2021 FFA Team Event Report Sheets
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Please note that when you see an answer box with a zero in the space for an answer, it means that the box will be filled with an answer that you gave or calculated from a previous question. For example, once you calculate the field acreage in cell F34, it will automatically populate every cell that requires the field acreage.

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Please answer the following qquestions, indicated your choice where appropriate, or complete the calculations.

Type your answers in the shaded/highlighted boxes

Rubric Code

WPQ 1
1 to 3 pt

Possible Solutions

WPAOI 3
1 to 3 pt

Analyze Scenario

Question 1. Summarize in at least three distinct bullet points, what your FFA consulting team has been hired to do by the farmer.

- Suggest the best orchardgrass cultivar to plant.
- Suggest pesticide or management options for weed and insect control.
- Suggest ongoing nutrient management to optimize grass production in 2022 to 2023 (the planting year and the first post-establishment production year) and future years.
- Determine total costs and income for 2022 through 2023.
- Determine the breakeven price in $/bale based on expected yield in 2023 and the total costs from 2022 through 2023.
- Determine the profit or loss that the farmer will experience during 2022-2023.

WPQ 2
1 pt

Question 2. Give a concise statement of what problem or problems the grower faces in this scenario.

Answer: The grower purchased a nutrient depleted fallow field that needs renovation and establishment recommendations for an orchardgrass crop to be planted in the fall of 2022 plus management advice for any pest problems that might appear during establishment.

WPAOI 2
1 to 4 pt

Question 3. What is the acreage of the farmer's newly purchased field?

Round to nearest whole acre

Field Width ft	Field Length ft	Fd Size feet^2	Field Size #Acres
1100	1000	1100000	25

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Cultivar Selection and Seed Cost

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Question 4. What cultivar/variety did you choose to recommend to the farmer?

Triple Crown

Question 5. What seeding rate did the farmer want to use? 12 Lbs PLS/acre

WPAOI 1
1 pt (question 6)

Question 6. For what parameter does PLS stand? **Pure Live Seed**

Question 7. To determine the cost of seed for the new orchardgrass field, please enter your cultivar's parameter's below:

WPQ 3,5
WPAOI 1-3
1 to 7 pt

Selected Cultivar	# lbs PLS per acre to plant	Field Size # Acres	Percent PLS	Total Lbs Seed Needed	# of 50 lb Bags Needed	Cost of a 50 # bag	Total Field Cost for Seed
Triple Crown	12	25	92.25	321.7	7	$160.00	$1,120.00

Question 8. Now that you've selected which cultivar the farmer will plant and assuming the yields reported are exactly what the farmer will achieve from his production field, calculate the income the farmer can expect for the period from land purchase 2021 to first post-establishment harvest year (2023). Farmer Brown plans to cut OG hay three times in 2023 after fall seeding.

WPAOI 1-3
WPQ 5,7
1-5 pt

Year	Season's yield Tons/acre	# Acres	Total tons from field	Number of 40-lb bales produced	Selling Price of each bale	Total Income	
2021	0	25	0	0	$5.25	$0.00	
2022	0	25	0	0	$5.25	$0.00	
2023	6.00	25	150.0	7500	$5.25	$39,375.00	Income Grand Total
							$39,375.00

WPQ 3,4
WPAOI 1
5 pt

Question 9. Are there any options you can think of for the farmer to obtain at least some income from his newly purchase field while waiting to plant orchardgrass in August/September of 2022 and which would not delay planting from his desired window and therefore reduce hay yields in 2023?

A very short season field crop such as corn or soybeans or a vegetable crop tolerant of acidity and with a short growing season. Perhaps sweet corn would work.

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WPQ 4
WPAOI 1
5 Pt

Question 10. Should the grower evaluate the grass stand's density and/or health and when would be the best time to do that? What parameter should he use to evaluate the stand or the stand's health?

Yes the farmer should evaluate his stand and the health of the stand. Although a preliminary stand count could be made in late fall of 2022, a more valuable evaluation would take place in the early spring of 2023 after the harshest portion of winter is over. One could take counts of the number of plants per square foot or you could estimate the amount of soil coverage by the leaf growth of the crop. Health-wise you could examine roots of a few plants or look for obvious disease symptoms.

Prior to completing the purchase of the new field in the fall of 2021, the farmer obtained a soil test in Sept of 2021 which recommended application of lime and fertilizer. Below, calculate the cost and field preparation cost the farmer will experience.

Field Fertiliy Repairs

Consult the September 2021 Soil Test Report from the University of Delaware for Recommendation for lime and fertilizer.

WPQ 5,6
WPAOI 1
5 pt

Question 11. **Limestone Needed**

Type of Lime Needed	Rate of Lime per Tons/acre	Cost per Ton of Lime but includes application	# Acres	Total tons of Lime Needed	Cost of Lime for the Field
Hi-Mag	3.50	$34.00	25	87.50	$2,975.00

Application cost is included with Lime

WPQ 5,6
WPAOI 1
8 pt

Question 12. **Potash Needed**

Grade of Fertilizer Selected	Lbs Rate of K_2O/acre	# of lbs fertilizer needed/ac.	# Acres	Total tons of Fertilizer for Field	Cost $/ton	Cost of K_2O for Field $
0-0-60	180	300	25	3.75	$425.00	$1,593.75

Potash and Phosphorus will be applied in two separate trips across the field.

Application $/acre	# Acres	Cost to Apply K_2O to the Field
$7.25	25	$181.25

WPQ 5,6
WPAOI 1
8 pt

Question 13. **Phosphorus Needed**

Grade of Fertilizer Selected	Lbs Rate of P_2O_5/acre	# of lbs fertilizer needed/ac.	# Acres	Total tons Fertilizer for Field	Cost $/ton	Field P_2O_5 Cost $
0-46-0	92	200	25	2.5	$450.00	$1,125.00

Application $/acre	# Acres	Cost to Apply P_2O_5 to the Field
$7.25	25	$181.25

WPQ 5,6
WPAOI 2-3

2 pt

Question 14. The farmer plans to chisel plow the field to incorporate all the lime plus P and K. What will be his cost?

Cost $/A	# Acres	Field Cost to Incorporate All Fertilizer
$20.00	25	$500.00

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Summer of 2022 Weed Control; Late Summer Seedbed Preparation; Drilling Grass Seed Diagonally in 2 Directions

WPQ 5,6
WPAOI 1
3 pt

Question 15. Weed control in summer 2022:

Number of diskings Planned	# Acres	$/Acre Cost per Disking	Total Cost for the Field
3	25	$20.00	$1,500.00

WPQ 5,6
WPAOI 1
2 pt

Question 16. Seedbed Preparation via running cultipacker after third disking

Cost per Acre to Cultipack Seedbed	# Acres	Field Total Cost
$7.25	25	$181.25

WPQ 5,6
WPAOI 1
2 pt

Question 17. How much will drilling the grass seed cost?

Cost to Drill Grass Seed $/Ac.	# Acres	Total Cost for Field
$18.38	25	$459.50

WPAOI 2-3
2 pt *All or none*

Question 18. Does the soil test suggest that fall nitrogen be applied to the grass seedlings and if so how much and the cost?

Place and X after your answer:

Yes:	X
No:	

Suggested Rate lb N/A	Grade you selected	# Acres	Total tons Needed	Cost of Fertilizer	Final Field Cost--$
22.50	45-0-0	25	0.63	$395.00	$246.88

WPQ 5,6
7 pt

Application Cost	# Acres	Cost of N Application
$7.25	25	$181.25

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WPQ3
WPAOI 2,3
2 pt

Question 19. Did you advise the farmer to take another soil test in late summer but prior to planting the crop or preparing the seedbed?

Place and X beside your answer:

Yes	X
No	

WPQ 3,4
WPAOI 2,3
2 pt

Question 20. Answer the questions below only if you chose yes. What recommendation if any did the soil test specify and if the farmer followed any recommendation that was made, how much extra cost was involved?

Was there a recommendation? Yes

2 pt

What was the recommendation if any? Add an addiional 0.5 ton of Hi-Mag or dolomitic limestone before the final disking and cultipacting operation.

WPQ 5,6
5 pt

If there was a recommendation and the farmer followed the advice, how much additional cost did he incur?

1pt per box - ac not included

Rate of Fertilizer Applied if Needed	# Acres	$/ton	# Total Ton Field Cost	
0.5 ton/acre	25	$34.00	12.50	$425.00

Fall Pest Control

Question 21. From the statement of the fall 2022 scouting report, what two pests were potentially causing problems for the grass?

WPAOI 3
2 pt

	Name of Pest
Pest 1.	Aphids
Pest 2.	Morningglory

WPQ 3,5,6
7 pt

Question 22. What would you do about Pest 1? If you select a pesticide, fill in the table below:

Pesticide Name	Rate oz/ acre	Cost $/oz	Cost of Pesticide $/Acre	Cost of Application by Ground Rig $/Acre	Final Cost $/Acre	# Acres	Total Cost $/Field
Warrior II	1.92	$2.45	$4.70	$8.75	$13.45	25	$336.25

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WPQ 3
2 pt

Question 23. If you did not select a pesticide, what do you suggest the farmer should do about Pest 1? If you did, leave blank.

WPQ 3,5,6
7 pt

Question 24. What would you do about Pest 2? If you select a pesticide fill in the table below:

Pesticide Name	Rate oz/ acre	Cost $/oz	Cost of Pesticide $/Acre	Cost of Application by Ground Rig $/Acre	Final Cost $/Acre	# Acres	Total Cost $/Field
None is Needed						25	

WPQ 3
2 pt

Question 25. If you did not select a pesticide, what do you suggest the farmer should do about Pest 2? If you did, leave blank.

A frost is just around the corner as it normally occurs the third week of October so ignore this weed since it is an annual and the frost or winter temperatures will kill it.

First Post Establishment Production Year--2023

Using the New Field Soil Test Report from March 2023, Calculate the Fertilizer Costs and Harvest Costs

Fertilizer Costs:

Question 26. Nitrogen Application at Spring Greenup

WPQ 5,6
7 pt

Rate of N per Acre	Fertilizer Grade	Fertilizer Amount lbs/Acre	# tons per Acre	Fertilizer Cost $/ton	Cost of Fertilizer Application $/Acre	# Acres	Total Cost of N and Application $/Acre
45	45-0-0	100	0.05	$395.00	$7.25	25	$675.00

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Question 27. Nitrogen Application after the First Harvest.

WPQ 5,6
7 pt

Rate of N per Acre	Fertilizer Grade	Fertilizer Amount lbs/Acre	# tons per Acre	Fertilizer Cost $/ton	Cost of Fertilizer Application $/Acre	# Acres	Total Cost of N and Application $/Acre
90	30-0-0	300	0.15	$300.00	$8.50	25	$1,337.50

Question 28. Potash Application (1/2 of recommended rate) after the First Harvest.

WPQ 5,6
8 pt

Rate of K_2O per Acre	Fertilizer Grade	Fertilizer Amount lbs/Acre	# tons per Acre	Fertilizer Cost $/ton	Cost of Fertilizer Application $/Acre	# Acres	Total Cost of K_2O & Application $/Acre
120	0-0-60	200	0.10	$425.00	$7.25	25	$1,243.75

Total Cost of Fertilizer for First Harvest

$2,581.25

Question 29. Nitrogen Application after the Second Harvest

WPQ 5,6
7 pt

Rate of N per Acre	Fertilizer Grade	Fertilizer Amount lbs/Acre	# tons per Acre	Fertilizer Cost $/ton	Cost of Fertilizer Application $/Acre	# Acres	Total Cost of N and Appl. for 2nd Harvest
90	30-0-0	300	0.15	$300.00	$8.50	25	$1,337.50

Question 30. Nitrogen Application after the Third Harvest

WPQ 5,6
7 pt

Rate of N per Acre	Fertilizer Grade	Fertilizer Amount lbs/Acre	# tons per Acre	Fertilizer Cost $/ton	Cost of Fertilizer Application $/Acre	# Acres	Total 3rd Harvest Cost of N & Application Charge
45	45-0-0	100	0.05	$395.00	$7.25	25	$675.00

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Question 31. Potash Application (remaining 1/2 recommended rate) after the Third Harvest

WPQ 5,6
9 pt

Rate of K_2O per Acre	Fertilizer Grade	Fertilizer Amount lbs/Acre	# tons per Acre	Fertilizer Cost $/ton	Cost of Fertilizer Application $/Acre	# Acres	Total 3rd Harvest Cost of K_2O & Application Charge
120	0-0-60	200	0.10	$425.00	$7.25	25	$1,243.75

Total Cost of Fertilizer for Third Harvest
$1,918.75

Total Cost of Fertilizer for Spring Greenup plus Harvest 1-3 in 2023
$6,512.50

Question 32. What are the mowing, raking and baling costs the farmer must pay for the three harvests in 2023?

WPQ 5,6
6 pt

# of Harvests	$/Acre To Mow Hay	$/Acre To Rake or Ted Hay Done 2x/Harvest	$/Bale To Bale Sm Sqs	Seasonal Total # Bales	# Acres	2023 Total Harvest Costs
3	$12.50	$16.00	$0.50	7500	25	$5,887.50

Profit and Loss Calculation 2021 - 2023

The Income and Expense Items Will Populate as You Complete the Sections Above

Income during the period 2021 to 2023	$39,375.00
Expenses during the period 2021 to 2023	
Cost of grass seed	$1,120.00
Cost of Fertility Repair (Lime plus K_2O plus P_2O_5	$5,693.75
Cost of Application of the potash and phosphorus	$362.50
Cost of chisel plowing for incorporation of lime, potash, and phosphourus	$500.00

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Cost of Weed Control during Summer 2022	$1,500.00
Seedbed Preparation--late summer 2022	$181.25
Cost to Drill Grass Seed--late summer 2022	$459.50
Fall 2022 Nitrogen to help grass establish	$428.13
Any Additional Fertility Applied in Summer/Fall 2022	$425.00
Fall 2022 Pest Control Expenses	
Pest 1	$336.25
Pest 2	$0.00
First Post Establishment Year--2023--Fertility Needs	$6,512.50
Includes Spring greenup N, 1st Harvest N + K_2O, 2nd Harvest N, and 3rd Harvest N + K_2O	
Total Harvest Costs in 2023 (mow, rake, bale)	$5,887.50
TOTAL ALL EXPENSES	$23,406.38

WPQ 8
5 pt

Question 33. Calculate the Farmer's Profit or Loss $15,968.63

Question 34. Based on the number of 40-lb bales your grass selection will produce during 2023 and using the total of all expenses from 2021 to 2023, calculate the breakeven price the farmer should receive for his hay.

WPQ 9
6 Pt

All Expenses	Total Bales	Breakeven Price for Hay ($/bale)
$23,406	7500	$3.12

WPQ 10
10 Pt

Question 35. Please provide a brief summary of your management plan for the farmer's new grass hay field.