

Analysis of Drought Resistant Corn

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Introduction

- What is DRC?
- Why was DRC created?
- Which areas and types of farmers were considered in the analysis?
- Why is this analysis relevant?
- Can Producers overcome the increase in seed cost with DRC?

Resources

- ◎ Chandler Mazour
- ◎ Bruce Dodson
- ◎ Other Resources

Methods

- ◎ Variables that were needed to be known:
 - Price of Non-DRC
 - \$200
 - Price of DRC
 - \$400
 - Percentage Yield Increase Range with DRC
 - 6-10%
 - Number of Seeds in a fifty pound sack
 - 80,000 seeds
 - Seed population planted per acre
 - (Annual Average Rainfall x 900 seeds)

Methods (cont.)

- ◎ Variables that need to be determined:
 - How many acres 1 bag of seed will plant?
 - What is the cost per acre for each variety?
 - How much does the yield need to increase to cover the added expense?
 - What is the % increase needed?

Methods (cont.)

- ⦿ How many acres 1 bag of seed will plant?
 - Equation used:
 - $(80,000 \text{ kernels/seed population per acre}) = \text{acres per bag of seed}$

Methods (cont.)

What is the cost per acre for each variety?

- Equation used:
 - $(\text{Cost per bag/acre} \times \text{bags per acre}) = \text{cost per acre}$

Methods (cont.)

- ⦿ How much does the yield need to increase to cover the added expense?
 - Equation used:
 - $(\text{Cost per acre}/\text{market price}) = \text{Bushels needed}$

Methods (cont.)

- ◎ What is the % increase needed?
 - Equation used:
 - $(\text{Bushels needed}/\text{yield avg. per rainfall zone}) = \% \text{ yield increase}$

Results

Figure 1:	
<u>% yield increase needed in 18" Annual Rainfall zone</u>	
# of seeds/bag:	80,000
Price/bag of DRC:	\$400
Price/bag of non-DRC:	\$200
Seeds/ac planted:	16200
Price of Corn(\$ per bushel):	3.4
#of acs a bag will plant:	4.938272
Cost/ac of DRC:	\$81
Cost/ac of Non-DRC:	\$41
Bushel increase in yield needed to cover cost:	11.91176
% yield increase needed:	11.91%
*based on 100 bu/ac yield average	

Results (cont.)

Figure 2:	
<u>% yield increase needed in 15" Annual Rainfall zone</u>	
# of seeds/bag:	80,000
Price/bag of DRC:	\$400
Price/bag of non-DRC:	\$200
Seeds/ac planted:	13500
Price of Corn (\$ per bushel):	3.4
#of acs a bag will plant:	5.925926
Cost/ac of DRC:	\$68
Cost/ac of Non-DRC:	\$34
Bushel increase in yield needed to cover cost:	9.926471
% yield increase needed:	12.41%
*based on 80 bu/ac yield average	

Results (cont.)

Figure 3:

Lowest price to cover increased cost 18" Annual Rainfall zone

# of seeds/bag:	80,000
Price/bag of DRC:	\$400
Price/bag of non-DRC:	\$200
Seeds/ac planted:	16200
Price of Corn(\$ per bushel):	5.06
#of acs a bag will plant:	4.938272
Cost/ac of DRC:	\$81
Cost/ac of Non-DRC:	\$41
Bushel increase in yield needed to cover cost:	8.003953
% yield increase needed:	8.00%
*based on 100 bu/ac yield average	

Results (cont.)

Figure 4:

Lowest price to cover increased cost 15" Annual Rainfall zone

# of seeds/bag:	80,000
Price/bag of DRC:	\$400
Price/bag of non-DRC:	\$200
Seeds/ac planted:	13500
Price of Corn (\$ per bushel):	5.28
#of acs a bag will plant:	5.925926
Cost/ac of DRC:	\$68
Cost/ac of Non-DRC:	\$34
Bushel increase in yield needed to cover cost:	6.392045
% yield increase needed:	7.99%
*based on 80 bu/ac yield average	

Results (cont.)

- ◎ Possibilities if DRC cost less per bag?

Recommendations

- At the current market price in the first and second figures it would be best not to plant DRC. Since it will take a larger than possible increase in yield to cover costs.
- However if a producer can lock-in their price it is possible to cover their cost at high corn prices.
- Given the results of the first four scenarios it could be difficult to overcome the increased cost of seed. However if seed producers would lower the cost per bag it would make raising DRC feasible making it a more attractive variety of seed.

Questions?

