

Bar BQ Ranch

B. Godfrey, J. Parsons, J. Deering, and D. Hoag

The **Bar BQ Ranch** is representative of a cow/calf operation located in the northern Rocky Mountains. Production practices, costs of production, market prices, weather patterns, and other information are based on data from the region in order to provide a realistic setting. The probabilities of risk events were calculated using actual data. However, modifications and simplifications were made to maintain the workability and realism of the scenario.

The ranch runs 300 mother cows with annual non feed production costs of \$250 per cow. Calving typically starts in early March. Calves are weaned in October. The Bar BQ Ranch has historically had a 93 percent weaning percentage and replaces 15 percent of their cows. This leaves 234 calves (100%-7%-15%) which have an average weight of 575 pounds (steers and heifers). These can be retained or sold with an initial market price of \$95.00 per hundredweight. Cull cows weighing 1,100 pounds are sold at about the same time as calves are weaned. The cull price is \$45.00 per hundredweight. The ranch usually buys about 100 yearlings each spring that graze privately owned pasture and meadow lands. These animals normally weigh 500 pounds when purchased and 750 pounds when sold in late September.

Beef Cattle Production

Quantity	300 Head
Production Costs Per Unit	\$250 Per Cow
Weaning Percentage	93%
Average Net Sale Weight	575 Pound Per Weaned Calf
Initial Market Price of calves	\$95.00 Per Hundredweight
Cow Death Loss per year	1%
Annual Hay Consumption	2.5 Tons Per Cow
Cow Replacement Percentage	15%
Sale Weight of Cull Cows	1,100 Pounds Per Cow
Net Sale Price	\$45.00 Per Hundredweight
Death Loss of Yearlings	3%
Death Loss of Retained Calves	2%

The Bar BQ Ranch raises 200 acres of grass and alfalfa hay. Hay is normally fed to the cows, bulls and replacement heifers from about the middle of November until mid April. The cows normally graze state and federal (BLM and Forest) lands during the spring, summer and fall. These permits complement the privately owned range, meadow and pasture lands that can be used most of the year. Replacement heifers and yearlings are kept on privately owned irrigated meadow and pasture lands. The hay land normally produces 3.75 tons per acre and at least a month of aftermath grazing. The variable production costs for hay production are \$70.00 per acre.

Crop Production

Hay	200 Acres
Normal Annual Yield	3.75 Tons Per Acre
Production Costs	\$70 Per Acre
Initial Inventory	750 Tons
Initial Market Price	\$75.00 Per Ton
Private Grazing Lands	150 Acres
Production	3 AUMs Per Acre

When you begin the simulation, there is 750 tons of hay on hand with a market value of \$75 per ton. None of the calves (234 head), but all of the cull cows and bulls have been sold. Calves that are retained will be placed in a feed yard. The feedlot operator will feed these calves for \$1.25 per head per day. They are expected to be sold in 210 days with an average ending weight of 1,300 pounds.

The Bar BQ Ranch expects sales of about \$211,682 and cash costs of \$157,800 which would generate \$53,882 in net cash income per year.

Projected Annual Net Cash Income (if no calves are retained)		
Expected Revenues		Expected Cash Expenses
Weaned Calves	234 Head =	\$127,823
Cull Cows	42 Head =	\$20,790
Cull Bulls	3 Head =	\$2,250
Yearlings	97 Head =	\$60,819
		Cows 300 Cows = \$75,000
		Hay 200 Acres = \$14,000
		Yearlings 100 Head = \$49,000
		Grazing 2100 AUM = \$19,800
Annual Total		\$211,682
		\$157,800
Net Cash Income = \$53,882 per year		

DECISIONS

Year 1		
Period 1	Risk and Probability of Occurrence	Impact
Mid October to Mid April	<u>Winter Precipitation</u> Dry Winter (20%) Normal Winter (55%) Cold Wet Winter (20%) Normal winter but Cold-wet calving season (5%) <u>Corn Harvest</u> > 10 billion bushels (20%) 9 - 10 billion bushels (55%) 8 - 9 billion bushels (20%) < 8.0 billion bushels (5%)	<ul style="list-style-type: none"> • In a normal winter, hay prices decrease due to seasonal trends. • In a dry winter: Hay use will decrease by 10%. • If it is a cold and wet winter and normal calving season: 10% more hay will be fed; death loss of calves will increase 1%. • If it is a normal winter but a cold wet calving season: calf death losses will increase 5% • Cold and wet weather will increase the death loss of retained calves by 3 percent. • Large corn production will decrease hay prices and increase cattle prices because corn is a competitive feed source. • Low corn production will increase hay prices and decrease cattle prices.
	Risk Management Strategy Decisions	
	Decision 1: Buy or sell hay Hay may be purchased to increase feed inventory or sold to generate cash income. Consider current inventory, possible feed usage and probabilities of increases or decreases in price. You may not carry a negative inventory. Any shortages are automatically covered by additional purchases at the prevailing market price. Decision 2: Sell or retain calves You may sell all or some of the calves that are available for sale. Calves not sold at this time will be retained and fed until spring. Decision 3: Purchase LRP insurance policy for retained calves. If desired, determine the number of animals to be insured and the coverage level (75 to 95%).	

Period 2	Risk and Probability of Occurrence	Impact
<p>Mid April to July</p>	<p><u>Corn planting intention</u> > 80 million acres (25%) 70 - 80 million acres (65%) < 70 million acres (10%)</p> <p>.....</p> <p><u>Spring Precipitation</u> Excellent (20%) Normal (50%) Poor (23%) Very Poor (7%)</p>	<ul style="list-style-type: none"> • If planting intentions are high, hay prices fall because corn is a competitive feed alternative. Lower feed costs increase cattle prices. • Normal planting intentions have small seasonal effects on prices. • If planting intentions are low, hay prices rise because corn is a competitive feed alternative. Higher feed costs decrease cattle prices. <p>.....</p> <ul style="list-style-type: none"> • If spring precipitation is excellent, forage and livestock yields will increase. Expect hay prices to decrease due to shifts in supply and demand. Lower feed costs increase cattle prices. • Normal precipitation will have small seasonal effects on prices. • Poor spring precipitation will decrease forage and livestock yields. Expect hay prices to increase due to shifts in supply and demand. Higher feed costs decrease cattle prices. • Very poor spring precipitation will have an even more dramatic effect.
	<p>Risk Management Strategy Decisions</p>	
	<p>Decision 1: Buy Stockers The number purchased should take into consideration the expected forage available on pasture and meadow lands. Excellent = 500 AUMs, Normal = 450 AUMs, Poor = 375 AUMs and Very Poor = 300 AUMs. Replacement heifers will use 150 AUMs. Stockers will graze excess capacity with each stocker using 0.6 AUMs per month.</p> <p>Decision 2: Purchase Livestock Insurance Policy for Stockers. The number of animals to be insured and the coverage level (80 to 95%) is to be determined. The current futures price for 700 pound calves to be delivered at the end of September will be used to determine coverage price.</p>	
Period 3	Risk and Probability of Occurrence	Impact
<p>July until calves are weaned in October</p>	<p><u>Summer Precipitation</u> Poor (25%) Average (55%) Good (15%) Excellent (5%)</p> <p>.....</p> <p><u>Expected U.S. Corn Production</u> > 10 billion bushels (20%) 9 - 10 billion bushels (55%) 8 - 9 billion bushels (20%) < 8.0 billion bushels (5%)</p>	<ul style="list-style-type: none"> • Poor summer precipitation will decrease forage and livestock yields. Calf weaning weights will decline by 20 pounds and ending stocker weights by 40 pounds. Poor forage conditions will increase the price of hay and decrease the price of cattle. • Average precipitation conditions will have small seasonal effects on prices. • Good precipitation will increase forage and livestock yields slightly (10 pounds for calves and 25 pounds for stockers). Good forage conditions will decrease the price of hay and increase the price of cattle. • Excellent precipitation will increase forage and livestock yields (calf and stocker ending weights will increase by an additional 25 and 50 pounds respectively) but stocker death loss will increase by 1%. <p>.....</p> <ul style="list-style-type: none"> • Large corn production will decrease hay prices and increase cattle prices because corn is a competitive feed source. • Low corn production will increase hay prices and decrease

		cattle prices.
Period 3	Risk Management Strategy Decisions	
(cont.)	<p>Decision 1: Buy or sell hay Any number of tons of hay may be purchased or sold at current market prices.</p> <p>Decision 2: Purchase LRP insurance coverage for calves The number and level of coverage (80 to 95%) to be determined. The current futures market for 600 pound animals is used to determine coverage price.</p> <p>Decision 3: Send stockers to feed lot. Yearlings can be sent to a local feedlot. Cost is \$1.25 per head per day. Stockers are expected to be sold at the same time and weight as they would have been had they been pastured. Forage saved may be used by cow herd if needed to offset the impacts of a dry summer. Stockers use 0.6 AUMs per head per month and cows use 1.0 AUMs per head each month.</p>	
Year 2		
Period 4	Risk and Probability of Occurrence	Impact
	Same as Year 1.	Same as Year 1.
	Risk Management Strategy Decisions	
	<p>Decision 1: Buy or sell hay Decision 2: Sell or retain calves Decision 3: Purchase LRP insurance policy for retained calves.</p>	
Period 5	Risk and Probability of Occurrence	Impact
	Same as Year 1.	Same as Year 1.
	Risk Management Strategy Decisions	
	<p>Decision 1: Buy stockers Decision 2: Purchase LRP insurance policy for stockers to be sold in the fall.</p>	
Period 6	Risk and Probability of Occurrence	Impact
	Same as Year 1.	Same as Year 1.
	Risk Management Strategy Decisions	
	<p>Decision 1: Buy or sell hay. Decision 2: Purchase LRP insurance policy for weaned calves to be sold in the fall. Decision 3: Send stockers to feed lot.</p>	
Game End	<p>Hay inventory must be at 750 tons. Hay is automatically bought or sold at the current price. The number of calves is reset to 234 head by buying and selling calves on the cash market.</p>	



<http://www.rightrisk.org>

RightRisk™ is an innovative risk research and education program. It uses real world farm and ranch settings and economic concepts to help you understand and explore risk management decisions and evaluate the effects of those decisions. You will learn about your personal risk management style and build your decision-making skills.

RightRisk™ is not only a simulation model. You will have on-going access to agricultural economists with expertise in risk management. The RightRisk™ Education Team consists of a team of researchers and extension specialists from eight Western states including Arizona, Colorado, Idaho, Montana, Nevada, Utah, Washington, and Wyoming.

For more information about RightRisk™, please visit our website. There you can learn more about RightRisk™, about risk and managing risks, how to contact resource people, and where and when up-coming RightRisk™ meetings will be held. Also, you can play RightRisk™ online!



Putting Knowledge to Work



Partially funded by: *Western Center for Risk Management Education, USDA – Risk Management Education, USDA – Risk Management Agency*

RightRisk™ programs are available to all without discrimination. No endorsement of products mentioned is intended nor is criticism implied of products not mentioned.