3.1 A

Statement of Purpose: The purpose of this investigation is to find out what the consumer wants and what the attributes are of buying lamb chops.

Nowadays farmers have to produce a product that the consumer will want to buy. As sheep meat is only 3% of the meat market the producers have to aim for the higher earning people with a lot of disposal income so that the producer can get more money for their product. All of the management practices that the farmer and the meat processors do is to produce a product that will meet the consumers demands. To find out the consumers wants and what the attributes are that make them want to buy it as a class we did an investigation to determine these attributes.

Valid range of the key variable: We obtained three different types of chops, Group A had lots of fat on them compared to meat. Group B had the correct amount of meat to fat ratio and would have been graded with a P which is the good quality chops in terms of what the consumer wants. Group C were very lean with little fat and should have little flavour due to the fat content.

Valid description of the effect of the range of the key variable: Looking at the appearance of the chops and a taste / flavour, tenderness, juiciness, and texture assessment of the chops.

A description and management of other variables: There were 21 people in the survey, the people in the survey were kept the same throughout the investigation, the chops were all roughly the same size sample, the survey was all done at the same time, all the chops were cooked all the same way, the same chef cooked them all, and water was used to wash mouth between each of the chops. We got a chef to cook our chops the same so that all the chops will look similar with little variation within the chops groups. Something that may have affected the reliability of my results were that the chops were not able to come from the same lamb carcass, as it is hard to get 3 different grades for the same cut of meat, in this case chops. However, the chops have come from lambs that were produced on the same farm and reared the same way.

Method: The cook simmered (pan fired) the chops on the oven top and seasoned them all with salt and peppers and used oil to cook them. He put them in the oven at 180°C. When he finished he left them to cool for 10-15 minutes. Then the teachers would taste one group at a time. They will have to go off the visual and taste of the chops to determine if the chops are good or not as there is no labels around. Once they have tasted the chops the judge the chops in five categories taste, flavour, tenderness, juiciness, and texture. Each category had a scoring system of 1-10 with 10 being the best it can and 0 being the worst. In total the chops can get a maximum of 50. Once the teachers gave their results, they were collated and then analysed.

Results:

An interpretation of the findings based on processed data: From my results I have found that Group B was what the people that did the survey preferred as the average score 41.4 which was the highest by far. We collected 21 surveys but the good chops (Group B) were clearly better ones as they scored 41.4 out of a possible 50 and ranged from 38-48 which is only 10 units. So it is clear that group B was the best. We know this is true because the next best group of chops was group C the ones with little fat and little meat on them scored 28/50 and had a range of 15-42 which is 27 units which will make the results not really reliable because of the scoring we know that people prefer Group B. When eating the chops Group A scored the worst with 19.6/50. Group A were really fat ones they had a range of 5-35 which is 30 units and these results show fatty ones are less liked ones out of all the chops.

Student 1 Low Excellence

      

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| Group | Average score (0-50) | Range of score (0-50) | Grade |
| A -Fat | 19.6 / 50 | 5 – 35 | T,F |
| B -Good | 41.4 / 50 | 38 – 48 | P |
| C – Lean | 28 / 50 | 15 -42 | L |



**Conclusions:** According to what the farmers and the meat processors said Group B was the type of meat that they were aiming to produce so it was no surprise that Group B were the best as it had the attributes that the consumer was looking for. It had the dark red meat, more meat than bone and fat so it was more appealing.

**Discussion:** Group B chops are prime chops from a lamb which are loin chops. Loin chops are prime chops because there are extremely tender compared to chops from other parts of the animal. The loin chops are tender because they are in the area of the lamb that doesn’t move very much and is barely used in most of the animal’s movements and activities leaving this cut unworked and tender and succulent for the consumer. Other areas of the lamb produce tough and tasteless chops such as the shoulder, this produces tough chops because it is an area of the lamb that is constantly walking meaning that the area is constantly moving and will become tough. Loin chops are desired by the consumer because of the large area of the eye fillet which is the best part of the chop and is very tasty and tender.

For farmers to maximise profit they need to produce a product that the market that is going to want to buy a product similar to our Group B. Farmers need to know what attributes are preferred by the consumer. This will be used in selecting the management practices that are used to ensure that their lamb will produce a premium price on the export market. Through the class investigation I have found the farmer needs to choose the correct management practices to achieve the right attributes for the meat market. From my results most people have similar taste because they scored Group B the highest.

They have found that the attributes

that consumers are wanting are;

Fat content: The fat content of the lamb is important as it adds flavour to meat but people don’t like to much fat as people want to taste the meat not the fat. The best fat content is a GR measurement taken on the 12th rib of the lamb.

pH levels: If the sheep’s glycogen reserves have been run down before slaughter because of stress, then there is insufficient lactic acid to lower the pH of the muscle. The pH will remain high. High pH meat is likely to have poor quality meat.

Size: Size is another attribute that is important. Before killing the lambs should weigh around 41-42kgs so that the lamb will yield around 18kgs carcass weight and this is the idea weight as it should have reasonable sized cuts for consumers when it cut into its many different cuts. They all should be similar size as families won’t buy big roasts as they take longer to cook and there may be too much for them to eat. The fat cover should be graded at P for best price.

Tenderness: The lamb’s tenderness is important as people don’t want to eat (“gumboots) tough meat that people have to chew for ages. Tenderness is affected by the stress levels in the sheep prior to killing until killing so that farmer should be trying to do as little as possible not to add extra unnecessary steps to the lamb.

Shelf life: The meat will be chilled not frozen which will mean that meat will not last as long as meat that is frozen. When lamb is CO2 injected it has a shelf life of 100 days. So timing of killing is important for certain markets. To make the Christmas market people should aim to have meat on the shelves late November.

Consumer preference: As consumer preference currently wanting to buy chops with dark red meat, not a lot of bone or fat compared to meat. These are the attributes that the consumer is looking for when purchasing chops. They are looking for these attributes so that they can pick good chops to achieve the cooked attributes of taste, flavour, tenderness, juiciness and texture that the consumer potentially wants to get. Then the attributes that people are looking for when they are eating the chops are good looking chops with little fat, more meat than fat or bone, well flavoured chops, tender, juicy and of good texture. These are Grade P lambs chops.

Lamb New Zealand (www.beeflambnz.com). They state that to achieve maximum profit for the product the We basically found the same results as the Beef and farmer needs to produce lamb that will have the right attributes for the consumer and at the moment the

attributes are dark red meat, 6-10mm of fat and more meat to bone and fat.

Therefore for farmers to maximise profit they need to produce a product that the market that is going to buy a product similar to our Group B and the findings from Beef and Lamb New Zealand. There are three management practices that farmers can do to achieve this is product are; animal health, grazing management, and breed selection.

Grazing management is very important to produce a lamb that has the right attributes for the meat market. Grazing management helps to get the lamb ready in time for the market like set stocking at flushing and tupping to help improve fertility that will produce lambs, or set stocking the lambs to increase productivity. Even increasing the rotation before lambing to give the ewe 10% more feed each week to give both the ewe and the lamb required nutrients for the ewe to support itself and the lamb inside or feeding off the ewe as the lamb grows 70% in the last 50 days of pregnancy. Every grazing management decision is important to produce an 18kg carcass weight lamb. 18kg carcass weight is the size the lamb needs to be to produce lamb chops of grade P which are the chops that people want as found by our survey.

(Student discusses animal health (ram, ewes, drenching, vaccination, pre-lamb, lambing, docking and pre- slaughter handling); grazing management (rams, ewes, flushing, tupping, pre-lamb preparation, lambing, weaning and lambs) and breed selection (survivability, myomax, worm resistance and fertility) in a lot of depth but has been removed as it is too long for the purpose of this investigation).

Recommendations: The management practice of animal health is also really important in producing a 18kg carcass weight lamb as the sheep need to be healthy to produce a healthy lamb that will grow quickly like drenching the lambs to keep them free of internal parasites so that the lambs growth don’t slow them down. Vaccinating the sheep to stop outbreaks of diseases that can kill the sheep resulting in loss of profit, due to the farmer can’t send in animals if they are sick or dead because the meat processors won ‘t take them. Even the condition of the animal is important for the product of the lamb for the meat market as a lean (skinny) lamb can produce little profit and a lamb that is fat enough to get a T or F grade will produce little profit. The condition of the sheep will determine how quick the lambs will grow. Animal health is very important in the production of lamb as the ewes, lambs and even the rams need to be healthy to produce a lamb for the meat market as the breed of the lamb will help determine how quickly the lamb will grow because they breed for worm resistance which will not slow growth and genes like Myomax will help to breed leaner and meatier lambs which will increase the farmers profit also breed selection can improve the fertility and increase the lambing percentages which will increase farmers profit. Over all the management practices that the farmer does needs to be done well to produce a lamb to have the correct attributes for the consumer to make a profit. The attributes that the lamb needs to have is dark red meat, more meat than bone and fat and a 18kg carcass weight lamb is the best to produce these attributes and to give the farmer the best profit. We know that attributes are of lamb what farmers and meat processors have said and even our surveys told us that these are the attributes that people are looking for when purchasing lamb.

Bibliography: BeefandLambNewZealand(2010)BeefandLambNewZealandReferenceGuide. www.beeflambnz.co.nz