

PRE TEST Illinois Soil Health Training 2016

(Correct answers are in red)

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		26	Answered	18
Skipped		0	Skipped	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 fertilizers	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%
Carbon	36.36%	8	56.25%
Oxygen	86.36%	19	93.75%
Zinc	0.00%	0	0.00%
Phosphorus	0.00%	0	0.00%
Boron	4.55%	1	0.00%
Hydrogen	81.82%	18	81.25%
Sulfur	4.55%	1	0.00%
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%
Within 3-4 weeks after wheat harvest	70.83%	17	88.89%
Interseeded when corn is at V5 growth stage	29.17%	7	44.44%
Immediately after corn harvest	16.67%	4	5.56%
On prevent plant acres	75.00%	18	61.11%
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%
When there is about 75% of sunlight hitting the ground at noon	19.23%	5	23.53%
When there is about 50% of sunlight hitting the ground at noon	65.38%	17	70.59%
About 6 weeks prior to expected harvest of corn, while crops are still growing	23.08%	6	17.65%
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%
Herbicide must be applied before 4-5 hours before the sun sets	86.96%	20	72.22%
Residual herbicides may interfere with glyphosate translocation	52.17%	12	50.00%
Water should be reduced to 8-12 gallons/acre	26.09%	6	27.78%
pH should be neutral	17.39%	4	22.22%
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 tester	54.55%	12	50.00%	9
Answered		22	Answered	18
Skipped		4	Skipped	0