to expected harvest of corn, while crops a	23.08%	6	17.65%	3
	Answered	26	Answered	17
	Skipped	0	Skipped	1

Q18. Which of the following are best management practices for annual ryegrass termination prior to planting the cash crop?

Answer Choices	Responses-PRE	Responses-POST		
Burndown should not occur until all plants are actively growing	86.96%	20	94.44%	17
Herbicide must be applied before 4-5 hours before the sun sets	86.96%	20	72.22%	13
Residual herbicides may interfere with glyphosate translocatio	52.17%	12	50.00%	9
Water should be reduced to 8-12 gallons/acre	26.09%	6	27.78%	5
pH should be neutral	17.39%	4	22.22%	4
	Answered	23	Answered	18
	Skipped	3	Skipped	0

Q19. Which of the following is true about certified seed?

Answer Choices	Responses-PRE	Responses-POST	
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It is better than non-certified	34.78%	8	23.53%	4
It must have a blue tag verifying certification of the seed in the	56.52%	13	41.18%	7
It has guaranteed genetics	65.22%	15	64.71%	11
it provides plants with consistent performance under similar co	60.87%	14	58.82%	10
It costs more	43.48%	10	52.94%	9
	Answered	23	Answered	17
	Skipped	3	Skipped	1

Q20. Which of the following is true about VNS (variety not stated) seed for cover crops?

Answer Choices	Responses-PRE	Responses-POST		
It should never be used for cover crops	22.73%	5	5.56%	1
It can be a safe cover crop source if it has been cleaned and te	63.64%	14	77.78%	14
It has guaranteed genetics	0.00%	0	0.00%	0
It can be raised for self-use, but should be cleaned, germ teste	54.55%	12	50.00%	9
	Answered	22	Answered	18
	Skipped	4	Skipped	0