



Virginia Cooperative Extension

Virginia Tech • Virginia State University

Graduate Extension Scholars Program

Understanding Business Structures, Markets, and Risk Management Strategies Handout 2.2 _____ Publication ALCE-177-D

Simulation Cards

Eight sets of simulation cards are provided in this handout. Each unique set should be cut prior to teaching Lesson 2. The sets of cards are:

- Cattle 1
- Cattle 2
- Cattle 3
- Cattle 4
- Corn 1
- Corn 2
- Corn 3
- Corn 4

www.ext.vt.edu

Produced by Virginia Cooperative Extension, Virginia Tech, 2019

Virginia Cooperative Extension programs and employment are open to all, regardless of age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, genetic information, veteran status, or any other basis protected by law. An equal opportunity/affirmative action employer. Issued in furtherance of Cooperative Extension work, Virginia Polytechnic Institute and State University, Virginia State University, and the U.S. Department of Agriculture cooperating. Edwin J. Jones, Director, Virginia Cooperative Extension, Virginia Tech, Blacksburg; M. Ray McKinnie, Administrator, 1890 Extension Program, Virginia State University, Petersburg.

VT/0319/ALCE-177

Simulation Cards: Cattle 1

To begin, each owner/member has 50 heifers weighing an average of 700 lbs. and a beginning balance of \$120,000 in the bank to bring to the business.

Feed decision time! You can feed your heifers a ration costing \$400 per cow to bring their weight up to 1,200 lbs., or you can feed your heifers a ration costing \$450 per cow to bring their weight up to 1,250 lbs. Which do you choose?

Uh-oh. A disease is running through cattle herds in Virginia and killing 20% of the herds. There is a vaccine you can give your cattle that costs \$50 per cow. However, there is only a 25% chance your herd will be affected. Do you vaccinate?

You have the option to trade in your cattle for a premium breed of cattle, wagyu, that sells for 30% more than your Angus heifers, but it will cost \$200 per head to make the trade. Do you make the trade?

Bad news: Your herd was affected by that terrible disease! If you vaccinated, you're in luck because you didn't lose any cows. However, if you didn't vaccinate, you lost 10 cows right before sale, so you still paid to feed all of them.

Some of your cattle broke through the fence and damaged your neighbor's car and yard. He is suing you for the cost of the car and damages to his yard. He is willing to settle for \$50,000. Do you settle or go to court?

Hearing day! If you didn't settle and instead went to court with your neighbor, the judge ruled in your favor and is only making you pay \$25,000.

Bad news: Your tractor broke and you have to buy a new one. Do you buy a used one that might need repairs later on for \$25,000 or do you buy a new one for \$40,000?

Sale time! You sell your cattle today at the futures price for this day. Futures price is listed as dollars per cwt, i.e. 137.87 = \$137.87 per 100 lbs. or \$1.37 per pound.

www.ext.vt.edu

Produced by Virginia Cooperative Extension, Virginia Tech, 2019

Virginia Cooperative Extension programs and employment are open to all, regardless of age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, genetic information, veteran status, or any other basis protected by law. An equal opportunity/affirmative action employer. Issued in furtherance of Cooperative Extension work, Virginia Polytechnic Institute and State University, Virginia State University, and the U.S. Department of Agriculture cooperating. Edwin J. Jones, Director, Virginia Cooperative Extension, Virginia Tech, Blacksburg; M. Ray McKinnie, Administrator, 1890 Extension Program, Virginia State University, Petersburg.

VT/0319/ALCE-177

Simulation Cards: Cattle 2

To begin, each owner/ member has 50 heifers weighing an average of 700 lbs. and a beginning balance of \$120,000 in the bank to bring to the business.

Feed decision time! You can feed your heifers a ration costing \$400 per cow to bring their weight up to 1,200 lbs., or you can feed your heifers a ration costing \$450 per cow to bring their weight up to 1,250 lbs. Which do you choose?

Uh-oh. A disease is running through cattle herds in Virginia and killing 20% of the herds. There is a vaccine you can give your cattle that costs \$50 per cow. However, there is only a 25% chance your herd will be affected. Do you vaccinate?

You have the option to raise grass-fed cattle that sells for 15% more than your Angus heifers, but it will cost \$12,500 to rent additional acreage to graze them on. Do you make the switch?

Good news! Your herd was not affected by that terrible disease!

Some of your cattle broke through the fence and damaged your neighbor's car and yard. He is suing you for the cost of the car and damages to his yard. He is willing to settle for \$50,000. Do you settle or go to court?

Hearing day! If you didn't settle and instead went to court with your neighbor, the judge ruled in your favor and is only making you pay \$25,000.

Good news! You have an offer from another farmer to buy your favorite heifer to use to breed show beef cattle. He offers you \$12,000 for your heifer!

Good news! You have an offer from another farmer to buy your favorite heifer to use to breed show beef cattle. He offers you \$12,000 for your heifer!

www.ext.vt.edu

Produced by Virginia Cooperative Extension, Virginia Tech, 2019

Virginia Cooperative Extension programs and employment are open to all, regardless of age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, genetic information, veteran status, or any other basis protected by law. An equal opportunity/affirmative action employer. Issued in furtherance of Cooperative Extension work, Virginia Polytechnic Institute and State University, Virginia State University, and the U.S. Department of Agriculture cooperating. Edwin J. Jones, Director, Virginia Cooperative Extension, Virginia Tech, Blacksburg; M. Ray McKinnie, Administrator, 1890 Extension Program, Virginia State University, Petersburg.

VT/0319/ALCE-177

Simulation Cards: Cattle 3

To begin, each owner/member has 50 heifers weighing an average of 700 lbs. and a beginning balance of \$120,000 in the bank to bring to the business.

Feed decision time! You can feed your heifers a ration costing \$400 per cow to bring their weight up to 1,200 lbs., or you can feed your heifers a ration costing \$450 per cow to bring their weight up to 1,250 lbs. Which do you choose?

Uh-oh. A disease is running through cattle herds in Virginia and killing 20% of the herds. There is a vaccine you can give your cattle that costs \$50 per cow. However, there is only a 25% chance your herd will be affected. Do you vaccinate?

You have the option to raise grass-fed cattle that sells for 15% more than your Angus heifers, but it will cost \$12,500 to rent additional acreage to graze them on. Do you make the switch?

Bad news! Your herd was affected by that terrible disease! If you vaccinated, you're in luck — you didn't lose any cows. However, if you didn't vaccinate, you lost 10 cows right before sale, so you still paid to feed all of them.

Some of your cattle broke through the fence and damaged your neighbor's car and yard. He is suing you for the cost of the car and damages to his yard. He is willing to settle for \$50,000. Do you settle or go to court?

Hearing day! If you didn't settle and instead went to court with your neighbor, the judge ruled in your favor and is only making you pay \$25,000.

Good news! You have an offer from another farmer to buy your favorite heifer to use to breed show beef cattle. He offers you \$12,000 for your heifer!

Sale time! You sell your cattle today at the futures price for this day. Futures price is listed as dollars per cwt le 137.87 = \$137.87 per 100 lbs. or \$1.37 per pound.

www.ext.vt.edu

Produced by Virginia Cooperative Extension, Virginia Tech, 2019

Virginia Cooperative Extension programs and employment are open to all, regardless of age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, genetic information, veteran status, or any other basis protected by law. An equal opportunity/affirmative action employer. Issued in furtherance of Cooperative Extension work, Virginia Polytechnic Institute and State University, Virginia State University, and the U.S. Department of Agriculture cooperating. Edwin J. Jones, Director, Virginia Cooperative Extension, Virginia Tech, Blacksburg; M. Ray McKinnie, Administrator, 1890 Extension Program, Virginia State University, Petersburg.

VT/0319/ALCE-177

Simulation Cards: Cattle 4

To begin, each owner/member has 50 heifers weighing an average of 700 lbs. and a beginning balance of \$120,000 in the bank to bring to the business.

Feed decision time! You can feed your heifers a ration costing \$400 per cow to bring their weight up to 1,200 lbs., or you can feed your heifers a ration costing \$450 per cow to bring their weight up to 1,250 lbs. Which do you choose?

Uh-oh! A disease is running through cattle herds in Virginia and killing 20% of the herds. There is a vaccine you can give your cattle that costs \$50 per cow. However, there is only a 25% chance your herd will be affected. Do you vaccinate?

You have the option to raise grass-fed cattle that sells for 15% more than your Angus heifers, but it will cost \$12,500 to rent additional acreage to graze them on. Do you make the switch?

Good news! Your herd was not affected by that terrible disease!

You have been thinking about switching to a new slaughterhouse that will package your beef and give it back to you to sell direct to your customers. You'll get \$0.25 more per pound by marketing directly, but it will cost \$15,000 in marketing costs to reach your customers. Do you direct market?

Good news! You have an offer from another farmer to buy your favorite heifer to use to breed show beef cattle. He offers you \$12,000 for your heifer!

Bad news. Your tractor broke and you have to buy a new one. Do you buy a used one that might need repairs later on for \$25,000, or do you buy a new one for \$40,000?

Sale time! You sell your cattle today at the futures price for this day. Futures price is listed as dollars per cwt, i.e. 137.87 = \$137.87 per 100 lbs. or \$1.37 per pound.

www.ext.vt.edu

Produced by Virginia Cooperative Extension, Virginia Tech, 2019

Virginia Cooperative Extension programs and employment are open to all, regardless of age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, genetic information, veteran status, or any other basis protected by law. An equal opportunity/affirmative action employer. Issued in furtherance of Cooperative Extension work, Virginia Polytechnic Institute and State University, Virginia State University, and the U.S. Department of Agriculture cooperating. Edwin J. Jones, Director, Virginia Cooperative Extension, Blacksburg; M. Ray McKinnie, Administrator, 1890 Extension Program, Virginia State University, Petersburg.

VT/0319/ALCE-177

Simulation Cards: Corn 1

To begin, each owner/member has 50 heifers weighing an average of 700 lbs. and a beginning balance of \$120,000 in the bank to bring to the business.

Feed decision time! You can feed your heifers a ration costing \$400 per cow to bring their weight up to 1,200 lbs., or you can feed your heifers a ration costing \$450 per cow to bring their weight up to 1,250 lbs. Which do you choose?

Uh-oh! A disease is running through cattle herds in Virginia and killing 20% of the herds. There is a vaccine you can give your cattle that costs \$50 per cow. However, there is only a 25% chance your herd will be affected. Do you vaccinate?

You have the option to raise grass-fed cattle that sells for 15% more than your Angus heifers, but it will cost \$12,500 to rent additional acreage to graze them on. Do you make the switch?

Good news! Your herd was not affected by that terrible disease!

You have been thinking about switching to a new slaughterhouse that will package your beef and give it back to you to sell direct to your customers. You'll get \$0.25 more per pound by marketing directly, but it will cost \$15,000 in marketing costs to reach your customers. Do you direct market?

Good news! You have an offer from another farmer to buy your favorite heifer to use to breed show beef cattle. He offers you \$12,000 for your heifer!

Bad news. Your tractor broke and you have to buy a new one. Do you buy a used one that might need repairs later on for \$25,000, or do you buy a new one for \$40,000?

Sale time! You sell your cattle today at the futures price for this day. Futures price is listed as dollars per cwt, i.e. 137.87 = \$137.87 per 100 lbs. or \$1.37 per pound.

www.ext.vt.edu

Produced by Virginia Cooperative Extension, Virginia Tech, 2019

Virginia Cooperative Extension programs and employment are open to all, regardless of age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, genetic information, veteran status, or any other basis protected by law. An equal opportunity/affirmative action employer. Issued in furtherance of Cooperative Extension work, Virginia Polytechnic Institute and State University, Virginia State University, and the U.S. Department of Agriculture cooperating. Edwin J. Jones, Director, Virginia Cooperative Extension, Virginia Tech, Blacksburg; M. Ray McKinnie, Administrator, 1890 Extension Program, Virginia State University, Petersburg.

VT/0319/ALCE-177

Simulation Cards: Corn 2

Beginning, each owner/member has 50 acres of corn and a beginning balance of \$100,000 in the bank to bring to the business.

First, you need to buy some seed! You can buy feed grade No. 2 seed that costs \$65 per acre and yields 155 bushels per acre, or you could buy a new hybrid of corn seed that costs \$80 per acre and yields 165 bushels per acre. Which seed do you buy?

Uh-oh! There is a drought that is predicted to affect Virginia cornfields, destroying 20% of the crop. You can install an irrigation system that draws on deep water supplies that costs \$1,000 per acre to install but will last 7 years. However, there is only a 25% chance your fields will be affected this year. Do you install the irrigation system?

Bad news! Your combine broke, and you have to buy a new one. Do you buy a used one that might need repairs later on for \$25,000, or do you buy a new one for \$40,000?

Fertilizer decision time! You can fertilize your fields at a cost of \$55 per acre to bring your yield up by 5 bushels per acre, or you can fertilize your fields at a cost of \$70 per acre to bring your yield up by 10 bushels per acre. Which do you choose?

Bad news! Your crop was affected by that terrible drought. If you installed the irrigation system, you're in luck, as you didn't lose any of your crop. However, if you didn't install the irrigation, you lost 20% of your crop right before harvest.

There is a disease breaking out in Virginia that can cause a 50% crop loss. You can purchase insurance for \$100 per acre that will cover 25% of that loss, should it occur. However, there is only a 25% chance that it will occur. Do you buy the insurance or risk it?

Good news! Your crop was not affected by that terrible disease.

Sale time! You sell your corn today at the cash price for today. Price is listed as cents per bushel, i.e. 375.87 = \$3.75 per bushel.

www.ext.vt.edu

Produced by Virginia Cooperative Extension, Virginia Tech, 2019

Virginia Cooperative Extension programs and employment are open to all, regardless of age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, genetic information, veteran status, or any other basis protected by law. An equal opportunity/affirmative action employer. Issued in furtherance of Cooperative Extension work, Virginia Polytechnic Institute and State University, Virginia State University, and the U.S. Department of Agriculture cooperating. Edwin J. Jones, Director, Virginia Cooperative Extension, Virginia Tech, Blacksburg; M. Ray McKinnie, Administrator, 1890 Extension Program, Virginia State University, Petersburg.

VT/0319/ALCE-177

Simulation Cards: Corn 3

Beginning, each owner/member has 50 acres of corn and a beginning balance of \$100,000 in the bank to bring to the business.

First, you need to buy some seed! You can buy feed grade No. 2 seed that costs \$65 per acre and yields 155 bushels per acre, or you could buy a new hybrid of corn seed that costs \$80 per acre and yields 165 bushels per acre. Which seed do you buy?

Uh-oh! There is a drought that is predicted to affect Virginia cornfields, destroying 20% of the crop. You can install an irrigation system that draws on deep water supplies that costs \$1,000 per acre to install but will last 7 years. However, there is only a 25% chance your fields will be affected this year. Do you install the irrigation system?

You have the option to start a corn maze for the fall season. It will cost \$15,000 to start up, and you will get \$10 in revenue from each person who visits the maze. Your market research shows that between 1,000 and 2,200 people show up to corn mazes in an average year. Do you invest in a corn maze and see how many people show up this season?

Fertilizer decision time! You can fertilize your fields at a cost of \$55 per acre to bring your yield up by 5 bushels per acre, or you can fertilize your fields at a cost of \$70 per acre to bring your yield up by 10 bushels per acre. Which do you choose?

There is a disease breaking out in Virginia that can cause a 50% crop loss. You can purchase insurance for \$100 per acre that will cover 25% of that loss, should it occur. However, there is only a 25% chance that it will occur. Do you buy the insurance or risk it?

Good news! Your crop was not affected by that terrible disease or by that terrible drought!

If you chose to start the corn maze, you didn't have as much luck with your opening season as you would have liked. You had 1,100 people visit the maze. Better luck next time!

Sale time! You sell your corn today at the cash price for today. Price is listed as cents per bushel, i.e. 375.87 = \$3.75 per bushel.

www.ext.vt.edu

Produced by Virginia Cooperative Extension, Virginia Tech, 2019

Virginia Cooperative Extension programs and employment are open to all, regardless of age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, genetic information, veteran status, or any other basis protected by law. An equal opportunity/affirmative action employer. Issued in furtherance of Cooperative Extension work, Virginia Polytechnic Institute and State University, Virginia State University, and the U.S. Department of Agriculture cooperating. Edwin J. Jones, Director, Virginia Cooperative Extension, Virginia Tech, Blacksburg; M. Ray McKinnie, Administrator, 1890 Extension Program, Virginia State University, Petersburg.

VT/0319/ALCE-177

Simulation Cards: Corn 4

To begin, each owner/member has 50 acres of corn and a beginning balance of \$100,000 in the bank to bring to the business.

First you need to buy some seed. You can buy feed grade No. 2 seed that costs \$65 per acre and yields 155 bushels per acre, or you can buy white corn seed that costs \$85 per acre and yields 155 bushels per acre, but you get a 10% premium over the No. 2 seed price come time to market. Which seed do you buy?

Uh-oh! There is a drought that is predicted to affect Virginia cornfields, destroying 20% of the crop. You can install an irrigation system that draws on deep water supplies that costs \$1,000 per acre to install but will last 7 years. However, there is only a 25% chance your fields will be affected this year. Do you install the irrigation system?

Bad news. Your tractor broke and you have to buy a new one. Do you buy a used one for \$25,000 that might need repairs later on, or do you buy a new one for \$40,000?

Fertilizer decision time! You can fertilize your fields at a cost of \$55 per acre to bring your yield up to 160 bushels per acre, or you can fertilize your fields at a cost of \$70 per acre to bring your yield up to 165 bushels per acre. Which do you choose?

Good news! Your crop was not affected by that terrible drought.

A disease is breaking out in Virginia that can cause 50% crop loss. You can purchase insurance for \$100 per acre that will cover 25% of that loss, should it occur. However there is only a 25% chance that it will occur. Do you buy the insurance or risk it?

Bad news! The disease hit your fields. If you bought crop insurance, you only lose 25% of your final crop. If you didn't buy crop insurance, you lose 50% of your crop.

Sale time! You sell your corn today at the cash price for today. Price is listed as cents per bushel, i.e. 375.87 = \$3.75 per bushel.

www.ext.vt.edu

Produced by Virginia Cooperative Extension, Virginia Tech, 2019

Virginia Cooperative Extension programs and employment are open to all, regardless of age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, genetic information, veteran status, or any other basis protected by law. An equal opportunity/affirmative action employer. Issued in furtherance of Cooperative Extension work, Virginia Polytechnic Institute and State University, Virginia State University, and the U.S. Department of Agriculture cooperating. Edwin J. Jones, Director, Virginia Cooperative Extension, Virginia Tech, Blacksburg; M. Ray McKinnie, Administrator, 1890 Extension Program, Virginia State University, Petersburg.

VT/0319/ALCE-177