Sustainability in the Butchery

HOW CAN QUALITY LABELS IMPROVE ENVIRONMENTAL
SUSTAINABILITY AND ANIMAL WELFARE OF MEAT-CONCEPTS IN THE
BUTCHERY?

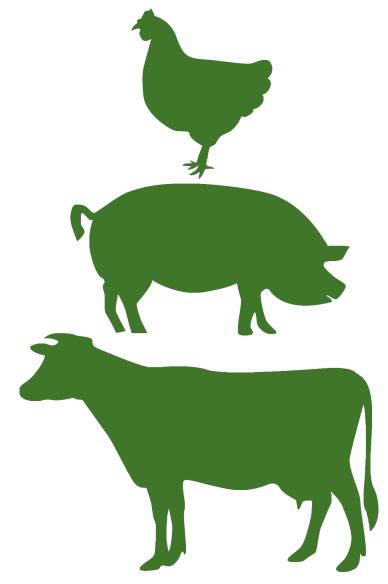
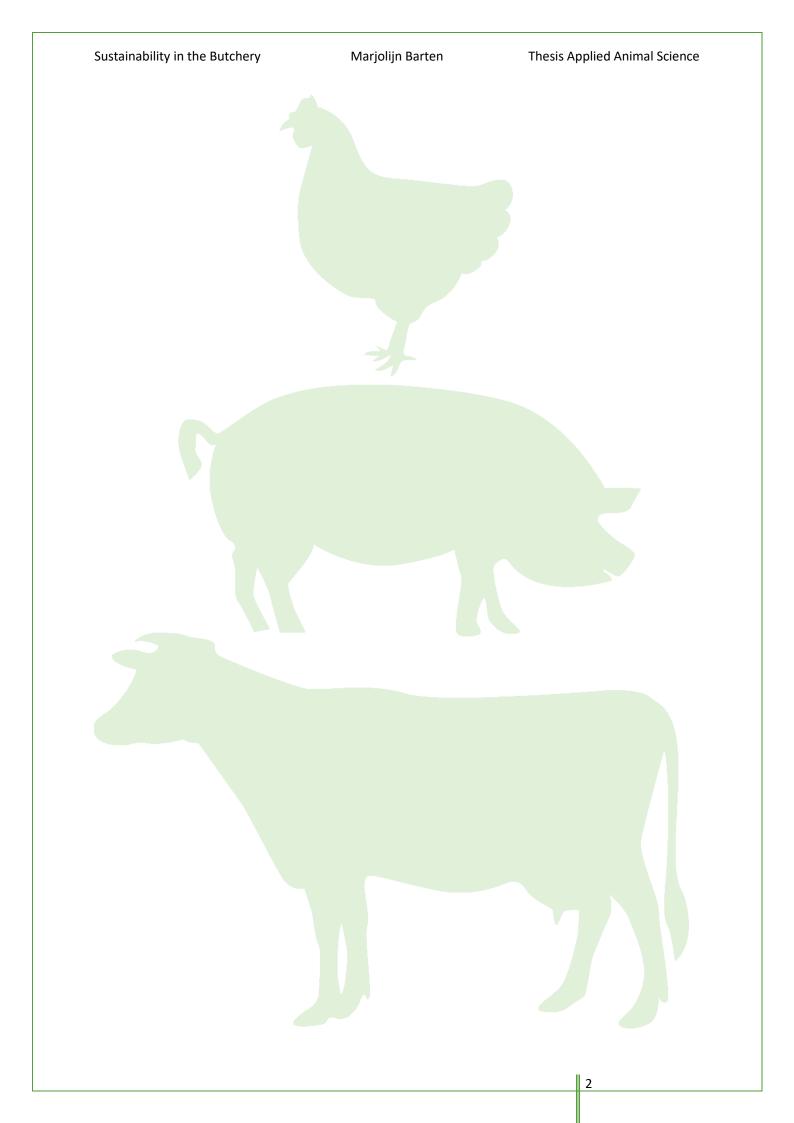


Figure 1: Source: Freepik.com

THESIS REPORT MAY 2018

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Van Hall Larenstein – True Food Projects



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HOW CAN QUALITY LABELS IMPROVE ENVIRONMENTAL
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BUTCHERY?

Thesis Report

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Abstract

English Version

The primary purpose of this study was to determine how quality labels and company logos can help butcheries to become more sustainable and animal friendly. In order to do this, the focus has been on the question "How can quality labels and company logos improve environmental sustainability and animal welfare of the meat-concepts in the butchery?". This study took place in the Netherlands commissioned by True Food Projects. The empirical part of this study was conducted in April 2018. Data for this study were collected through a literature review and a questionnaire. The questionnaire consisted of 31 questions all directed to butcheries throughout the country. Respondents gave their opinion on the subject of environmental sustainability, animal welfare, transparency and trustworthy of quality labels. Responses were made on a 5-point scale ranging from very little to a lot. Twenty butcheries participated in this questionnaire. These results were compared to the scoring of MilieuCentraal. MilieuCentraal has done an extensive scoring on 22 quality labels and company logos linked to meat products (Keurmerkwijzer).

The results show that the knowledge of butchers towards quality labels and company logos is very weak. The results of the questionnaire were different from the scoring of MilieuCentraal. From the literature review it was concluded that quality labels and company logos can be very effective in improving environmental sustainability and animal welfare. However, based on the questionnaire, there is a lack of knowledge about sustainability and the use of quality labels and company logos. If butchers would have more knowledge about labels and logos, they can adapt this to their own meat-concepts and then transfer the knowledge to the consumers.

Key words: quality labels, company logo, sustainability, butchery, animal welfare

Dutch Version

Het voornaamste doel van dit onderzoek is om vast te stellen hoe keurmerken en bedrijfslogo's slagerijen kunnen helpen om duurzamer en diervriendelijker te worden. Om dit te bereiken, heeft de focus constant gelegen bij de vraag "Hoe kunnen keurmerken en bedrijfslogo's duurzaamheid en dierenwelzijn van de vleesconcepten van de slagerij verbeteren?". Dit onderzoek vond plaats in Nederland, in opdracht van True Food Projects. In April 2018 vond het onderzoek plaats. Door middel van een literatuur onderzoek en een enquête zijn er gegevens verzameld. De enquête bestond uit 31 vragen en waren gericht aan slagers van slagerijen door het hele land. Deelnemers aan de enquête konden hun mening geven over milieu, dierenwelzijn, transparantie en betrouwbaarheid van keurmerken en bedrijfslogo's. De deelnemers konden op een schaal van 1 tot 5 aangeven wat zijn of haar mening over het onderwerp was. Deze resultaten werden vergeleken met een scoring van MilieuCentraal in de Keurmerkwijzer, welke een intensieve scoring heeft gedaan op 22 keurmerken en bedrijfslogos gekoppeld aan vleesproducten.

De resultaten laten zien dat de kennis over de keurmerken en bedrijfslogos nog veel verbeterd kunnen worden. Zo kwamen de scores uit de enquête niet overeen met de score van MilieuCentraal en zaten er ook grote verschillen tussen. Het kan dus geconcludeerd worden dat keurmerken en bedrijfslogo's zeker wat kunnen betekenen in het verbeteren van de duurzaamheid en het dierenwelzijn, maar dat de kennis toegankelijker en makkelijker te begrijpen moet zijn. Zodra slagers hier meer kennis van hebben, kunnen zij dat beter toepassen op hun eigen vleesconcepten en kunnen zij ook hun consumenten goed informeren.

Kernwoorden: keurmerken, bedrijfslogo's, duurzaamheid, slagerij, dierenwelzijn

Preface

This thesis is part of the Applied Animal Science bachelor of the University of Applied Sciences, Van Hall Larenstein. In order to graduate, this thesis is written on how the quality labels and company logos can improve sustainability and animal welfare of meat concepts in butcheries. The reason that I started this bachelor is because I am very interested in the topics of animal welfare and sustainability. It was therefore a privilege to be able to write a thesis about these subjects.

After the proposal was approved, the thesis took place from February to May 2018. The first part was the literature review. This took place in February and March. After this was completed and the knowledge about quality labels, company logos, sustainability and animal welfare was gained, the questionnaire was made and sent out to butcheries throughout the Netherlands. This happened in April. After 2 weeks the results could be collected and analysed. In April and May the report was written by myself.

This thesis could not have been finalized without the efforts of my commissioner Maurits Steverink and my thesis coach Harmke Borkent. Both have given me accompaniment throughout the process of the thesis giving feedback on the products and consulting on how to go further. I want to thank both of them for helping me finalizing this thesis.

I hope you enjoy reading my thesis report.

Marjolijn Barten.

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1. Introduction

Meat production has a disproportional large ecological footprint. The worldwide meat consumption is increasing and the FAO expects that the worldwide consumption of meat will be increased with 40% by 2050. Figure 2 shows the increase of meat consumption per person per year from 1950 to 2050 (*De Correspondent, 2016*).

According to MVO Nederland (Maatschappelijk Verantwoord Ondernemen, Corporate Social Responsibility) the attitude of Dutch consumers

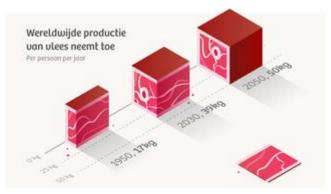


Figure 2: Infographic on the increase of worldwide meat consumption per person, De Correspondent (2016)

towards sustainability has improved in 2015. Almost half of all consumers pays attention to sustainability when shopping (49%). In 2014 this was 42% and in 2013 only 30%. A distinct majority wants companies to help them make sustainable and/or responsible choices. The percentage of consumers that find this important has increased from 64% to 71% in 2016. It turns out that according to a file on sustainability (Dossier Duurzaam) of 2016, only 19% of the consumers think that the companies are doing this well (*MVO Nederland, 2017*).

Consumers also prefer to buy meat where, during production, more attention is paid to animal welfare. This is not depending on where the meat is bought, at a full-service supermarket or a discounter, at a local or regional chain. Organic and welfare labels are getting more popular. Consumers are willing to pay more for products with these type of labels. This is all shown in the fifth edition of the Vion Consumer Monitor (*Vion Food Group, 2016*).

The mind-set of consuming meat is changing. With the large environmental and welfare impact that meat has, consumers are changing the way they eat meat. Therefore, butcheries should adapt to this changing demand.

1.1 Problem Definition

The production of meat has a major impact on the environment (*Porcelijn, B. 2017*) and animal welfare (*Barth Misset Foundation, 2017*). According to several sources, meat-production is one of the biggest factors in global warming. Consumers are getting more aware on their environmental impact, but also animal welfare is a rising topic of interest. Where supermarkets respond to this by using quality labels such as Beter Leven, the butcheries are falling behind (*Zevenbergen, B. 2017*).

At the KNS (Koninklijke Nederlandse Slagersvereniging, Royal Dutch Butcheries association) and Smaakacademie Achterhoek the question arose about sustainability and the butchery of the future. From this question, True Food Projects went to Van Hall Larenstein to suggest a question which fits a thesis research.

In order to produce meat more sustainable and help consumers choose sustainable products, quality labels are a tool in which the butchery can offer an environmental and animal friendly product to their customers. However, the hypotheses is that using quality labels is not very common and butcheries do not have the knowledge because there are many labels available and each label has different guarantees and promises.

1.2 Research Objective

The aim of this research was to clarify how quality labels can improve the sustainability of the meat-concepts in the butchery. To draft a plan in which it is clearly stated how butcheries can use quality labels to help the environment and animal welfare.

1.3 Research Questions

1.3.1 Main Research Question

The main research question for this thesis is:

HOW CAN QUALITY LABELS IMPROVE ENVIRONMENTAL SUSTAINABILITY AND ANIMAL WELFARE OF MEAT-CONCEPTS IN THE BUTCHERY?

1.3.2 Sub Research Questions

In order to answer the main research question, the following sub research questions are formulated:

- 1. What is the impact of the production of meat on environmental sustainability and animal welfare?
- 2. Which quality labels are available for butchers and how are they organized?
- 3. What is the position of the supermarket in relation to the butchery, regarding the use of (sustainable) quality labels and what is the perception of the butcher towards this?
- 4. What is the position of the butchers in regards to the topic of sustainability and the use of quality labels?
- 5. What needs to happen in order to improve sustainability of meat-concepts in butcheries?

2. Methodology

2.1 Research Design

This research has been completed through an extensive literature review and a questionnaire. Research questions 1 and 2 have been answered with use of the literature, question 3 has been answered using both literature results and questionnaire results. Question 4 has been answered with the use of the questionnaire results alone. Research question 5 has been answered with the answers of questions 2, 3 and 4 and the results of the questionnaire.

2.2 Data Collection

The data that was needed has been collected through a literature review and a questionnaire.

The literature review has information on environmental sustainability, animal welfare, quality labels and meat-concepts of supermarkets. Also, the method that MilieuCentraal used to score the quality labels is researched.

MilieuCentraal (Environment Central) is an independent organisation that advises consumers on how to live more sustainable. They offer practical tips which can make life more sustainable. The method that they developed, is called the "Keurmerkwijzer" or quality label tool. In this tool, MilieuCentraal has scored the quality of a number of sustainability quality marks and put them together in an overview. This tool is reviewed so it can be used for the questionnaire.

The literature has been found on the internet and books, by using the catalogue of Greeni. Multiple books have been consulted in order to get reliable and qualitative data.

Marjolijn Barten made a questionnaire containing 31 questions, divided over 4 pages. It was sent out in an email to 27 butcheries in the region "Achterhoek" and 14 butcheries throughout the Netherlands. The email addresses to butcheries in the region of the Achterhoek were provided by the network of Smaakacademie Achterhoek. The other 14 butcheries were contacted through the KNS, they have forwarded the email to 14 members. The aim was to get at least 20 respondents in order to get a reliable outcome.

The questionnaire was made using EnquetesMaken.com. The questionnaire can be found in annex II.

In order to make a comparison to the supermarkets, Maurits Steverink was asked to score the supermarkets' meat-concepts on animal welfare and environmental sustainability as an expert.

It has also been counted what the share of quality labels is used at Albert Heijn and Jumbo. This can be found in annex IV.

2.3 Data Processing

The data of the questionnaire has been processed using EnquetesMaken.com and SPSS. EnquetesMake.com generated the results and SPSS is the tool that was used to analyse the results. Via SPSS the median has been calculated and these results have been compared to the scores in the Keurmerkwijzer of MilieuCentraal.

The results of the questions regarding the supermarkets have been compared to the scoring of the expert, Maurits Steverink.

The conclusion has been drawn based on these comparisons and the literature review.

3. Literature Review

3.1 Sustainability

The definition of sustainability as stated in the dictionary, is shown in figure 3. For a butchery, this is defined in the fact that meat production has a considerable ecological footprint. Sustainability in butcheries means that the environmental impact should be limited as much as possible. For instance water use and soya production but also manure management and energy use.

Sustainability

- The ability to be sustained, supported, upheld, or confirmed
- Environmental science. The quality of not being harmful to the environment or depleting natural resources, and thereby supporting long-term ecological balance

Figure 3: Definition of Sustainability, Dictionary.com

The 3 P's

- People
- Profit
- Planet

Figure 4: The 3 P's of Sustainability, Platformduurzaamheid.

Sustainability has become an important concept. Everything that has something to do with living socially responsible, environment, ecology and future-oriented thinking is nowadays sustainability. Usually it is described following the theory of the 3 P's: People, Profit, Planet (figure 4).

Platform Duurzaamheid (2010) states that it is an important task to take good care of people and the planet, aside from making profit and enjoying wealth. If this is to be renounced, the future of humankind will be in the dispute. For example, when the current generation would use up all fossil fuels, the next generation would have a problem. This is also the case regarding global warming, CO2- emissions and the world food problems.

The idea of sustainability stems from the concept of sustainable development. After the World's first Earth Summit in Rio de Janeiro in 1992, this became common language. The original definition of sustainable development is usually this:

"Development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

— Bruntland Report for the World Commission on Environment and Development (1992)

However, since then there have been many variations and extensions to this basic definition (*Global Footprints*, 2009).

It is calculated that the meat production is the cause of 13-18% of the total CO2 emissions (*Porcelijn*, *B. 2017*). While meat is still a very popular food in the Netherlands, it has a significant impact on climate change. In figure 5 it is shown how much kilograms of meat is consumed per head in the Netherlands over a period of 7 years (2009-2016). It is seen that since 2009, a slight decrease of consuming meat has occurred but this has stagnated in 2016. In 2009 the total consumption of meat was 79,1 kilograms per head per year. In 2016 this has decreased to 76,8kg. This is calculated on the basis of carcass weight (weight including bones). Among the other types of meat are calf, horse, sheep and goat (*Terluin*, *I. et al*, 2017).

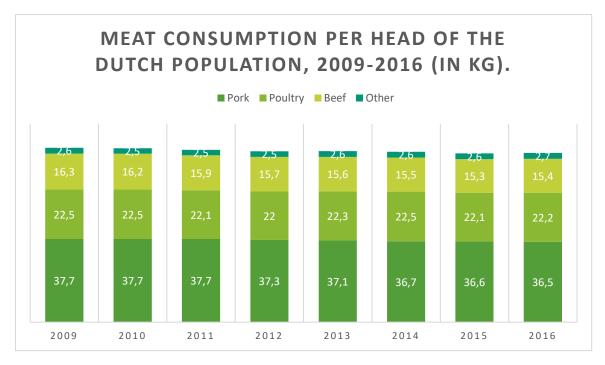


Figure 5: Meat consumption per head of the Dutch population from 2009 - 2016. Source: CBS / Wageningen Economic Research, 2017

The production of meat (pork, beef and chicken) has a negative impact on the environment. One particular important consequence is the emission of greenhouse gasses. When raising livestock, gasses are released into the atmosphere that cause climate change. The three most important gasses are carbon dioxide (CO2), methane (CH4) and nitrous oxide (N2O). These are caused by for instance digesting feed (CH4), using artificial fertilizers (N2O) and stored manure (CH4 and N2O). Methane and nitrous oxide are far more powerful greenhouse gasses than CO2.

Furthermore, deforestation takes place in order to produce animal feed. According to Maria Cook (Sciencing, 2018), this is a global problem. It causes soil erosion, water cycle disruption, greenhouse gas emissions and biodiversity losses. These consequences do not only affect wild plants and animals, but also human beings. Greenhouse gases such as methane and carbon dioxide trap heat in the atmosphere of the earth. Trees absorb carbon dioxide, which gives them a filtering function for greenhouse gases. Consequently, by removing the trees, the carbon dioxide in that area can no longer be absorbed as it was before.

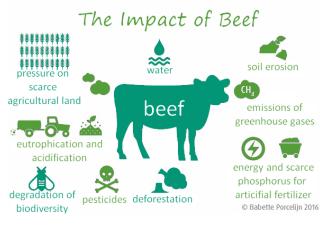


Figure 6: Impact of Beef. Source: Porcelijn, B. 2016

Figure 6 shows the impact of beef in particular on the environment. This shows multiple factors that influence the negative impact of the production of meat (in this case beef) on the environment. Babette Porcelijn looked at the pressure on scarce agricultural land in the book "The Hidden Impact (2017)". It is seen that only 12% of the total land available in the world is fit for cultivation of feed. Sixty-seven percent of this land is used as grassland for animals. Only 18% is used for feed for humans, 12% is used for growing animal feeds and the other 3% is used for biofuel, cotton and industry.

In order to produce all this feed, there is a large amount of water needed. Eighty-six percent of the total water usage is used for irrigation of fields. For 120 grams of beef, 1800 litre of water is used, for 120 grams of pork, 630 litre of water is used and for 120 grams of poultry, 480 litre of water is used. When looked at where this water is used, it is seen that most water is used in the production (98%). This figure also shows where the most CO2 is emitted.

The supply chain starts with mining grounds. The increasing demand of animal feed, leads to deforestation. At the production of animal feed, lots of scarce water is used on the arable lands. The irrigation of these lands leads to issues with the soil because of the use of (artificial) fertilizers and pesticides. Manufacturing artificial fertilizers cost a lot of energy. On the farm, CO2 and CH4 gets emitted because of burping and farting of the cows. Also, only half of the animal ends up in the consumers fridge in the end. The other parts end up in animal feeds, are bones or are lost during the processing of the meat. Then, when it is finally consumed, almost half is thrown out by the consumers (*Porcelijn*, *B. 2017*).

3.2 Animal Welfare

Animal welfare is nowadays a hot topic of discussion. People are becoming more aware of how animals are treated in the farming industry and set higher demands on how their meat was treated before it is consumed. In order to objectively look at animal welfare, various studies have been conducted by for instance the World Organisation for Animal Health.

A much used concept that links to animal welfare, are the five freedoms. These five freedoms originated from a phrase in the Brambell Report by the HMSO in 1965. In 2007, this was further developed by the Farm Animal Welfare Council (FAWC). The phrase from the report said: Farm animals should have freedom to stand up, lie down, turn around, groom themselves and stretch their limbs. These were later extended into the five freedoms described in figure 7. The Dutch government uses these five freedoms as parameters for a sufficient animal welfare (Universiteit Utrecht). This has also been include in the Health- and welfare law for animals. applies to all farm animals (MilieuCentraal).

Freedom from Hunger & Thirst

 By ready access to fresh water and a diet to maintain full health and vigour

Freedom from Discomfort

 By providing an appropriate environment, including shelter and a comfortable resting area

Freedom from Pain, Injury & Disease

• By prevention or rapid diagnosis and treatment

Freedom to Express Normal Behaviour

By providing sufficient space, proper facilities and company of the animal's own kind

Freedom from Fear & Distress

 By ensuring conditions and treatment which avoid mental suffering

Figure 7: Five Freedoms according to the Brambell Report. Source: Appleby, M.C. (2008).

In 2012, the World Organisation for Animal Health adopted 10 'General Principles for the Welfare of Animals in Livestock Production Systems'. These principles act as a guide to the development of animal welfare standards. These principles are based on half a century of scientific research relevant to animal welfare. These principles are outlined in figure 8.

10 General Principles for the Welfare of Animals in Livestock Production Systems

- •Genetic selection should always take into account the health and welfare of animals
- •The physical environment, invluding the substrate (walking surface, resting surface etc), should be suited to the species and breed so as to minimise risk of injury and transmission of diseases or parasites to animals.
- •The physical environment should allow comfortable resting, safe and comfortable movement, including normal postural changes, and the opportunity to perform types of natural behaviour that animals are motivated to perform.
- Social grouping of animals should be managed to allow positive social behaviour and minimise injury, distress and chronic fear.
- Air quality, temperature and humidity in confined spaces should support good animal health and not be aversive to animals. Where extreme conditions occur, animals should not be prevented from using their natural methods of thermoregulation.
- •Animals should have access to sufficient feed and water, suited to the animals' age and needs, to maintain normal health and productivity and to prevent prolonged hunger, thirst, malnutrition or dehydration.
- •Diseases and parasites should be prevented and controlled as much as possible through good management practices. Animals with serious health problems should be isolated and treated promptly or killed humanely if treatment is not feasible of recovery is unlikely.
- •Where painful procedures cannot be avoided, the resulting pain should be managed to the extent that available methods allow.
- •The handling of animals should foster a positive relationship between humans and animals and should not cause injury, panic, lasting fear or avoidable stress.
- •Owners and handlers should have sufficient skill and knowledge to ensure that animals are treated in accordance with these principles.

Figure 8: The General Principles for the Welfare of Animals in Livestock Production Systems. Source: Fraser, D. et al (2013)

The research done by Fraser, D et al (2013) was initially intended to resolve problems in confinement production systems. However, many of the scientific methods and findings have proven applicable to animals in a wider range of circumstances. That is why these general principles were designed; to capture and summarize the key insights arising from this research.

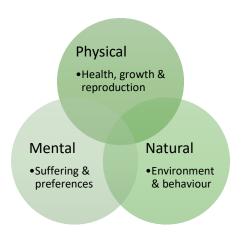


Figure 9: Overlap of the three concepts. Source: Appleby, M.C. (2008).

Animal welfare can be assessed on three different concepts, according to Appleby, M.C. (2008). These overlap but not entirely. Animal welfare can emphasize physical, mental and natural aspects which can be characterized as their bodies, minds and natures. In figure 9 it is seen how these concepts may overlap.

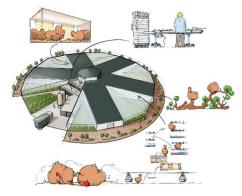
Physical aspects are those that happen when an individual perceives a threat. This particular threat is then called a "stressor". When this response truly threatens the animal's wellbeing, the animal will be in distress. The perception of a threat is critical, it is not said that every stressor is in fact a threat to the animal. Stress is sometimes deduced from the animal's behaviour, however it is measurable. Heart rates, blood cell counts and comounds such as glucocorticoids (stress hormones) can be found

in blood, saliva and faeces and be an indicator of the level of distress that the animal experiences. When animals are in a good functioning state, they are more than just healthy. They eat, drink and excrete, move around, breath and respond to stimuli. Thus, they are expressing normal behaviour. These are all measurable, as well as the physical effects when this is disruption such as for instance weight loss.

Although it can never be known for certain how animals are feeling, the mental aspects are very important in animal welfare. However, there are two types of evidence in which it can be concluded whether the animal's welfare is sufficient. The first is evidence about what animals want and the second is evidence about whether they are feeling positive (are they happy). Animals' preferences to features of handling could be indicators. For instance; the ease of loading when the animals are transported can be measured and studied experimentally.

Pain is also an indicator. Farm animals suffer pain when certain mutilations are done to them. Examples are tail docking in pigs and beak trimming in chickens. These are painful procedures for the animal. Other causes for pain are injuries from other animals such as aggressive attacks or long-term problems such as foot and leg damage. But also accidental injuries such as broken bones or bruises during handling or transport. Physical treatment such as electric goads and hanging poultry by shackles for slaughter are all painful procedures.

The third concept, natural aspects, focuses most on the ability of animals to express their normal, natural behaviours. This concept has not received as many scientific attention as the previous ones. Two main answers have been given to the question of what is necessary for animals to achieve this natural behaviour. The solution is that they must be kept in ways that allow them to perform natural behaviour. The second is that features of their natural environment are important. Examples of these are grazing for cattle, mud baths for pigs or stables that are adapted to the needs of the animal, such as "Rondeel" stables (figure 10) in the Netherlands (Appleby, M.C. 2008).



10: Dutch Rondeel stable. Source: Rondeeleieren.nl (2018)

In order to measure welfare, there are multiple factors that are taken into account:

- Physiological indicators of pleasure
- Behavioural indicators of pleasure
- Extent to which strongly preferred behaviours can be shown
- Variety of normal behaviours shown or suppressed
- Extent to which normal physiological processes and anatomical development are possible
- Extent of behavioural aversion shown
- Physiological attempts to cope
- Immunosuppression
- Disease prevalence
- Behavioural attempts to cope
- Behavioural pathology
- Brain changes (e.g. those indicating self-narcotization)
- Body damage prevalence
- Reduced ability to grow or breed
- Reduced life expectancy

Next to these measurements, there are also some physiological indicators of poor welfare. These can be seen in table 1.

Stressor	Physiological variable						
	Measured in blood or other body fluids						
Food deprivation	↑FFA, ↑β-OHB, ↓ glucose, ↑urea						
Dehydration	↑Osmolality, ↑total protein, ↑albumin, ↑PCV						
Physical exertion	↑CK, ↑lactate						
Fear, lack of control	↑Cortisol, ↑PCV						
Motion sickness	↑Vasopressin						
	Other measures						
Fear, physical effects	↑Heart rate, heart rate variability↑, ↑ respiration rate						
Hypothermia/hyperthermia	Body temperature, skin temperature						
Explanation of abbreviations:	FFA; Free Fatty Acids, β-OHB; β-hydroxybutyrate, PCV; Packed Cell Volume, CK; Creatine kinase						

Table 1: Physiological indicators of poor welfare. Source: Broom, D.M. 2008)

When measuring the physiological variables as shown in table 1, it is important to keep in mind that this should not be done without setting a basal level. Also, these measurements should be looked at how they fluctuate over time (*Broom, D.M. 2008*).

"Animals are not self-conscious and are there merely as a means to an end. The end is man. [...] Our duties towards animals are merely indirect duties towards humanity." – Immanuel Kant (1963)

In the Netherlands, hundreds of millions of animals are kept in livestock farming. In 2016, there were 350 million broilers, 42 million laying hens, 24 million pigs, 1,6 million dairy cows, 1,6 million veal calves and 0,4 million beef cattle kept on Dutch farms. In the Netherlands, a series of animal welfare issues has been identified by the Barth Misset Foundation.

In housing animals, according to the Barth Misset Foundation hard and wet floors can lead to claw and joint issues in cattle and pigs. In broilers, dirty and wet litter can lead to infections on the claws and breast. When large numbers of animals are put together in a small area, the infection pressure rises and this forced

groupsize and composition can lead to frustrated behaviour, stress and discontent. In these groups, livestock can suffer from frustrated behaviour from other animals such as picking of feathers in chicken or biting tails in pigs. Limitations in housing systems such as not being able to go outside can lead to boredom, stress and discontent. Last, many stables are a serious fire hazard. Each year hundreds of thousands of animals die in stable fires.

In order to prevent animals to hurt each other or the handlers, the Barth Misset Foundation documented various procedures. In cattle, dehorning is seen. Pigs have to undergo castration, removal of the tails and polishing of the teeth. Breeding chickens and laying hens receive procedures to the beaks, in order to make them less sharp. Roosters get painful amputations such as the removal of the come or the feet, which makes them mate less rough. Some of these procedures are done without any anaesthesia which makes them even more painful and stressful.

Animals bred for production, usually have a lower immune system and lifespan. The fast growth of livestock for meat production such as broilers and veal calves leads to welfare issues like fouling and joint issues. Beef cattle such as the Belgian Blue (figure 11) have issues at giving birth, because of their narrow birth canal and muscular hind quarters. Because of this they will always need a Csection in order for the calf to be born and these procedures can lead to infections and adhesions. Overall the Barth Misset Foundation states that breeding on production qualities of the animal hurts Figure 11: Veal cow with muscular hind-quarters. the integrity of the animal.



Source: Wikimedia Commons

The Barth Misset Foundation also found that the nutrition of livestock animals is based on the production and not always on the needs of the animal. When veal calves get fed too little roughage, this can cause an insufficient development of the penis and complaints such as gastric ulcers. White meat calves get fed an iron-free diet which leads to anaemia and other health issues. Pigs get fed a diet that leads to deformations of the stomach, such as gastric ulcers. Older broilers are growing fast but in order to reduce fertility, they get fed too little which makes them hungry.

The Barth Misset Foundation states that livestock animals are often exploited. Cows have to give birth to calves on a regular bases, which can cause infertility or infections. Also, the separation at birth has a negative influence on learning natural behaviour and on the immune system of the calves. Livestock animals typically have a short lifespan; broilers live 42 days, pigs 6 months, veal-calves 8-12 months and dairy cows 6 years on average. Male animals are often killed because they cannot be used, such as the roosters or bull calves.

When animals are ready to be transported to the slaughterhouse, Barth Misset Foundation reports that they are often put in trucks which are small, narrow and slippery. Animals are also kept from water and food during the transport. Resting places and markets have a high chance of disease transmission due to a high infection pressure and distress. Transport is a significant source of stress anyway, loading and offloading, mixing different animals and the new environment are all stress factors. During loading poultry, animals can suffer fractures or other wounds due to the rough manner of catching the poultry. Transport over a long distance also increases the chance of disease spread such as bird flu. As



Figure 12: Transportation truck for pigs. Source: Wikimedia Commons

with any transport, accidents on the road can happen. These usually lead to wounds and deaths of the livestock.

When the animals arrive at the slaughterhouse, they find themselves in another stressful situation where animals are removed from the herd and pushed up to the slaughter. Sometimes the animals have to wait a long time in hot or cold weather. The stunning prior to slaughter is also a stress factor. Poultry are hung upside down where their heads go through an electric charged bath, which is not always effective and is very stressful. The CO2 stunning that pigs receive prior to slaughter, leads to irritation of the airways and a lot of stress. In the case of slaughter without prior stunning, animals are in pain, stress and experience a death battle of seconds, Barth Misset Foundation reported.

3.3 Quality Labels

Given the previous chapters, there are many of factors that could influence the welfare and sustainability of the production of meat. The type of meat that consumers demand, is changing. In an article published by Nu.nl, it is stated that consumers more often choose meat with more attention to animal welfare during the production process. The quality of the meat keeps getting more important. The demand to organic meat and meat with a quality label is rising. In order to make it easier for consumers, quality

Quality Label

 A quality label is an image on a product with which the manufacturer ensures a set quality of this product.

Figure 13: Definition of a quality label according to the Dutch government. Source: Rijksoverheid.nl

labels are developed. These are logo's that may be placed on the packaging of meat. These logo's then ensure certain guarantees about the production of that piece of meat.

A quality label can be recognized by a certain image or logo. The quality of each label is different as well as the way that the label is organized. One thing that is a ground rule for labels, is the fact that each needs to have an owner. This owner may be an independent organisation or person, but could also be the producer of the product itself. The owner of the label will set certain guarantees before a product can have this logo on it, and it will make sure that the ones that use the logo are monitored to see if they keep matching to these guarantees.



Figure 14: Chicken breast with Beter Leven & Label Rouge quality label. Source: AH.nl, 2018

The difference in ownership of a label is an indicator of the independence of a label. When the users of the labels are checked with use of an accredited organisation, this is far more reliable and independent than when the label owner checks the products itself.

The guarantees that are given by a quality label are individually made per logo. Each logo sets its own guarantees and rules and also sets up its own supervision and monitoring. Some quality labels set guarantees for each step of the supply chain, some only for the production on the farm and some set guarantees for the source of each packed product with the label throughout the supply chain. Others make guarantees for different topics such as welfare and sustainable and other labels only focus on one particular topic.

In order to make sure that the product that is sold with a particular logo actually meet the set guarantees, the producers should undergo a check-up. Some label owners perform these check-ups themselves, others hire an inspection body. This is a body that is accredited by the Board of Accreditation (Raad van Accreditatie, RvA). The Board of Accreditation is a governmental organisation. This accreditation means that the inspectors are monitored. In order to become accredited, an inspection body has to be independent and knowledgeable, this means that the inspector cannot be influenced by commercial interests. An accreditation gives more guarantees for a sufficient check-up and thus a better reliability of the logo. However, not only the inspection gives an image on the reliability of a logo. In order to find whether a logo is trustworthy, it is also assessed how easy it is to find information on a particular logo and how understandable this information is (Consuwijzer).

When a producer does not meet the guarantees that the logo wants them to have after an inspection, there could be sanctions. Which sanction or what punishment they get is up to the logo owner. It usually means that the producer cannot use the logo for a certain time, or cannot use the logo ever again. Usually they get warnings ahead of this (Demeter, Dierenbescherming & Keten Duurzaam Varkensvlees).

In the Netherlands, there are multiple organizations which collect and score quality labels and logo's. One of them is MilieuCentraal. This organisation has put together a list of all sustainable related quality labels and logo's and has scored them on 5 subjects: environment, animal welfare, social, reliability and transparency. This has been put together in the Keurmerkwijzer (MilieuCentraal).

Given this information, a quality label is considered good or sufficient when it is independent, so not owned by the producer or seller but the owner of the label has no economic interests. The label is inspected by an accredited organisation and an independent and knowledgeable inspector. The label gives adequate information on the standards and guarantees that it offers which is easily accessible.

3.3.1 Method MilieuCentraal

MilieuCentraal has developed a method for consumers in which they analyse the quality of different labels and logo's and where they can easily compare the logo's with each other. In this analysis, there is a difference between toplabels, labels and company logo's. There are also so-called "umbrella-logo's". These are logo's that are put on products where they combine multiple logo's but in itself does not demand extra guarantees.

A toplabel that, according to MilieuCentraal, stands out above the rest. These labels distinguish themselves on 3 particular factors: ambitious, transparent and reliable. With ambitious, it is meant that these labels go further than the average of all labels. These labels usually score 4 or 5 points (out of 5) on the surface on environment, welfare or social. The labels are also transparent, which means that they score 4 or 5 points (out of 5) on de surface of transparency. It means that information on this label is easily accessible and understandable. The labels are also reliable. The producers that carry out the label are inspected by an accredited organisation and there are clear sanctions when the demands are not met properly. They score 2 or 3 points (out of 3) on



Figure 15: Toplabels according to MilieuCentraal. Source: MilieuCentraal

reliability. The six labels that apply to animal products classified as toplabels can be seen in figure 15 and are: Beter Leven (2 & 3 star), Demeter, European Label for Organic, EKO and MilieuKeur.



Figure 16: Labels. Source: MilieuCentraal

MilieuCentraal has classified 5 other labels as just labels. These are labels that are always of an independent party which means that the company that develops the label is not also the seller of the products with the label. All producers whose products meet the set demands of the label are allowed to carry out the label on their products. The labels that are put in this category are: Beter Leven (1 star), Label Rouge and the Producert beef, pork and chicken meat. These labels are shown in figure 16.

The last category are the company logo's. These are logo's that are developed by the company that produces and sells the meat themselves. Most of the labels are a company logo. This company sets its own standards and guarantees and is responsible for the inspection themselves. This could however still be done by an accredited organisation. In figure 17 the company logo's that apply to meat are shown: Veldhoen, Tante Door, Elita, Doerak, France Limousin, Keten Duurzaam Rundvlees, Keten Duurzaam Varkensvlees, Pluimgarantie and Nieuwe Standaard Kip (Jumbo).



With their quality label method (Keurmerkwijzer), MilieuCentraal has created a table where all labels and logo's that apply to meat can be seen in one overview. This overview can be seen in table 2.

Quality Label / Company Logo	Environment	Animal Welfare	Inspection	Transparancy
Beter Leven 1 ster	0/5	3/5	3/3	5/5
Beter Leven 2 sterren	0/5	4/5	3/3	5/5
Beter Leven 3 sterren	0/5	5/5	3/3	5/5
Demeter	4/5	5/5	3/3	4/5
Doerak	0/5	3/5	1/3	0/5
EKO	4/5	5/5	3/3	4/5
Elita	0/5	2/5	1/3	0/5
Europees Keurmerk voor	4/5	5/5	3/3	4/5
Biologisch				
France Limousin	3/5	4/5	1/3	3/5
Halal	-	-	3/3	-
Keten Duurzaam Rundvlees	1/5	3/5	3/3	2/5
Keten Duurzaam Varkensvlees	3/5	2/5	3/3	4/5
Label Rouge	0/5	4/5	3/3	2/5
Livar	3/5	5/5	3/3	2/5
Milieukeur	4/5	2/5	3/3	4/5
Nieuwe Standaard Kip	0/5	1/5	1/3	5/5
Pluimgarantie	0/5	1/5	1/3	1/5
Producert Scharrelkippenvlees	0/5	3/5	3/3	0/5
Producert Scharrelrundvlees	0/5	3/5	3/3	0/5
Producert Scharrelvarkensvlees	0/5	4/5	3/3	0/5
Tante Door	2/5	1/5	1/3	1/5
Veldhoen	0/5	3/5	1/3	1/5

Table 2: Overview of quality labels and company logo's including the score. Source: MilieuCentraal

In the scoring of the quality labels and company logo's by MilieuCentraal, they usually take 5 categories into account: environment, animal welfare, social aspects, transparency and inspection (reliability). However, since social aspects do not apply to the labels that are used for meat, this category was not taken into account. Also, the Halal quality label, is not a quality label that focuses on sustainability at all, this one is only scored on inspection. A complete overview of how the labels are scored and what they score, can be found in annex 12.1.

The categories sustainability and animal welfare are sored with points from 1 to 5. Table 2 shows the level of ambition and what a score means. When they score a label, they ask themselves how high the demands are in relation to the laws and regulations that apply. When given a certain number of points, they correspond with a certain gradation which can also be seen in table 3.

Score	Level of Ambition	Meaning
0		No extra demands on top of the demands made by the law
1	Low	The demands go a little bit further than the demands made by the law, and is on the same level as is common in the sector
2	Mediocre	The demands go a little bit further than the demands made by the law and are a little bit higher than what is common in the sector
3	Reasonable	The demands are stricter than those of the common practice but could be a bit more strict
4	High	The demands are pretty strict but not the strictest
5	Very High	The demands of this label or logo are the strictest in the sector
NVT	Not applicable	This category is not applicable to this label or logo
NTB	To be determined	This score has yet to be determined.

Table 3: Scores, level of ambition and the meaning of the score. Source: MilieuCentraal

When scoring a label on transparency, MilieuCentraal inspects the following four aspects: findability, understandability, testability and results. In this scoring, the label also gets points from 1 to 5, but is scored on each aspect individual. The lowest score is leading for the end result (for example: a label that scores 3 on findability but 4 on testability will have a transparency score of 3).

When scoring on monitoring (reliability) the label or logo is given 1 to 3 points. This score has 3 possible meanings, as seen in table 4.

Score	Meaning
1	Less reliable label or logo, there is no independent inspection and/or transparent sanction policy
2	Reliable label or logo, there is an inspection by an independent, but not accredited organisation or the label is an 'associated member' of the ISEAL Alliance. There is a transparent sanction policy
3	Very reliable label or logo, there is an inspection by an independent, accredited organisation or the label is a 'full member' of the ISEAL Alliance. There is a transparent sanction policy

Table 4: Scoring of monitoring (reliability). Source: MilieuCentraal

Apart from the labels that MilieuCentraal has scored and put into their overview, there are a few more labels that apply to meat concepts in the butchery. These are the following: Gildehoen, Boerderijkip, Kemper Kip, Krull, Wroetvarken, Porkbest, Porc d'or, Beemsterlandsvarken and beefbest.

3.4 Supermarket Share

According to Detailhandel.info, supermarkets own 79,1% of the market share in meat. Butcheries only have 14,9% of the total market share. These numbers show that the supermarket is the largest competitor in de meat-selling business. This market share is furthermore detailed in figure 18, where it is shown per product group.

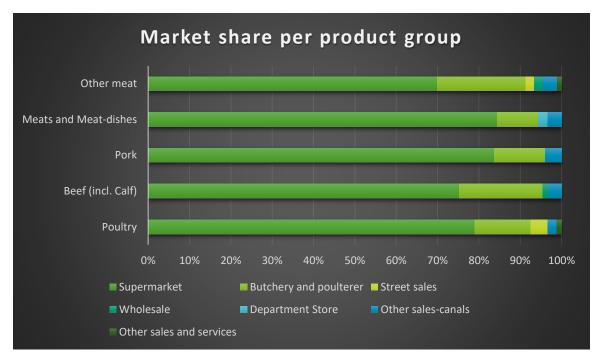


Figure 18: Market Share per Product Group, Detailhandel.info (2017).

Detailhandel.info also has numbers on the consumption expenses by Dutch households, in euros in 2015. This shows that per household, most is spent on cold meats and meat-dishes. Second most is beef, followed by pork. Poultry and other meat is least spent on. These numbers are not including poulterers, webshops and market trade.

According to Distrifood.nl, the 3 largest supermarkets in the Netherlands based on their client circle in 2016 are Albert Heijn, Lidl and Jumbo. These are therefore the largest competitors of the butcheries when it comes to selling meat.

The offer of sustainable products in the supermarket is rising. In 2016, 10% of all sold food was marked sustainable, in 2010 this was only 3,5%. The value of sustainable food has increased with 26% in 2016 to 3.8 billion euro's. The main reason for this is believed to be of quality labels. Many products in the supermarkets are provided with a label or logo that tells them if it is sustainable or not. In a graph published by Trouw, it is seen that the sales of sustainable product is rising in the supermarket but stagnating in the specialty stores such as butchers (*Zevenbergen*, *B. 2017*).

This rise can also be seen in the products that are sold by supermarkets. Ninety-four percent of all poultry is more sustainable than it used to be. 6% is sold with the Beter Leven 3 star label, 11% with the Beter Leven 1 star label and 77% is another sustainable alternative. Only 6% remains regular. The same thing can be seen in pork meat. 6% is sold with the Beter Leven 3 star, 3% with the Beter Leven 2 star and 85% with the Beter Leven 1 star or an alternative. Only 6% remains regular (CBL, 2018).

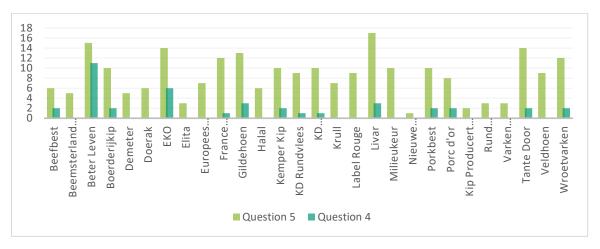
4. Results

4.1 General

The first three questions were general questions. In total, 20 butcheries participated in the questionnaire. Two participants remained anonymous, the other 18 specified the name of their butchery. Most of the participants (40%) are located in the Achterhoek which is a specific region in the province of Gelderland. Twenty percent of the participants were from the province Zuid-Holland, 15% from Limburg, 10% from Groningen, 5% from Drenthe, 5% from Noord-Brabant and 5% of Overijssel. Other possible answers that were not given were: Flevoland, Friesland, Gelderland, Noord-Holland, Utrecht and Zeeland. All of the butcheries participated in this questionnaire, sell pork and beef. Ninety percent also sells poultry.

The participants were asked in question four which quality label or company logo's they already know. The following answers were given, with the quantity in parentheses: Beefbest (2x), Beter Leven (11x), BIO (1), Boerderijkip (2x), Boeuf d'or (1x), BOP (1x), De Groene Weg (1x), Duroc d'olve (2x), EKO (6x), Fairtrade (1x), France Limousin (1x), Gildehoen (3x), Gildeslager (3x), Heidevarken (1x), Heydehoeve Varken (1x), Hoeve Varken (1x), Kemperkip (2x), Keten Duurzaam Rundvlees (1x), Keten Duurzaam Varkensvlees (1x), Keur (1x), Keurslager (5x), Livar (3x), Natuurlijk Scharrelvlees (1x), Porc d'olive (2x), Porc Fermier (1x), Porc d'or (2x), Porc Planair (1x), Porkbest (2x), Poule de Yvonne (1x), PQA Varken (2x), Riellanderpacht (1x), Ruygveen Varken (1x), Scharrel (1x), Scharrelhoen (1x), SKAL (5x), Tante Door (2x), Topslagers (1x), Uw Slager (1x), Vleesvee Integratie Twente (1x), Wroetvarken (2x), Zaak vol Smaak (1x).

After this question, the participants were given a list in question five with available quality labels and company logo's that apply to meat. They gave the following answers: Beefbest (6x), Beemsterlands Varken (5x), Beter Leven (15x), Boerderijkip (10x), Demeter (5x), Doerak (6x), EKO (14x), Elita (3x), European Quality Label for Organic (7x), France Limousin (12x), Gildehoen (13x), Halal (6x), Kemperkip (10x), Keten Duurzaam Rundvlees (9x), Keten Duurzaam Varkensvlees (10x), Krull (7x), Label Rouge (9x), Livar (17x), MilieuKeur (10x), Nieuwe Standaard Kip (1x), Porkbest (10x), Porc d'or (8x), Producert Scharrelkippenvlees (2x), Producert Scharrelrundvlees (3x), Producert Scharrelvarkensvlees (3x), Tante Door (14x), Veldhoen (9x), Wroetvarken (12x). One participant said to not know any of the quality labels or company logos mentioned and there were 3 other entries: IKB, BIO and Meatyourveggies.



Graph 1: Comparison of answers to question 4 and 5.

Graph 1 shows a comparison between the answers of question four and five. The "KD" in KD beef and KD pork means Keten Duurzaam (Sustainable Chain).

In the next questions, six and seven, it was asked to what extent the participant considers environmental and animal welfare aspects in the production and origin of their meat and what their perception of the consideration of the supermarkets to both topics is. Using SPSS, the results to this question were analysed. The answer possibilities varied from 1 (none) to 5 (a lot). There was also a sixth option, which meant "no opinion". In the analysis from SPSS this is classified as "missing". All participants gave

Statistics

		but_env	but_wel	sup_env	sup_wel
N	Valid	20	20	19	19
	Missing	0	0	1	1
Mean	١	4,35	4,75	3,32	3,11
Media	an	5,00	5,00	4,00	3,00
Mode	;	5	5	4	3ª
Sum		87	95	63	59

a. Multiple modes exist. The smallest value is shown

There was also a sixth option, which meant "no opinion". In the analysis from SPSS this is "analysis from spss this is "a label 5: Analysis of question 6 and 7. But_env: Environment in the butchery, but_wel: Welfare in the butchery, sup_env: Environment in the supermarket, sup_wel: welfare in the supermarket.

an answer to both questions. The analysis of this question is shown in table 5. It includes the mean, median, mode and sum of both questions. The questions were divided into two categories; one for the consideration of the environment in the butcheries (but_env) and consideration of animal welfare in butcheries (but_wel) and the same for the supermarkets, the consideration of the environment in supermarkets (sup_env) and consideration of animal welfare in supermarkets (sup_wel).

Questions six and seven has also been asked to an expert of True Food Projects, Maurits Steverink. He interpreted the question as "is it actively offered". He scored that on a scale from 1 to 5 (very little, little, neutral, some, a lot) supermarkets have the environment on a 2, meaning that it is little offered. Animal welfare however, is much offered, this is therefore scored on a 5.

It has also been counted how many company logos and quality labels are present in the supermarket. The complete count can be seen in annex 12.4, table 6 shows the total numbers. This count has been done for the two biggest supermarkets in the Netherlands: Albert Heijn and Jumbo via their webshop. It is seen that 52,05% of the meat-concepts sold in these two supermarkets have a quality label and 18,26% have a company logo. Not even a third (29,69%) is sold without any logo or label. Half of the total meat-concepts have a Beter Leven quality label. Of all the meat sold, 50,68% has either Beter Leven 1*, Beter Leven 2* or Beter Leven 3* label. The other labels that were found were: Halal, European Quality Label for Organic and Label Rouge. The company logos are: Greenfields, Jumbo Iers Rund and Jumbo Nieuwe Standaard Kip.

	Number	Percentage
Total	586	100%
With Quality Label	305	52,05%
With Beter Leven Quality Label	297	50,68%
With Company Logo	107	18,26%
Without label or logo	174	29,69%

Table 6: Number of meat concepts in Dutch supermarkets (Albert Heijn & Jumbo). Date of count: April 19th

Question eight asked the opinion of the butcheries on the previous questions. Butchery De Schelfer said the following: On a global scale, the Netherlands performs very well. Partly due to the attention that has been created towards these topics, which pushes supermarkets to respond. The quality of the Dutch product through the quality of the Dutch water, Dutch veterinary industry and the Dutch feed procurement is at the top of the world. We find the diversification within the Netherlands with all quality marks opaque and distracting from the Dutch product.

Other butchers commented that the supermarkets are only considering the environment and animal welfare as a response to the demands of the customer in order to get more (satisfied) customers, and not because they want to improve the animal welfare or the environment.

4.2 Poultry

Moving on to the next part of the questionnaire, which focused on poultry, the first question to the participants was whether they sell poultry with a quality label or a company logo. Sixteen participants answered this question. Three of them said to not sell poultry with any label or logo. The following answers were given; Beter Leven 1* (4x), Beter Leven 2* (1x), Beter Leven 3* (3x), EKO (2x), European Quality Label for Organic (1x), Label Rouge (1x), MilieuKeur (1x), Tante Door (3x), Boerderijkip (1x) and Kemperkip (5x). There were three other entries: Wellfoort, Harry's farm and PQA Scharrelvarkens.

Questions 10 to 14 asked the opinion of the participants on the given quality labels and company logos. The answers to these questions were analysed using SPSS. The following quality labels and company logos were given with the SPSS code in parentheses: Beter Leven 1* (bl1), Beter Leven 2* (bl2), Beter Leven 3* (bl3), Demeter (dem), EKO (eko), European Quality Label for Organic (ekb), Label Rouge (lar), MilieuKeur (mik), Pluimgarantie (plg), Producert Scharrelkippenvlees (psk), Tante Door (tad), Veldhoen (veh), Gildehoen (gih), Boerderijkip (bok), Kemkerkip (kek). Two participants added their own. One added "Eigen slacht" which means own slaughter. The SPSS code for this was eis. Another added Harry's Farm, with the SPSS code haf.

There were 5 different questions, two of them specified on the trustworthy of the label or logo. The first trust, with SPSS code trust1, asked to what extend the participant trusts that the meat sold with the logo or label is always produced according to the same set guarantees. The second question on trust, with SPSS code trust2, asked to what extent the participant trust that the meat delivered always comes from livestock farms that produce by these guarantees. The third question, with SPSS code trans, asked how transparent the participants thought of the labels and logo's. The fourth question, with SPSS code envi, asked how well the participant thought that the logo or label is for the environment and the fifth question, with SPSS code welf, asked the same as the previous, only on animal welfare.

All these questions could be answered with a rating from 1 to 5 and had 16 participants. Using SPSS, the median was analysed and with using Word, a table has been made in which the comparison is made between the answers of the questionnaire (quest) and the scoring of MilieuCentraal (MC). This is shown in table 7. The empty fields in the scoring of MilieuCentraal mean that there is no scoring of MilieuCentraal available for that logo or label.

	Trust 1		Trust 2		Transpa	rency	Environ	ment	Welfare	
	Quest	Mc	Quest	Mc	Quest	Mc	Quest	Mc	Quest	Мс
Beter Leven 1 (BI1)	3	3/3	3,5	3/3	4	5	3	0	4	3
Beter Leven 2 (BI2)	3,5	3/3	4	3/3	4	5	3	0	4	4
Beter Leven 3 (BI3)	4	3/3	3,5	3/3	4	5	4	0	4	5
Demeter (Dem)	5	3/3	3	3/3	4	4	4	4	4	5
EKO (Eko)	4	3/3	3	3/3	4	4	4	4	4	5
Europees Keurmerk	3,5	3/3	3	3/3	4	4	4	4	4	5
Biologisch (Ekb)										
Label Rouge (Lar)	4	3/3	4	3/3	4	2	2,5	0	4	4
MilieuKeur (Mik)	3,5	3/3	3	3/3	4	4	4	4	4	2
Pluimgarantie (Plg)	3	1/3	3	1/3	3,5	1	2,5	0	4	1
Producert Scharrel	3	3/3	3	3/3	3	0	2	0	3,5	3
Kippenvlees (Psk)										
Tante Door (Tad)	4	1/3	5	1/3	4	1	3,5	2	4	1
Veldhoen (Veh)	3	1/3	5	1/3	4	1	3	0	4	3
Gildehoen (Gih)	4		4		4		3,5		4	
Boerderijkip (Bok)	4		4		4		3		4	
Kemper Kip (Kek)	4		3		4		3,5		4	
Eigen Slacht (Eis)	5		5		5		5		5	
Harry's Farm (Haf)	5		5		5		5		5	

Table 7: Median of answers to questionnaire plus comparison to scoring of MilieuCentraal regarding Poultry. Explanation of abbreviations: Quest = questionnaire, MC= MilieuCentraal

Question 15 asked the opinion of the butcheries to the previous part of the questionnaire. Butchery Bolscher mentioned that they did not trust anyone anymore and thought that the certificating parties did not belong in the chain. This is why they started with setting up their own chain, with an own farm etcetera. Keurslagerij Kamperman mentions that they slaughter their own animals, which means that the producer of its meat are known to them and are all from within a radius of 5 kilometres of the butchery.

4.3 Beef

The third part of the questionnaire focussed on beef. There were 14 participants to this part of the questionnaire. Question 16 asked whether the butchery uses quality labels or company logo's in their meat concepts. The following answers were given: Beter Leven 1* (1x), Beter Leven 2* (1x), Beter Leven 3* (1x), EKO (1x), Elita (1x), European Quality Label for Organic (1x), France Limousin (1x), Keten Duurzaam Rundvlees (2x), Producert Scharrelrundvlees (1x), Beefbest (1x). Two participants said that they do not sell beef with a quality label or company logo. Five other answers were given: beef from own region, own livestock, own slaughter, Harry's Farm and beef from own stable.

Same as in the previous part (poultry) the participants were asked to give their opinions on the given quality labels and company logos on the subject of trust, transparency, environment and animal welfare. The same codes for SPSS apply to these questions (trust1, trust2, trans, envi and welf). The participants were asked to give their opinion on the following labels: Beter Leven 1* (bl1), Beter Leven 2* (bl2), Beter Leven 3* (bl3), Demeter (dem), EKO (eko), Elita (eli), European Quality Label for Organic (ekb), France Limousin (frl), Keten Duurzaam Rundvlees (kdr), MilieuKeur (mik), Producert Scharrelrunvlees (psr), Beefbest (beb). In this part, the own slaughter was also mentioned as eis. Table 8 shows, like the poultry, the median of the questions in the questionnaire (Quest) and the comparison to the scoring of MilieuCentraal (MC). Thirteen participants answered these questions.

	Trust 1		Trust 2		Transpa	rency	Environ	ment	Welfare	
	Quest	Mc	Quest	Mc	Quest	Mc	Quest	Mc	Quest	Mc
Beter Leven 1 (BI1)	4	3/3	4	3/3	4	5	3	0	4	3
Beter Leven 2 (BI2)	4	3/3	4	3/3	3,5	5	3	0	4	4
Beter Leven 3 (BI3)	4,5	3/3	4	3/3	3,5	5	3	0	4,5	5
Demeter (Dem)	4,5	3/3	4	3/3	3	4	5	4	4,5	5
EKO (Eko)	4	3/3	4	3/3	4	4	5	4	4	5
Elita (Eli)	3	1/3	2,5	1/3	3	0	3	0	3,5	2
Europees Keurmerk voor Biologisch (Ekb)	5	3/3	5	3/3	5	4	4	4	5	5
France Limousin (Frl)	4	1/3	2,5	1/3	3	3	3	3	4	4
MilieuKeur (Mik)	4	3/3	3,5	3/3	4	4	4	4	4	2
Producert Scharrel Rundvlees (Psr)	3,5	3/3	3	3/3	3	0	3	0	3	3
Beefbest (Beb)	3		3		2,5		3		3,5	
Eigen slacht (Eis)	5		5		5		5		5	

Table 8: Median of answers to questionnaire plus comparison to scoring of MilieuCentraal regarding beef. Explanation of abbreviations: Quest = questionnaire, MC= MilieuCentraal

Question 22 asked once again for an explanation to the previous given answers. Butchery Jan Pinckaers said that there are too many logos and labels available. Butchery Arno de Best said that they buy the meat from a fattener that is qualified as Keten Duurzaam Rundvlees. He says that there are brand names which promises and guarantees can be doubted.

4.4 Pork

The part of the questionnaire focused on pork had the same lay-out and questions as the parts on poultry and beef. The first question was again whether the butcheries sold meat with a quality label or company logo. Twelve participants answered this question. The following answers were given: Beter Leven 1* (3x),

Beter Leven 3* (1x), Doerak (1x), EKO (2x), European Quality Label for Organic (1x), Keten Duurzaam Varkensvlees (1x), Livar (2x), Wroetvarken (1x), Porkbest (1x), Porc d'or (1x). 1 participant answered that they do not sell any quality labels or company logos and there were four other answers; region, own fattener, own slaughter and PQA scharrelvarken.

Once again, the participants were asked to give their opinions on the given quality labels and company logos on the subject of trust, transparency, environment and animal welfare. The same codes for SPSS apply to these questions (trust1, trust2, trans, envi and welf). The participants were asked to give their opinion on the following labels: Beter Leven 1* (bl1), Beter Leven 2* (bl2), Beter Leven 3* (bl3), Demeter (dem), Doerak (doe), EKO (eko), European Quality Label for Organic (ekb), Keten Duurzaam Varkensvlees (kdv), MilieuKeur (mik), Producert Scharrelvarkensvlees (psv), Livar (liv), Wroetvarken (wrv), Krull (kru), Porkbest (pob), Porc d'or (pod), Beemsterland Varken (bev). Also in this part, the own slaughter was also mentioned as eis. Table 9 shows, like the poultry and beef, the median of the questions and the comparison to the scoring of MilieuCentraal. Thirteen participants answered these questions.

	Trust 1		Trust 2		Transpa	rency	Environ	ment	Welfare	
	Enq	Mc	Enq	Mc	Enq	Mc	Enq	Mc	Enq	Mc
Beter Leven 1 (Bl1)	4	3/3	4	3/3	4	5	4	0	3,5	3
Beter Leven 2 (BI2)	4	3/3	4	3/3	4	5	4	0	4	4
Beter Leven 3 (BI3)	4	3/3	4	3/3	4	5	4	0	5	5
Demeter (Dem)	4	3/3	4	3/3	5	4	4,5	4	4,5	5
Doerak (Doe)	4	1/3	5	1/3	4,5	0	2	0	2	3
EKO (Eko)	5	3/3	4	3/3	4	4	5	4	5	5
Europees Keurmerk	5	3/3	5	3/3	5	4	4	4	5	5
voor Biologisch (Ekb)										
Keten Duurzaam	4	3/3	4	3/3	4	4	4	3	4	2
Varkensvlees (Kdv)										
MilieuKeur(Mik)	4	3/3	4	3/3	4	4	5	4	4	2
Producert Scharrel	3	3/3	3	3/3	3	0	3,5	0	3	4
Varkensvlees (Psv)										
Livar (Liv)	4	3/3	5	3/3	5	2	4	3	4	5
Wroetvarken (Wrv)	4		4,5		5		5		5	
Krull (Kru)	3,5		4		5		4		3,5	
Porkbest (Pob)	5		5		4,5		3,5		3,5	
Porc d'or (Pdo)	4		4		4,5		3,5		3,5	
Beemsterland	4		4		4		3,5		3,5	
Varken (Bev)										
Eigen slacht (Eis)	5		5		5		5		5	

Table 9: Median of answers to questionnaire plus comparison to scoring of MilieuCentraal regarding pork. Explanation of abbreviations: Quest = questionnaire, MC= MilieuCentraal

Question 29 asked an explanation on the previous given answers. Butchery Arno de Best said that he does not know all the logos by name, but that there are certain names of which the trustworthy of the given promises is not very big, or where the logo does not have a big advantage in regards to the regular meat.

4.5 Closing

In the end, the participants were asked if there was anything else they would like to add to the given answers in the questionnaire. Butchery Arno de Best said the following: For the butcher it is already very difficult to distinguish all the quality labels and company logos, let alone for the consumers. There are also logos and labels that make little or no difference with regular. There should be more clarity on this front, also towards the consumers.

5. Discussion

The findings of the questionnaire showed some interesting results. The aimed number of 20 to 50 participants has been met by 20. This is quite a low number, however the lower quantity of participants did give a reliable response on the filled out questionnaires. The number of participants was lower than expected because the required number of email addresses was not acquired. On beforehand, it was expected to receive email addresses from the organization KNS. However, the KNS felt that the questionnaire was not fit to send out to all their members, so they refused to give the email addresses. They did however forward the questionnaire to a smaller number of members.

In general it is interesting to see that many participants did not know many quality labels or company logo's prior to the questionnaire. However, when given a list of labels and logo's, the participants did know some. The most well-known label is the Livar company logo. Seventeen of the participants knew this logo after seeing it in the list. Second is the Beter Leven quality label, 15 of the participants knew this label. Other well-known (known by 10 participants or more) quality labels and company logos are Boerderijkip, EKO, France Limousin, Gildehoen, Kemperkip, Keten Duurzaam Varkensvlees, MilieuKeur, Porkbest, Tante Door and Wroetvarken.

In order to get a grip on how the butchers perceive the position of the supermarkets in regards to environment and animal welfare, the participants were asked to what extent, on a scale of 1 to 5 from 'very little' to 'a lot'. Using the statistical program SPSS, the median was calculated with these results. This showed that the butchers are taking both topics into account in the meat concepts that they sell. The perception of the butchers towards the supermarket is on the topic of the environment a median of 4. This means that the participants believe that the supermarkets are keeping the environment into account in their meat concepts. On the topic of animal welfare, the median was a 3 showing that the perception of the butcheries is that the supermarkets do more for the environment than for the animal welfare.

This is opposite of what the expert Maurits Steverink scored and what was analysed. The conclusion of the expert was, that the supermarkets offer little products with a label for the environment and much for animal welfare. This is also seen in the quality labels and company logo's that are offered by the supermarkets. More than half of the meat concepts sold in supermarkets have a Beter Leven quality label, which is a label that focuses on animal welfare and has no guarantees in regards to the environment. The meat products of the supermarkets change every few weeks because of seasonal products. The count was done on April 19th, 2018.

Butcheries argued that the reason behind the use of quality labels and company logos is mainly to keep attracting consumers and to respond to the consumer demand. However, the reason for offering meat-concepts with a label or logo is irrelevant for this study, because it is mainly compared how the perception of the butcheries is in regards to the supermarket.

In the questionnaire, the butcheries were asked to their opinion on many different quality labels. It is interesting to see that this rating is very different than the scoring of MilieuCentraal which was the comparison for these questions. One thing that stands out, is the fact that the Beter Leven quality label scored well on the environment according to the butcheries in the questions 13, 20 and 27. However, the Beter Leven quality label had no guarantees or guidelines on the environment, only on animal welfare. The only label or logo where the opinion of the participants somewhat corresponds to the scoring of MilieuCentraal, is the Demeter and European Quality Label of Organic. Most of the labels were scored lower by the participants than MilieuCentraal, but for some labels the butchers thought were more trustworthy or transparent than the score of MilieuCentraal implied.

6. Conclusion

With the given results, it is now possible to answer the research questions.

1. What is the impact of the production of meat on environmental sustainability and animal welfare?

Using the literature review, it can be stated that the impact of the production of meat is significant to the environment. This is extensively described in chapter 4.1 and 4.2. Meat production is the cause of 13-18% of the total worldwide CO2 emissions (Porcelijn, B. 2017). Also, large amounts of water is used to produce only 120 grams of meat, for instance 120 grams of beef costs 1800 litre water. All these factors together make that the impact of the production of meat on environmental sustainability is significant.

On the basis of animal welfare, the animals are usually not living by the five freedoms which causes poor welfare. Multiple examples of housing, breeding, nutrition, transport and more topics are given in chapter 4.2. It can therefore be concluded that the meat production also has a significant impact on animal welfare.

2. Which quality labels are available for butchers and how are they organized?

MilieuCentraal has scored 22 quality labels and company logos which apply to meat. These are all but one (Jumbo Nieuwe Standaard Kip) available for butcheries throughout the Netherlands. MilieuCentraal has an extensive scoring which clearly states which labels are the best per topic. Some labels score higher on environment and others score higher on animal welfare. The quality labels and company logos which are available to butcheries and are scored by MilieuCentraal can be found in chapter 4.3. Apart from this list, there are more quality labels and company logos available on the market.

3. What is the position of the supermarket in relation to the butchery, regarding the use of (sustainable) quality labels and what is the perception of the butcher towards this?

The perception of the butcher towards the supermarket, is that the supermarket does more for the environment then for animal welfare. However, this is the opposite. In supermarkets more than half of the available meat-concepts are sold with the Beter Leven quality label which focuses mainly on animal welfare and has no guarantees on the environment.

It can therefore be concluded the butchers have limited knowledge regarding quality labels and company logos. In the results, it is shown that the scorings of the butchers are different than how MilieuCentraal has scored them, and how the expert Maurits Steverink and Marjolijn Barten analysed it.

4. What is the position of the butchers in regards to the topic of sustainability and the use of quality labels?

Given the answers to the questionnaire, the butchers find the environment and animal welfare important topics to take into account in the meat-concepts that they sell. However, it is shown that knowledge on how to use the quality labels and company logos and sustainability itself can be improved.

5. What needs to happen in order to improve sustainability of meat-concepts in butcheries?

Quality labels and company logos need to be simplified and easier to understand. There are too many labels and logos making it impossible to select which one is the right fit for the butchery. In the ideal world, the number of labels and logos is cut back to the top labels, each giving clear guarantees on one specific subject. For instance, using the Beter Leven to indicate the animal welfare standards and another label specified to the environment.

However, this is not feasible since this would mean that a lot of labels and logos should fuse together. Therefore, a tool such as the one that MilieuCentraal has produced (Keurmerkwijzer) should be expanded with the labels and logos that are now missing, and it could be very useful to draw this up in a clear poster and possibly flyer which could be used to inform the butcher of the important guarantees, the confidentiality and transparency of the label or logo which is easily understandable so that the butcher can make its decisions in choosing which label or logo to use, and also to inform its customers on the different available labels and logos.

The KNS could write articles in their magazine about sustainability and which topics affects the butcheries. Together with MilieuCentraal they could come up with an information package which includes drop down schemes and tools in order to understand the quality labels better and to improve the use of these labels.

The government should make stricter rules and regulations in order to prevent more quality labels from entering the supply chain making it even less easy to understand each label.

Owners of quality labels should ask themselves if they make a difference with their label and if not, try to cooperate with owners of other quality labels to find a way to fuse together in order to limit the number of labels and increase the quality of the existing labels. Owners of quality labels could also team up with the labels that set the guarantees on different topics in order to improve the label with more guarantees.

With the answers to the sub research questions, the main research question can now be answered:

How can quality labels improve environmental sustainability and animal welfare of meat-concepts in the butchery?

By providing butcheries with a clear overview of each quality label and company logo, the butcher can make an easy choice as to which labels or logos fit in their butcheries. By expanding the scores of MilieuCentraal with the guarantees, the butchery can easily understand what the label or logo stands for. With the scorings that are already done by MilieuCentraal, it is easily seen whether the label is reliable and transparent.

Quality labels and company logos can provide a quick and understandable view of the production of the product. However, nowadays there are so many labels and logos available that it has become unclear which one has the highest quality, or which one fits best in the butchery.

7. Recommendation

In future studies regarding this thesis, it is recommendable to study the position of the customers in regards to this subject, in order to form a clear advise on what the demands of the customers are towards the environment and animal welfare.

Some aspects of the questionnaire appeared multi-interpretable which caused some irregularities in the answers and results. On the bases of the questionnaire, in order to gain more respondents it could be helpful to not only ask the KNS for email addresses but to cooperate more with them so that they are more involved in the project and see the benefit for their members better. It is debatable whether more respondents can lead to a different outcome. However, reliability is always higher when there are more respondents.

In order to make a more sustainable future and to increase the use of quality labels and company logos in butcheries, collaboration is a key factor for success. Whether it is different quality labels fusing together and joining in an effort to increase the quality of the labels, or the organizations KNS and MilieuCentraal to work together to inform butcheries on the importance of a sustainable production but also to help them choose meat concepts with labels and logos that fit their butchery and customers, it is very important to work together.

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Annex I Scoring of Quality Labels and Company Logo's by MilieuCentraal

Environment

Bij de beoordeling van keurmerken en bedrijfslogo's heeft MilieuCentraal de meest relevante milieuaspecten onderzocht. Dit zijn: grondstoffen (hoe worden ze gewonnen? Nieuw/gerecycled), gebruik van kunstmest en bestrijdingsmiddelen, gebruik van land en water, ontbossing, biodiversiteit, herkomst en impact van veevoer, benodigde energie voor productie, gevolgen voor het klimaat (CO2 en methaan uitstoot), energiegebruik (bij apparaten) en afvalbeheer.

Animal Welfare

Bij de beoordeling van producten met dierlijke ingrediënten (vlees, vis, zuivel en eieren) heeft MilieuCentraal eveneens de meest relevante aspecten van het dierenwelzijn onderzocht. Hierbij hebben ze de volgende punten aangehaald: Leefruimte per dier (aantal dieren per vierkante meter), uitloop naar buiten, mogelijkheid om natuurlijk gedrag te uiten (modderbad of stofbad), geen pijnlijke ingrepen (zoals castreren, onthoornen en het kappen van snavels), hoe is het transport geregeld (tijd, afstand) en hoe wordt het dier geslacht.

Transparancy

Deze score is alleen van toepassing bij keurmerken en logo's op voeding.

MilieuCentraal beoordeelt of de informatie die verstrekt wordt over het keurmerk of logo begrijpelijk, concreet en makkelijk te vinden is en of het keurmerk/logo verslag doet van resultaten. Hierbij toetst MilieuCentraal op het volgende:

- Vindbaarheid
 - Staan de (belangrijkste) eisen op de website van het keurmerk/logo en zijn ze daar makkelijk (met enkele logische muisklikken) te vinden?
- Begrijpelijkheid
 - Is de website in het Nederlands of Engels geschreven en zijn de eisen begrijpelijk voor de consument?
- Toetsbaarheid
 - O Zijn de eisen concreet en meetbaar? Bijvoorbeeld; '3 kippen per vierkante meter' tegen 'de dieren hebben voldoende ruimte'.
- Resultaten
 - o Doet het keurmerk/logo verslag van de resultaten, bijvoorbeeld in een jaarverslag?

Op elk onderdeel krijgt het keurmerk een score van 1-5. De laagste score, bepaalt het eindresultaat. Als het keurmerk geen verslag doet van de resultaten, wordt er een punt van de eindscore afgetrokken. Bijvoorbeeld: Een keurmerk scoort een 4 op vindbaarheid, een 5 op toetsbaarheid, een 3 op begrijpelijkheid en het doet verslag van de resultaten. De eindscore voor transparantie is dan een 3.

Monitoring (reliability)

De betrouwbaarheid van een keurmerk wordt ook beoordeelt door MilieuCentraal. Hierin wordt de vraag gesteld over hoe de controle geregeld is. Is deze controle onafhankelijk? Wordt dit uitgevoerd door een geaccrediteerde organisatie? En wat zijn de sancties voor een bedrijf als zij zich er niet aan houden?

De keurmerken krijgen in de voedingscategorieën een score van 1 tot 3, bij alle overige keurmerken is dit van 1 tot 5. Bij voeding staat de score gelijk aan de volgende gradaties:

- 1 Minder betrouwbaar keurmerk; er is geen onafhankelijke controle en/of transparant sanctiebeleid
- 2 Betrouwbaar keurmerk; er is controle door een onafhankelijke, maar niet geaccrediteerde partij óf het keurmerk is een 'associated member' van ISEAL Alliance. Er is ook een transparant sanctiebeleid
- 3 Zeer betrouwbaar keurmerk; er is controle door een onafhankelijke, geaccrediteerde partij óf het keurmerk is 'full member' van ISEAL Alliance. Er is ook een transparant sanctiebeleid.

Met een geaccrediteerde partij wordt bedoeld dat de controlerende partij geaccrediteerd is door de Raad voor Accreditatie of een vergelijkbare buitenlandse instantie. De ISEAL Alliance is een internationaal platform voor keurmerkeigenaren die samenwerken aan voortdurende verbetering van duurzaamheidsstandaarden.

De keurmerken worden door de volgende instanties gecontroleerd:

Keurmerk	Score	Controlerende instantie
Demeter	3/3	Control Union Certifications (Nederland), Integra en
		Certisys (Vlaanderen)
ЕКО	3/3	SKAL
Europees Keurmerk voor	3/3	SKAL
Biologisch		
Beter Leven 1, 2 & 3 ster	3/3	Vinçotte ISACert Nederland BV, Kiwa CBD / Kiwa
		VERIN, SGS Nederland BV, Producert
Milieukeur	3/3	SMK (onafhankelijk gecertificeerd)
Halal	3/3	Halal Voeding en Voedsel Keuringsdienst,
Liver (met Beter Leven 2 sterl	3/3	Halalcorrect, HIC en HQC Geaccrediteerde instantie die de Beter Leven sterren
Livar (met Beter Leven 3 ster)	3/3	
		controleert, geen onafhankelijke controle op de extra Livar-eisen.
Keten Duurzaam Varkensvlees	3/3	De Hoeve Certificering (uitvoering controles) en
Retell Duulzaalli Vaikelisviees	3/3	Certificatiebureau CGB (Onafhankelijke certificatie).
		Producert, Verin (IKB). Global G.A.P. (Varken van
		Morgen module). Beter Leven 1 ster.
France Limousin	1/3	Onduidelijk
Keten Duurzaam Rundvlees	3/3	"Een onafhankelijke, geaccrediteerde instantie
	0,0	controleert", onduidelijk welke instantie dit is
Label Rouge	3/3	Intern door ondernemingen zelf (zelfcontrole), ODG
		(interne controle), instantie die de certificaten
		toekent (externe controle)
Producert Scharrelvarkensvlees	3/3	Producert. Eigenaar is Varkenspost.nl
Producert Scharrelkippenvlees	3/3	Producert. Eigenaar is Varkenspost.nl
Producert Scharrelrundvlees	3/3	Producert. Eigenaar is Varkenspost.nl
Nieuwe Standaard Kip (Jumbo)	1/3	Isacert
Tante Door	1/3	Onduidelijk
Veldhoen	1/3	Onduidelijk
Doerak	1/3	Onduidelijk
Elita	1/3	Onduidelijk
Pluimgarantie	1/3	Onduidelijk

Annex II Questionnaire

Duurzaamheid in de Slagerij

Pagina 1
Goedendag,
Hartelijk dank dat u de tijd neemt om deze enquête in te vullen. Middels deze vragenlijst zal onderzocht worden hoe keurmerken gebruikt kunnen worden om de vleesconcepten in slagerijen duurzamer te maken. De resultaten worden anoniem verzameld en verwerkt.
Het invullen zal 5-10 minuten van uw tijd in beslag nemen.
Algemeen
Op deze pagina vindt u algemene vragen.
1. Wat is de naam van uw slagerij? Als u anoniem wilt blijven, hoeft u deze vraag niet te beantwoorden.
2. In welke regio is uw slagerij gevestigd? (verplichte vraag) *
Maak een keuze ▼
3. Welke diersoorten verkoopt u in uw slagerij? (verplichte vraag) *
Wanneer u geen van de 3 getoonde diersoorten verkoopt, is de enquête niet van toepassing op uw bedrijf.
☐ Kip
Rund
Varken

Ke	raag scheiden door middel van een komma. ent u geen keurmerken of bedrijfslogo's, vul dan "geen" in. *
Г	
_	
vv	elke van de volgende logo's uit deze lijst is u bekend? (verplichte vraag) *
\Box	Beefbest
C	Beemsterlands Varken
	Beter Leven
	Boerderijkip
	Demeter
	Doerak
L) EKO
L] Elita
L	Europees Keurmerk voor Biologisch
_	France Limousin
L	Gildehoen
_	Halal Kemper Kip
	Keten Duurzaam Rundvlees
	Keten Duurzaam Varkensvlees
] Krull
	Label Rouge
	Livar
\bar{C}	MilieuKeur
C	Nieuwe Standaard Kip
C	Pluimgarantie
C	Porkbest
۲	Porc d'or

stainability in the Butchery			N	1arjolijn Barte	en	Thesis Applied Animal Science		
	Producert S	Scharrelkippen	lees					
	Producert S	Scharrelrundvle	es					
	Producert S	Scharrelvarkens	svlees					
	Tante Door							
	Veldhoen							
	Wroetvarke	en						
	Geen van bovenstaande is mij bekend							
	Anders, na	melijk:						
	_							
6.	In hoeverre ho	udt u rekenin	g met het milieu	en dierenwelzij	n in de productie	/herkomst van	uw vlees?	
	(verplichte vra				•			
		Geen	Weinig	Neutraal	Een beetje	Veel	Geen mening	
	Milieubewust	0	\circ	0	0	0	0	
	Dierenwelzijn	0	0	0	0	0	0	
7.					et milieu en diere	enwelzijn in de	,	
	productie/herk	omst van vle	es? (verplichte v	raag) *				
		Geen	Weinig	Neutraal	Een beetje	Veel	Geen mening	
	Milieubewust	0	0	0	0	0	0	
	Dierenwelzijn	0	0	0	0	0	0	
8.	Wilt u uw antw	oorden op de	ze pagina nog to	pelichten?				

Kippenvlees

Op deze en de volgende pagina's, wordt gevraagd naar uw mening over bepaalde logo's. Dit zijn logo's die u tegen kunt komen in de slagerij. Al deze logo's zeggen iets over hoe het vlees is geproduceerd ten opzichte van het milieu en/of dierenwelzijn.

Marjolijn Barten

De vragen op deze pagina zijn gericht op de verkoop van kippenvlees. Indien u geen kippenvlees verkoopt, kunt u direct door naar de volgende pagina.

Verkoopt u kippenvlees met 1 of meerdere van de volgende logo's?

Beter Leven 1 ster	
Beter Leven 2 sterren	
Beter Leven 3 sterren	
Demeter	
EKO	
Europees Keurmerk voor Biologisch	
Label Rouge	
MilieuKeur	
Pluimgarantie	
Producert Scharrelkippenvlees	
Tante Door	
Veldhoen	
Gildehoen	
Boerderijkip	
Kemper Kip	
lk verkoop geen kippenvlees met keurmerken	
Anders, namelijk:]

10. In hoeverre vertrouwt u erop dat het vlees dat met de volgende logo's verkocht wordt, altijd volgens dezelfde garanties geproduceerd is?

Met de garanties worden de beloftes die het keurmerk maakt bedoeld, en of deze garanties nageleefd worden door de veehouder.

	Zeer onbetrouwbaar	Onbetrouwbaar	Neutraal	Betrouwbaar	Zeer betrouwbaar	Geen mening
Beter Leven 1 ster	0	0	0	0	0	O
Beter Leven 2 sterren	0	0	0	0	O	0
Beter Leven 3 sterren	0	0	0	0	\circ	0
Demeter	0	0	0	\circ	\circ	0
EKO	0	0	0	0	\circ	0
Europees Keurmerk voor Biologisch	0	0	0	0	\circ	0
Label Rouge	0	0	0	0	\circ	0
MilieuKeur	0	0	0	0	\circ	0
Pluimgarantie	0	0	\circ	0	0	0
Producert Scharrelkippenvlees	0	0	0	0	0	0
Tante Door	0	0	0	0	\circ	0
Veldhoen	0	0	0	\circ	\circ	0
Gildehoen	0	0	0	0	\circ	\circ
Boerderijkip	0	0	0	\circ	\circ	0
Kemper Kip	0	0	0	0	0	0
		0	0	0	0	0

11. In hoeverre vertrouwt u erop dat het uitgeleverde vlees daadwerkelijk afkomstig is van veehouderijen met deze garanties?

Met de garanties worden de beloftes die het keurmerk maakt bedoeld.

	Zeer		programmer record		Zeer	Geen
	onbetrouwbaar	Onbetrouwbaar	Neutraal	Betrouwbaar	betrouwbaar	mening
Beter Leven 1 ster	0	0	\circ	0	\circ	0
Beter Leven 2 sterren	0	0	\circ	\circ	\circ	\circ
Beter Leven 3 sterren	0	0	0	0	0	\circ
Demeter	0	0	0	\circ	\circ	0
EKO	0	0	0	0	\circ	0
Europees Keurmerk voor Biologisch	0	0	0	0	0	0
Label Rouge	0	0	0	0	\circ	\circ
MilieuKeur	0	0	0	0	0	\circ
Pluimgarantie	0	0	0	0	\circ	0
Producert Scharrelkippenvlees	0	0	0	0	\circ	0
Tante Door	0	0	0	0	\circ	0
Veldhoen	0	0	\circ	0	\circ	\circ
Gildehoen	0	0	0	0	\circ	\circ
Boerderijkip	0	0	0	0	\circ	0
Kemper Kip	0	0	0	0	\circ	\circ
	$\neg \circ$	\circ	\circ	\circ	\circ	\circ

12. Hoe transparant vindt u de volgende logo's?Met transparant wordt bedoeld hoe gemakkelijk de informatie te vinden is, en of deze goed te begrijpen is.

	Zeer				Zeer	Geen
	ontransparant	Ontransparant	Neutraal	Transparant	transparant	mening
Beter Leven 1 ster	0	0	0	0	0	0
Beter Leven 2 sterren	0	0	0	0	0	0
Beter Leven 3 sterren	0	0	0	0	0	\circ
Demeter	0	0	0	0	\circ	\circ
EKO	0	0	0	0	\circ	\circ
Europees Keurmerk voor Biologisch	0	0	0	0	0	0
Label Rouge	0	0	\circ	0	\circ	\circ
MilieuKeur	0	0	0	0	\circ	\circ
Pluimgarantie	0	0	\circ	0	0	0
Producert Scharrelkippenvlees	0	0	0	0	0	0
Tante Door	0	0	\circ	0	0	0
Veldhoen	0	0	\circ	0	\circ	0
Gildehoen	0	0	0	\circ	0	0
Boerderijkip	0	0	0	0	0	0
Kemper Kip	0	0	0	\circ	\circ	\circ
		0	0	0	0	0

13. Hoe goed voor het milieu vindt u de volgende logo's?
Hiermee doelen wij op de wijze waarop het logo zich onderscheidt van de wettelijke eisen.

	Zeer slecht	Slecht	Neutraal	Goed	Zeer goed	Geen mening
Beter Leven 1 ster	0	0	0	0	0	0
Beter Leven 2 sterren	\circ	0	0	0	0	0
Beter Leven 3 sterren	\circ	0	0	0	0	0
Demeter	\circ	0	0	0	0	0
EKO	\circ	0	0	0	0	0
Europees Keurmerk voor Biologisch	0	0	0	0	0	0
Label Rouge	0	0	0	0	\circ	\circ
MilieuKeur	0	\circ	0	0	\circ	\circ
Pluimgarantie	0	0	0	0	0	0
Producert Scharrelkippenvlees	0	0	0	0	\circ	0
Tante Door	0	0	0	0	0	0
Veldhoen	0	0	0	0	\circ	\circ
Gildehoen	0	\circ	0	0	0	0
Boerderijkip	0	\circ	0	0	0	0
Kemper Kip	0	\circ	0	0	0	0
	$\neg \circ$	\circ	\circ	\circ	0	\circ

15.

14. Hoe goed voor het dierenwelzijn vindt u de volgende logo's?
Hiermee doelen wij op de wijze waarop het logo zich onderscheidt van de wettelijke eisen.

Beter Leven 1 ster Beter Leven 2 sterren Beter Leven 3 sterren Demeter EKO Europees Keurmerk voor Biologisch Label Rouge MilieuKeur Pluimgarantie Producert Scharrelkippenvlees Tante Door Veldhoen Gildehoen Boerderijkip Kemper Kip	Zeer slecht	Slecht 000000000000000000000000000000000000	Neutraal	Goed O O O O O O O O O O O O O O O O O O O	Zeer goed () () () () () () () () () (Geen mening	
Wilt u uw antwoorden op deze pagina nog toelichten?							

Rundvlees

Verkoopt u rundvlees met 1 of meer van de volgende logo's?
Beter Leven 1 ster
Beter Leven 2 ster
Beter Leven 3 ster
Demeter
EKO
Elita
Europees Keurmerk voor Biologisch
France Limousin
Halal
Keten Duurzaam Rundvlees
MilieuKeur
Producert Scharrelrundvlees
Beefbest
lk verkoop geen rundvlees met keurmerken
Anders, namelijk:

17. In hoeverre vertrouwt u erop dat het vlees dat met de volgende logo's verkocht wordt, altijd volgens dezelfde garanties geproduceerd is?

Met de garanties worden de beloftes die het keurmerk maakt bedoeld, en of deze garanties nageleefd worden door de veehouder.

	Zeer				Zeer	Geen
	onbetrouwbaar	Onbetrouwbaar	Neutraal	Betrouwbaar	betrouwbaar	mening
Beter Leven 1 ster	0	0	0	0	0	0
Beter Leven 2 ster	0	0	0	\circ	\circ	0
Beter Leven 3 ster	0	0	0	\circ	\circ	0
Demeter	0	0	0	\circ	\circ	0
EKO	0	0	0	0	\circ	0
Elita	0	0	0	0	0	0
Europees Keurmerk voor Biologisch	0	0	0	0	0	0
France Limousin	0	0	0	0	\circ	0
MilieuKeur	0	0	0	0	0	0
Producert Scharrelrundvlees	0	0	0	0	0	0
Beefbest	0	0	0	0	0	0
	$\neg \circ$	0	\circ	0	\circ	\circ

18. In hoeverre vertrouwt u erop dat het uitgeleverde vlees daadwerkelijk afkomstig is van veehouderijen met deze garanties?

Met de garanties worden de beloftes die het keurmerk maakt bedoeld.

	Zeer				Zeer	Geen
	onbetrouwbaar	Onbetrouwbaar	Neutraal	Betrouwbaar	betrouwbaar	mening
Beter Leven 1 ster	0	0	\circ	0	0	0
Beter Leven 2 ster	0	0	\circ	\circ	\circ	0
Beter Leven 3 ster	0	0	0	\circ	\circ	0
Demeter	0	0	0	\circ	\circ	0
EKO	0	0	0	0	\circ	0
Elita	0	0	0	\circ	\circ	0
Europees Keurmerk voor Biologisch	0	0	0	\circ	0	0
France Limousin	0	0	0	\circ	0	0
MilieuKeur	0	0	0	0	\circ	0
Producert Scharrelrundvlees	0	0	0	0	\circ	0
Beefbest	0	0	0	\circ	\circ	0
	$\neg \circ$	0	0	0	0	0

19. Hoe transparant vindt u de volgende logo's?
Met transparant wordt bedoeld hoe gemakkelijk de informatie te vinden is, en of deze goed te begrijpen is.

	Zeer				Zeer	Geen
	ontransparant	Ontransparant	Neutraal	Transparant	transparant	mening
Beter Leven 1 ster	0	0	\circ	0	0	\circ
Beter Leven 2 ster	0	0	0	\circ	0	\circ
Beter Leven 3 ster	0	0	0	\circ	\circ	\circ
Demeter	0	0	0	\circ	\circ	\circ
EKO	0	0	0	\circ	\circ	\circ
Elita	0	0	0	0	0	0
Europees Keurmerk voor Biologisch	0	0	0	\circ	\circ	\circ
France Limousin	0	0	0	\circ	\circ	\circ
MilieuKeur	0	0	\circ	\circ	0	0
Producert Scharrelrundvlees	0	0	0	\circ	0	\circ
Beefbest	\circ	0	\circ	\circ	0	\circ
		0	0	0	0	0

20. Hoe goed voor het milieu vindt u de volgende logo's?
Hiermee doelen wij op de wijze waarop het logo zich onderscheidt van de wettelijke eisen.

	Zeer slecht	Slecht	Neutraal	Goed	Zeer goed	Geen mening
Beter Leven 1 ster	0	0	0	\circ	0	0
Beter Leven 2 ster	0	0	\circ	\circ	0	0
Beter Leven 3 ster	0	0	0	0	0	0
Demeter	0	0	\circ	\circ	0	0
EKO	0	0	\circ	0	0	0
Elita	0	0	0	0	0	\circ
Europees Keurmerk voor Biologisch	0	0	0	\circ	0	0
France Limousin	0	0	0	0	\circ	0
MilieuKeur	0	0	0	\circ	0	0
Producert Scharrelrundvlees	0	0	0	0	\circ	0
Beefbest	0	0	\circ	0	0	0
	10	\circ	0	\circ	0	\circ

21.	Hoe goed voor het dierenwelzijn vindt u de volgende logo's? Hiermee doelen wij op de wijze waarop het logo zich onderscheidt van de wettelijke eisen.							
	Deze vraag kunt u invullen op alle lo invullen.	go's die u ken	t. Kent u h	et logo niet?	Dan kunt ı	ı "geen meni	ng"	
	Beter Leven 1 ster Beter Leven 2 ster Beter Leven 3 ster Demeter EKO Elita Europees Keurmerk voor Biologisch France Limousin	Zeer slecht O O O O O O O O O O O O O O O O O O	Slecht	Neutraal O O O O O O	Goed O O O O O O	00000000	Geen mening O O O O O O O O O O O O O O O O O O O	
22.	MilieuKeur Producert Scharrelrundvlees Beefbest Wilt u uw antwoorden op deze pagin	0 0	O O O	0000	0000	0000	0000	

Varkensvlees

De vragen op deze pagina zullen gaan over de varkensvlees producten die u verkoopt. Verkoopt u geen varkensvlees, dan kunt u deze pagina overslaan.

Anders, namelijk:

Thesis Applied Animal Science

24. In hoeverre vertrouwt u erop dat het vlees dat met de volgende logo's verkocht wordt, altijd volgens dezelfde garanties geproduceerd is?

Met de garanties worden de beloftes die het keurmerk maakt bedoeld, en of deze garanties nageleefd worden door de veehouder.

	Zeer onbetrouwbaar	Onbetrouwbaar	Neutraal	Betrouwbaar	Zeer betrouwbaar	Geen mening
Beter Leven 1 ster	0	0	0	0	0	O
Beter Leven 2 ster	0	0	0	0	0	0
Beter Leven 3 ster	0	0	\circ	0	0	0
Demeter	0	0	0	0	\circ	\circ
Doerak	0	0	0	0	\circ	0
EKO	0	0	0	0	\circ	0
Europees Keurmerk voor Biologisch	0	0	0	0	0	0
Keten Duurzaam Varkensvlees	0	0	0	0	0	\circ
MilieuKeur	0	0	\circ	0	0	\circ
Producert Scharrelvarkensvlees	0	0	\circ	0	0	\circ
Livar	0	0	0	0	0	0
Wroetvarken	0	0	0	0	0	\circ
Krull	0	0	0	0	\circ	\circ
Porkbest	0	0	0	\circ	\circ	\circ
Porc d'or	0	0	0	0	\circ	0
Beemsterlands Varken	0	0	0	\circ	\circ	0
	$\neg \circ$	0	\circ	0	\circ	\circ

25. In hoeverre vertrouwt u erop dat het uitgeleverde vlees daadwerkelijk afkomstig is van veehouderijen met deze garanties?

Met de garanties worden de beloftes die het keurmerk maakt bedoeld.

	zeer onbetrouwbaar	Onbetrouwbaar	Neutraal	Betrouwbaar	betrouwbaar	mening
Beter Leven 1 ster	0	0	0	0	0	0
Beter Leven 2 ster	0	0	0	0	\circ	\circ
Beter Leven 3 ster	0	0	0	\circ	\circ	0
Demeter	0	0	0	0	\circ	0
Doerak	0	0	0	0	\circ	0
EKO	0	0	0	0	0	0
Europees Keurmerk voor Biologisch	0	0	\circ	\circ	0	\circ
Keten Duurzaam Varkensvlees	0	0	0	0	0	\circ
MilieuKeur	0	0	0	0	0	\circ
Producert Scharrelvarkensvlees	0	0	0	0	\circ	0
Livar	0	0	0	0	0	\circ
Wroetvarken	0	0	0	\circ	\circ	\circ
Krull	0	0	0	0	\circ	\circ
Porkbest	0	0	0	\circ	\circ	0
Porc d'or	0	0	0	0	\circ	0
Beemsterlands Varken	0	0	0	0	\circ	0
	$\neg \circ$	\circ	\circ	\circ	\circ	\bigcirc

26. Hoe transparant vindt u de volgende logo's?Met transparant wordt bedoeld hoe gemakkelijk de informatie te vinden is, en of deze goed te begrijpen is.

	Zeer ontransparant	Ontransparant	Neutraal	Transparant	Zeer transparant	Geen mening
Beter Leven 1 ster	0	O	0	Ó	0	0
Beter Leven 2 ster	0	0	0	0	0	0
Beter Leven 3 ster	0	0	0	\circ	\circ	\circ
Demeter	0	0	\circ	0	\circ	\circ
Doerak	0	0	\circ	0	\circ	0
EKO	0	0	0	0	\circ	0
Europees Keurmerk voor Biologisch	0	0	\circ	\circ	\circ	\circ
Keten Duurzaam Varkensvlees	0	0	0	\circ	\circ	\circ
MilieuKeur	0	0	\circ	\circ	\circ	0
Producert Scharrelvarkensvlees	0	0	0	\circ	\circ	\circ
Livar	0	0	\circ	\circ	\circ	\circ
Wroetvarken	0	0	\circ	\circ	\circ	\circ
Krull	0	0	\circ	\circ	\circ	\circ
Porkbest	0	0	\circ	\circ	\circ	\circ
Porc d'or	0	0	\circ	\circ	\circ	\circ
Beemsterlands Varken	0	0	\circ	\circ	\circ	0
	1 0	0	\circ	0	0	0

27. Hoe goed voor het milieu vindt u de volgende logo's?
Hiermee doelen wij op de wijze waarop het logo zich onderscheidt van de wettelijke eisen.

	Zeer slecht	Slecht	Neutraal	Goed	Zeer goed	Geen mening
Beter Leven 1 ster	0	0	\circ	0	\circ	0
Beter Leven 2 ster	0	0	\circ	0	\circ	0
Beter Leven 3 ster	0	0	\circ	0	\circ	0
Demeter	\circ	0	\circ	0	\circ	0
Doerak	0	0	0	0	0	\circ
EKO	0	0	0	0	0	\circ
Europees Keurmerk voor Biologisch	0	\circ	0	0	\circ	0
Keten Duurzaam Varkensvlees	\circ	\circ	0	0	0	\circ
VilieuKeur	0	0	0	0	0	0
Producert Scharrelvarkensvlees	0	0	0	0	0	0
Livar	0	0	\circ	0	\circ	\circ
Vroetvarken	0	0	\circ	0	\circ	\circ
Krull	0	\circ	0	0	\circ	\circ
Porkbest	0	0	0	0	\circ	\circ
Porc d'or	\circ	\circ	\circ	\circ	\circ	\circ
Beemsterlands Varken	0	\circ	\circ	\circ	0	0
	$\neg \circ$	\circ	0	\circ	0	\circ

29.

28. Hoe goed voor het dierenwelzijn vindt u de volgende logo's?
Hiermee doelen wij op de wijze waarop het logo zich onderscheidt van de wettelijke eisen.

Beter Leven 1 ster Beter Leven 2 ster Beter Leven 3 ster Demeter	Zeer slecht	Slecht	Neutraal O O	Goed O	Zeer goed O O O	Geen mening O O O
Doerak EKO Europees Keurmerk voor Biologisch Keten Duurzaam Varkensvlees	0000	0000	0000	0000	0000	00000000000
MilieuKeur Producert Scharrelvarkensvlees Livar	000	000	000	000	000	000
Wroetvarken Krull Porkbest	000	000	000	000	000	000
Porc d'or Beemsterlands Varken	0	000	000	000	000	000
Wilt u uw antwoorden op deze pagina	a nog toelicht	en?				

Sustainal	tainability in the Butchery	Marjolijn Barten	Thesis Applied Animal Scie
Eine	de		
 ,	ue		
30.	Heeft u nog opmerkingen?		
	2		
31.	Wanneer u op de hoogte gehoude mailadres achterlaten.	n wilt worden over de resultaten van	dit onderzoek, kunt u hieronder uw e-
		_	

» Redirection to final page of Enquêtes Maken (wijzigen)

Annex III Results of Questionnaire

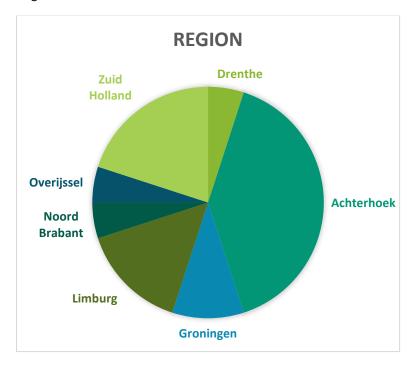
General.

Question 1, 2 & 3

Participants: 20 in total, 2 anonymous:

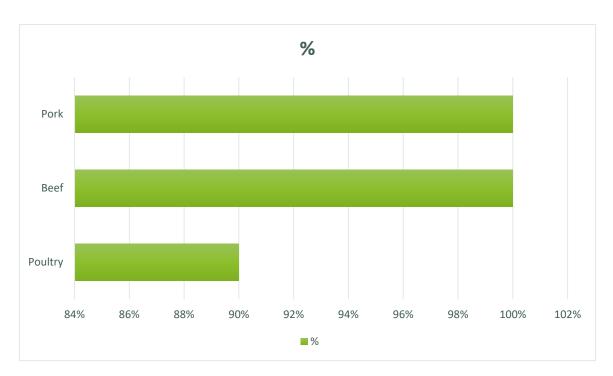
- De Schelfer
- Keurslagerij Gleis
- Kuenen
- Keurslagerij Kamperman
- Slagerij Wassink
- Slagerij Scholtes
- Vleeschmeester
- De Groene Weg slagerij Theo Pronk
- Bolscher, Meerdanvlees
- Slagerij J Hemmen
- Jellema Keurslagerijen
- Post Slagerij en Partyservice
- Slagerij Pessers
- Slagerij Jan Pinckaers
- Slagerij Arno de Best
- Beerten
- Slagerij Theo & Yvette Viets
- Slagerij Veugen

Region:



 $Other\ possible\ answers\ (not\ given):\ Flevoland,\ Friesland,\ Gelderland,\ Noord\ Holland,\ Utrecht\ \&\ Zeeland$

Types of meat sold in the butcheries:

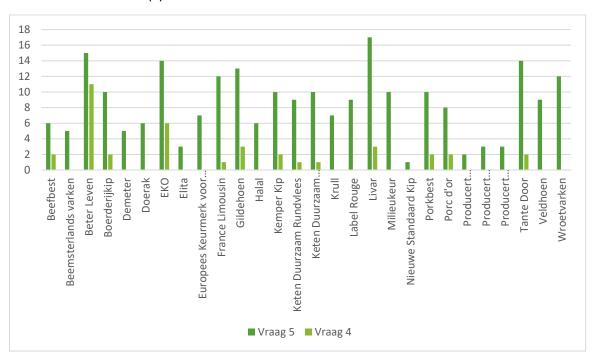


Question 4 & 5

Quality labels known by the respondents;

- Beefbest (2)
- Beter Leven (11)
- BIO (1)
- Boerderij Kip (2)
- Boeuf d'or (1)
- BOP (1)
- De Groene Weg (1)
- Duroc d'olive (2)
- EKO (6)
- Fairtrade (1)
- France Limousin (1)
- Gildehoen (3)
- Gildeslager (3)
- Heidevarken (1)
- Heydehoeve varken (1)
- Hoeve Varken
- Kemper Kip (2)
- Keten Duurzaam Rundvlees (1)
- Keten Duurzaam Varkensvlees (1)
- Keur (1)
- Keurslager (5)
- Livar (3)
- Natuurlijk scharrelvlees (1)
- Porc d'olive (1)
- Porc d'or (2)
- Porc Fermier (1)
- Porc Planair (1)

- Porkbest (2)
- Poule de Yvonne (1)
- PQA Varken (2)
- Riellanderpracht (1)
- Ruygveen varken (1)
- Scharrel (1)
- Scharrelhoen (1)
- SKAL (5)
- Tante Door (2)
- Topslagers (1)
- Uw slager (1)
- Vleevee Integratie Twente (1)
- Wroetvarken (2)
- Zaak vol Smaak (1)



Question 6 & 7

Question 6: To what extent do you consider the environment and animal welfare in the production / origin of your meat? SPSS codename: but_env (environment) & but_wel (welfare).

Question 7: To what extent do you think the supermarket takes account of the environment and animal welfare in the production / origin of meat? SPSS codename: sup_env (environment) & sup_wel (welfare).

Obligated question, respondents had to fill in this question.

Total respondents: 20.

Answer possibilities: 1= none, 2= little, 3= neutral, 4= a bit, 5= a lot, 6= no opinion (classified as "missing" in SPSS dataset).

Statistics

		but_env	but_wel	sup_env	sup_wel
N	Valid	20	20	19	19
	Missing	0	0	1	1
Median		5,00	5,00	4,00	3,00

Statistics

		but_env	but_wel	sup_env	sup_wel
N	Valid	20	20	19	19
	Missing	0	0	1	1
Mean		4,35	4,75	3,32	3,11
Media	ın	5,00	5,00	4,00	3,00
Mode		5	5	4	3ª
Sum		87	95	63	59

a. Multiple modes exist. The smallest value is shown

Question 8

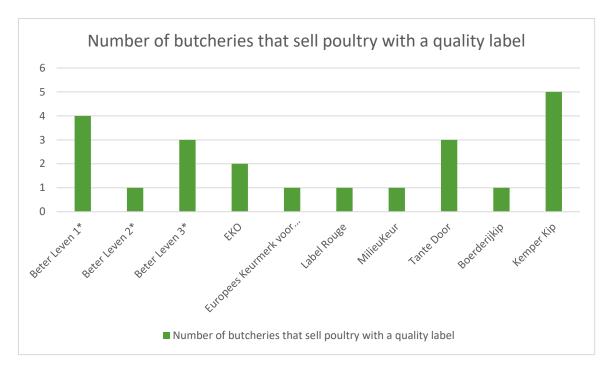
- Op wereldschaal presteert Nederland heel goed. Mede door de aandacht die gecreëerd is waardoor supermarkten wel moeten. De kwaliteit van het Nederlandse product door de kwaliteit van het Nederlandse water en de Nederlandse dierenartsenij en de Nederlandse voerinkoop is top van de wereld. De diversificatie binnen Nederland met alle keurmerken, vinden wij ondoorzichtig en afleiden van het Nederlandse product.
- Vraag 7: Kan ik niet beoordelen!
- de supermarkt doet alleen wat nodig is om de consument de indruk te geven dat de supermarktketen goed bezig is.
- Zoals het beste uitkomt.
- Nee
- Nvt
- Bij de Supermarkten gaat het om zoveel mogelijk klanten binnen "lokken", Millieubewust en Dierenwelzijn is volgens mij geen keuze van de supermarkt maar een keuze om de consument die dat vraagt binnen te krijgen.Het zit veelal niet in het bedrijfsprofiel.
- Supermarkt doet er wel aan mee of loopt voorop maar niet dat ze doelbewust de affectie hiervoor hebben
- Bij de supers zeggen ze dat ze het doen , maar uiteindelijk gaat ales om de prijs tozv de concurent. marktaandeel is belangrijker als de boer
- Wij verkopen al vanag 1987 scharrelvlees, toen nog niet bekend bij grote publiek,
- Het groot winkel bedrijf kan niet achter blijven , om zo veel mogelijk consumenten te bereiken spelen zij hier ook zeer goed op in,
- Nee
- Er is een groot verschil tussen wat er gecommuniceerd wordt naar de consument en daadwerkelijk gedaan wordt op dit gebied.

Chicken.

Question 9

Which quality labels are sold?

Respondents: 16



3 butcheries don't sell poultry with a quality label or company logo. 3 butcheries answered "Other" and specified this as follows: WellFoort, Harry's Farm (own meat) and PQA Scharrel Varkens.

Question 10, 11, 12, 13 & 14

Codes for labels (17): bl1 (beter leven 1*), bl2 (beter leven 2*), bl3 (beter leven 3*), dem (demeter), eko (EKO), ekb (Europees Keurmerk voor Biologisch), lar (Label Rouge), mik (MilieuKeur), plg (Pluimgarantie), psk (Producert Scharrelkippenvlees), tad (Tante Door), veh (Veldhoen), gih (Gildehoen), bok (Boerderijkip), kek (Kemper Kip), eis (Eigen slacht), haf (Harry's Farm).

Answer possibilities: 1= very bad, 2= bad, 3= neutral, 4= good, 5= very good, 6= no opinion (classified as missing)

Question 10: To what extent do you trust that the meat sold with the following logos is always produced according to the same guarantees? SPSS code: trust1_+label 16 respondents.

Statistics

		trust1_bl1	trust1_bl2	trust1_bl3	trust1_dem	trust1_eko	trust1_ekb	trust1_lar	trust1_mik
N	Valid	12	12	12	5	11	8	6	8
	Missing	4	4	4	11	5	8	10	8
Media	an	3,00	3,50	4,00	5,00	4,00	3,50	4,00	3,50

Statistics

			trust1_plg	trust1_psk	trust1_tad	trust1_veh	trust1_gih	trust1_bok	trust1_kek	trust1_eis	trust1_haf
Γ	N	Valid	3	5	10	6	9	9	9	1	1
ı		Missing	13	11	6	10	7	7	7	15	15
L	Median		3,00	3,00	4,00	3,00	4,00	4,00	4,00	5,00	5,00

Question 11: To what extent do you trust that the meat delivered comes from livestock farms with these guarantees? SPSS code: trust2_+label

Statistics

		trust2_bl1	trust2_bl2	trust2_bl3	trust2_dem	trust2_eko	trust2_ekb	trust2_lar	trust2_mik
Ν	Valid	10	9	10	4	8	5	3	5
	Missing	0	1	0	6	2	5	7	5
Media	n	3,50	4,00	3,50	3,00	3,00	3,00	4,00	3,00

Statistics

		trust2_plg	trust2_psk	trust2_tad	trust2_veh	trust2_gih	trust2_bok	trust2_kek	trust2_eis	trust2_haf
N	Valid	2	3	5	3	6	6	7	1	1
	Missing	8	7	5	7	4	4	3	9	9
Media	n	3,00	3,00	5,00	5,00	4,00	4,00	3,00	5,00	5,00

Question 12: How transparent do you find the following logos? SPSS code: trans_+label 16 respondents

Statistics

		trans_bl1	trans_bl2	trans_bl3	trans_dem	trans_eko	trans_ekb	trans_lar	trans_mik
N	Valid	11	10	11	5	10	7	5	6
	Missing	0	1	0	6	1	4	6	5
Median	ı	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00

Statistics

		trans_plg	trans_psk	trans_tad	trans_veh	trans_gih	trans_bok	trans_kek	trans_eis	trans_haf
N	Valid	2	3	5	3	6	6	8	1	1
	Missing	9	8	6	8	5	5	3	10	10
Media	n	3,50	3,00	4,00	4,00	4,00	4,00	4,00	5,00	5,00

Question 13: How good for the environment do you find the following logos? SPSS code: envi_+label

16 respondents

Statistics

		envi_bl1	envi_bl2	envi_bl3	envi_dem	envi_eko	envi_ekb	envi_lar	envi_mik
N	Valid	9	9	10	6	9	7	4	5
	Missing	1	1	0	4	1	3	6	5
Median	ı	3,00	3,00	4,00	4,00	4,00	4,00	2,50	4,00

Statistics

		envi_plg	envi_psk	envi_tad	envi_veh	envi_gih	envi_bok	envi_kek	envi_eis	envi_haf
N	Valid	2	3	6	3	6	7	6	1	1
	Missing	8	7	4	7	4	3	4	9	9
Media	n	2,50	2,00	3,50	3,00	3,50	3,00	3,50	5,00	5,00

Question 14: How good for animal welfare do you find the following logos? SPSS code: welf_+label

16 respondents

Statistics

		welf_bl1	welf_bl2	welf_bl3	welf_dem	welf_eko	welf_ekb	welf_lar	welf_mik
N	Valid	10	10	11	6	10	7	5	5
	Missing	1	1	0	5	1	4	6	6
Media	an	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00

Statistics

		welf_plg	welf_psk	welf_tad	welf_veh	welf_gih	welf_bok	welf_kek	welf_eis	welf_haf
N	Valid	3	4	6	4	5	7	7	1	1
	Missing	8	7	5	7	6	4	4	10	10
Median	1	4,00	3,50	4,00	4,00	4,00	4,00	4,00	5,00	5,00

Median all questions including score of MilieuCentraal

	Trust 1		Trust 2		Transpa		Environ	ment	Welfare	
	Enq	Мс	Enq	Mc	Enq	Мс	Enq	Мс	Enq	Мс
Bl1	3	3/3	3,5	3/3	4	5	3	0	4	3
BI2	3,5	3/3	4	3/3	4	5	3	0	4	4
BI3	4	3/3	3,5	3/3	4	5	4	0	4	5
Dem	5	3/3	3	3/3	4	4	4	4	4	5
Eko	4	3/3	3	3/3	4	4	4	4	4	5
Ekb	3,5	3/3	3	3/3	4	4	4	4	4	5
Lar	4	3/3	4	3/3	4	2	2,5	0	4	4
Mik	3,5	3/3	3	3/3	4	4	4	4	4	2
Plg	3	1/3	3	1/3	3,5	1	2,5	0	4	1
Psk	3	3/3	3	3/3	3	0	2	0	3,5	3
Tad	4	1/3	5	1/3	4	1	3,5	2	4	1
Veh	3	1/3	5	1/3	4	1	3	0	4	3
Gih	4		4		4		3,5		4	
Bok	4		4		4		3		4	
Kek	4		3		4		3,5		4	
Eis	5		5		5		5		5	
Haf	5		5		5		5		5	

Question 15

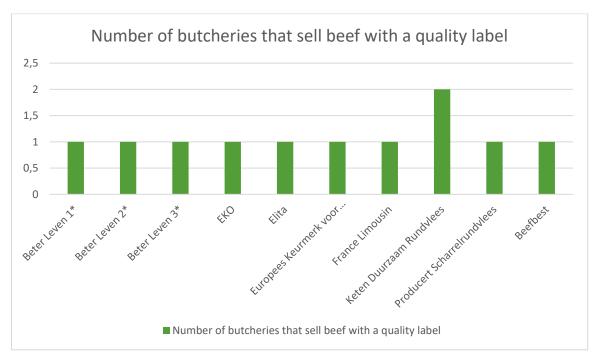
- Milieukeur bestaat dacht ik toch niet meer, geen deelnemers meer
- Gezien we zelf slachten zijn zowel de producent van varkens en runderen mij bekend, dieren worden gemest binnen een straal van 5 kilometer en geslacht in een klein slachthuis op nog geen kilometer van ons bedrijf.
- nvt
- Zeker, we vertrouwden niemand meer of vinden dat de certificerende party niet thuis hoort in de keten, en zijn daarom begonnen met het opzetten van een eigen keten, met een eigen boerderij
- ben niet bezig met kip keurmerken.
- naar mijn mening zijn er te veel keurmerken en logo,s, de consument weet op niet meer hoe/en wat er te koop is,
- hoe hoger het dierwelzijn hoe slechter het milieu.
- de vraag stellingen vind ik te zwart wit.

Beef.

Question 16

Which quality labels are sold?

Respondents: 14



2 butcheries said that they do not sell beef with quality labels, 5 butcheries responded with "other" and gave the following answers: Beef from own region, own livestock, own slaughter, Harry's farm, from own stable.

Question 17, 18, 19, 20 & 21

Codes for labels (17): bl1 (beter leven 1*), bl2 (beter leven 2*), bl3 (beter leven 3*), dem (demeter), eko (EKO), eli (elita), ekb (Europees Keurmerk voor Biologisch), frl (France Llimousin), kdr (keten duurzaam rundvlees), mik (milieukeur), psr (producert scharrelrundvlees), beb (beefbest), eis (eigen slacht.

Answer possibilities: 1= very bad, 2= bad, 3= neutral, 4= good, 5= very good, 6= no opinion (classified as missing)

Question 17: To what extent do you trust that the meat sold with the following logos is always produced according to the same guarantees? SPSS code: trust1 +label

Respondents: 13

Statistics

		trust1_bl1	trust1_bl2	trust1_bl3	trust1_dem	trust1_eko	trust1_eli
N	Valid	7	8	8	4	8	2
	Missing	4	3	3	7	3	9
Mediar	n	4,00	4,00	4,50	4,50	4,00	3,00

Statistics

		trust1_ekb	trust1_frl	trust1_mik	trust1_psr	trust1_beb	trust1_eis
N	Valid	5	5	4	4	4	1
1	Missing	6	6	7	7	7	10
Media	in	5,00	4,00	4,00	3,50	3,00	5,00

Question 18: To what extent do you trust that the meat delivered comes from livestock farms with these guarantees? SPSS code: trust2_+label

Respondents: 13

Statistics

		trust2_bl1	trust2_bl2	trust2_bl3	trust2_dem	trust2_eko	trust2_eli
N	Valid	7	8	9	5	8	2
	Missing	2	1	0	4	1	7
Media	n	4,00	4,00	4,00	4,00	4,00	2,50

Statistics

		trust2_ekb	trust2_frl	trust2_mik	trust2_psr	trust2_beb	trust2_eis
Ν	Valid	6	4	4	4	4	1
	Missing	3	5	5	5	5	8
Media	in	5,00	2,50	3,50	3,00	3,00	5,00

Question 19: How transparent do you find the following logos? SPSS code: trans_+label Respondents: 13

Statistics

		trans_bl1	trans_bl2	trans_bl3	trans_dem	trans_eko	trans_eli
١	V Valid	7	8	8	5	8	3
ı	Missing	1	0	0	3	0	5
٨	Median	4,00	3,50	3,50	3,00	4,00	3,00

Statistics

		trans_ekb	trans_frl	trans_mik	trans_psr	trans_beb	trans_eis
N	Valid	6	5	4	4	4	1
	Missing	2	3	4	4	4	7
Medi	ian	5,00	3,00	4,00	3,00	2,50	5,00

Question 20: How good for the environment do you find the following logos? SPSS code: envi +label

Respondents: 13

Statistics

		envi_bl1	envi_bl2	envi_bl3	envi_dem	envi_eko	envi_eli
N	Valid	6	7	7	4	7	1
	Missing	1	0	0	3	0	6
Media	an	3,00	3,00	3,00	5,00	5,00	3,00

Statistics

		envi_ekb	envi_frl	envi_mik	envi_psr	envi_beb	envi_eis
N	Valid	5	3	3	3	3	1
	Missing	2	4	4	4	4	6
Mediar	1	4,00	3,00	4,00	3,00	3,00	5,00

Question 21: How good for animal welfare do you find the following logos? SPSS code: welf +label

Respondents: 13

Statistics

		welf_bl1	welf_bl2	welf_bl3	welf_dem	welf_eko	welf_eli
N	Valid	7	8	8	4	8	2
ı	Missing	1	0	0	4	0	6
M	edian	4,00	4,00	4,50	4,50	4,00	3,50

Statistics

		welf_ekb	welf_frl	welf_mik	welf_psr	welf_beb	welf_eis
N	Valid	5	5	4	3	4	1
	Missing	3	3	4	5	4	7
Mediar	ı	5,00	4,00	4,00	3,00	3,50	5,00

Median all questions including score of MilieuCentraal

	Trust 1		Trust 2	,	Transpa	rency	Environ	ment	Welfare	:
	Enq	Mc	Enq	Мс	Enq	Mc	Enq	Mc	Enq	Mc
BI1	4	3/3	4	3/3	4	5	3	0	4	3
BI2	4	3/3	4	3/3	3,5	5	3	0	4	4
BI3	4,5	3/3	4	3/3	3,5	5	3	0	4,5	5
Dem	4,5	3/3	4	3/3	3	4	5	4	4,5	5
Eko	4	3/3	4	3/3	4	4	5	4	4	5
Eli	3	1/3	2,5	1/3	3	0	3	0	3,5	2
Ekb	5	3/3	5	3/3	5	4	4	4	5	5
Frl	4	1/3	2,5	1/3	3	3	3	3	4	4
Mik	4	3/3	3,5	3/3	4	4	4	4	4	2
Psr	3,5	3/3	3	3/3	3	0	3	0	3	3
Beb	3		3		2,5		3		3,5	
Eis	5		5		5		5		5	

Question 22

Ik ken geen beter leven 1 ster rundvlees (misleidende vraag)

- Eigen slacht vaste leveranciers
- nvt
- zelfde antwoorden als vorige pagina!
- te veel logo en keurmerken,
- geen ervaring mee koopt het vlees bij een vaste mester die is KDR gekwalificeerd. weet dat er merknamen zijn waar de beloften in twijfel kunnen worden getrokken.

Pig.

Question 23



1 respondent said to not sell pork with any quality label or company logo, 4 said "other" and specified as follows: Region, own slaughter, own fattener, PQA free range pig.

Question 24, 25, 26, 27 & 28

Codes for labels (17): bl1 (beter leven 1*), bl2 (beter leven 2*), bl3 (beter leven 3*), dem (demeter), doe (Doerak), eko (EKO), ekb (Europees Keurmerk voor Biologisch), kdv (Keten duurzaam varkensvlees), mik (MilieuKeur), psv (Producert Scharrelvarkensvlees), liv (Livar), wrv (Wroetvarken), kru (Krull), pob (Porkbest), pod (Porc d'or), bev (Beemsterland varken), eis (Eigen slacht).

Answer possibilities: 1= very bad, 2= bad, 3= neutral, 4= good, 5= very good, 6= no opinion (classified as missing)

Respondents: 13

Question 24: To what extent do you trust that the meat sold with the following logos is always produced according to the same guarantees? SPSS code: trust1_+label

Statistics

		trust1_bl1	trust1_bl2	trust1_bl3	trust1_dem	trust1_doe	trust1_eko	trust1_ekb	trust1_kdv
N	Valid	9	7	7	3	1	7	5	3
	Missing	0	2	2	6	8	2	4	6
Mediar	n	4,00	4,00	4,00	4,00	4,00	5,00	5,00	4,00

Statistics

		trust1_mik	trust1_psv	trust1_liv	trust1_wrv	trust1_kru	trust1_pob	trust1_pdo	trust1_bev	trust1_eis
N	Valid	3	3	8	7	4	2	2	2	1
	Missing	6	6	1	2	5	7	7	7	8
Medi	an	4,00	3,00	4,00	4,00	3,50	5,00	4,00	4,00	5,00

Question 25: To what extent do you trust that the meat delivered comes from livestock farms with these guarantees? SPSS code: trust2 +label

Statistics

		trust2_bl1	trust2_bl2	trust2_bl3	trust2_dem	trust2_doe	trust2_eko	trust2_ekb	trust2_kdv
N	Valid	9	7	7	3	1	6	4	3
	Missing	0	2	2	6	8	3	5	6
Mediar	1	4,00	4,00	4,00	4,00	5,00	4,00	5,00	4,00

Statistics

			trust2_mik	trust2_psv	trust2_liv	trust2_wrv	trust2_kru	trust2_pob	trust2_pdo	trust2_bev	trust2_eis
Г	V	Valid	3	3	6	6	4	2	2	2	1
ı		Missing	6	6	3	3	5	7	7	7	8
1	Median		4,00	3,00	5,00	4,50	4,00	5,00	4,00	4,00	5,00

Question 26: How transparent do you find the following logos? SPSS code: trans +label

Statistics

		trans_bl1	trans_bl2	trans_bl3	trans_dem	trans_doe	trans_eko	trans_ekb	trans_kdv
N	Valid	8	7	7	3	2	7	4	3
	Missing	0	1	1	5	6	1	4	5
Media	ın	4,00	4,00	4,00	5,00	4,50	4,00	5,00	4,00

Statistics

		trans_mik	trans_psv	trans_liv	trans_wrv	trans_kru	trans_pob	trans_pdo	trans_bev	trans_eis
Ν	Valid	3	3	7	5	3	2	2	2	1
	Missing	5	5	1	3	5	6	6	6	7
Med	dian	4,00	3,00	5,00	5,00	5,00	4,50	4,50	4,00	5,00

Question 27: How good for the environment do you find the following logos? SPSS code: envi_+label

Statistics

		envi_bl1	envi_bl2	envi_bl3	envi_dem	envi_doe	envi_eko	envi_ekb	envi_kdv
N	Valid	8	7	7	4	1	7	3	3
	Missing	0	1	1	4	7	1	5	5
Media	an	4,00	4,00	4,00	4,50	2,00	5,00	4,00	4,00

Statistics

		envi_mik	envi_psv	envi_liv	envi_wrv	envi_kru	envi_pob	envi_pdo	envi_bev	envi_eis
N	Valid	3	2	5	5	4	2	2	2	1
	Missing	5	6	3	3	4	6	6	6	7
Mediar	1	5,00	3,50	4,00	5,00	4,00	3,50	3,50	3,50	5,00

Question 28: How good for animal welfare do you find the following logos? SPSS code: welf_+label

Statistics

		welf_bl1	welf_bl2	welf_bl3	welf_dem	welf_doe	welf_eko	welf_ekb	welf_kdv
N	Valid	8	7	7	4	1	7	4	3
	Missing	0	1	1	4	7	1	4	5
Mediar	n	3,50	4,00	5,00	4,50	2,00	5,00	5,00	4,00

Statistics

		welf_mik	welf_psv	welf_liv	welf_wrv	welf_kru	welf_pob	welf_pdo	welf_bev	welf_eis
Ν	Valid	3	3	7	5	4	2	2	2	1
	Missing	5	5	1	3	4	6	6	6	7
Media	n	4,00	3,00	4,00	5,00	3,50	3,50	3,50	3,50	5,00

Median all questions including score of MilieuCentraal

	Trust 1		Trust 2		Transpa	rency	Environ	ment	Welfare	:
	Enq	Mc	Enq	Mc	Enq	Mc	Enq	Mc	Enq	Mc
BI1	4	3/3	4	3/3	4	5	4	0	3,5	3
BI2	4	3/3	4	3/3	4	5	4	0	4	4
BI3	4	3/3	4	3/3	4	5	4	0	5	5
Dem	4	3/3	4	3/3	5	4	4,5	4	4,5	5
Doe	4	1/3	5	1/3	4,5	0	2	0	2	3
Eko	5	3/3	4	3/3	4	4	5	4	5	5
Ekb	5	3/3	5	3/3	5	4	4	4	5	5
Kdv	4	3/3	4	3/3	4	4	4	3	4	2
Mik	4	3/3	4	3/3	4	4	5	4	4	2
Psv	3	3/3	3	3/3	3	0	3,5	0	3	4
Liv	4	3/3	5	3/3	5	2	4	3	4	5
Wrv	4		4,5		5		5		5	
Kru	3,5		4		5		4		3,5	
Pob	5		5		4,5		3,5		3,5	
Pdo	4		4		4,5		3,5		3,5	
Bev	4		4		4		3,5		3,5	
Eis	5		5		5		5		5	

Question 29

- Porc d'or is toch failliet?
- nvt
- deze ook.
- te veel keur merken en logo,s
- ken niet alle merknamen persoonlijk, weet wel dat er bij een aantal merknamen de betrouwbaarheid van de beloften die gedaan worden niet erg groot is. of waar de merknaam weinig of geen meerwaarde heeft ten opzichte van het regulier.

Closing

Question 30

- na
- eenheid en duidelijkheid voor de consument
- voor de slager is het al lastig om alle keurmerken en namen te onderscheiden. laat staan voor de consumenten. er zijn ook namen die weinig of geen verschil maken met regulier. hier mag best meer duidelijkheid in komen. ook richting de consumenten.

Question 31

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Annex IVCalculations of Quality Labels and Company Logos in Supermarkets

Albert Heijn:

	Soort	Aantal	Percentage
KIP	Totaal	108	100%
	Halal	7	6,5%
	Standaard	60	55,56%
	Scharrel (1* Beter Leven)	21	19,44%%
	Scharrel (2* Beter Leven)	6	5,56%
	Biologisch (3* Beter Leven +	10	9,3%
	Europees Keurmerk Biologisch)		
	Frans (3* Beter Leven)	1	0,93%
	Frans (3* Beter Leven + Label Rouge)	3	2,78%
	Totaal keurmerk	48	44,44%
	Totaal bedrijfslogo	0	0%
	Totaal zonder keurmerk	60	55,56%
RUND	Totaal	106	100%
	Standaard	77	72,64%
	Biologisch (3* Beter Leven)	15	14,15%
	Greenfields	13	12,26%
	Halal	1	0,94%
	Totaal keurmerk	16	15,09%
	Totaal bedrijfslogo	13	12,26%
	Totaal zonder keurmerk	77	72,64%
VARKEN	Totaal	122	100%
	Standaard	11	9,02%
	Standaard (1* Beter Leven)	97	79,51%
	Scharrel (2* Beter Leven)	5	4,1%
	Biologisch (3* Beter Leven +	9	7,38%
	Europees Keurmerk Biologisch)		
	Totaal keurmerk	111	90,98%
	Totaal bedrijfslogo	0	0%
	Totaal zonder keurmerk	11	9,02%
TOTAAL	Totaal	336	100%
	Totaal keurmerk	175	52,08%
	Totaal bedrijfslogo	13	3,87%
	Totaal zonder keurmerk	148	44,05%

Jumbo:

	Soort	Aantal	Percentage
KIP	Totaal	98	100%
	Standaard	1	1,02%
	Standaard (Jumbo Nieuwe	73	74,49%
	Standaard Kip)		
	Scharrel (1* Beter Leven)	15	15,31%

Marjolijn Barten

	Biologisch (3* Beter Leven +	9	9,18%
	Europees Keurmerk Biologisch)		
	Totaal keurmerk	24	24,49%
	Totaal bedrijfslogo	73	74,49%
	Totaal zonder keurmerk	1	1,02%
RUND	Totaal	50	100%
	Standaard	23	46%
	Jumbo Iers Rund	21	42%
	Beter Leven 1*	1	2%
	Biologisch (3* Beter Leven +	5	10%
	Europees Keurmerk Biologisch)		
	Totaal keurmerk	6	12%
	Totaal bedrijfslogo	21	42%
	Totaal zonder keurmerk	23	46%
VARKEN	Totaal	102	100%
	Standaard	2	1,96%
	Standaard (1* Beter Leven)	92	90,20%
	Biologisch (3* Beter Leven +	8	7,84%
	Europees Keurmerk Biologisch)	100	00.040/
	Totaal keurmerk	100	98,04%
	Totaal bedrijfslogo	0	0%
	Totaal zonder keumerk	2	1,96%
		0-0	1000/
TOTAAL	Totaal	250	100%
	Totaal keurmerk	130	52%
	Totaal bedrijfslogo	94	37,60%
	Totaal zonder keurmerk	26	10,40%

	Aantal	Percentage
Totaal	586	100%
Met keurmerk	305	52,05%
Met bedrijfslogo	107	18,26%
Zonder keurmerk debedriifslogo	f 174	29,69%

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Annex VI Consent form

Consent Form for inclusion and availability of graduation paper in a digital repository

Van Hall Larenstein, University of applied sciences (referred to below as "the *Hogeschool*") has set up a digital repository via which papers produced by its students in the context of their studies will be made available to third parties. This will facilitate the process of creating, acquiring, and sharing knowledge within the education sector.

The papers concerned will be retained in the repository for a minimum period of seven years so as to be available to potential users based both at the *Hogeschool* and elsewhere. By filling in this form, the student consents to his/her paper being included in the repository and made available.

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 $^{^{\}mathrm{1}}$ Or a similar graduation product, for example a bachelor's thesis or multimedia product

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CONSENT FORM

Date	
Name of the student	
Email address	
Study programme	
Topic of work/thesis	