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AGRICULTURAL SCHOLARSHIPS

Opportunities for Canadian Beef in International Markets

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NUFFIELD CANADA

Nuffield Canada Agricultural Scholarships

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3. Achieve personal development through travel and study
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Applications are due annually by June 30th

SCHOLAR PROFILE

"There is only one way to learn. It's through action. Everything you need to know you have learned through your journey." – Paulo Coelho

This quote from The Alchemist by Paulo Coelho has been an inspiration for me throughout my Nuffield journey. It has been through this journey that I have not only learned a great deal about my topic, but also about myself.

I was raised on a first-generation cow-calf operation in Lorne Valley, Prince Edward Island. My brother and I were both active members in our local 4-H club and exhibited beef cattle all over the country.

I completed my M.Sc. in animal science at the Dalhousie Agriculture Campus in 2016. During my time in graduate school I was a mentee in the Cattlemen's Young Leader Program, a mentorship program overseen by the Canadian Cattlemen's Association. It was during my mentorship with my mentor John Baker that I first gained exposure to the topic of international trade.

After my thesis was complete, I started work with the Maritime Beef Council, a small organization that works collaboratively with local beef industry groups to advance the local beef industry. It was while working in this role when I got a better understanding of the issues that the local industry was facing and the potential opportunities.

Since October 2018 I have been working as the extension coordinator with the Beef Cattle Research Council. I am fortunate in this role that I get to work in producing extension resources to be used for producer education. While working in this role I feel that I have gained a better understanding of the issues that are faced nationally in terms of beef production.

It has been a combination of my experiences through my education and my work that I discovered my topic of interest and developed a passion for the improvement of beef production in Canada from east to west.

ACKNOWLEDGEMENTS

Firstly, I would like to thank my partner Andrew for supporting and encouraging me throughout this Nuffield journey. I couldn't have taken on this journey without you.

To my parents Brendon and Carol Crane, thank you for raising me as a farm kid in rural PEI and inspiring me to be the best version of myself that I possibly can.

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Canada Beef Inc.
Atlantic Beef Products
Maritime Beef Council
Nova Scotia Cattle Producers
New Brunswick Cattle Producers
Prince Edward Island Cattle Producers
Maritime Hereford Association
Canadian Hereford Association
Canadian Angus Association

EXECUTIVE SUMMARY

When was the last time you purchased a beef product in a grocery store? For many beef producers, purchasing grocery store beef is not a regular activity, and they may be removed from some of the current realities of consumer demands. The modern consumer has become increasingly conscious about the products they purchase. Is it good for me? Is it good for the environment? These are just a couple of attributes of beef production a consumer may consider when making purchase decisions. This consideration led to the topic of my Nuffield Canada study "which attributes of beef production is the international consumer willing to pay for? What production changes can be made in Canada to leverage consumer marketing in export markets?"

Taking into consideration the upcoming trade deals for Canada and the type of consumer we would be targeting, my travels would take me to the Netherlands, Scotland, England, Denmark, Northern Ireland, the Republic of Ireland, France, Italy, Hong Kong, Japan and the United States and visits across Canada. My objectives during this travel were to consider a) What were the attributes of beef production in these countries that consumers have shown value for? What are they buying? And b) How is the value from the consumer reflected in beef production within these countries?

The values of the consumers that are purchasing Canadian beef products are as diverse as the consumer themselves. The customer has voted with their dollars and chosen to consume beef. Some common themes of consumer desires across various countries include:

a) Price: The price needs to reflect product value.
b) Food Safety: This is a primary concern regardless of what the customer is purchasing.
c) Quality: If the product is going to be labelled with a premium price the product needs to match that price.
d) Provenance: If a story is used to describe how the product was produced it needs to be able to be proven.
e) Presentation and labelling: need to indicate quality and value.

My recommendation for the industry is to encourage beef producers to enhance the keeping of on-farm records and to ensure best management practises are used. By doing so, this will increase the number of beef cattle available for existing Canadian verification systems including VBP+ and the CRSB certified sustainable program. For the products that are marketed locally and internationally, enhanced product labelling will ensure the consumer is aware that the product was raised sustainably (economically viable, environmentally sound and socially responsible). Including a sustainable label will require efforts through product branding to ensure the consumer knows that the claims such as sustainability are verifiable in Canadian products.

DISCLAIMER

This report has been prepared in good faith but is not intended to be a scientific study or an academic paper. It is a collection of my current thoughts and findings on discussions, research and visits undertaken during my Nuffield Canada Farming Scholarship.

It illustrates my thought process and my quest for improvements to my knowledge base. It is not a manual with step-by-step instructions to implement procedures.

Neither The Nuffield Farming Scholarships Trust, nor my sponsor, nor any other sponsoring body guarantees or warrants the accuracy, reliability, completeness or currency of the information in this publication nor its usefulness in achieving any purpose.

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In submitting this report, the Scholar has agreed to Nuffield Canada publishing this material in its edited form.

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1.0 INTRODUCTION

1.1 Canadian Beef production

I was raised on a first-generation beef farm in rural Prince Edward Island. Growing up I had the privilege of watching and participating in the building of our farm constructed from a 10 acre stand of pine trees to a 100+ acre, 50 pair cow-calf operation. In 2003, was the first time I had heard of bovine spongiform encephalopathy (BSE). After the 2003 discovery of BSE, the Canadian beef industry was changed almost overnight through the closure of the American border. This closure immediately halted Canadian exports of beef and as a result, prices dropped significantly and remained low for several years. I believe that living through these experiences has instilled a passion in me to see the growth of this industry not only in the Maritimes, but across the country.

Despite these challenging times, the industry remains strong. Canada is built for raising beef cattle. The country is rich in fresh air, clean water and millions of acres of grassland which is not always appropriate for growing crops due to various reasons, but still well suited for feeding ruminant livestock.

Each year, Canada produces approximately 1.3 million tonnes of beef. In 2018, the Canadian beef industry exported $2.75 billion (398,580 tonnes) of beef, which represented 38% of domestic slaughter (Canadian Cattlemen's Association, 2018). The Canadian beef industry ships to 56 countries but is reliant on the United States (US) for 74% of all beef exports. In total, the US and Mexico account for 78% of our export market (Canadian Cattlemen's Association, 2018). The next largest beef export markets are Japan (8%), mainland China & Hong Kong (7.7%), Southeast Asia (1.8%) and South Korea (1%) (Canadian Cattlemen's Association, 2018). Considering a significant portion of our products are sent to export markets where our products are sold at a premium, Canada's place in international trade deals is critical for industry profitability.

1.2 Export Market Trade Agreements

During the time I was preparing my application for Nuffield Canada, there were a number of trade deals in the process of negotiation or signing. One of these trade deals was the North American Free Trade Agreement (NAFTA) which is a free trade agreement between Canada, the United States and Mexico. The instability of this market has made many Canadian producers nervous, and rightfully so given the experience with the closure of the US border in 2003, as a result of the BSE discovery. It is without question that we want to maintain this relationship with the US and Mexico, but what if there was an opportunity to expand the export market into other countries?

On November 30, 2018, Canada agreed to a new trade deal with the United States and Mexico to form the new United States Mexico Canada (USMCA) trade agreement replacing the former North American Free Trade Agreement (NAFTA). At the time of writing this report the deal was not received well by all sides of the Canadian agriculture sector and all the details of the deal have not been revealed.

The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) is a free trade agreement between Canada and 10 other countries in the Asia-Pacific region: Australia, Brunei, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Vietnam. Once fully implemented, the 11 countries will form a trading bloc representing 495 million consumers and 13.5% of global GDP, providing Canada with preferential access to key markets in Asia and Latin America (Government of Canada, 2018b).

On December 30, 2018 the CPTPP entered into force among the first six countries to ratify the agreement – Canada, Australia, Japan, Mexico, New Zealand, and Singapore. The elimination of tariffs and improved market access for Canadian beef products provides an opportunity to improve competitiveness when accessing these markets. Prior to this agreement, Canada was at a trade disadvantage with the US and Australia due to a lower import tariff for both countries giving American and Australian beef a price advantage in these markets.

The Comprehensive Economic Trade Agreement (CETA), a free trade agreement between Canada and the EU, was entered into force on September 21, 2017. For this deal Canada was immediately granted a duty-free quota of 9,300 tonnes of fresh beef and 2,500 tonnes of frozen for the remainder of 2017. On January 1, 2018 this increased to 14,400 tonnes of fresh and 5,000 tonnes of frozen, reaching a maximum of 35,000 tonnes fresh and 15,000 frozen in 2022. However, granted market access to the European Union was not met without challenges. To enter this market the Canadian beef industry is required to make several changes in production methods such as the use of growth hormones and carcass washes, both commonly used in Canada (Government of Canada, 2018a).

While having these trade deals in place is the critical piece to accessing export markets, there will still be work to do to sell our product to consumers in these markets. For the most part, higher value products such as Canadian beef will be sold in city centres due to the fact there is a greater population density, and the fact that urban dwellers may have a higher disposable income compared to rural residents. To better understand what the consumer in urban export markets could value I considered the current situations of consumers living in North America.

1.3 Modern Agriculture and Beef Production

In 1931, when the farm population count was compiled for the first time, 3,289,140 people were living on a farm - 31.7% of the Canadian population. By 2006, the farm population accounted for only 2.2% of all Canadians. In less than one lifetime Canada has moved from 1 in 3 Canadians living on a farm to 1 in 46. At the same time, Canada's total population tripled from 10,363,240 in 1931 to 31,511,590 in 2006 (Stats Canada, 2016).

Canada is not alone in this population shift. As of the 2018 United States Department of Agriculture (USDA) census of agriculture, there were just over 2 million farms, covering an area of 899 million acres, an average of 443 acres (179 hectares) per farm (Figure 1) (USDA, 2018). This is compared to the 1935 census where there were nearly 7 million farms (Figure 2) (USDA, 2007).

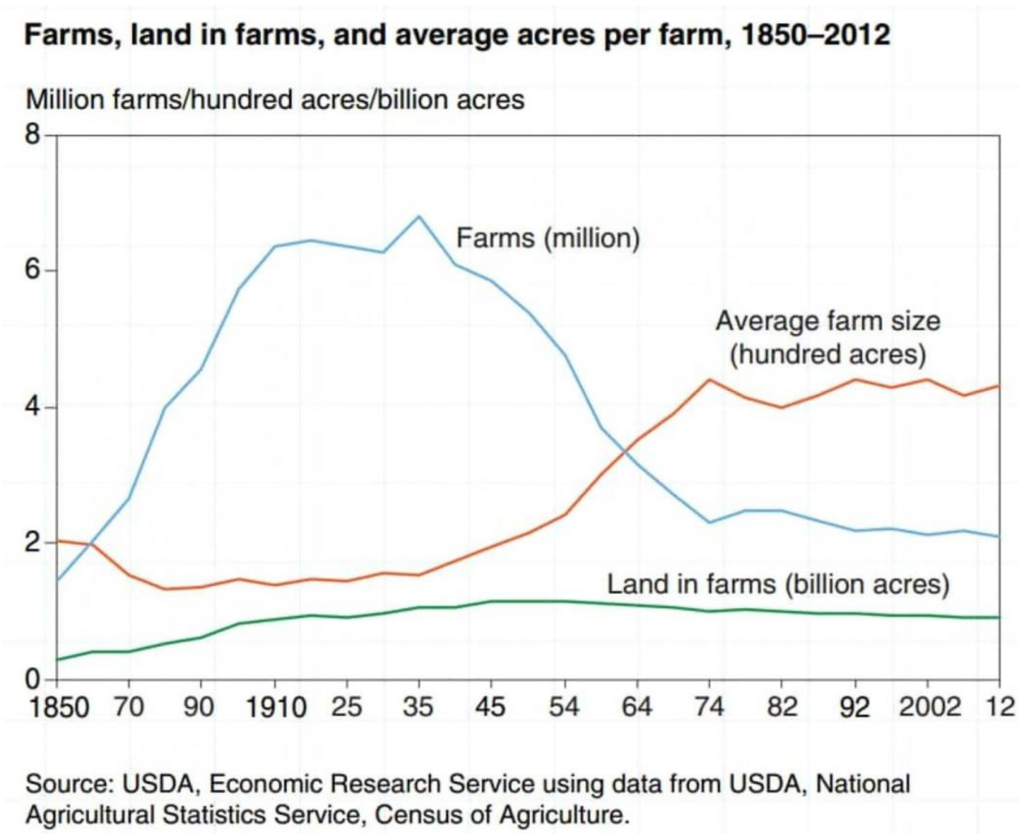

Figure 1: USDA 2012 census results, number of farms, average farm size.

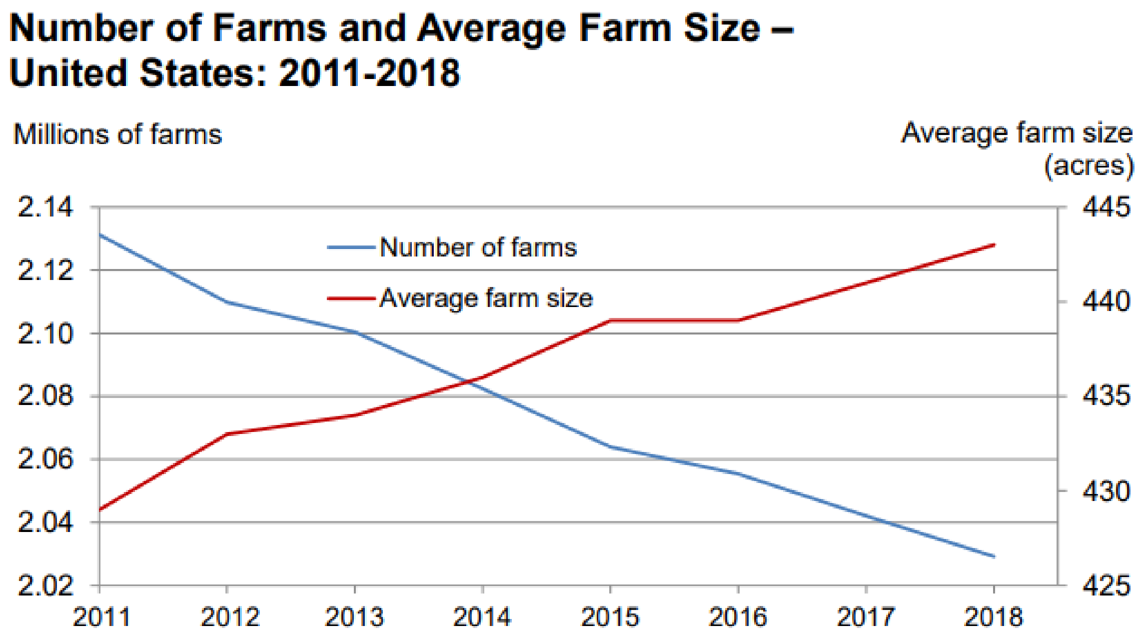

Figure 2: USDA farms and land in farms between 2011 and 2018.

Since the 1950's, the efficiency of beef production in Canada has improved by 30% (BCRC, 2018). This is a result of research in the areas of diet management, grain processing, growth promotants and genetics (BCRC, 2018). Due to the increase in the overhead cost of raising cattle, inflation, etc. the size of a typical beef farm has increased in size and capacity (Canfax, 2019). Since the 1930's the average area per farm increased from an average of 250 acres to 750 acres (Figure 3).

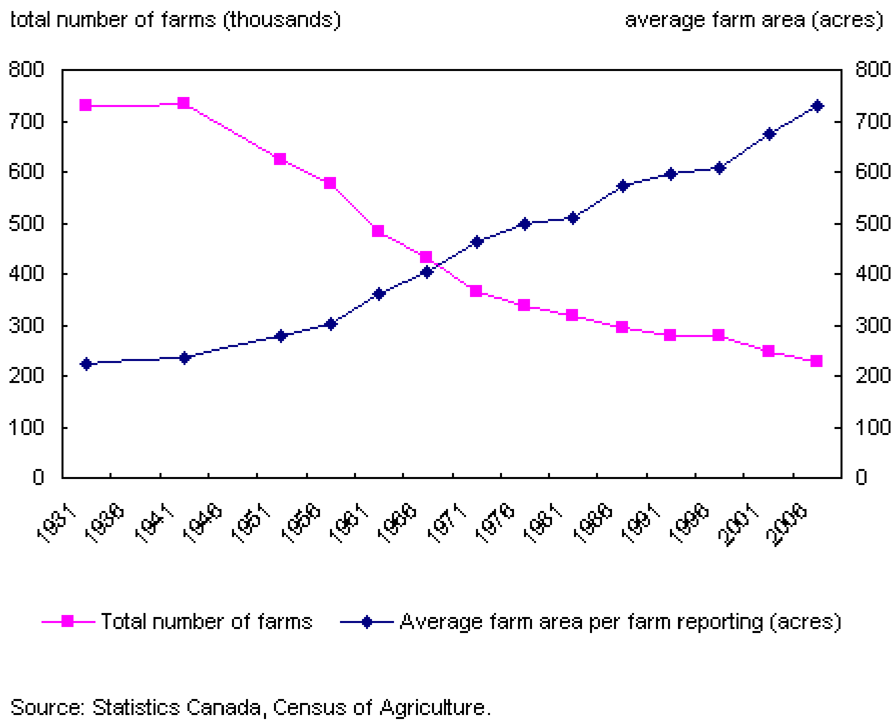

Figure 3: Total number of farms compared to average farm area, Stats Canada

In the last 100 years, consumers have migrated from rural areas into more populated areas putting a distance between themselves and farming communities both socially and physically (Woolpert, 2015). The disconnect between the average consumer and food production becomes increasingly apparent through recent advertising campaigns. Grocery stores and social media platforms have all become opportunities to share an often-misleading message for consumers. For example, products such as baking soda or cat litter could be labelled as Non-GMO. Both products do not contain the genetic material to even require this label, but it is used as a marketing tool for the consumer that has come to the conclusion that genetically modified isn't something they want.

This challenge of advertising is not unknown for those working in animal agriculture. Animal welfare groups, health and environmental activists have animal agriculture as a main target. According to preliminary results from a recent Dalhousie university report, less than 3% of consumers consider themselves as a vegan. However, 32.2 % of consumers which currently consume animal products stated that they would consider changing their diet to include less meat in the next six months. The new group of consumers known as the flexitarian, is where the industry may see the biggest changes in consumer trends in animal proteins (Charlebois, 2018).

The influence on consumer purchasing decisions does not fall solely on those working in advertising. In 2018, the release of the EAT Lancet report presented a global planetary health diet that was quoted as healthy for both people and the planet. The report suggests that globally, we should not eat more than 98 grams, or ½ cup of red meat per week and to consume more vegetable-based proteins (EAT, 2018). These suggestions were reflected in the 2018 release of the revamped Canada Food Guide which removed the section for servings of meat and meat alternatives to simply state that Canadians eat protein foods with a greater influence from vegetable proteins (Canada's Food Guide, 2019).

1.3 The Modern Consumer

In North America and in many other advanced nations, the modern consumer has an abundance of options in terms of food choices. The purchasing decisions made in the grocery store can be the result of a multitude of factors. The Satter Eating Competence Model shown in Figure 4, was adapted from Maslow's Hierarchy of Needs (Satter, 2007). Abraham Maslow arranged basic needs in order of sequential importance to the individual and thought that needs at each level must be satisfied before the individual can become aware of and address the next level of need. From the foundation through the apex on Maslow's pyramid-shaped Hierarchy of Needs, they are: (1) physiological needs: air, water, food, shelter, sleep, sex; (2) safety, security and order; (3) social affection: love and belongingness; (4) esteem, status: self-esteem and esteem by others; and (5) self-actualization: being all the individual can be. Satter's model captures these foundations through food choices in Figure 4. Starting with:

Enough food: Individuals experiencing food insecurity function at this level. They are driven by hunger and anxiety about getting enough to eat.

Acceptable food: A person functioning at this level is free enough from the threat of hunger to be able to consider the subjective issue of acceptability.

Reliable access to food: People who feel reasonably assured that an adequate amount of familiar and acceptable food is currently available can turn to ensuring food availability at the next meal or the next day. They can plan for subsequent meals, accumulate a food stash, and budget for food purchases.

Good tasting food: Once food security is adequately addressed, appetite again becomes noticeable, and food choices are influenced by aesthetic and gustatory considerations.

Novel food: At this level on the hierarchy, the prospect of wasting unappealing food is less risky, and experimenting with novel food becomes a possibility.

Instrumental food: The person functioning at the top of Satter's Hierarchy of Food Needs reliably gets enough to eat of rewarding food and has food acceptance skills that are good enough to allow him or her to eat a variety of food. That person is thus positioned to consider choosing food for instrumental reasons: to achieve a desired physical, cognitive, or spiritual outcome (Satter, 2007).

There is a strong positive relationship between the level of income and the consumption of animal protein, with the consumption of meat, milk and eggs increasing at the expense of staple foods (WHO, 2018). For the current Canadian beef export markets including the United States, Japan and Hong Kong, in general the consumer of interest fits into the top three tiers of Satter's Hierarchy due to the fact these countries are performing well economically. These consumers have choices when it comes to making decisions on what to feed their families. The challenge for the Canadian beef industry is to determine what the values of these consumers are and how to showcase this value at the meat counter.

Figure 4: Satter's Hierarchy of Food adapted from Maslow's Hierarchy of Human Needs

1.5 Objectives of study

Taking into consideration the new free trade deals for Canada and the type of consumer we would be targeting, my travels would take me to the Netherlands, Scotland, England, Denmark, Northern Ireland, the Republic of Ireland, France, Italy, Hong Kong, Japan and the United States and visits across Canada. My objectives during this research were to consider:

a) What were the attributes of beef production in these countries that consumers have shown value for? What are they buying?

b) How are consumer values reflected in beef production practises within these countries?

2.0 Attributes of beef production and the modern consumer

Throughout my travels there were reoccurring themes related to consumer values in each market and could be considered the "meat" of this report. Based on my conversations with beef producers, industry personnel, meat counter staff and some general observations I compiled a list of attributes that appear to be valued by consumers in every country, which includes price, food safety, quality, provenance, and labelling and packaging. These attributes could be the points which convert a grocery shopper to a customer.

2.1 Price

Value-based pricing is one of the most common pricing methods that businesses will use to determine the price for a particular product. In value-based pricing, the perceived value to the customer is primarily based on how well it's suited to the needs and wants of each customer. According to the BDC, with value pricing the price is a better fit with the customer's perspective and allows you to be more profitable, meaning you can acquire more resources and grow your business. When a price doesn't work, the answer isn't just to lower it, but to determine how it can better match customer value. That may mean adapting the product to better suit the market (BDC, 2019).

Determining the price to charge for Canadian beef in an international market can be challenging. Expenses such as shipping costs, inspections and import tariffs can place Canadian products at a disadvantage in markets that do not have an active trade deal in place. The new trade deals including CETA, CPTPP and USMCA support the development of a level playing field by removing the import tariff costs, making Canadian beef more competitive with other countries including the United States and Australia.

In order to remain competitive with the local product, the customer must see the value in paying more for an imported product. Determining what that customer deems as higher quality may be different from person to person.

2.1.1 Japan

After six weeks of travelling, the first piece of Canadian beef I found abroad was in a high-end retail store in Osaka, Japan. This store sold exclusively Japanese Wagyu and Canadian beef, specifically the Ontario Corn Fed Beef brand. Side by side, the corn-fed beef has less marbling (the white flecks of fat that is distributed throughout the meat and is thought to add to the flavour and tenderness) than the traditional Wagyu beef (see Figure 5). However, after a conversation with the meat department management staff it was revealed that the typical mother of two tends to feed her children Canadian beef during the week but may have the Japanese Wagyu on the weekends. This is partially due to the price difference between the two products where a Canadian beef steak costs less than half the price of the Wagyu steak of the same size (898¥ vs. 2606¥). The nutritional value of the two proteins is also taken into consideration. Where wagyu is a fatty, luxurious protein that tends to be consumed in small pieces, the Canadian product can be consumed in larger portions more often.

Figure 5: Japanese Wagyu and Ontario Corn Fed Steaks in Osaka, Japan. Photo credit Ellen Crane.

This may be one of the greater marketing opportunities for Canadian beef in Japan. With the security that the product will be safe and high quality for the price, the Canadian steak should be consumed more often by the Japanese consumer because they are getting more value for their money.

2.2 Food Safety

No matter which country is approached as an export market, food safety is going to be a primary concern. The extent to which the food safety concerns of the consumer are addressed in the labelling and marketing, may vary slightly according to country.

When speaking about food safety the issue goes back further in many cases past the grocery store, shipping and handling, and the processing facility. For most consumers in developed nations, the food they buy will already be guaranteed that it is safe to consume. However, this is where the attributes of beef production such as hormone use, antibiotic use and animal welfare can come into play. These attributes can often be described as a 'label' and not always a quality that can be easily proven. For some countries there are methods and regulations in place for beef production that ensures the customer is getting what they think they are purchasing. The food safety umbrella can include traceability, record keeping for antibiotic use, DNA testing, regulations against hormone use, and many others including assurance schemes which will be discussed later.

Currently, Canada is at an advantage when it comes to food safety. Since the outbreak of BSE in 2003, the industry has changed dramatically. The development of the Canadian Food Inspection Agency (CFIA) was created in response to outbreaks including BSE in other countries, which has resulted in Canada having a global reputation of high food safety standards. In 2001, the Canadian Cattle Identification Agency was formed to improve the traceability of cattle across the country and post BSE was amplified to develop premise identification, full animal movement and age verification (CCIA, 2005). With the reputation of high food safety standards already in place, Canada has an opportunity to leverage this reputation in export markets as an attribute of our products.

2.2.i EU Traceability

Figure 6: Angus calves exhibiting double tagging system in Scotland. Photo credit Ellen Crane.

One major difference in the beef production systems in Europe compared to Canada is the achievements they have made with traceability. At birth, each animal is given two ear tags with identical numbers on them (Figure 6). The first number is the individual farm number, similar to our current premises identification system in Canada. The second number is a unique number the animal will keep throughout its lifetime. The advantage to the double tag system is that should one ear tag fall out, the second tag will be in place. The farmer is required to replace the lost tag within a few days, or they could face a penalty.

Each animal is also given a 'passport'. The passport is available in both a paper version and farmers can access an online system which works very effectively. The passport is used to record all movements of the animal off the farm site. The passports are also used when selling and purchasing animals which give a clear indication of the buyer, seller, and the date. The format of the passports varies slightly by country but is required by law to be completed. According to the farmers I spoke with, the passports were extra work. However, the farmers were all quite proud to say that full traceability was in place. In fact, certain retailers have utilized this asset to market beef at the local supermarket to have product labels with not only the country of origin, but the farm and potentially the individual animal identification.

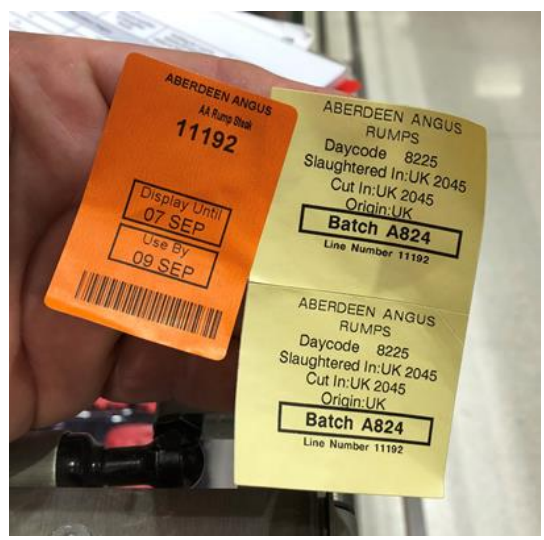

Figure 7: Traceability information from a meat counter in the Morrison's store. Photo credit Ellen Crane.

While I was in the UK, I wanted to put their traceability system to the test. I started a conversation with the butcher behind the counter at a Morrison's store in England and asked him if he could tell me where the beef in the case had originated from. From behind the counter he pulls out a binder that has a record of all the meat that has been in the case. He pulls out two stickers from the beef that was currently in the case (Figure 7). This information includes the day the animal was processed, location of slaughter, cutting and origin. According to the butcher, store customers were requesting this information more often.

This same information was available in France. In the window of the display case in an E. Leclerc grocery store was a poster of information about the beef in the case. From this simple sign it says that the beef was produced and processed in France and provides the breed of the animal which in this case is Limousin. This would be important information for the French consumer. According to my interviewees in France, they suggested French shoppers prefer to buy breeds native to their region such as Limousine from Limoges or Blonde D'Aquitaine from the D'Aquitaine region. This was an interesting difference from the North American consumer which may not realize that Angus is a breed of cattle, yet it is a very popular branding initiative. This would suggest that selling product into some of these European markets could benefit from a breed designation in the labelling.

Since 2005, food traceability has been mandatory in Europe due to growing concerns from the public about a number of previous health outbreaks that were transferable to humans including BSE, and foot and mouth disease (European Commission, 2007). The European consumer expects to have this type of information available when making purchasing decisions. In a 2003 study, Tonsor et al. found that many consumers claimed that country of origin was important with 52% responding with a 4 or 5 (very important) and only 22% responding with a 1 or 2 (not important) (Tonsor et al., 2003). To sell Canadian beef products into the European market, consumers may require that Canadian products have more extensive country of origin labelling. Tracing the product back to the province may not be necessary, but perhaps it could be an additional branding opportunity to those customers that are looking for a product with a story.

Figure 8: Information displayed in meat case in France. Photo credit Ellen Crane.

2.2.ii. UK Animal Health and Record Keeping

While Canada continues to provide surveillance for diseases such as BSE, the UK has a number of health issues that continue to be monitored. Depending on the country, all animals on farm are tested annually for bovine TB. The disease is a major issue in Europe, outbreaks continue to surface in both dairy and beef herds.

Producers who plan to receive the farm subsidies must participate in the record keeping system BreedPlan at a cost of 1000€ or approximately $1449 Canadian per year. The Breedplan system is used to track everything including births, movements, and medical records. Failure to comply in adequate record keeping can result in loss of points or fines. The producers I spoke to across the UK had grumblings about the onus on producers to maintain accurate records, however, without this system they would not have access to the subsidy programs which allow beef farmers to make a full-time living producing beef.

On January 1, 1989, the European Union (EU) enacted a ban on the production and importation of meat derived from animals treated with growth-promoting hormones. Despite numerous studies which indicate growth hormones have no impact on human health the ban remains in place (Jeong *et al.* 2010). To sell Canadian beef into the EU will require the demonstration that the product was raised without hormones. We already know this, since the Canadian Program for Certifying Freedom from Growth Enhancing Products (GEPs) has been in place for several years already. My concern is the public perception in the EU over the use of hormones in Canada, even though it is only used for commodity beef sold in non-EU markets. In a conversation I had with an English farmer named Rich Norman, I inquired about the public's perception around hormone use and beef production. In Rich's opinion, unless the use of hormones was well tracked there would be a newspaper headline which read "Canadian Beef has Hormones," as a means to deter British shoppers from purchasing Canadian beef products. To alleviate the opportunity for a headline such as this one, Canada needs to improve its record keeping practises not only with hormone use but with our production practises in general to be competitive with the local products.

2.2.iii. Danish Livestock Production and Regulations

Similar to other countries in the EU, in Denmark record keeping and traceability play a large role in the management of livestock. Most of the feeder cattle are exported to the southern EU for finishing. However, in Denmark the country does have some differences in terms of veterinarian interventions on farms. According to my conversation with producer Henrik Andersen, veterinarians play a huge role in the activities that would be normally carried out by a beef producer in other countries. For example, castration and dehorning may only be carried out by a veterinarian, and dehorning must be completed under anaesthesia.

Danish farmers have developed a close relationship with their veterinarians, with monthly visits from their vet. Animal treatments and withdrawal dates are recorded but can only be delivered with an agreement with the veterinarian.

In Denmark, and other EU countries, the reduction of the use of antimicrobials as growth promotants has been in place since 1998 with the intent to reduce antimicrobial resistance in humans. This suggests that freedom from the use of antibiotics is a valued attribute for EU consumers. In December 2018, Canada changed its regulations on antimicrobial products to require a veterinary prescription. Like hormone use, I believe Canada has an opportunity to become more advanced in the recording of antibiotic use. One program we currently have in Canada, the Verified Beef Production Plus program, requires that producers record health treatments including the dose, route (i.e. oral, injection, etc), and withdrawal date of drugs such as antibiotics. Encouraging more producers to participate in this program could open more doors for potential trade deals where better records could be considered valuable (VBP+, 2018).

2.2.iv Ensuring Food Safety

Hong Kong is one of the most densely populated areas in the world with over 7000 people per square kilometre and is one of the world's most significant financial and commercial ports (World Population Review, 2019).

To get a better understanding of the typical consumer in Hong Kong, we ventured to what is known as a 'wet' market. The wet markets are where the typical household will purchase their groceries including vegetables, meat and dried goods. The wet market provided us with a bit of a culture shock. Unlike the food safety regulations we have in Canada, there is less regulation in Hong Kong. On a 35°C day without incorporating the effect of the humidity (which would feel more like 40°C), proteins including beef and pork were sold in the open air without refrigeration (see Figure 9). Until this point in my research I hadn't considered that food safety is valued in some of these markets because it is not something that is always guaranteed in local products.

Figure 9: Red meat sold in a Hong Kong wet market. Photo credit Ellen Crane.

The value of food safety and quality was confirmed in a small shop tucked in the corner of the market. In a refrigerated case there was frozen, imported product from other countries including Spain, Australia and the United States. These items were being sold for a premium price and were displayed in a way that suggested higher quality in comparison to the local product shown in the photo above. According to the shop clerk, these products may be purchased for a special occasion or by a housewife with a larger food budget. To capitalize on this market, we need to ensure that Canadian beef is going to hold its spot in the display case next to products from Australia and the US. From Figure 10, it is clear that food safety (single use packaging and refrigeration), the presentation and product origin are important factors in higher valued products in Hong Kong.

Figure 10: Imported red meat sold in a Hong Kong wet market. Photo credit Ellen Crane.

2.3 Quality

Once the beef has been sold and prepared it is finally time to have the pleasant eating experience. In Canada, the 2014-2018 beef audit report on consumer satisfaction assessment revealed that 79% of the test consumers gave an overall score of 7/10 or higher. Of the 1,200 consumers, 288 gave their steak a perfect rating (10/10). When the rest of the consumers were asked, “Why wasn’t it perfect?”, approximately 12% of consumers felt their cooking methods were solely or partially responsible. The consumers’ main concern (46%) was with the texture (tenderness and juiciness) of their steak. Flavour and fat content were least often noted as a concern (9% and 6% respectively). As found in past studies, consumer satisfaction with their eating experience continues to be driven by tenderness (NBQA, 2018).

While this may be the case for Canadian consumers, attributes such as fat content can be viewed differently by consumers in other countries.

2.3.i Dairy Beef

The 2018 Contemporary Scholars Conference (a yearly conference held for all incoming Nuffield Scholars from participating countries) was held in Zeewolde, the Netherlands. The Nuffield Scholars of the Netherlands provided a full itinerary with visits to many innovative farm businesses, some of which were operated by Nuffield Scholars. One of the key shifts in agriculture in the Netherlands and many European countries occurred after the second world war. The devastation during and following WWII created considerable hunger in Europe. To prevent the occurrence of hunger such as that felt during the war, the Dutch have become highly efficient and self-sustaining in their food production. This focus has resulted in a reduction of animal agriculture to increase land use for crop production.

One dairy operation on our tours was focused on the production of milk and ice cream from a mixed breed herd of dairy cattle. At the end of its productive life, a dairy cow would then become a beef animal that was sold to local restaurants as cuts ranging from steak to roasts to mince. This was one of my first realizations that not every market is looking for what Canadians would consider as a "high quality" premium product. For example, in the Canadian market a cull cow from a dairy operation would likely receive a lower grade on the Canadian grading system and would most likely be used for ground beef rather than premium cuts due to issues with quality and consistency. In a market such as the Netherlands where there are very few beef breeds of cattle, would this market appreciate a Canadian beef product which is primarily beef breeds, or would they prefer to continue consuming dairy type cattle?

In my opinion, North Americans can have an adverse reaction to knowingly consuming dairy beef (beef produced from dairy cattle). However, based on conversations I have had with industry personnel, a dairy animal is just as tasty as a beef animal. According to Bruce Andrews, the executive Vice President of Atlantic Beef Products Inc., dairy beef can marble and grade like a beef breed, and it can produce a leaner product (Bruce Andrews, 2019). Restaurants and chefs like cuts from dairy cattle such as the tenderloin because it is smaller thus making it cheaper in price, and fits on a plate better. Currently, it takes a longer time period and more feed to finish a dairy feeder as a beef feeder of the same size and age. This is due to the fact that modern dairy cattle are selectively bred to produce volumes of milk, not tonnes of beef which requires more energy from feed. For lifelong health, and to reduce illness in a feeding system, it is important that a calf receives enough colostrum (first milk from freshly calved cow) in the first few hours of its life which is rich in proteins called antibodies that support immune system health. Unfortunately for dairy calves they are at a disadvantage where it can be difficult to get enough of this colostrum in time to create a strong immune system due to the fact a beef calf is generally fed by its mom and a dairy calf often relies on the producer (Godden, 2008).

Through these conversations it has been suggested that breeding more North American dairy cows to beef bulls creates an animal that finishes (or fattens) faster than a dairy feeder calf typically would because beef cattle are bred for beef and dairy cattle were bred for milk production. It is also been shown in feeding systems in the US and western Canada that careful management in the early stages of life can improve the health of a dairy calf long term and produce an animal that can be successful in a finishing system (Wardinsky, 2012). This may be a more efficient way of dealing with the male calves that can sometimes be a nuisance in the dairy sector due to the lack of space and feed. Perhaps a solution for the abundance of dairy calves in Canada is to create a brand of lean beef produced from dairy mixed calves as a product for Europe.

This concept is very similar to the model currently in place at StraitLine Beef in southern England. The finishing model was developed by English Nuffield Scholar Rob Drysdale, who set out to produce the "chicken" of beef or in other words, a product which is more consistent and sustainable than the beef that was currently on the market. The system purchases calves from local dairy operations some of which were TB positive operations which sell cheaper calves. As a veterinarian, Rob developed a health protocol for calves that is thought to be key for their growth. At the time of my visit they were finishing Holsteins in 12-14 months at 250 kg or 551 lbs on a diet of corn, brewers' grain, minerals and chopped straw. One of the downsides of purchasing calves from TB infected operations is that they are required to test for TB very frequently which takes a lot of staff time. Fortunately, in Canada, that is a non-issue.

Figure 11: Dairy beef in covered feedlot at Straitline Beef. Photo credit Ellen Crane.

2.3.ii The United Kingdom

One facility I visited was the Anglo Beef Processors (ABP) Food Group plant in Perth, Scotland. Similar to the plant I'm the most familiar with, Atlantic Beef Products Inc. (ABPI) in Albany, Prince Edward Island, this plant is smaller, processing 1500 head per week. The three main everyday grocery retailers for their products include ALDI, ASDA and Morrison's. It was during this visit that I was first exposed to the EUROP grid (Figure 4), the system used by European processors. Unlike the Canadian or American grading systems which can have 35 grade possibilities (Canadian Beef Grading Agency, 2019), the EUROP grid can have up to 108 potential grade possibilities. The grid was initially designed to reward producers for a high yielding lean product with a limited amount of fat cover. This is strikingly different from the system in Canada which rewards producers based on marbling. With this reward system, higher lean-yielding breeds such as Limousin, Charolais and Belgian Blue are popular among beef producers across Europe. It was noted during the tour that Limousin and Belgian Blue crosses bring in the highest value on the grid due to their conformation and low body fat.

A report, completed in 2016 by the Agriculture and Horticulture Development Board (AHDB), compared the finish (fatness of the carcass) to where UK producers receive the best returns to the current market demand. The first stage of the analysis looked at the extent to which the prime cattle being delivered to processors meet their requirements. For many years, the consistent message to UK producers from processors has been that, to achieve the best returns, cattle should be finished at conformation R or better and fat class 3 or 4L. This is more comparable to the look of an Angus or Hereford carcass which tends to be a bit shorter and fatter than breeds like a Limousine or Charolais which tend to be more lean-muscled. Despite this, only around half of cattle slaughtered in the months analysed were within this target range, indicated by the colour blue in Figure 12. If this graph was to be compared to the demand for a similar grade in the Canadian system this would be roughly equivalent to a grade Canada A. If we were to place a Canada AAA or Canada Prime on this grid it may fit somewhere under the 4H to 5H.

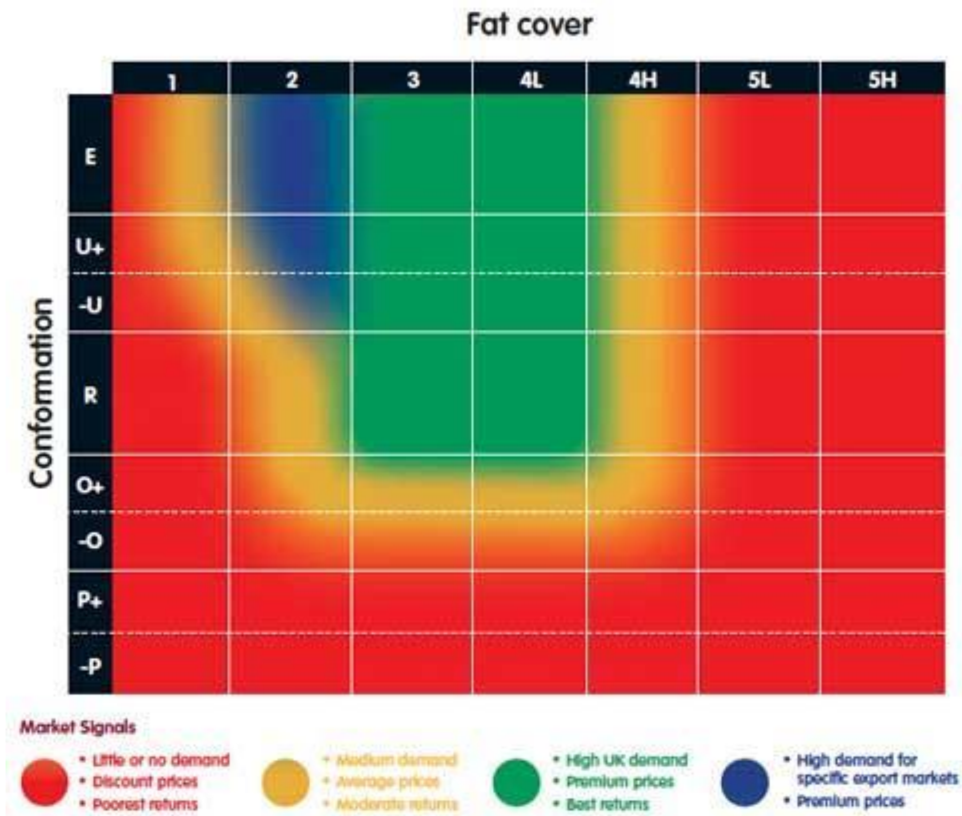

Figure 12: The EUROP grid and market signals for beef grade demand in the UK.

Similar to Canadian processors, ABP makes use of the entire carcass. Organs including hearts and livers are sent to Germany for processing into premium pet food. The plant also noted the work that is done to support the local producer education. Producers are permitted to enter the facility to view the carcasses during the grading process. This allows the producers to get an understanding of how their animals are performing. Producers are also provided with grading reports. This work they believe has helped the processor to gain the trust from producers which can be an issue in the industry.

Like the rest of Europe, France sells beef based on the EUROP grid which rewards producers for carcasses with high yields and lean cuts. This has resulted in the popularity of the fast growing and high yielding Limousin and Charolais feeders across Europe. However, unlike consumers in the United Kingdom which prefer to see a lean beef product in the case, the French don't seem to mind fat according to the meat cases I observed.

In order to sell Canada beef in Europe it may be worth the investment in the development of a table which compares the EUROP grid to the Canadian grading system. If we are going to sell into the European market or the British market it may be confusing for the consumer to see different grades in a meat case for similar cuts. At the minimum, we should determine what the equivalent Canadian grade would be for the leaner cuts that the UK consumer prefers according to Figure 12. On the other hand, our grading system may be less confusing than the 108 potential grades on the EUROP grid.

2.3.iii Canada

As part of my studies I started and ended my research with Canadian interviews. My first interview took me to Simcoe, Ontario to meet with Cory Van Groningen at VG Meats. This family run operation delivers a delicious local product literally from farm to plate. Their business has invested both time and money to ensure that the product which their customers bring home is going to meet high standards in not only food safety but in eating quality. The business has invested money from their business in the development of tenderness testing to ensure that if the customer was persuaded to purchase a product based on the claim of a good eating experience that the product will in fact deliver on that promise. One of my takeaways from that conversation was that we as producers need to be able to back up the claims we are making about a product. If a product is going to be labelled as premium or highest quality I think that we as producers need to work, based on the knowledge that we have, to produce that consistent, high quality product whether it's making changes in genetics, housing, feeding, handling etc.

For the very diligent customer, VG offers a virtual farm tour on their website or they can book their own personal tour. There is also a QR code on the packaging that can link the customer to more information and to provide feedback on their eating experience. I think it is the complete transparency and the devotion to a high-quality product that allows VG Meats to continue to grow their business in two full-time retail locations and employ several full-time employees in addition to the four VG brothers.

2.4 Provenance

Provenance is a word that I had learned on my Nuffield journey from my Australian and British counterparts that I felt best described the story about how something was produced. Provenance means knowing the root of where your food has come from and knowing how the food was produced, transported and delivered. The provenance is the part of marketing where emotions may be targeted to persuade a customer purchase. As mentioned previously, assurance programs tie into both the food safety aspect of production but also into telling the story of how that food was produced. Several of the countries I visited had their own version of an assurance scheme that was being used to target consumers with various attributes such as the country it was produced in, animal welfare, antibiotic use and sustainability.

One goal of assurance schemes is to reconnect producers to consumers through information on packaging and advertising even where producers and consumers do not come into direct contact. The model of food assurance schemes is one way to reduce the disconnect between the producer and consumer and target those consumers that are looking for instrumental food options and are willing to purchase something they can feel good about because it supports their values.

2.4.i UK Assurance Programs

The beef production system in the UK has several specialty brands which farmers can produce for and receive a better price for their product. In Scotland, the Scotch Beef label is an option for beef that is deemed the very best beef according to the grid and age requirements and has spent its entire life in Scotland. Animals that have remained in Scotland for their entire lives but have not met the age requirements can fit under the branding for Scottish Beef. If the animal has spent part of its life outside of Scotland and comes from an operation that has met the requirements, it can fit under the Red Tractor branding (Douglas Bell and Stuart Ashworth, 2018).

Figure 13: Shorthorn beef steak verified by Red Tractor Assurance scheme. Photo credit Ellen Crane.

One common theme I observed amongst the grocery stores in the UK was the availability of products that were verified by an assurance program. Red Tractor was a brand available in every grocery store I explored in the UK. During the early 1990's, British farmed food took a hit as high-profile food scares including BSE and salmonella were making the headlines. This affected people's trust and as a result a number of farm assurance schemes were introduced. Although the schemes were put in place to help, the schemes were confusing for consumers. The 'British Farm Standard' was created (now known as Red Tractor). In 2005 the logo was changed to incorporate the Union Jack flag to reinforce the Red Tractor logo's responsibility for improved food production standards as well as highlight the origin of the food. Red Tractor is the only scheme that offers full traceability of products, from farm to pack (Red Tractor, 2019).

To meet the brand requirements of Red Tractor, standards must be met at both the farm and supplier level. For the producers that belong to the Red Tractor brand, there are a number of requirements that must be met but to highlight two of those, animal welfare and traceability are key. As mentioned previously, full traceability currently exists in the UK making this requirement possible for the brand. Farms which participate and fulfil the requirements of the brand are rewarded with price premiums for their products. According to the 2015 Annual Red

Tractor review, 65% of consumers recognize the brand and 57% of consumers said that the logo influences their purchasing decisions (Red Tractor, 2015). In the same year, the brand sold over £12 billion in sales (Red Tractor, 2015).

According to David Connolly, a Northern Ireland Charolais breeder, most producers (in Ireland) belong to some type of an assurance scheme either Red Tractor or Origin Green, otherwise they do not make a good living as a farmer (David Conolly Interview, September 20, 2018).

2.4.ii Origin Green – Ireland's Assurance Program

The republic of Ireland is home to 4.5 million people and has an agriculture sector that is 90% export reliant. The country produces €4 billion in beef exports each year (Origin Green, 2019). Two stereotypical "Irish" associations are the famous Guinness beer and the colour green. Bord Bia, an Irish marketing group is capitalizing on the 'green' concept with the development of the Origin Green branding initiative. The purpose of my travel to Ireland was to learn more about the Origin Green program and how it was working for farmers and consumers.

Origin Green is Ireland's food and drink sustainability programme. According to their website, Origin Green is a voluntary program, led by Bord Bia, that brings together the food industry from farmers to food producers, retailers to foodservice operators with the common goal of sustainable food production (Origin Green, 2019). The program enables Ireland's food industry to set and achieve measurable sustainability targets that respect the environment and serve local communities more effectively. Origin Green members include farmers and food businesses such as food and beverage manufacturers, retailers and foodservice operators.

One of the tremendous benefits of the Nuffield Scholars program is the network one can access all over the globe. While in Dublin I was able to spend the morning chatting with Irish Nuffield Scholar, Joe Burke who is the livestock sector manager with Bord Bia and is quite familiar with the Origin Green initiative. The initiative was developed in response to increasing demands from consumers who want more information about the sustainability credentials of the food and drink they choose to consume. The brand is also a key development of the Food Wise 2025 plan. The plan acts strategically and achieves a competitive critical mass in the international marketplace while targeting more quality conscious consumers who will recognise and reward Ireland's food producers for their sustainable production and high-quality produce (DAFM, 2015). The subtitle of the Food Wise plan is "Local Roots, Global Reach", reflecting the importance of gaining a deep understanding of what consumers, often in distant markets, really want, and communicating those messages back to Irish farmers and food companies. Equally important is to communicate key messages about what makes Irish food unique to the international market. One of the goals of this report includes a 70% increase in value added to increase market value by €13 billion for Irish food products (DAFM, 2015).

At the time of our conversation 52,000 beef farms were currently participating in the program which covered 90% of beef production in the country. In total, 600 food and drink companies were participating including McDonald's and Tesco. To participate in the brand companies must submit a sustainability plan and undergo an audit on a yearly basis (Origin Green, 2019).

Since 2011, additional sustainability criteria have been added in order to develop a carbon foot printing methodology across Irish farms. This process began with beef, which was followed by dairy, with plans in place to implement similar criteria across all other Bord Bia schemes in 2018. Each day, over 100 independent auditors visit farms to measure the environmental impact of each production system using an innovative Carbon Navigator tool developed in conjunction with Teagasc.

Farms under the brand are measured against key efficiency areas, including extended grazing, calving rate, daily live weight gain, improved economic breeding index (EBI), nitrogen efficiency, slurry management, and energy efficiency in a process of measurement, feedback, and continuous improvement (Origin Green, 2019). The ability to generate a carbon footprint for farms on an individual basis has been aided by collaboration with the Irish Cattle Breeding Federation (ICBF) and the Department of Agriculture, Food and the Marine (DAFM), who with a farmer's consent, share data with Bord Bia to aid in the foot printing process. This ensures significant time savings during the Bord Bia audit process (Origin Green, 2019).

In my opinion the work that has been accomplished by the Origin Green branding is remarkable. I think Ireland has positioned themselves to be very competitive in the international market by selling products that are certified sustainable from the field to the factory. By building on this imagery of Ireland being green, clean and sustainable I think they have built a very interesting branding concept that will be mimicked by other countries. Like the Red Tractor assurance scheme, Origin Green covers several sectors including beef, dairy, pork and poultry. Although this would be difficult to do in Canada given the supply management systems that are in place for sectors like poultry and dairy I think working as an entire agriculture sector to build a strong reputation for all Canadian products would be an effective strategy.

2.4.iii La Granda Italy

One of the suppliers of beef for the grocery chains in Italy is La Granda, a branding initiative that works with the local producers to create a high-quality product.

Figure 14: Italian beef producer with his Piedmontese cattle. Photo credit Ellen Crane.

La Granda headquarters is located south of Torino in the Pied Montese region. The region is famous for the aptly named Piedmontese cattle, which are notably lean and large framed and tend to be slow growing. The attributes of the brand include the production of slow food, fed a natural diet in addition to food safety and full traceability (Table 1). This was the first time I had come across the term slow food in an assurance scheme. The slow food movement is built on the three pillars of good, clean and fair. Good, indicating that the food is quality, flavoursome and healthy food. Clean, meaning that the production does not hurt the environment. Fair, meaning accessible prices for consumers and fair conditions and pay for producers (Slow Food, 2015). Slow Food was started by Carlo Petrini and a group of activists in the 1980s with the initial plan to defend regional traditions, good food, gastronomic pleasure and a slow pace of life (Slow Food, 2015).

One unique quality about this brand, related to the slow food movement, is that they host a meeting with the producers once a year to set the price for the entire year. Part of my tour at La Granda included a visit with one of the producers which produce beef for the brand. This gentleman was in his 80's and still very active on the farm (Figure 14). When I asked him about what it is like to have the guidelines and the set price in order to participate in the brand, he said it made him very happy. Along with himself, his son and nephew were working on the farm full-time and they were able to build the cow barn that we were standing in. He was also happy to have guidelines on how to raise cattle in a better way, to produce a product La Granda was happy with and they could be proud of. Although we were communicating through a translator, this particular visit was one of the most memorable conversations I had during my travels.

Table 1: A comparison of the attributes of European beef assurance schemes according to the brand's website.

Country	Brand	Attributes

Scotland	Scotch Beef	• High quality beef
		• Born, reared and processed in Scotland only
		• Cattle that are:
		  ○ Over 12 months of age
		  ○ Under 48 months if a steer or a heifer
		  ○ Under 16 months if a young bull
		  ○ Heifers must not have had a calf
		• Animal welfare
		• Full traceability
		• Sustainability

UK	Red Tractor	• Locally produced, UK origin only • Fully traceable • Animal welfare • Food safety • Environmental protection
Ireland	Origin Green	• Sustainability throughout value chain • Food safety • Traceability • Animal health and welfare • Environmental impact
Italy	La Granda	• Locally produced • Food safety • Slow grown • Natural feed (corn, barley, bran, fava beans and hay; no silage, soy or vitamin supplements • Label that gives information about the farmer, the animal's characteristics and the slaughter date

2.5 Labelling and Packaging

One interesting observation from the countries I visited was the differences in labels and packaging on beef. Labels and packing are an opportunity to showcase to the shopper what they can expect from the product and entice them to buy it. This is where more of the added value attributes can be showcased.

2.5.i What's in a label?

Figure 15: Examples of labelling used on beef products in the UK. Photo credit Ellen Crane.

Many packages in the UK contained a label with extensive information. Aside from the standard weight, cut and price many labels included nutrition information, cooking instructions, the union jack flag and the Red Tractor assurance logo. England was the first place I had ever seen a beef product labelled as Shorthorn beef (see Figure 15). In recent years the branding for the Certified Angus Beef program has been very successful but that is generally the breed that is advertised the most often in North America and is recognized by the consumer.

Clear plastic packing was a common theme in the UK. This was supposedly to improve consumer confidence by being able to look at both sides of the product.

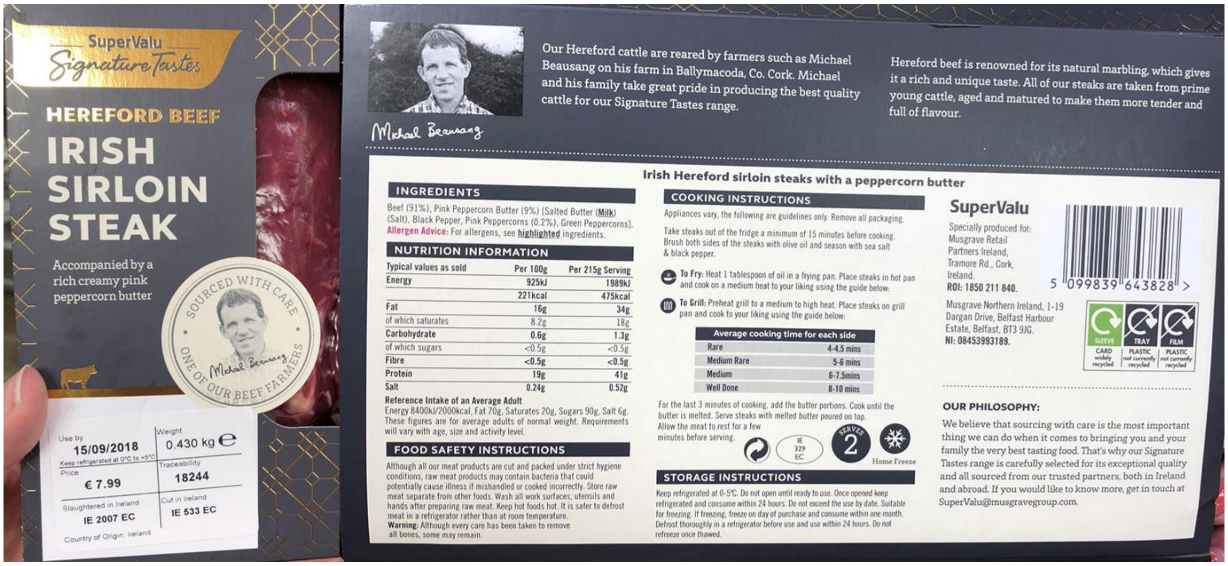

Figure 16: Example of labelling used on beef products in Ireland. Photo credit Ellen Crane.

The package of Hereford beef shown in Figure 16 was found at the SuperValu chain of grocery stores in Ireland. This is one of the best examples of packaging that I've ever seen on a steak. What I like about this packaging is the feeling of quality. Similar to the UK packaging, the back of this package contains nutrition, storage and cooking information. There is also an image of one of their farmers, almost like a seal of approval. An argument could be made that this is a lot of packaging for one steak, however most of the package was cardboard that wasn't directly touching the beef and could be easily recycled or composted.

Figure 17: Example of meat case in French grocery store. Photo credit Ellen Crane.

In addition to the poster with the traceability information posted in the display case (see Figure 8), these roasts at a French grocery store also included the French flag. France is known for its native breeds of beef cattle including Charolais, Limousin, Bazadaise, Saler, Maine Anjou and Blonde D'Aquitaine. In a country that is steeped in history and tradition, this is also reflected in its beef industry. According to a Bazadaise breeder from Baza, nearly all animals in France will be purebred as crossbreeding (breeding one breed to another) is almost considered a taboo.
To be a true local supporter, some

residents believe that you must consume the beef specifically from your region for example Limousin beef from Limoges, Bazadaise from Baza, or Blonde D'Aquitaine from Pyrenees. In nearly every grocery store, the beef cuts were labelled at the very least with the breed of the animal and may also identify the farmer that produced it.

The presentation of the meat case in France was also interesting. As shown in Figure 17, the additional white material is added to roasts and other cuts to give a neater appearance.

Figure 18: Example of labelling used on beef products in Japan. Photo credit Ellen Crane.

In contrast to the extensive labelling on some products in Europe, these labels at Harves in Osaka, Japan (Figure 18) provide basic information on the product. Not shown in the photo is additional information on the Canadian steak on the right which includes the Ontario Corn Fed logo and the Canada Beef logo.

I believe that labelling is our opportunity to share with the consumer about the good production practises that currently exist in Canada. Without turning the package into looking like a Nascar covered in logos or various claims, having one easy to identify logo that means many different things about the product such as the Red Tractor or Origin Green logo could deliver an impact for consumers.

2.6 Food Culture

Food culture refers to the practices, attitudes, and beliefs as well as the networks and institutions surrounding the production, distribution, and consumption of food. Every country, community, family, or workplace can have a different food culture. During my travels my goal was essentially to study the food culture within each location. By exploring areas where food is a major component such as restaurants, markets and grocery stores you begin to gain a sense of what the food culture is like in that particular area.

2.6.i UK Grocery Experience

The grocery experience in the UK was similar to what you would experience in Canada. The open market concept was present at most stores with sections for produce, meat and dairy around the perimeter of the store. It has been threatened in Canada that eventually there will be no meat counters in grocery stores and the product will arrive to the store shelf-ready, cutting out the need for a meat counter all together. This was the case in a number of UK grocery stores that I visited. Many locations had removed the meat counter entirely and replaced it with several aisles of products which were packaged off site. In higher end grocery chains such as Waitrose the meat counter was still present. In a market where the consumer is asking more and more about where their food comes from, I see the loss of meat counters as a disadvantage for the animal protein sector. The butcher or meat cutter can be the only connection a shopper has when they have questions about beef production, cuts or cooking methods. Perhaps we should be using this resource still available in many Canadian stores as a treasure trove of knowledge for the customer. Providing experiences for butchers, such as farm tours, may help to make the valuable connections that could be shared with customers.

In North America we are famous for our love of fast food and ready meals. In my opinion, England and Scotland aren't far behind. Many grocery stores contained multiple aisles of convenience foods including ready-made, heat-and-serve meals including meal kits. Similar to North America there was a generous amount of mince (ground beef), thin cut steaks, and small roasting joints (roasts) available for purchase, indicating the faster cooking proteins were the most popular. For the UK, providing options that are a greater convenience may be an option.

2.6.ii France

For the French consumer, food is the essence of a good life. For this consumer, food is meant to be enjoyed and delicious. Traditional French cooking techniques such as the moist heat required for beef bourguignon have been developed to enhance the lean French beef. One of my takeaways from the French food culture was the time taken to enjoy food. Whether it was at a restaurant or cooked at home the French seem to take time to enjoy what they are eating and have a respect for food; something that was recently incorporated into the new Canada Food Guide. The food guide suggests healthy eating is more than the foods you eat. It is also about where, when, why and how you eat. The food guide now recommends that Canadians be mindful of eating habits, cooking more often, enjoying your food and eating meals with others (Canada Food Guide, 2019).

Figure 19: Line-up of customers onto the street outside a Parisian butcher shop. Photo credit Ellen Crane.

As you can see from the line outside of a Parisian butcher shop (see Figure 19) there is still a demand for high quality, local ingredients including red meat.

I think it could be a challenge to sell Canadian beef to the French consumer. Selling commodity beef into this market I don't think would have the same impact as selling products with provenance. Smaller niche brands such as Ontario Corn Fed Beef, Blue Dot Reserve, or Qu'Appelle Beef may be able to deliver a product that doesn't contain growth promotants and is fully traceable. The ability to include the breed composition of the animal I think would also be something to consider as the French consumer will expect it.

2.6.iii Italy

Italy is one of the largest consumers of red meat in all of Europe. Similar to the French, Italians love food. What really drew me into research in Italy was a chain of grocery stores called 'Eataly' which showcases Italian food products from coffee to beef and of course, pasta. The stores are divided into sections for each type of produce and within each section is a restaurant where you can sit end enjoy a meal containing the highlighted products.

As I mention above, the slow food movement was initiated in Italy in order to preserve the qualities of traditional food production. I think there are some lessons that we could learn from the Italians love for food that would be applicable for Canadian niche market branding initiatives. I think the Italians may have taken advantage of this in Canada already. November

13, 2019 was the grand opening of the first Eataly store in Toronto, Ontario. The store is selling a mixture of Italian and Canadian products. In fact, some of our Canadian niche beef brands including Ontario Corn Fed Beef and Blue Dot Reserve are currently in the meat case of the new Eataly store. If the Italians can find a product in Canada that fits under the values of their brand that was designed to showcase Italy's cuisine, this could suggest that we have products in Canada that could thrive in the Italian market.

2.6.iv United States

As mentioned previously, the United States is Canada's largest trading partner with 74% of the export market for Canadian beef. In my opinion, and with a quick search through Google, determining consumer preferences in the United States can be done with an internet connection. To gain a better understanding of what an American consumer may value in the not too distant future I contacted my roommate from the 2010 Youth Agriculture Summit, Sam Werth who is currently completing a Ph.D. at UC Davis under the supervision of Dr. Frank Mitloehner (or the "GHG Guru" if you happen to be a Twitter user).

Sam's project is focused on the calculation of the environmental and economic impact of the removal of cattle by-products such as leather and gelatine and replacing those with synthetic materials. Sam has an interesting perspective as a millennial beef greenhouse gas production researcher working in the state of California, a market where the environmental impact is a factor in some purchasing decisions. In Sam's opinion, there is a strong disconnect between the urban population and food production. There is also a focus on greenhouse gas emissions and the connection between red meat and overall health. For some consumers, this means purchasing leaner cuts of beef or in some cases, bison meat. Bison, like other types of wild game animals is thought to be a healthier option due to the fact it tends to be a naturally lean product which is associated with being healthier (Sam Werth, 2019).

Sam's perspective on Californian ranchers willing to share their story about beef production with the public sounded too familiar. For the Californian ranchers there is the fear of being ridiculed for sharing their story and find its best to say nothing. This perspective is not unique to California, the United States or Canada. This same fear of being ridiculed for sharing your story about the work you are proud of is the same regardless of commodity and whether you're farming in the Netherlands, Australia, Denmark, Italy, Ireland, or the UK or somewhere in between. The term 'consumer education' has been used in some form in nearly every country I visited on my travels as a way to improve the communication between the primary producer and the consumer.

I struggle with the term consumer education. The term suggests that we are teaching something to the consumer that they need to know. Do we know what the consumer really wants to know? Aside from the noise that we will see on the news and in social media about how modern agriculture is destroying the planet, for the person that is going to spend their hard-earned money at the grocery store what do they actually value? Do they truly fear that animal agriculture is damaging the ecosystem or do they need it to be validated that the food they are eating is going to be a) safe; b) nutritious and c) make them feel good. If the work has not already been completed in Canada, I think it would be interesting to evaluate how a person's own core values impact their purchasing decisions. How often do emotions such as fear or joy impact a purchasing decision when it comes to food?

2.6.v Canada

The last interview I completed was with Brianna Hagell, a young butcher operating a one-day-a-week meat counter at the Halifax Farmer's Market. Brianna had recently competed in the History Channel's competition 'The Butcher' where she placed in second. Brianna's story is an interesting one, her background contains no previous experience in animal agriculture of any kind. In fact, her training up until recently was in human resources management with a degree in sociology and gender studies. Her journey to meat cutting began when she started paying closer attention to how her food was produced, where it was produced and how this was impacting her health. She began experimenting with different foods, discovering what worked for her body chemistry and what didn't. For her, she felt a diet consisting of whole foods including meat and vegetables was a solution. She got involved with some local food groups through the farmers market and eventually started working for a local abattoir owned and operated by the Withrow Family. It was here that she learned how to break down a carcass and cut meat. Fast forward to present day, she currently sells local meat products once a week and employs two full-time staff besides herself with the aspiration to open a full-time meat counter and deli.

One of the advantages for Brianna is that she has an opportunity to talk directly with her customers. From her perspective, customers want to know what the difference is in what they are eating. She used a great example of comparing a grain-fed animal and grass-fed animal to eating romaine lettuce vs kale. Kale is currently one of superfoods, but it has a different eating quality than a lettuce such as romaine or iceberg which also have nutritional value.

As I mentioned in the introduction, Satter's hierarchy of needs is at play when consumers are making purchasing decisions. Brianna agrees with this point, but also pointed out that not everyone's values are the same. For some customers greater value may be placed on the where the product came from versus another that is looking for something to show off in front of their friends. Brianna's role is a pivotal point between the farmer and consumer in this transaction, but it made me wonder how this can be translated into commodity products.

The only comparable link in a commodity value chain to Brianna's role is a meat cutter at the local grocery store. This has made me consider whether there is more that can be done to support meat cutters working behind the counter that are quite often the only link to the production of these products for consumers with questions. In the past, these conversations used to be held with the local butcher, today they are more likely to happen with the meat cutter at a grocery store. By equipping those working behind the counter with more information about how beef is produced in Canada we can prepare those that work with the public every day to deliver the facts and answer questions. In Canada we are fortunate to have meat counters remaining in a lot of our grocery stores. I think we should be trying to leverage this opportunity of having a direct connection with the public that other products on the shelves don't have the opportunity to do. These conversations with customers are an opportunity to answer questions about production methods, offer tips on which cuts they may need, or suggest cooking methods. By doing so we can help deliver the good eating experience at home.

3.0 CONCLUSION

3.1 Consumer Values When Purchasing Canadian Beef Products

The values of the consumers that are purchasing Canadian beef products are as diverse as the consumer themselves. The customer is the individual that has voted with their dollars that they have chosen to consume beef. Some common themes did arise throughout my studies regardless of the market. These themes include:

f) Price: The price needs to reflect the value of the product. Selling higher priced cuts in an urban market such as London or Tokyo will be easier to do than in a smaller rural market.

g) Food Safety: This is a primary concern regardless of who is making the purchase. In Canada we have a good reputation in terms of food safety, and we need to continue to leverage this in marketing and in our production practices.

h) Quality: If the product is going to be labelled with a premium price the product had better match the price. Flavour and tenderness are two attributes that need to be on the plate.

i) Provenance: The story, terroir, or Ecologique (or whatever word you chose to describe how the product was produced) used to sell the product needs to be supported through traceability and assurance programs.

j) Presentation: this will vary slightly according to the market. For example, a consumer in the UK may not appreciate extra fat trim on a steak or a roasting joint but a French or Japanese customer may appreciate it. Cultural preferences will need to be understood.

k) Labelling: this is also going to vary according to the market. For the European customer there is a high probability they will require a label stating that the product was raised without hormones. I do not think Canadian beef will survive in this market without it. For the Asian markets there is a value placed on high food safety standards and quality.

3.2 Industry Actions

In the two years that have passed since I started this research there have been new threats and changes to the food sector in general. The prime example being the escalation in the popularity of alternative proteins. At the beginning of this research, the Beyond Meat burger was still at the research and development stage. As I'm writing this report, the Beyond Meat burger and other 'Beyond' type products are sold in several North American grocery, restaurant and fast food chains. Is the alternate 'fake meat' trend here to stay? Maybe, but I don't think this is our largest challenge to face.

Agriculture, and especially the beef sector, is used as a scapegoat as a large contributor of greenhouse gas emissions and in general destruction of the environment. According to the study at Dalhousie University, in the next 30 years more people are going to be considered a flexitarian and reduce their consumption of red meat (Charlebois, 2018). If the customer is going to purchase Canadian beef at a premium price, we need to ensure that the customer is getting a product that they can feel good about purchasing.

The good news is that the Canadian beef industry does not need to start at square one on this. As mentioned previously, the Canadian Food Inspection Agency (CFIA) was created in response to outbreaks including BSE in other countries, which has resulted in a global reputation of high food safety standards. In 2001, the Canadian Cattle Identification Agency was formed to improve the traceability of cattle across the country and post BSE was amplified to develop premise identification, full animal movement and age verification (CCIA, 2005). In 2004 The Verified Beef Production On-Farm Assurance Program now known as Verified Beef Production Plus (VBP+) was initiated to validate responsible on-farm practises. In 2010, the Beef Info eXchange System, or now known as the Business Information Exchange (BIX), was developed to track cattle through all stages of the Canadian pasture-to-packer beef production system. During this time millions of industry dollars have been invested to improve the feed efficiency, reduce emissions and improve the feedstuffs for beef cattle in Canada. In fact, according to the Beef Cattle Research Council, the Canadian beef industry has reduced greenhouse emissions, in producing 1 kg of beef, by 15%, and we have improved the feed conversion ratio, since the 1950's, from 10:1 to 6:1 (BCRC, 2018).

My point is that we have the pieces already in place to do the best job that we can, and I think we have one success story already that is taking advantage of this. The Canadian Roundtable for Sustainable Beef (CRSB) is a collaborative multi-stakeholder community devoted to advancing sustainability in the Canadian beef industry. Its membership includes organizations across the beef value chain and beyond; farmer/rancher associations, academic institutions, processor and processor associations, food and agriculture businesses, non-governmental associations (animal care and environmental organizations), retail and foodservice companies as well as governments and observers. The CRSB vision is that the Canadian beef industry is recognized globally to be economically viable, environmentally sound and socially responsible. The CRSB is involved with the Canadian Beef Sustainability Acceleration (CBSA) pilot project that pays a premium back to the producer that successfully raises an animal which meets the requirements of the program. This program has been considered a success so far. In the first 12 months of the program, Cargill has produced 3.7 million pounds of sustainable beef; that translates into approximately 14.8 million quarter-pounder patties. In the fourth quarter of the project the average payout to producers was a premium of $18.24 per head (Welshans, 2018). While this isn't a substantial payout for a beef producer, it is a reward for the verification that they are using the best management practises to produce a sustainable product. This is something that did not exist before the CBSA pilot project.

Like many pilot programs, there can be a challenge with getting enough certifiable facilities to participate. Logistically, it takes time to complete the certification process due to a limited number of resources across the country, therefore we need to continue to support programs, such as VBP+ and the CRSB, that are working towards creating a better product that rewards producers and processors for doing the right thing and enhancing consumer confidence.

For the primary producer, we need to continue to support producer education initiatives from one side of the country to the other. Beef producers both within Canada and abroad had a similar complaint about not receiving carcass data on finished animals, which I think is a valid point. Without receiving any indication that your work in genetics, feeding and marketing are making a difference, how are you going to change your production methods to improve? The infrastructure exists in this country to make this happen and I think that we would see an improvement in the quality and the perception of our product if this link was made.

4.0 RECOMMENDATIONS

For Canadian beef in an international market there is an opportunity to improve on the verification of the production practises which lead to the attributes that are considered valuable by the international consumer. These values have been reflected through the marketing schemes within each country which aims to target a specific consumer. The pieces to the puzzles currently exist in Canada, and the goal should be to showcase these attributes in consumer marketing, both domestically and internationally.

- Encourage Canadian beef producers to improve on-farm records and to ensure best management practises are used. This can be achieved through the VBP+ program.

- Implement full traceability in order to use systems such as TrustBIXS to quickly source the products that a customer is searching for.
- Increase producer education, including production feedback from the final carcass.
- Consider what the consumers are saying and find what their true values are by having a two-way conversation.
- Work to increase the number of operations, both cow-calf and feedlot, that produce beef cattle for existing Canadian verification systems including VBP+ and the CRSB certified sustainable program to validate the practises on-farm and to compete with existing food safety systems in export markets.
- For products that are marketed locally and internationally, enhance product labelling to ensure the consumer is aware that the product was raised sustainably, meaning economically viable, environmentally sound and socially responsible. This will also require efforts through product branding to ensure the consumer knows that the claims such as sustainability are verifiable.

For the domestic market, it would be interesting to see a Canada wide product label that would apply to not only beef products, but to other products such as seafood, grains, eggs, dairy and pork. Each of these sectors currently have rigorous quality assurance systems in place that many Canadians may not realize. Having one unified label that says “yes this is Canadian, it is safe, and it was sustainably raised” could remove some of the confusion or concerns about how their food was produced. This could be worthwhile, if you compare to branding examples in countries such as the UK and Ireland where a single assurance scheme across sectors has been successful. This could target the portion of the population that has several options when it comes to making food purchasing decisions.

5.0 GLOSSARY

ALDI: German supermarket chain
Angus: A breed of black or red beef cattle originally bred in Scotland
ASDA: British supermarket chain
Bazadaise: Breed of French cattle from the town of Baza
Blonde D’Aquitaine: Breed of French beef cattle, a hybrid of Blonde de Pyrenees, the Blonde de Quercy and the Garonnaise cattle.
Bovine TB: Bovine tuberculosis
Bord Bia: Organization that oversees the Origin Green initiative
Breedplan: online record keeping system
BSE: Bovine spongiform encephalopathy
CETA: Comprehensive economic trade agreement

CPTPP: Comprehensive and Progressive agreement for Trans-Pacific Partnership
CRSB: Canadian Roundtable for Sustainable Beef
CSA: Community Shared Agriculture
Charolais: A French breed of white beef cattle
EUROP Grid: European classification of bovine animals
GDP: Gross Domestic Product
Hereford: An English breed of beef cattle traditionally red body with a white face.
La Granda: Italian company that produces and markets local meat products
Limousin: A French breed of beef cattle that is known for being lean and well-muscled.
Maine Anjou: A French breed of beef cattle
NAFTA: North American Free Trade Agreement
Origin Green: A sustainable branding initiative in Ireland
Piedmontese: A French breed of beef cattle
Red Tractor: An assurance scheme from the UK
Saler: A French breed of cattle
Teagasc: An agricultural research organization in Ireland
USMCA: the United States Mexico Canada trade agreement
Wagyu: A Japanese breed of beef cattle that produces highly marbled meat.
Yakiniku: Japanese BBQ restaurant.

6.0 REFERENCES

BDC (2019) How to price your product: 5 common strategies. Retrieved from https://www.bdc.ca/en/articles-tools/marketing-sales-export/marketing/pages/pricing-5-common-strategies.aspx.

Beef Cattle Research Council (2018) Improving Feedlot Feed Efficiency. Retrieved from http://www.beefresearch.ca/research-topic.cfm/optimizing-feedlot-feed-efficiency-8

Beef Cattle Research Council

Bruce Andrews (2019) Atlantic Beef Products Update presentation at the 2019 Forage Field Day in Nappan, NS on August 7, 2019.

Canada Beef (2017) 2016–2017 ANNUAL REPORT. Retrieved from https://canadabeef.ca/wp-content/uploads/2017/07/00%203339%20CheckOff%20Annual%20Report%202017%20WEB%20-%20Copy.pdf

Canadian Cattlemen’s Association (2018) Industry Stats. Retrieved from http://www.cattle.ca/cca-resources/industry-stats/

Canadian Cattle Identification Agency (2005) Canadian Cattle Identification Program. Retrieved from https://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/beef9688/$FILE/c_giffen.pdf

Canada's Food Guide (2019) Eat protein foods. Retrieved from https://food-guide.canada.ca/en/healthy-eating-recommendations/make-it-a-habit-to-eat-vegetables-fruit-whole-grains-and-protein-foods/eat-protein-foods/

Canadian Beef Grading Agency (2019) Email communication with Amanda Bennett on July 12, 2019.

Canfax (2019) Interview with Brenna Grant on March 26, 2019.

Charlebois S. (2018) Protein wars and the changing Canadian consumer. Retrieved from https://cdn.dal.ca/content/dam/dalhousie/pdf/management/News/News%20%26%20Events/Charlebois%20Somogyi%20Music%20EN%20Plant-Based%20Study.pdf

DAFM (2015) Food Wise 2025. Retrieved from https://www.agriculture.gov.ie/foodwise2025/

David Connolly (2018) Interview at his farm in Northern Ireland on September 2, 2018.

Douglas Bell and Stuart Ashworth (2018) Interview at Quality Meat Scotland on August 23, 2018.

EAT (2018) Healthy Diets From Sustainable Food Systems. Retrieved from https://eatforum.org/eat-lancet-commission/eat-lancet-commission-summary-report/

European Commission (2007) Food Traceability Factsheet. Retrieved from https://ec.europa.eu/food/sites/food/files/safety/docs/gfl_req_factsheet_traceability_2007_en.pdf

Godden, Sandra (2008) Colostrum Management for Dairy Calves. Vet Clinics Food Animal Practise 24 19–39. Retrieved from http://www.oabp.ca/Members/Continuing%20Education/2008/Spring/SG%20Colostrum.pdf.

Government of Canada (2018a) Canada-European Union Comprehensive Economic and Trade Agreement (CETA). Retrieved from https://www.international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/ceta-aecg/index.aspx?lang=eng

Government of Canada (2018b) Economic impact of Canada's participation in the Comprehensive and Progressive Agreement for Trans-Pacific Partnership. Retrieved from https://international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/cptpp-ptpgp/impact-repercussions.aspx?lang=eng

Jeong SH, Kang D, Lim MW, Kang CS, Sung HJ. Risk assessment of growth hormones and antimicrobial residues in meat. *Toxicol Res*. 2010;26(4):301–313. doi:10.5487/TR.2010.26.4.301

Origin Green Ireland (2019). Get Involved On Farm. Retrieved from https://www.origingreen.ie/get-involved/on-farm/

NBQA (2018) National Beef Quality Audit 2014-2018. Retrieved from http://www.beefresearch.ca/files/pdf/Retail%20Satisfaction%20Benchmark%20Brochure%20Sept%2019%202018.pdf.

Red Tractor (2015) Annual Review 2015. Retrieved from https://assurance.redtractor.org.uk/contentfiles/RedTractor-573.pdf?_=635729875939800918

Red Tractor (2019) History. Retrieved from https://assurance.redtractor.org.uk/who-we-are/history

Rumble JN, Settle Q, and Irani T (2017). Assessing the Content of Online Agricultural Awareness Campaigns. Retrieved from https://newprairiepress.org/cgi/viewcontent.cgi?article=1233&context=jac

Sam Werth (2019) Interview via Skype on January 15, 2019.

Satter E. (2007) Eating Competence: Definition and Evidence for the Satter Eating Competence Model Retrieved from https://www.sciencedirect.com/science/article/abs/pii/S1499404607000942

Statistics Canada (2006) Canada's Farm Population: Agriculture-Population Linkage Data for the 2006 Census Retrieved from https://www150.statcan.gc.ca/n1/ca-ra2006/agpop/article-eng.htm

USDA (2007) Census of Agriculture. Retrieved from https://www.nass.usda.gov/Publications/AgCensus/2007/

USDA (2018) Farms and Land in Farms
2018 Summary. Retrieved from https://www.nass.usda.gov/Publications/Todays_Reports/reports/fnlo0419.pdf

VBP+ (2018) Verified Beef Production Plus. VBP+ in Depth. Retrieved from http://verifiedbeefproductionplus.ca/about-vbp/vbp-in-depth.cfm

Wardinksy, Frank (2012) Raising dairy steer calves for profitable beef production. Michigan State University Extension. Retrieved from https://www.canr.msu.edu/news/raising_dairy_steer_calves_for_profitable_beef_production.

Welshans, K. (2018) Cargill Canadian beef pilot project momentum continues. Feedstuffs Daily. Retrieved from https://www.feedstuffs.com/news/cargill-canadian-beef-pilot-project-momentum-continues

WHO (2018) 3.4 Availability and changes in consumption of animal products. Retrieved from https://www.who.int/nutrition/topics/3_foodconsumption/en/index4.html

Woolpert, E (2015) The Greatest Challenge Facing Agriculture over the Next 5 Years. Retrieved from https://www.usda.gov/oce/forum/diversity/papers/2015/MelissaWoolpert.pdf

World Population Review (2019) Hong Kong Population 2019. Retrieved from http://worldpopulationreview.com/countries/hong-kong-population/.