What is the future of the burger? By Kieran Smith

Topic: What's the future of the burger?

The burger is the quintessential American meal and is also the centre of Australia's beef export trade to the US. Why does Australia export so much grinding beef to the world's largest beef producer? What are the latest trends in the US burger industry- fake meat? Have consumer perceptions regarding the burger changed in recent times in the US for better or worse (in light of health concerns, the push for "fresh" and locally sourced, the development of social media, the foodie movement, fast-food food safety issues)?

Introduction:

The United States of America (USA) is the largest beef producer in the world, producing approximately 12.4 million tonnes of beef in 2019 (Cook, 2020), as well as being the largest producer of grain-fed beef. In 2019, there was estimated to be 98.4 million head of cattle in the USA (United States Department of Agriculture [USDA], 2019). Despite this high amount of beef production, the USA competes with China as one of the largest importers of beef, with the three biggest suppliers being Canada, Australia, and New Zealand. Around two thirds of beef imported into the USA from Australia is 90-95 per cent chemical lean (CL), primarily for use in ground beef products such as burgers, to dilute excess amounts of domestic fatty trim produced by the fed cattle industry (Meat & Livestock Australia [MLA], 2019). Approximately 73 per cent of the 252,000 tonnes of beef exported from Australia to the USA in 2019 was in the form of frozen grass-fed products (MLA, 2019a). The USA beef herd and beef imports fluctuate simultaneously. As the herd increases and plateaus, so too does demand for lean trim from Australia to blend with fatty trim from their domestic grain fed cattle. Conversely, when herd numbers are declining, due to drought events or an oversupply of cattle, the demand for lean meat contracts as higher quantities of cull cows and bulls are slaughtered (USDA, 2019). With an ever-increasing population and a growing middle class in many Asian countries, the demand for high quality protein sources such as beef is increasing (Rahman, Amin & Palash, 2019). This strong demand of protein from Asia has a slight buffering effect on USA's cyclical demand of lean meat from Australia. However, it is still important to consider the current factors and trends affecting beef consumption within the USA.

The USA is a large consumer of beef, with approximately 26kg of beef being consumed per capita annually (Beef. Its What's For Dinner, 2019). Within the USA, there is also a strong culture of eating food away from home. Of the 9.7 per cent of disposable income that is spent on food, approximately 51 per cent of this is spent on eating out (USDA, 2019a). Of beef that is consumed whilst at food retail outlets, 64 per cent of this is ground beef, primarily as burgers (Wilfong et al, 2016). Burgers are a popular choice among consumers due to their price point and consistency in terms of cooking and eating quality, with most restaurants within the USA, including many high-end restaurants, having burgers on their menu (Speer, Brink & McCully, 2015). Recent consumer trends have been skewed towards healthier products, an increasing awareness of the environmental impacts of food, a demand for fresh products, and a growing amount of labelling and branding of products. Due to the market share of major retail chains such as McDonalds and Burger King, shifts in marketing towards fresh products and the inclusion of alternate protein burgers such as the Beyond and Impossible burger also have the potential to affect the demand for Australian lean meat. Hence, total beef production trends

within the USA, as well as ground beef and burger consumption trends have a significant impact on the amount of beef exported from Australia. Therefore, this report aims to outline some of the major factors and trends affecting burger consumption within the USA, and how these may affect Australia's position in supplying beef for the USA burger industry in future.

Red meat health concerns & alternative protein burgers (fake meat)

There is apparent concern among consumers in the USA, relating to long-term health impacts associated with the consumption of beef, along with fast food such as burgers. The USA Consumer Beef Tracker found that 29 per cent of people were concerned beef was detrimental to their health in the long term (Beef. Its What's For Dinner, 2019). Additionally, the USA Consumer Beef Index showed that 27 per cent of people in 2017 ate more than three servings of beef within one week, down 26 per cent from 2008 (Beef. It's What's for Dinner, 2017). Furthermore, in a quantitative online survey conducted by Ypulse, funded by Beef Checkoff, out of 970 Millennial survey participants, 22 per cent responded they were trying to eat less burgers at fast food restaurants. Of these participants, 79 per cent responded that they were trying to eat healthier, along with 59 per cent believing that chicken was healthier (Ypulse, 2016).

In addition to the beef industry having to compete with other animal proteins, there has been a lot of publicity regarding 'fake meats' and 'alternative protein products' in recent years. The two main sources of artificial 'meats' are stem cell cultured meat and plant-based products, such as Impossible Food's Impossible burger. Of these two, only plant-based products are currently commercially available. These alternative protein burgers are marketed as being healthier, better for the environment and produced with a smaller environmental footprint than conventional red meat agricultural enterprises. However, there are few comprehensive comparative studies done to date to support or reject these claims of health and environmental benefits (Australian Farm Institute, 2017). One of the major arguments against the health benefits of alternative protein burgers is due to high levels of dietary sodium in the product, which has a positive correlation to risk of cardiovascular disease (Oparil, 2014). Despite the lack of evidence regarding health benefits of alternate proteins, the Consumer Beef Tracker reported that 54 per cent of consumers considered meat substitutes to be healthier than meat (Beef. It's What's for Dinner, 2019). Nevertheless, the current market share of alternative protein products such as beef substitutes is still very low and represents only approximately 0.5 per cent of market share in the USA food service industry. A comparative study is needed to determine the true environmental impact of alternative protein burgers compared to beef burgers.

In response to health concerns of beef burgers, there is the potential for increased sales of leaner beef burgers. Of 216 Millennial survey participants that were choosing to consume less beef burgers, 37 per cent responded they would be motivated to consume more beef burgers if they were leaner (Ypulse, 2016). Additionally, a survey conducted in Washington of 509 people who ate beef, fat and calorie content of beef was the second highest factor affecting purchasing choice (behind price), due to health-conscious purchasing decisions (McCluskey, Wahl, Li, & Wandschneider, 2005). This same survey found that approximately 94 per cent of consumers looked at the nutritional label at least sometimes when making purchasing decisions. In a consumer palatability rating study (n=112), when 90CL ground beef patties were compared to 80CL ground beef patties in a blind taste test, there was no significant difference found in overall liking of the product (Wilfong et al, 2016). Hence, having a leaner burger will likely not affect the overall eating experience, with the addition of the consumer

knowing they have made a healthier purchasing decision. This could provide an opportunity for the Australian beef industry to export higher quantities 90-95CL of beef to the USA for the use of burger manufacturing. However, the price point of a product is still dominating purchase decisions at present (McCluskey et al., 2005; Napolitano et al., 2010).

Branding and product identification

In an attempt to differentiate and gain a competitive advantage in the market, many food service providers and retail outlets are using both certified and non-certified branding, as well as product identification to promote their products (Wilfong et al, 2016). Product identification within the burger industry may include aspects such as disclosure of the chemical lean percentage, as well as the creation of ground meat from a specific primal, such as chuck or sirloin. An example of a branded burger product is that of Certified Angus Beef (CAB). In a study by Wilfong et al. (2016), it was found that when a product was identified as either CAB or a specific primal, that eating quality and overall liking of a product increased by 24 per cent compared to its performance in a blind taste test. In a similar study, Napolitano et al. (2010) found that consumer liking of organic beef products rated significantly higher than the same product during a blind taste test when product disclosure testing took place. Hence, marketing and branding of a product may have a significant impact on consumer satisfaction and repeat purchases in future, highlighting the opportunity of increased marketing within the food industry. In addition, there are many other non-certified branding programs occurring within the USA, including; hormone-free, antibiotic-free, grass-fed and region of production. These branding programs allow these products to attract a premium, by labelling intangible values that appeal to customers (Napolitano et al.; Drouillard, 2018).

Grass-fed beef products are viewed by consumers to be more natural and healthier, as well as being better for the environment and animal welfare (MLA, 2019b). Grass-fed beef contains less saturated fat than grain-fed beef, along with higher levels of essential omega 3 fatty acids (McCluskey et al., 2005). Despite grass-fed beef being perceived as a superior product by many consumers, several studies have found that grain-fed beef has a more acceptable flavour and higher palatability rating than grass-fed beef (Melton, 1990; Cox et al; 2006). This is likely due to grass-fed beef having higher levels of linoleic acid, giving it a different, less desirable flavour profile, which may limit consumer satisfaction and consequently consumption of grass-fed products (Melton, 1990; Legako, 2016). Nevertheless, a study done by Cox et al. (2006) found that 34 per cent of consumers preferred the taste of grass-fed beef and were willing to pay a premium for the product. Additionally, Umberger, Feuz, Calkins and Killinger-Mann (2002) found that 23 per cent of consumers within their study were willing to pay a premium for imported grass-fed beef. In an economic analysis by Qushim, Gillespie, Bhandari and Scaglia (2018), it was found that an enterprise with greater than 100 head of grass-fed cattle in the USA was the optimal size for production efficiencies to be achieved. However, in 2017, the average beef cow herd size was 43.5 head, with 90.1 per cent of beef operations having less than 100 head (USDA, 2019). Hence there is a limited capacity for many beef operations within the USA to produce economically viable grass-fed beef products. Therefore, Australia is in a strong position to meet the growing demand for grass-fed beef products in the USA.

Fresh vs frozen products:

Several major food franchises such as McDonald's and Burger King have introduced 'fresh (never frozen)' burger products to their menus in the hope that consumers perceive the product to be of

higher quality and a better overall eating experience. McDonald's made the shift to 'fresh' Quarter Pounder burgers in 2018 and reported a 30 per cent increase in sales of these burgers in 2019 within USA restaurants (Beef Central, 2019). In a quantitative online survey conducted by Ypulse, funded by Beef Checkoff, 17 per cent of the 1242 millennial survey participants responded they were trying to consume less burgers from fast food restaurants. It was found that amongst these individuals, 47 per cent responded that "knowing beef is fresh" would be a key motivator for them to increase fast food burger consumption (Ypulse, 2016). However, there is little evidence within the literature that fresh burger products have a different flavour profile and overall satisfaction ratio to that of frozen burger products. If fresh meat demand increases, this has the potential to alter the type of products that Australia exports to the USA, as most of the current Australian beef export to the USA is in the form of frozen products (MLA, 2019a). However, export of fresh ground meat products and lean trim may be limited by shipping time and shelf life, as these products tend to have higher microbial levels than that of fresh primals and a shorter subsequent shelf life (MLA, 2016).

Food safety:

Food safety is also a critical consideration in the food service and retail industries. Food safety issues have the potential to majorly affect sales in the event of food contamination recalls, which could permanently damage a consumer's trust in a brand or product. Following ground beef recalls for Salmonella spp. in October and December 2018, the perceived safety of fresh hamburgers/ground beef on the USA Consumer Beef Tracker dropped 10 per cent from September to December (Beef. Its What's For Dinner, 2019). When foods are frozen, many potentially harmful microorganisms are killed through various physical and chemical processes (Archer, 2004). However, several studies have found that there is no difference in survival of microorganisms such as Escherichia coli, Salmonella spp. and Listeria spp. in beef trimmings and ground beef products following freezing or refrigeration (Dykes and Moorhead, 2001; Novak & Juneja, 2003; Dykes, 2000). Many food service outlets within the USA give consumers the option of how they would like their burgers cooked, similar to what is done when ordering steak. However, this can increase the likelihood of food contamination related illnesses when ground meat is not cooked thoroughly, as ground meat tends to have higher microbial loads than primal products (MLA, 2016). Novak and Juneja's (2003) study highlighted the importance of ensuring ground beef reaches 60°C to ensure that potentially harmful microorganisms are killed during cooking. Food safety management is critical along all levels of the supply chain to ensure that consumers trust beef products. For Australia to continue to export products into the USA, our stringent food safety control measures must be maintained and improved upon where possible to ensure continual market access.

Conclusion:

In conclusion, there are several factors that may potentially influence the consumption of burgers and beef within the USA. Although there is a lot of hype about alternative protein burgers and fresh beef burgers, these products still only represent a small percentage of burger sales within the USA. By marketing Australian beef trim in the USA as a lean, healthy and grass-fed product, the opportunity for exports to remain strong will continue. The Australian beef industry maintains high food safety standards. Ensuring this is essential for the longevity of US exports primarily due to Australia's geographical isolation. Further research needs to be conducted into doing a true comparison of environmental and health impacts of both beef burgers and alternative protein burgers. Nevertheless,

the global demand for protein is still growing, and there is likely to be a position for both products in the burger industry in future.

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