



TEAM EVENT 2023 - AGRONOMY

FIELD MANAGEMENT PROBLEM

Using the information provided in the packet, you will answer the questions as it relates to the given scenario below:

You are consulting for a large farming operation in the desert southwest and that has had growing contracts with large vegetable shippers from California for several years. This year the producer is growing 40 acres of head lettuce on the open market in the hopes of making a larger margin.

Pre-plant irrigation will be flood irrigation on laser flat ground; there is no water run-off. The source of the water is the Colorado River delivered to the field in cement lined ditches. The crop will be germinated via a temporarily installed sprinkler irrigation pipe and powered with a diesel booster pump. Once the crop is established, it will be irrigated with furrow irrigation.

Preplant fertilization will consist of 350 lbs. of MAP (11-52-00) per acre. In season, there will be 92 gallons of UAN32 applied; One gallon of UAN32 weighs 11.06 pounds.

The lettuce (leafy greens) will be grown in a medium textured soil and will require a preplant herbicide application. It will also require a second herbicide treatment applied during the germination process, applied via chemigation at the maximum labelled rate.

This lettuce crop is following a Sudangrass crop where some biomass residue is still present in the soil, creating a potential for early insect pressure by flea beetles, armyworm, cabbage looper, and white fly. This can cause severe plant injury or death if not addressed quickly. Two insecticides will be applied via shanks on the planter at planting. Coragen will be applied at 6oz per acre and Admire at 7oz per acre.

There was Cabage Looper pressure reported on 10-5 and 75% of the max label of Lannate was recommended and applied.

On 10-16, the forecast called for 80% chance of rain between 0.25 and 0.5 inches. A preventative fungicide application of Orondis Ultra was applied at 6 fl. Oz per acre. The product was applied via aerial application and was conducted on 10-16 and again on 10-26 with a harvest date of 11-12. The application is to prevent powdery mildew.

The buyer is responsible for the cost of harvesting and cooling. Due to cooler weather, there is a tightening in the supply as crops were taking longer to mature. The yield on the crop is estimated at 900 boxes per acre at an open market value price of \$80/box. One of your shippers asked if the producer would be willing to take 75% of the full market value for the crop.

Fill out the spreadsheet and answer all the questions to determine the following:

Was the crop profitable?

What was the total cost of production?

What was the total profit potential of the crop?

What would be the revenue at 75% of full market value?

Why would/wouldn't you take 75% of full market value?

Fill in cells highlighted in yellow!

Cost per Acre		Cost per Hour	
Description	Rate	Description	Rate
Application - Ground	\$ 30.00	Blade/border disk	\$ 120.00
Application - Arial	\$ 20.00	Spray ditches with tractor (2)	\$ 63.90
Chisel	\$ 101.00	Irrigator	\$ 25.00
Cultivate	\$ 52.00	Irrigator foreman	\$ 52.00
Disk w/ring roller	\$ 45.50	Set Siphon pipes	\$ 25.00
Laser/GSP Leveling	\$ 121.00	Collect siphon pipes	\$ 25.00
List	\$ 55.00	Siphon pipe foreman	\$ 38.00
Pest Control Advisor	\$ 35.00	Siphon pipe tractor	\$ 55.00
Plant	\$ 101.50		
Plow	\$ 94.50		
PCA Services	\$ 45.00		
Rent/acre (40 ac)	\$ 959.00		
Seed	\$ 525.00		
Side Dress	\$ 58.00		
Soil Testing	\$ 9.25		
Spike	\$ 39.00		
Spreading (dry fertilizer)	\$ 15.00		
Sprinklers	\$ 330.00		
Thinning	\$ 300.00		
Water	\$ 47.00		

FERTILIZER		
Item	Density	\$/Ton
UAN 32	11.06#/gal	\$ 500.00
MAP (11-52-00)	N/A	\$ 850.00
PESTICIDES		
Item	Cost	Unit
Corigen	\$ 5.00	Oz
Admire	\$ 17.00	AC
Radiant	\$ 1,400.00	Gal
Balan	\$ 22.00	LB
Prefar	\$ 85.00	Gal
Lannate SP	\$ 40.00	LB
Orondis Ultra	\$ 176.00	Gal

CHRONOLOGY OF EVENTS			
Description	Units	Date	Total
Rent	40	1-Jul	\$ 38,360.00
Water	3	1-Jul	\$ 5,640.00
Chisel	40	10-Jul	\$ 4,040.00
Herbicide Purchase - Product Only	40 ac	10-Jul	
Soil Testing	40	31-Jul	\$ 370.00
PCA Services	40	31-Jul	\$ 1,800.00
Plow	40	11-Jul	\$ 3,780.00
Disc	40	12-Jul	\$ 1,820.00
Laser/GSP Level	40	13-Jul	\$ 4,840.00
Irrigator	6.5	13-Jul	\$ 162.50
Irrigator foreman	0.5	18-Jul	\$ 26.00
11-52-00 Purchase (Units-Acres)	40 ac	18-Jul	
Seed Purchase	40	10-Aug	\$ 21,000.00
UAN32 Purchase (season)	40 ac	10-Aug	
11-52-00 Spreading	40	20-Aug	\$ 600.00
List	40	21-Aug	\$ 2,200.00
Plant	40	1-Sep	\$ 4,060.00
Insecticide Purchase: Admire, Corigen, Radiant - Product Only	40 ac	1-Sep	
Sprinkler Set up/breakdown	40	1-Sep	\$ 13,200.00
Irrigation	48	1-Sep	\$ 1,200.00
Irrigation Foreman	0.5	1-Sep	\$ 26.00
Irrigation Foreman	0.5	2-Sep	\$ 26.00
Blade: Border Disk/road ways	3	10-Sep	\$ 360.00
Set up siphon pipe	2	11-Sep	\$ 110.00
Irrigator	4	12-Sep	\$ 100.00
Irrigation Foreman	0.5	12-Sep	\$ 26.00
Pick up siphon pipe	1.5	19-Sep	\$ 82.50
Border disk: Take down borders	1.5	20-Sep	\$ 180.00
Thinning	40	21-Sep	\$ 12,000.00
Spike	40	22-Sep	\$ 1,560.00
Cultivate	40	24-Sep	\$ 2,080.00
Side Dress	40	26-Sep	\$ 2,320.00
Border Disk/road ways	3	27-Sep	\$ 360.00
Set up siphon pipe	5	28-Sep	\$ 275.00
Irrigator	4.5	29-Sep	\$ 112.50
Collect siphon pipe	2.5	5-Oct	\$ 137.50
Lannate: Sum of Product and Application Cost	40	5-Oct	
Border disk: Take down borders	40	7-Oct	\$ 4,800.00
Spike	40	11-Oct	\$ 1,560.00
Cultivate	40	12-Oct	\$ 2,080.00
Side Dress	40	12-Oct	\$ 2,320.00
Border Disk/road ways	3	13-Oct	\$ 360.00
Set up siphon pipe	3	13-Oct	\$ 165.00
Irrigator	2.5	14-Oct	\$ 137.50
Irrigation Foreman	0.5	14-Oct	\$ 26.00
Orondis Ultra: Sum of Product and Application Cost	40	16-Oct	
Spray ditch banks	0.75	20-Oct	\$ 47.93
Irrigator	2	30-Oct	\$ 50.00
Collect siphon pipe	2	8-Nov	\$ 110.00
Border Disk Knock down borders	1.5	8-Nov	\$ 82.50
Harvest	N/A	12-Nov	\$ -
			\$ 134,592.93

Fill in cells highlighted in yellow!

Fertilizer	Answer
If in the first side dress 30 gallons of UAN32 were applied per acre, how many units of N were applied per acre?	
If in the second side dress 75 units N of UN32 were applied per acre, how many gallons of UAN32 were applied per acre?	
How many tons of 11-52-00 was purchased? (MAP)	
Herbicides	Answer
Which of the two herbicides was applied via chemigation?	
What was the rate at which Prefar was applied?	
What was the rate at which Balan was applied?	
What was the total cost of Balan herbicide?	
Insecticides	Answer
Which of the two products applied at planting was used for white fly?	
Which of the two products at planting was used for armyworm and cabbage looper?	
What was the total cost of the product Coragen?	
What was the total amount of Lannate used on the application?	
What was the total cost of the product Lannate?	
Fungicide	Answer
Is Orondis registered for Powdery Mildew?	

Market Price per box	
Boxes per acre	
With the above information, what would be total revenue?	\$ -
Total cost of production?	\$ 134,592.93
What was the profit margin	-\$ 134,592.93
Was the crop profitable	
What is the revenue potential at 75% of full market value?	
What is the profit margin at 75% full market value?	

Question	Answer
Would you accept an offer for 75% of the full market value of your crop?	

Rational for Answer Above