



**Animal welfare in livestock
production systems – how well do
New Zealand farmers perform and
where can we improve?**

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Executive Summary

Animal welfare in New Zealand agriculture is a vital part of our “brand” as an exporting country. Both nationally and globally, consumers are expecting more and more transparency throughout the food supply chain. With society’s collective conscience adapting an increased focus on the ethical treatment of animals, we as members of the agricultural community have more and more reason to ensure that our whole industry is aiming to be above reproach on this matter. However, as there continue to be articles in the media exposing cases of animal neglect or abuse, we must acknowledge as an industry that there is room to improve. The problem the primary sector faces is: how can we collectively improve animal welfare in a practical, collaborative and sustainable way? In doing so, the aim is to meet the values and needs of our global consumers and maintain our social licence to farm. With access to information at an all-time high, any abusive or negligent behaviour leaves the whole of New Zealand agriculture vulnerable, as distressing videos can make it around the world to our consumers in seconds. Similarly, poor communication from our sector or an inability to give scientific evidence to consumers on why we continue with certain farming practices could lead to their distrust for our brand. The goal of this study was to identify what we are currently doing well in the sector as a whole, what areas we need to work on, and how best to practically effect change.

This study is a combination of a literature review, interviews and two surveys. The literature review focused on scientific research, global perspectives and media releases in relation to animal welfare. Interviews were conducted with representatives from industry bodies on their stance on how best to improve animal welfare and what they believe the biggest issues to be, and what action their organisation is taking on this front. I conducted two surveys – one from a farmer/rural professional perspective and one from an urban consumer perspective, to gauge whether there were any shared opinions and concerns between the two demographics.

The literature review enlightened me to the fact that animal welfare standards will always be evolving as society changes. This means that New Zealand must be keenly aware of what our overseas markets expect of us, and we must ensure we align with their values. Increased public scrutiny means that farmers need to be cognisant of how our agricultural practices are being viewed by the public.

Throughout the farmer survey, many respondents showed that they put a high priority on animal welfare, and many desired harsher punishments for those that showed disregard for their animals’ wellbeing. Farmers recognised the need in the sector for increased education on animal welfare, and a desire for urban consumers to not judge their farming practices so harshly without first understanding the reasoning behind it. Many urban consumers also identified within their survey that the urban population is not very well informed in relation to common farming practices. However, the majority did want information to be easily accessible to them on the welfare status of the animal-based food products that they buy. In general, they showed distaste for “factory farming” of chicken and pork, as well as for the production and slaughter of bobby calves.

The key recommendations from my research centred around the need for promoting open dialogue around animal welfare, in a “farmer to farmer” format. This would improve the exposure that young people and new entrants of the industry have to topics and resources around animal husbandry practices. Increased knowledge of best practice animal care could also be improved by better marketing by some of the key industry players in the animal welfare space. This research has also shown that as a sector we need to put increased focus on reducing the number of bobby calves. I also believe that the industry would greatly benefit from national animal welfare awards, which would be a great way to celebrate and incentivise best practice animal welfare, in the same way that the Ballance Farm Environment Awards have incentivised best practice environmental stewardship.

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Introduction

“The greatness of a nation can be judged by the way its animals are treated.” – Mahatma Gandhi

As a new comer to the primary industries at eighteen years old, I was unaware of how best to look after livestock – monitoring their health, dietary requirements and behavioural needs were all new to me. For myself and my peers, the first things that you get taught at a new job are generally along the lines of how to operate the tractor, how to put the wash through the milking vat, and where all the gear is kept. But learning about animal welfare is not generally taught in such a structured manner. Similarly, as a subject in itself, it is not usually taught at schools or universities either. New employees generally pick this up organically through their first season, through asking their superiors questions about why certain things are done and being instructed on what to look out for. Luckily for me, I found jobs with farmers who prioritised animal welfare, and slowly began to develop good animal husbandry practices. Unfortunately, however, it can't be taken as a given that all new farm employees are developing the same skills.

In today's modern society, animal welfare is at the forefront of our collective conscience. We as a society care more and more about the wellbeing of our animals. But do we as farmers have as much concern as our urban counterparts do, and if we do, can we hold ourselves accountable and prove it? How much visibility do we need to provide to the rest of society on our production systems and what more do we need to do to ensure we are world leaders in caring for our animals?

To quote the vice-president of Federated Farmers, Andrew Hoggard, proving our commitment to animal welfare is “more than just having a nice photo of a farmer scratching a calf under the chin” (Jago, 2018). Hoggard also notes that in the USA, the dairy sector is “going big” on training, record keeping and developing robust procedures regarding animal welfare, which the mainstream animal welfare groups are supportive and positive about. Tesco's, the UK's largest supermarket, employ an “Agriculture Team” whose responsibility it is to work with suppliers to oversee animal welfare (Little Helps Plan, 2018). Similarly, Sainsburys have published a list of KPI's from which to measure the animal welfare standards of their animal products, that are available for consumers to read. The company work with a “Development Group” of farmers to ensure that best practice animal welfare is adhered to throughout the supply chain (Making a difference, 2018). These examples show some of our biggest markets are investing a lot of resources into ensuring high welfare standards, at the demand of the consumer. There are certainly things for New Zealand to learn from overseas food supply chains.

Farmers must manage a huge variety of factors in order to properly care for their animals – from adverse weather, to feed shortages to disease incursions. But the technology that farmers have access to that can help them monitor and manage animal welfare is ever increasing. For example, pregnancy scanning of ewes now allows farmers to better draft and shepherd their mobs at lambing time to prevent lamb losses from dystocia in single lambs and starvation or exposure in multiples, which are the biggest factors of lamb survival respectively (Cave, et al., 2008). Collars are now available for cows that monitor rumination and movement of the cow, giving early indication if she is unwell. Access to information is at an all-time high, with most of the country able to access the internet for farming forums, veterinary advice, and weather updates. New Zealand farmers are currently world leaders in animal welfare, as discussed later in this report, but there is definitely room for higher uptake of improved practices, better training of farmers, and certainly better communication with the urban consumer. The adage “the customer is always right” is as relevant to us as it is to any industry.

Aims and Objectives

It is absolutely imperative that if our economy is to continue to rely on livestock production, we do so in a manner that puts ultimate emphasis on the quality of life those animals have, not just for moral reasons, but also for market access - meaning we must recognize the areas where we are lacking and continually strive to improve. Global consumers are demanding that the food they eat is produced as ethically as possible. If New Zealand is going to continue to export to these markets, the consumer will demand transparency throughout the food supply chain.

Within this project I have focused on these key objectives:

- Establishing how much emphasis farmers currently place on animal welfare
- Finding out what farmers' main issues and concerns are
- Collecting farmers' individual thoughts on how the wider industry does on this front and how they feel they are being viewed by the urban population
- Gauge how aligned farmers' values are to those of the urban population of New Zealand
- Establish where urban New Zealanders' see the biggest room for improvement is regarding welfare in livestock production systems
- Analyse what works well in monitoring animal welfare, ensuring best practice and implementing new standards and rules
- Investigate roadblocks in improving animal welfare standards
- Focus on why New Zealand needs to take a global outlook on animal welfare, and how increasing public scrutiny effects our farming practices
- Compare New Zealand to other countries in terms of the advantages and disadvantages that we have ensuring high welfare standards

This report attempts to address these topics, and discuss issues and potential solutions, through study of literature, surveys and interviews. It is hoped that these findings will provoke thought within our sector about the way forward promoting and prioritising ethical treatment and care of our animals.

Research Method

To first get an overview of this multi-faceted topic, I conducted a broad literature review focusing on scientific research on animal welfare, journal articles, legislation, global perspectives and the media. I felt that in this context it was important to study some media releases on the topic, because public perception is often moulded by what they read online/in newspapers, and view on social media and the television, which then goes on to mould what agricultural practices are deemed acceptable or unacceptable. Because one of my aims has been to analyse the roadblocks we face in implementing new legislation or guidelines around animal husbandry, certain practices that have been questioned, revisited and changed over the years have been studied. I have referenced articles that discuss imminent changes such as tail docking of cows and the bobby calf dilemma, which I felt were good case studies of how our industries are changing, and what effect this has on system management.

I conducted an anonymous online survey, for which I received 252 responses, of farmers and rural professionals. The questions and answers received in this survey are listed in the appendices, and the results are analysed in the “Results and Analysis” section of this report. Due to the subjective nature of some of the questions asked in the survey, a thematic analysis of the answers was conducted, and some answers that were highly representative of the general feeling of the respondents have been quoted, as well as some that are contrary to the popular opinion.

Similarly, I conducted another online survey for urban consumers. This survey received 73 responses. It was conducted so that the perspectives of farmers can be compared to their urban counterparts. A similar approach to analysing the results was taken, and similarities and differences of opinion between the two groups are detailed in the “Results and Analysis” section of this report.

In addition to this, I conducted interviews with representatives from MPI, Dairy NZ and the SPCA. The questions focused mainly on engagement with farmers, implementing and enforcing animal welfare rules, how their organisation manages this topic, and research around animal welfare. However, the conversation was allowed to flow onto other points that they deemed relevant to the subject. I have detailed these conversations in the “Findings and Discussion” section of the report.

Literature Review

The difficulties of changing or improving animal welfare standards

Improving animal welfare is a difficult task for many reasons, but namely due to controversies over how to define animal welfare, economic concerns of producers, and ethical debate over the use of animals in agriculture (Croney, Muir, Ni, Widmar, & Varner, 2018). What is deemed a permissible animal husbandry practice by one person may be frowned upon by another. These differences in opinion often relate to age, gender, religion and culture of the individual, which further add to the difficulty of setting one universal set of standards (Lundmark, Berg, Schmid, Behdadi, & Rocklinsberg, 2014). Once the standards have been set, enforcement poses its own set of difficulties, and under our current government system, inspection activity is based on responding to complaints (Williams, et al., 2015) meaning the vast majority of farms are not inspected. Quality assurance often comes down to the terms of supply contracts to industry product buyers, but rarely is an in-depth investigation into the welfare status of a farm performed, unless there is just cause to suspect abuse or neglect. Both farmers and industry recognise the added cost that regular audits would entail.

Animal welfare legislation and technology must adapt quickly to keep up with changing markets. In many developed nations globally, changing economies mean that small family farms are being phased out and replaced with large intensive commercial operations (Rossi & Garner, 2014), which creates new animal welfare concerns that didn't need to be addressed in the past. Such new issues include: dealing with increased stocking rates which have an effect on social structures of herds/flocks, adjusting animals to different housing/feeding systems, and lower labour unit to stock unit ratios.

The importance of taking a global perspective on animal welfare

In a study conducted on the attitudes of Europeans towards animal welfare, 93% of EU respondents answered either "totally agree" or "tend to agree" to the following statement: "Imported products from outside the EU should respect the same animal welfare standards as those applied in the EU" (Attitudes of Europeans Towards Animal Welfare, 2015). New Zealand, as a nation heavily reliant on agricultural animal exports, needs to focus itself on aligning with the needs of the countries we export too, especially wealthy nations through which price premiums for quality are attainable. To quote Massey Professor David Mellor: "If we are to encourage trade with the more welfare-sensitive markets we are going to have to show we have standards acceptable to them" (Morgan, 1995)

In the past, designing animal systems was focused predominantly on basic physical health needs of animals. However, in our wealthy European markets, there is increasing recognition for behavioural needs as well (Croney, Muir, Ni, Widmar, & Varner, 2018). Behavioural needs are much more difficult to define than physical health, which highlights the roadblocks policy makers come across when setting industry standards. The United Kingdom is increasingly moving towards "animal based" measures of welfare, such as body condition and herd illness prevalence, as opposed to the traditional and more simple measures such as recording available resources (e.g.: space per cow). Animal based measures of welfare are currently considered the "gold standard" in the United Kingdom (Laven & Fabian, 2016).

MPI identifies "increased public satisfaction" and "evidence of consumer trust" as measures by which we can monitor the effectiveness of our nationwide animal welfare strategy (Animal Welfare Matters - New Zealand Animal Welfare Strategy, 2013). It is clear that even isolated incidents of animal neglect or abuse can damage the whole industry's reputation. In this day and age, with the global inundation of social media, food producers are keenly aware of how fast-spreading negative news stories can be. This knowledge should incentivize people at all stages of the supply chain to be critical of their own

actions as well as the actions of their peers, which will hopefully serve to enhance our national animal welfare values.

Public pressure and its effect on changing animal husbandry practices

A significant issue that the primary industries face in changing or improving the welfare of its animals is actually the customers themselves. Consumers make demands on production systems without fully understanding the implications of what they are asking for – meaning that animals will be farmed to suit consumer preferences, which does not necessarily align with practically achieving animal welfare outcomes (Croney, Muir, Ni, Widmar, & Varner, 2018). Such demands are very hard to push back against, as activist groups are often very effective at campaigning and emotionalising the issues. One such example of this is PETA's on-going anti-wool campaign – consumers are being persuaded to boycott the wool industry without realising that disincentivizing farmers to shear their sheep could have catastrophic animal welfare effects. This is a quote from their website: "(Sheep) are treated as nothing more than wool-producing machines... There are plenty of durable, stylish, and warm fabrics available that aren't made from wool or animal skins... Save a sheep—don't buy wool." (PETA, n.d.). However, although all farmers would agree abstaining from shearing would be disastrous for the

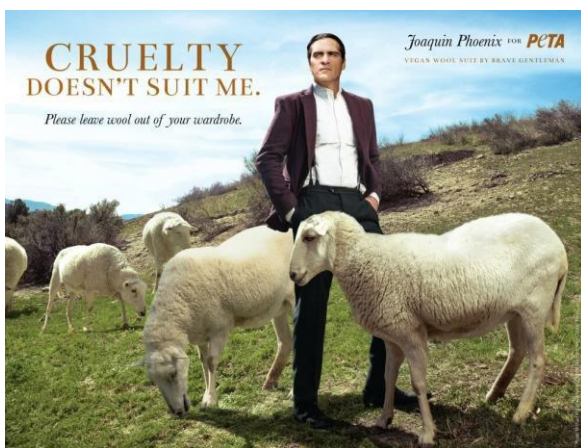


Figure 1: PETA is known for using celebrities to advertise perceived cruelties in animal production, thereby influencing consumers to make demands on production systems

sheep, this webpage does feature a video of some atrocious stockmanship from shearers in the USA and Australia, putting the whole industry in disrepute. The challenge for the wool industry is to renounce the actions of the shearers in question, while promoting the qualities of wool and educating the public that shearing, when done correctly and humanely to industry standard, is beneficial to the health and wellbeing of the sheep.

Within New Zealand agriculture, the rationale and justification behind commonplace farming procedures continues to be questioned, and standards updated. One such example of this is tail docking in cows, which is highly likely to

become illegal this year (Law and Policy - Proposed Animal Welfare Regulations, 2017). The original reasoning behind tail docking was to increase the cleanliness of cow udders and thereby improve hygiene and decrease mastitis risk. However, in 2014 a study was undertaken that supports the finding that docking does not improve udder hygiene (Morabito, Nolan, & Bewley, 2014). Because the procedure has been shown to cause pain and distress to the cows (Sutherland & Tucker, 2011), with no significant benefits, new regulations are imminent. This rule is likely to affect 20 – 30% of dairy farmers who currently dock tails (Law and Policy - Proposed Animal Welfare Regulations, 2017), who will likely choose instead to opt for switch trimming, which has an increased labour demand. Similarly, the docking of lambs' tails – undertaken on almost all New Zealand sheep farms – has been under scrutiny, as scientific evidence as to whether it actually significantly reduces fly strike is "surprisingly sparse" (Sutherland & Tucker, 2011). These tail docking scenarios highlight the fact that delving deeper into the history, evidence and reasoning behind why farmers use the procedures they commonly use, can provide reason to question and improve upon our current farming practices.

The dairy industry has for years been under public pressure to put a stop to the production and euthanasia of bobby calves (further discussion on public perception later in this report). Many farmers argue that there is no difference between humanely euthanising an animal at a few days old compared

to slaughtering it at a few years old for meat. Regardless of farmer pushback, AgFirst consultant Bob Thomson explains that public opinion towards the practice is increasingly negative, and as such, the practice is an “increasing threat on our market reputation because of animal welfare perceptions” (Thomson, 2018). The problem with eradicating the bobby calf production system is that beef finishing land is being pushed up into the hills by dairy land and increasing focus on the Emissions Trading Scheme has led to an increased push in the other direction from forestry. In Bob’s opinion, a solution to the “bobby calf problem” is only possible if “beef prices are lifted to a level where beef farming is land use competitive with dairy farming”. In other words, if we were to keep every bobby calf, as it is at the moment, there is simply nowhere to put them. The “bobby calf problem” is a classic example of an industry issue where the consumer demands a practice be changed, but for farmers there is no financial incentive to do so, and currently no viable alternative options. How the industry responds to these increasing animal welfare demands with no financial gain is yet to be fully realised. Whether or not we can continue to use economics as an excuse to carry on with practices that are now frowned upon by the general public remains to be seen.

Public pressure is likely to continue to contribute to the development of new animal welfare standards. Public submissions on certain farming activities often motivate the National Animal Welfare Advisory Committee (NAWAC) to undertake a review and research programme to investigate potential alternatives to the way things are currently done. NAWAC make a stance based on “net welfare status” (National Animal Welfare Advisory Committee, 2005). This can yield an unsatisfactory result for some members of the public who may not have an understanding of why NAWAC’s stance was reached. An example of this is the continued public outcry to ban farrowing crates on pig farms. Research conducted by NAWAC, requested by Nathan Guy in August 2014, showed that at present “there are a range of alternatives that provide a varying degree of improved sow welfare but all result in higher piglet mortality through injury, hypothermia, starvation or disease” (Hellstrom, 2016). Overall, the net welfare status would not be improved by banning farrowing crates, and as a result, consumers continue to demand alternatives to the current system. Such demands cannot be ignored



Figure 2: Antahi's Flexi Tuber Starter Kit - designed with kindness on the animal in mind. Sourced from antahi.com

if we are to maintain our social licence to farm, and in fact, they often fuel innovation in improved technology within the agricultural sector. Pictured is an example of this innovation prevalent in the animal welfare space – a calf tube feeder designed to reduce trauma and stress on calves, made in New Zealand by Antahi.

Another example of public pressure influencing animal welfare decision making is the recent surge in public protestation towards rodeos, which has led to the Lions Club of New Zealand issuing a press release that they no longer support rodeo (Wiggins, 2018). Although it can be argued that rodeo is not an agricultural industry as such, the

scrutiny that is applied to the events themselves will more than likely be applied to the supporting industries that supply the livestock (i.e: agriculture). It is my opinion that farmers in New Zealand cannot rely on ongoing public support for their businesses if any activity that can be traced back to their sector is called into disrepute.

New Zealand's animal welfare advantages and disadvantages

New Zealand's comparatively mild climate allows for a relatively easy environment for outdoor animal production, and only a small number of our national herd/flock are housed indoors. Due to New Zealand sheep and beef farms being extensive and large scale, the animals have much "behavioural freedom" (Morris, 2017), compared to some of our overseas counterparts. Many studies have concluded that the welfare of pasture-based cattle is better than that of cows in confinement (Laven & Fabian, 2016), which lends value to the New Zealand "brand image" of animals outdoors – perceived as a more natural environment for them. This was echoed in my interview with Sarah Zito from the SPCA, who stated that more intensive farming "generally leads to poorer welfare". However, companies selling indoor livestock housing are espousing their animal welfare advantages. For example, advertisements by HerdHomes® state that "providing animals with a shelter choice limits the impact of heat, cold and rain and improves calving survival rates" (Herd Homes, 2018). Although the studies which produced this result are not specified, potentially this suggests that when the "net benefit" (as discussed earlier in this literature review) is considered, indoor housing of animals could be considered by some as a more humane way to farm.

Although in general New Zealand farming systems tend to be lower input than other developed nations, with our systems predominantly still pasture based, increasing pressure on farmers to improve the environmental sustainability of their farms will likely result in increased use of stand-off pads for dairy cows. This increasing need has led to new research on cow welfare while on stand-off pads. In a recent study by AgResearch and DairyNZ (O'Connor, Webster, Dowling, & Thoday, 2018), the central focus was around maintaining the quality of the bedding in order to ensure cows met the minimum daily lying times of eight hours per day. The main factor determining whether or not cows would express this behaviour or not was the moisture content of the surface material – it is advised that in order for cows to achieve minimum lying times, the bedding moisture content should not exceed 75%. As a result, DairyNZ has introduced a new "Tipping Point Calculator", which can be used to estimate the maximum hours of use and appropriate stocking density for a stand-off pad (Dairy NZ, n.d.). This study serves as an example that new regulatory frameworks often necessitate changes in other areas of animal husbandry, including welfare, and as such research around achieving positive animal welfare outcomes is a continual process.

In broad terms, there are two pathways through which you can improve animal welfare – alter the environment to better suit the animal or alter the animal to better suit the environment (Croney, Muir, Ni, Widmar, & Varner, 2018). Throughout New Zealand's agricultural history we have been aiming our breeding programmes towards making animals better suit farm conditions – we have not only "fit the farm to the sheep" but also "fit the sheep to the farm" (Morris, 2017). This is evident when purchasing sire bulls or rams – many breeders will highlight that it has been bred for "unshepherded lambing", "easy calving" or has a constitution that means it is well suited to thrive on the hills. Having animals that are well suited to their environment is a positive animal welfare story and negates some of the health risks that animals who are poorly suited to their environments would face.

New Zealand is lucky to be free of many animal diseases that other countries suffer from, such as mad cow disease, which is prevented from entering the country through import regulation and surveillance (Atkinson, 2005). The National Animal Identification and Tracing (NAIT) scheme is designed to enable quick and reliable information in response to a disease outbreak, and also as an ongoing means by which to eradicate *Mycobacterium bovis*. (Ministry of Agriculture and Forestry, 2011). As such, a lower number of possible diseases means a lower number of animal health issues caused by disease. Unfortunately, the recent incursion of *Mycoplasma bovis* into New Zealand has reminded us that to maintain this competitive advantage, we must continue to be extremely vigilant and ensure our

biosecurity measures keep up with changing farming practices and increasing global trading of genetics, veterinary medicines and food products. It has also served as a reminder that the performance of NAIT is only as good as the information put into it, so the onus is on all of us to maintain accurate and up to date records.

Results and Analysis

Farmer/rural professional survey

Please refer to Appendix 1 for the full survey.

From the survey I conducted of 252 farmers and rural professionals, the majority of respondents were either sheep and/or beef or dairy farmers. There was a spread of the age of respondents, however this spread was not entirely representative of the actual age structure of farmers in New Zealand, as just over 30% of respondents were below the age of 30.

Overwhelmingly, respondents considered themselves good carers of animals who place a high importance on animal welfare. Their reasons for this tended to be that the animals were a “cornerstone of business” and that “happy stock produce more”. Similarly, many mentioned that they have “respect for animals” and many others recognised that “animals feel pain just like us” and they have “no interest in seeing animals suffer”. Many respondents judged their quality of care based on the “Five Freedoms”, with most reporting that they do well on these in general. However, a significant number stated that they would like to be able to provide more shelter from hot and cold/wet conditions, but most doing the best they could within “physical and financial” constraints.

Respondents had in general used multiple resources for advice on how to care for their animals, with the most popular advice sources being the vets (95%), friends or family (78%) and books/farming publications (69%). More respondents had used Beef and Lamb and Dairy NZ than had used MPI, which was the least utilised resource at 18%.

Most respondents felt that non-farmers judge farmers too harshly in relation to animal welfare. Their reasoning for feeling this was generally around non-farmers having “limited understanding of what is going on on a farm” and non-farmers opinions are often formed by negative “portrayal in the media”. However, some respondents commented that in some scenarios the negative public perception is justified, as there are “still a lot of improvements that need to be made on farms” and sometimes negative media attention can cause the “bad eggs” to “stop and assess” their practices.

Unfortunately, 56% of respondents have witnessed what they would consider animal abuse from another farmer, which is an upsetting statistic. One problem that we as an industry face is the difficulty in reporting animal cruelty when it involves one of our superiors. Although most respondents stated that they would not find it difficult to speak up about this, some expressed concern that there are often other factors at play such as “mental health or other issues”, therefore they would be cautious of who they told due to potential repercussions on the person. Job security is often a deterrent as well – one respondent even mentioned that they spoke up because their boss was inhumanely “causing (the cows) great pain”, and as a result they were fired from that job.

Two of the questions were about the methods farmers used and the reasons behind why they used them – specifically, tailing lambs and de-budding calves. Tailing irons were the most common method for lambs, at 41%, followed by rubber rings at 37%. People quoted various reasons for their choices, including “efficiency”, “sealing the wound” and “shorter period of pain” in relation to tailing irons.

One respondent who uses tailing irons stated that they choose this method for “animal welfare reasons after discussion with an MPI vet”. “Numbing” and “cleanliness” were common reasons behind the use of rubber rings. Five percent do not tail their lambs, for reasons including they believe it isn’t necessary as “clean feed and crutching prevents any problems”. Interestingly, only two of the 138 respondents of this question mentioned cost as one of the reasons behind their chosen method. Of the 220 cattle farmers who responded, 31% used both a sedative and local anaesthetic when de-budding, which was the most popular response. Many respondents did not like to use sedative as they believed it to be dangerous to the calves. Eighteen percent used no anaesthetic, for reasons mainly around cost and efficiency, and believing that injecting with anaesthetic caused “more stress” for the calves, with some pointing out that they would use anaesthetic as soon as legally required of them.

I felt it pertinent to include a question on the use of blunt force trauma, due to animal welfare groups such as SAFE’s focus on the issue (SAFE, 2014). Seventy-four percent of respondents have never used blunt force trauma, 24% answered that they had but only in desperate circumstances, and 2% answered that they regularly use this method of euthanasia. Later in the survey, respondents were asked for their methods for euthanasia or performing home kills. Many expressed a distaste for having to do this so opted for it to be done by a veterinarian using “lethal injection”. A firearm or captive bolt was the most common method for euthanising cattle, with some opting to run them into the yards and some opting to shoot them in the paddock so that the last thing the animal knew they were “happy eating grass”. Euthanising smaller animals such as sheep or pigs was often done with a sharp knife to the throat instead, sometimes followed by breaking the neck or pithing.

When asked what was the biggest animal welfare issue that they have to deal with on their properties, most dairy farming respondents answered “lameness”. Most other types of farmers, mostly comprising of sheep and beef farmers, answered either “flystrike” or “internal parasites”. It would appear that Dairy NZ has responded to this need with their Healthy Hoof Programme, and Beef and Lamb recognize these as significant issues, with their support of the Wormwise Workshops, internal parasite extension podcasts, flystrike factsheets, and other resources. When asked how they managed these issues, there were a plethora of responses, from “going to workshops” to “breeding for resistance” to “proactive monitoring” to “use of consultants and vets”.

A question was included for dairy farmers on what set up they used for bobby calves before the new rules came about. The majority of respondents said that very little had changed as they were already compliant, but many had to build ramps as lifting the calves onto the truck manually is no longer allowed. Many said their bobbies are reared along with their replacement heifers, to the same welfare standards. One respondent elaborated further, saying the bobbies received the same amount of “cuddles and attention” as the other calves. Those who opted to euthanise the calves themselves on farm mainly did so for welfare reasons, as it allowed them to “control the process” and avoid “dubious handling” of the calves at the processing facility.

When asked what they believe is the most effective method to get farmers on board with animal welfare standards, “education” was the most popular response, with some going further to say that a “certificate kept up to date” should be required. Throughout the survey, a common problem that people were highlighting were the “bad eggs” of the industry, and this was often attributed to a “generational” gap in animal welfare expectations, suggesting that there are older farmers “stuck in their ways”. Within the responses to this particular question, many highlighted the issue that “those that need (the education) won’t go” and “you can’t force empathy”. People with this sentiment often went on to describe that “harsher punishment” is needed for these people who refuse to conform to the standards. A popular idea was a quality assurance programme with regular random audits, which yielded financial benefits or premiums to those who met the standards, and “financial penalties” for

those not meeting them. Respondents pointed out that “farmers need to own the problem”, and farmers will take things on board better if they are delivered “farmer to farmer” using “peer pressure” as opposed to officials delivering the messages – they wanted to be talked to “as equals”. Federated Farmers also recognise that farmers respond to this approach best, stating “none of our farmers want a regimental militant approach to animal welfare compliance and enforcement, so it is important that we are part of the equation” (Federated Farmers of New Zealand, 2018).

When new rules are adapted, one respondent stressed that they need to be “scientifically sound, (able to) be practically implemented, and will actually result in better welfare”, with similar opinions from others suggesting that the rules need to be developed with “farmer input” by “experts, not only politicians”. When asked if they have specific ideas on whether any guidelines/laws are lacking regarding animal welfare, many shared the opinion that there are enough laws currently, it’s the policing of those laws that is lacking, as “laws are only effective if they can be policed”. Of those who did have a specific issue in mind, the most popular were around the treatment of down cows, minimum body condition scores, care of working dogs and stricter monitoring of hobby farmers. I found one statement to be very interesting – a farmer suggested that “the changing culture of farmers to operate as though the world is watching is the best approach”.



Figure 3: Some survey respondents believed the industry could improve on the care of working dogs

My final two questions were for vets or rural professionals only to answer. They were asked “how well do you believe, on average, your farming clients look after their animals?”. Officially, the average result was 67 out of 100, however, it became evident from individual answers to the first question and comments made in the following question that some people who were not vets/rural professionals had answered, and had either rated 0 or 100, so these scores were removed, and the amended average came out at 76 out of 100. Overall, the comments that the respondents made regarding their response were positive, although a few of the comments that need to be recognised by our industry are listed below:

- “Some farmers need to take more of the animals’ welfare into consideration rather than making money”
- “Stress in a system leads to both human and animal neglect”
- Some farmers “aren’t interested in making improvements”
- Sometimes farmers being “time poor” leads to inadequate animal welfare standards

Urban consumer survey

Please refer to Appendix 2 for the full survey.

This survey was carried out to gauge how the opinions of urban consumers differed to those of farmers. There were 73 respondents, with a very even spread of ages throughout the four age bracket categories (less than 30, 31 to 40, 41 to 50 and 50 plus).

My first aim was to gauge how well they believed farmers were caring for their animals. They rated farmers an average score of 67 out of 100. At the lower end of the scale, people were stating that to

a farmer, the animals are “just money, so welfare isn’t a priority” and one mentioned that they have seen animals treated “as units, not living creatures”. At the upper end of the scale, respondents felt farmers cared for their animals “extremely well” but recognized there was the odd “rogue farmer” who did not care for their animals as they should. This recognition of the “rogue farmers” is similar to how many farmer respondents felt, commenting on the “bad eggs” and “cowboys” who ruined their reputation for everyone. Based on the two surveys I conducted, it appears that overall, urban consumers view farmers less favourably than farmers view themselves, as far as animal welfare is concerned. Interestingly, according to a survey commissioned in 2017 by MPI, 68% of urban respondents agreed that farm animals are treated well by farmers, and 73% of rural respondents agreed – down from 71% of urban respondents and 82% of rural respondents agreeing in 2008 (UMR Research, 2017).

Most respondents would be willing to pay more (within reason) for food for which they knew had high animal welfare standards, some already doing so by paying more for free range eggs. Some did not agree with paying more for high welfare foods though, as they believed that all animal-derived food should be guaranteed to have been cared for with high welfare standards before it makes it to the shelves. Some believed that animals that are treated better produce higher quality food. Some stated that they would rather “go without” than buy food for which the welfare status was unknown. However, the respondents who shared this view explained that they had the ability to be this selective with their food choices due to having enough income and pointed out that others do not have this luxury. Other respondents mentioned they were limited by “budget constraints”.

The respondents rated the current systems in place in New Zealand for dealing with animal welfare concerns an average of 51 out of 100. Unfortunately, one respondent who had queried animal welfare standards in the past had been called a “townie who doesn’t understand” which reflects poorly on our industry. Many believed that the organisations involved such as the SPCA and MPI try their best to enforce standards, but struggle with a “lack of resources”. Some suggested that the consequences are “not tough enough” and there needs to be more focus on “those with a history of ill treatment of animals”. One respondent believed that complaints did not “get investigated fully”, and another queried whether there were enough visits to farms by authorities. These comments mirrored many made by farmers.

Overwhelmingly, the farming practices that most urban consumers disagreed with related to “factory farming” of chickens and pigs. Respondents generally firmly “disagree with (animals) being kept in a small space”. However, one respondent pointed out that banning caged eggs will mean that “low income families can no longer have access to low priced eggs”. A large proportion were also against the way bobby calves were produced and their end use. Increasing intensification of dairy farming was also mentioned, with people showing distaste for seeing dairy cows “standing in mud all winter”.

When asked whether they believed the public is well informed on how and why certain activities/procedures are done to animals, almost all respondents answered “no”. Many did point out though that the public is “ill informed” by the media, which only highlights negative cases, or really interesting/excellent farms. Some pointed out that the general public “doesn’t want to know”. Of interest was one respondents answer to this question: “we need something that enlightens the public as to where their food comes from, and whether this is ethical farming or not”.

Only 11% of consumers did not want information on the welfare status of their animal-based products. The others would like this information to be accessible on product packaging, through advertisements, on the producing company’s website, through signage, the media and QR codes (listed in order of

popularity). Other suggestions of how to get this information to consumers included “independent assessments” and “books for children so they know from an early age” about New Zealand produce.

Below are some relevant closing comments about agriculture in New Zealand from urban consumers that could provide some food for thought for us as an industry:

- “We need to address the welfare and environmental impact of animal agriculture in NZ, before it is replaced by artificial products and the industry will be gone for ever”
- “Some farmers need to pick up their act and for the ones that don't the penalties need to be harsher to act as a deterrent”
- “The dairy industry may be our greatest story as long as we keep it positive. It may also be our greatest nightmare if we continue to develop unsustainable intensive dairy without the appropriate infrastructure such as winter housing and slurry management systems”
- “It’s awesome and should be supported more to do well. The general public should be made aware of where their product comes from”
- “I'd like to see more stringent labelling, so we know the welfare of the animal together with what they are fed, what chemicals they are exposed to, the medical products, hormones etc. Knowledge is empowering and at the end of the day, if we can make choices, I believe the majority of people will choose more humane farming”
- “Still a lot of work to do before we are at an acceptable level to justify how we treat animals that are intended to provide food for human consumption”

Findings and Discussion

New Zealand has in recent years prided itself on the quality of life provided to our animals, be they farmed, wild, or pets. In 2014, New Zealand was ranked first equal on its animal welfare standards by the World Animal Protection Organisation (Animal Protection Index, 2014). Following on from this, New Zealand became the first country under the English legal system to legally recognize animals as “sentient” in the Animal Welfare Amendment Bill 2015 (Ministry for Primary Industries, 2015). However, it would be negligent for us to just assume there is no room for improvement.

What are New Zealand’s current issues?

Although we now recognize animals as sentient, which implies focus on the experience and perception of animals, does this bill amendment actually translate into agricultural practices? According to the aforementioned Animal Protection Index, the measure of animal welfare standards in which New Zealand is most deficient is in the formal education of those with animals in their care (Animal Protection Index, 2014). As shown in the survey detailed above, the view that more education is needed was supported by many farmers. In my personal experience working for small block owners, although they are more than willing to acknowledge the sentience of their livestock, formal animal welfare training would be hugely beneficial in actually achieving a high standard of welfare. Often it is not a lack of empathy towards the animals, but a lack of knowledge of the needs of the animals that brings about significant welfare concerns. There is a risk that this lack of knowledge is mirrored in commercial agriculture too – many starting out as farm assistants simply “learn on the job”, meaning they can be limited to the knowledge that their employer has, which is not necessarily industry standard.

It is widely recognised today that animals with a high level of welfare are likely to be more healthy and productive (B+L Commitment to the Welfare of Sheep and Beef Cattle, 2017). This, along with the need to maintain market access, are significant incentives for people throughout the supply chain to prioritise animal welfare. However, as discussed earlier in the “Results and Analysis” section of this

report, 56% of respondents reported that they had witnessed animal abuse by another farmer. Of the respondents who did not take any action, the resounding theme was that they were young at the time, and because of this they “didn’t know what was normal”, “didn’t know who to go to for action”, “were new to the job”, were “worried for their own safety” or were worried about their job security should they criticise the actions of their superiors. This shows a need for more education on appropriate avenues for young people to take should the welfare of an animal ever be called in to question. Of the respondents who answered that they did take action, many lamented the fact that there was “no ability to collect evidence to hand over to MPI”, aside from “their word against ours”.

Financial pressures, stress and mental health issues were all identified by survey respondents as common precursors to animal neglect or abuse. Between 2002 and 2016, the total number of farms in New Zealand decreased by 24%, and the average farm size has increased (Statistics NZ, 2018), with land prices continually increasing, thereby increasing the financial strain on farmers in all stages of their careers. This financial strain often leads to farmers making decisions to intensify their operation, which creates a need to adapt animal husbandry practices to suit. It is my belief that the negative effect that financial pressures have on animal welfare is two-fold – more financial pressure leads to more stress, and more financial pressure leads to intensification, which requires more stringent animal management, which in times of hardship can be neglected if it is not directly correlated with profit. Mental health issues are becoming more and more prevalent in our industry, as identified by initiatives such as Farmstrong and the Rural Support Trust. Depression can often cause the sufferer to lack the motivation to get out of bed in the morning, let alone go out and attend to all their animals needs, so needs to be looked at when assessing how best to address animal welfare concerns. Federated Farmers accepts that there is a need to focus on the underlying causes of animal welfare issues, stating on their website “when it comes to inspection or prosecution of farmers it is critical that Federated Farmers is given the opportunity to work closely with Government animal welfare inspectors to ensure that processes are carried out which recognize the often complex and multiple cause of animal welfare issues including mental illness” (Federated Farmers of New Zealand, 2018).

What resources are out there that producers can access to educate themselves on animal welfare?

As identified in my farmer survey, many farmers believe that education is the key to getting people on board with animal welfare standards. Surprisingly, only 48% of rural people and 35% of urban people are aware that there are “Codes of Welfare” for animals, according to the “New Zealander’s Views of the Primary Sector” survey (UMR Research, 2017). Similarly, only 60% of rural people and 48% of urban people were aware of the existence of the Animal Welfare Act 1999. Importantly, it was also identified within my farmer survey that people in the industry, especially young farm employees, didn’t know where to go for help or information. People who have been in the industry for longer usually know to report animal welfare concerns to MPI, and that information on care for your animals is accessible through various avenues such as Dairy NZ and Beef and Lamb, and often local vets will have information pamphlets on animal care for that specific time of year. However, unless an employer specifically tells their employee this information, the new employee is unlikely to know where to look. An employer who has poor animal husbandry practices is also highly unlikely to want to tell their new employee who to report animal neglect or abuse to. All of these factors potentially highlight the need for greater marketing by MPI in rural areas, so that those new to the industry will have a number to call or a website to visit should they deem it necessary.

During my phone interview with an employee at MPI, I was informed about the “Safeguarding our Animals, Safeguarding our Reputation” Programme. I was told this initiative was aimed at increasing

the knowledge of the codes of welfare and ensuring compliance. As listed on their website, the activities of the programme include:

- Developing resources to support farmers and veterinarians
- Educating people who work with production animals through workshops and conferences
- Improving awareness and the use of the codes of welfare (Ministry for Primary Industries, 2018)

However, I could not find any detail on how they are marketing these resources, workshops and conferences, or how they were going to measure their progress on the third objective.

Dairy NZ

Amongst the results of the survey, 72% of the dairy farming respondents mentioned that they had used Dairy NZ as a source for information on how to look after their animals. Within the Animal Welfare section of the Dairy NZ website, the organisation states “we take animal welfare seriously and work with farmers and industry partners to raise awareness that every animal should be treated with care and respect. We work to understand consumer and market expectations in animal welfare, provide training to build skills and develop resources to support the best standards of care” (Dairy NZ, 2018). This website also provides guideline documents for humane slaughter, bobby calves, and the new animal welfare regulations, as well as contact details for MPI, the SPCA and the Dairy NZ animal husbandry extension specialists.

In discussion with Bruce Evers, a Dairy NZ animal husbandry extension specialist (Evers, 2018), he talked me through what his role entails, how Dairy NZ contributes to ensure high levels of animal welfare are adhered to, and what challenges Dairy NZ face regarding animal welfare. A large portion of Bruce’s role revolves around improving animal husbandry practices through training days, such as body condition scoring days and facilitating MilkSmart workshops – which are not wholly focused on the animals, but include topics such as reducing mastitis, cow flow and cow behaviour, which all contribute to welfare. Through his involvement with farmers, Bruce believes that although ignorance can play a role in poor husbandry practices, on the whole, “awareness of innate care is increasing”, and there has been an attitude shift towards improving animal welfare. In fact, Bruce has found that high performing farmers want Dairy NZ to focus attention and resources on ensuring that underperforming farmers begin to do better – this statement was mirrored in my survey results. One respondent to the farmer survey noted: “Dairy NZ seem to be on top of it and want everyone to achieve the best on animal welfare.” Bruce senses that there is a hunger amongst farmers for continual improvement, but this is not always recognised by the urban population. Of note is the fact that tail shortening of cows will more than likely be illegal by the end of 2018, but as he points out, this rule will also apply to domestic dogs as well – animal welfare performance is a developing area in many sectors, not just agriculture.

When asked how Dairy NZ deals with reports of poor animal welfare standards, he explained to me their process: If someone rings up and reports a welfare concern, Dairy NZ must first contact the dairy company involved to check up on the farm, as Dairy NZ is not allowed on farm without being invited. If a report to MPI is warranted, this must go through the dairy company. If the dairy company believes that the best course of action is to support the farmer, then they will suggest to them that they accept a visit from Dairy NZ staff to help with the issue. If the farmer accepts this help, then the extension specialist will go and analyse the issue, using a triage of factors – the animals, the infrastructure, and the people/staff. However, Dairy NZ can “advise change but cannot enforce it”. Serious cases can be dealt with through prosecution. Although Bruce does not find widespread welfare issues in his role, one that he has come across is broken tails. This suggests a deliberate abuse, and these cases point

towards a person with an unacceptable attitude. Such cases are much more difficult to remedy than those which are caused by a lack of knowledge on the operators' part, which can be remedied through education and training.

SPCA and the Blue Tick Programme

Sarah Zito, a science officer in the Animal Welfare Science and Education Department of the SPCA kindly allowed me to interview her about her role within the organisation and the role the SPCA plays in ensuring animal welfare in New Zealand. As a science officer, she works on animal welfare related research, standards, communications, policies, and procedures. She sometimes provides expert advice to the animal welfare inspectorate team and also works on submissions to government on various animal welfare related topics. She says that the SPCA aims to work collaboratively with agricultural industry bodies such as Federated Farmers, Landcorp, Dairy NZ, and Beef and Lamb, and also with academia. Collaboration between the organisations is sometimes through government led working groups and sometimes through direct engagement (the initial engagement approach may be by either the industry bodies, academia, or the SPCA). Sarah herself was asked to present on the use of firearms for animal welfare in February by the Department of Public Health, at the University of Otago.

I was interested to find out how the SPCA decides what topics or aspects of animal welfare they focus their research on. I was curious as to whether it was driven by the latest or loudest public outcry. Sarah stated that her department is driven by the “area of greatest need”, taking into account the number of animals affected and the severity of the welfare compromise involved. She stressed that they want to focus on research areas that would have an “appreciable, practical outcome”. Although the Animal Welfare Science and Education Department is a fairly new department, animal welfare related research has already been undertaken and they are aiming to conduct even more proactive research in the future.

Sarah had a positive view of MPI, and believes they do a good job of engaging with all relevant stakeholders and communicating new legislation. SPCA compliance and MPI are co-regulators with the MPI of the Animal Welfare Act 1999, and have an MOU, and also Performance and Technical Standards. This brought me to ask her about one of my main queries regarding implementing new legislation or regulations – I wanted to gauge her opinion on what are the main problems with this process and how best to get people on board. Sarah said one of the main issues is ensuring people are fully informed, and finding the best avenues to disseminate the information. She stressed that “explaining why” is very important.

Transitional periods need to be provided so that people have time to make the changes necessary to comply with new legislation and, finally, ensuring consistency of enforcement and adequate resourcing for enforcement is an essential part of the process. In particular, the possibility of regular routine checks to make sure that all stakeholders are complying with regulations was discussed and, although this may help with consistency of enforcement and ensuring that regulations were complied with, this would be practically very difficult given the huge number of stakeholders. This sentiment was echoed within the farmer survey – a common theme was that farmers agreed that it is “a hard job to monitor” that animal welfare standards are being upheld,



Figure 4: Eggs available in New Zealand supermarkets bearing the Blue Tick certification from the SPCA. Sourced from: spcbuetick.org.nz/products

but many of them wanted regulatory bodies such as the SPCA and MPI to have “more check-ups”, some wanting every farm to be “checked at least once per year”. Farmers generally wanted “harsher penalties” for the “minority” that are cruel to animals, and saw the need for “faster action”. Within the survey, comments made by people who had used the SPCA to make an animal welfare complaint were generally somewhat negative, but Sarah admits that MPI tends to handle the commercial farms, whereas the SPCA’s call outs tend to focus on companion animals up to lifestyle blocks.

The SPCA began a scheme in 2001 that performs yearly and unannounced audits on participating farms, and issues those that meet their animal welfare criteria with a “Blue Tick Certificate of Approval”, which can then be displayed on their product packaging. Currently, the Blue Tick scheme is only available to chicken, egg and pork producers, but due to high consumer demand, they intend to add other farmed categories to their portfolio (Royal New Zealand SPCA, 2016). It would appear from the farmer survey that this scheme would be of interest to some respondents, who mentioned that animal welfare should be incentivised with “premiums”. Packaging with this type of labelling often attracts wealthier consumers. However, the issue with the application of such a scheme to red meat and dairy products is that a very small percentage of our production is destined for domestic consumption, with New Zealand being the world’s largest exporter of sheep meat and dairy products (Ministry for Primary Industries, 2018). Therefore, the value added by such a certification would be limited, unless all the countries we export to also placed high value on this specific accreditation. This highlights the difficulty in financially incentivising animal welfare using this quality assurance method.

The future of animal welfare in New Zealand

In NAWAC’s view, “the trend of increasing societal awareness of animal sentience and concern for their wellbeing will continue, and this will be expressed in expectations for increasing animal welfare standards and the enforcement of them”. NAWAC also recognised in 2013 that they need to “consider models for interaction that involve all people that need to be involved” (Hellstrom, 2013). To date, it appears that broadly speaking the primary industries have struggled to find the ideal “model for interaction” for each sector. Bearing this in mind, I believe that moving forward, the dialogue around animal welfare will improve. As discussed earlier in this report, ensuring young people have access to information around animal welfare should be a focus of our industry. Social media is as of yet an underutilised resource in this regard, with 88% of 18 to 29-year-olds active on Facebook alone. Facebook was also identified as the social network where millennials and Gen X are the most likely to share content (Spredfast, 2018). Although MPI, Beef and Lamb and Dairy NZ all have social media pages, there is potentially scope for them to increase their presence and engagement with young people around animal welfare. According to Emma Brand of Synlait Milk Ltd, “social media is a platform that allows users to become involved with other people and organizations” that can “increase engagement, awareness, educate the public, and showcase positive stories” (Brand, 2017). This study highlighted just how powerful social media can be, and it is my belief that it could largely be used to better effect within our industry.

The rest of the world is increasingly watching us, and the influence that the likes of SAFE and PETA have on our urban consumers should not be underestimated – as shown, they use big celebrity names to push their agenda, which creates far more media interest than press releases by Beef and Lamb or Dairy NZ! I believe farmers are beginning to realise that they should - as one respondent of the farmer survey put it - operate “as though the world is watching”. One respondent also stated that they would proudly be able to show anyone any of their animals at any time, which shows an excellent commitment to animal welfare. However, “while New Zealand’s animal welfare systems are regarded as some of the best in the world, the boundary between acceptable and unacceptable treatment of

animals is always evolving” (Federated Farmers of New Zealand, 2018). New Zealand needs to continue to use technology, collaboration, communication and appropriate legislation to keep up with these changes going forward.

Recommendations

Start talking – farmer to farmer!

First and foremost, the lack of knowledge around the Animal Welfare Act 1999 and the Codes of Welfare shows that more engagement is needed around animal welfare within farming communities. Agriculture has had success in starting dialogue about previously not talked about subjects, as shown in the last few years with mental health awareness in the rural sector – which went from being taboo to being widely promoted and discussed. It is my view therefore that we already understand the ways to get our rural friends and family talking, we simply need to apply this to animal welfare as well, in a “farmer to farmer” format. From being an active member of the rural community, and through keeping up to date with rural news and information, I get the impression that the only times we are publicly open about welfare concerns is when the mainstream media prints a negative article, at which point we all jump on the defensive. Instead, I believe we should be having open conversation all year round – highlighting positive welfare stories, sharing our queries and concerns with one another and asking for advice. This will also mean that new entrants to the industry will have more chance of becoming informed about animal welfare and will be less hesitant to ask questions.

Promote animal welfare through better marketing

Methods of getting information across to members of the rural community, especially young people, are currently underutilised. I believe that the power of social media could be utilised better by milk companies, meat companies, industry good bodies and MPI to promote animal welfare. The NZ Farming Facebook page currently has almost 150,000 followers, and posts on that page often receive hundreds of “likes”, which shows how far-reaching information posted through it could be. This page has become popular with entertaining and informative posts, and often features questions from followers for advice, which allows them to easily and anonymously talk “farmer to farmer” with the community. In contrast, the MPI Facebook page has 21,500 followers, however, posts on this page tend to be more informative in nature than entertaining. It is positive to see such a large number of people wanting to keep up to date with MPI, but it is my belief that with better “marketing” it could engage and inform a larger audience.

Get serious about solutions to the “bobby calf dilemma”

It would appear from widely reading on the subject and through my consumer survey that if we are going to maintain our social licence to farm, we need to put more emphasis on changing our systems around bobby calves. The solution is not as simple as just using sexed semen for replacement heifers and beef-breed follow up bulls, as there currently isn’t enough beef finishing land to support that influx, at current beef prices. The industry needs to prioritise finding sustainable solutions to this.

Focus on the “gold standard” measures of welfare

From reading about our international markets, it would also be beneficial to our industry to apply more “animal based” measures of welfare to our future laws and standards, which ensure a more measurable welfare outcome for the animals, at the same time as pleasing the European countries that we export to, who consider these measures the “gold standard”.

Develop national awards that celebrate excellence in animal welfare

The Ballance Farm Environment Awards have been an excellent platform for agriculture to promote and encourage environmental best practice. As well as entrants having the chance to win prizes, all contestants' farms are analysed by industry leaders and feedback is given. It is my belief that national animal welfare awards would be an excellent way to incentivise best-practice animal welfare in New Zealand.

In May 2018, Beef and Lamb unveiled their Taste Pure Nature origin brand. Global manager Michael Wan states that this brand has been developed to "create and capture greater returns for our sheep and beef sector". One of their market insights has been that "consumers desire animals to be raised gently by caring people, leading to them having a happier, healthier life". Clearly, it is in Beef and Lamb's best interest to incentivise farmers to excellent animal welfare standards that can be not only talked about but proven to our markets. I believe that promoting a national animal welfare award is one way to showcase this. To quote Michael Wan, I also agree that "success will only come through a collaborative approach and working together in a sustained way over time" (Beef and Lamb, 2018).

Conclusions

Global focus on the treatment of animals is going to continue to increase, meaning we need to accept the increased scrutiny we are going to be under as farmers. It is important to realise that the consumer wants to see transparency around farming practices, and in many cases will pay more for ethically produced food. This is both an opportunity and a threat for us. We could miss the opportunity to create premiums for ourselves if we cannot find ways in which to effectively communicate with our markets, while animal welfare activism groups continue to be much more media savvy. Specific areas that consumers generally feel negatively towards are "factory farming" of pigs and poultry, and bobby calves being processed at four days old.

One of the main areas for improvement that many people identified was education. People overwhelmingly thought that effective education methods were the best way to get people on board with animal welfare. The difficulty in finding and taking appropriate action against the "bad eggs" is exacerbated by the fact that inspections on farm are only carried out when formal complaints are received, meaning the vast majority of farms are not inspected. Some people expressed their frustration at this. It was identified by the Animal Protection Index that New Zealand has room for improvement when it comes to formal education of people with animals in their care. This could be a weakness that our wealthier global markets focus on in the future.

The main barriers identified to achieving high on farm-welfare standards, identified through the literature review, interviews and surveys, were financial and emotional stresses, scale and intensification, the difficulties in providing shelter, managing parasites and lameness, and the effects weather can have on feed supplies. This mixture of factors identified the need for a holistic approach to welfare management, which industry bodies such as Federated Farmers and Dairy NZ already recognize. The "farmer to farmer" approach appears to be the best method to engage with farmers around animal welfare issues. Farmers expressed a disliking towards being simply told what to do without an open discussion around the issues and implications of new standards. I have concluded from this research that farmer engagement has historically been lacking in the development of new standards, leading to compliance issues and complaints around the practicality of new rules. Engagement with young new entrants into the industry has also been lacking, and there is a need to explore how best to communicate with them and educate them about where to access information and how to formally report animal abuse or neglect.

Overall, through studying literature, personal communication, surveys and through personal experience, I have found that animal welfare within New Zealand is a dynamic topic, with areas in which we do well and areas in which we can improve. Recognition of the fact that animal welfare standards continue to “evolve” not only for farmed animals but also for domestic pets and other animal groups was a recurring theme, which emphasized to me that there is no one point at which we can say “we’re finished - we have ticked every animal welfare check box”. Rather, ethical and humane treatment of farmed animals is an ongoing project that we need to keep working towards to maintain our world leader ranking.

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Appendix 1: Farmer/rural professional survey questions and responses

1. What type of farmer are you? Please select

ANSWER CHOICES	RESPONSES	
Sheep and/or beef	35.86%	90
Cow dairy	45.02%	113
Dry stock grazier	2.79%	7
Poultry	0.00%	0
Pig	0.40%	1
Equine	2.39%	6
Rural vet	1.20%	3
Rural contractor (eg: shearer, "farm sitter" etc.)	2.39%	6
Other (please specify)	9.96%	25
TOTAL		251

2. Please select your age bracket:

ANSWER CHOICES	RESPONSES	
Less than 30	30.28%	76
30 - 40	31.47%	79
41-50	19.92%	50
51+	18.33%	46
TOTAL		251

3. How much importance do you place on animal welfare? (0 meaning "none" and 100 meaning "a large amount")

Responses ranged from zero to 100, with an average response of 89, out of 251 responses

4. For the above question, why did you give this score?

Answers discussed in the "Results and Analysis" section of report

5. Please select (if any) any method/organisation/person you have used in order to seek advice about how to care for your farm animals

ANSWER CHOICES	RESPONSES	
Friends, family or neighbours	78.49%	197
Vets	95.22%	239
MPI	17.53%	44
Dairy NZ	40.64%	102
Beef + Lamb	25.10%	63
Google	40.24%	101
University lecturers	25.10%	63
Books/farming publications	68.53%	172
None	0.40%	1
Other (please specify)	11.16%	28

Those who answered "other" gave the below alternative answers:

- Personal experience
- Farm advisors
- Facebook
- Discussion groups
- Primary ITO
- Deer NZ
- Industry specialists
- Empathy
- Wife
- YouTube
- Colleagues
- Homeopathy

- 6. Please rate the following statement from 0 to 100 (0 meaning "strongly disagree" and 100 being "strongly agree"): "I feel as though non-farmers judge farmers too harshly in relation to animal welfare"**

Responses ranged from zero to 100, with an average response of 74, out of 251 responses

- 7. In relation to the previous question, why did you give this score?**

Answers discussed in the "Results and Analysis" section of report

- 8. How difficult would you find it voicing your opinion on animal mistreatment if the person in question was one of your superiors? (0 being "extremely difficult" and 100 being "very easy")**

Responses ranged from zero to 100, with an average response of 64, out of 248 responses

- 9. In relation to the previous question, why did you give this score?**

- 10. What quality of life do you feel you provide for your animals before they are processed? (0 being "very poor" and 100 being "excellent")**

Responses ranged from eight to 100, with an average response of 87, out of 248 responses

- 11. In relation to the previous question, please give examples of why this is the case (i.e.: examples of what you do or don't do for/with your animals)**

Answers discussed in the "Results and Analysis" section of report

- 12. How do you rate the current authoritative bodies (e.g.: Dairy NZ, MPI, SPCA etc) on how well they ensure that animal welfare on farms is kept to a high standard? (0 being "they do a terrible job" and 100 being "they do an excellent job")**

Responses ranged from zero to 100, with an average response of 55, out of 244 responses

- 13. In relation to the previous question, why did you give this score?**

Answers discussed in the "Results and Analysis" section of report

14. Sheep farmers only: What method do you use to tail your lambs? Please select:

ANSWER CHOICES	RESPONSES	
Rubber rings	36.96%	51
Tailing iron	41.30%	57
Knife	0.72%	1
I do not tail my lambs	5.07%	7
Other (please specify)	15.94%	22
TOTAL		138

Those who answered “other” gave the below alternative answers:

- Rubber rings then knife
- Rubber rings for hill, iron for paddocks
- Both (rubber rings and iron)

15. For the previous question, please give a reason for your chosen method

Answers discussed in the “Results and Analysis” section of report

16. Cattle farmers: what method of pain relief (if any) do you use when de-budding calves?

ANSWER CHOICES	RESPONSES	
None	17.73%	39
Local anaesthetic	24.55%	54
General anaesthetic	7.73%	17
Both local and general	31.36%	69
Other (please specify)	18.64%	41
TOTAL		220

17. For the previous question, please give a reason for your answer

Answers discussed in the “Results and Analysis” section of report

18. Do you ever use blunt force to euthanize animals?

ANSWER CHOICES	RESPONSES	
Regularly	2.01%	5
Never	74.30%	185
I have in the past, but only in desperate circumstances	23.69%	59
TOTAL		249

19. Dog owners: how much time does your working dog get off the leash/out of the run each day?

ANSWER CHOICES	RESPONSES	
Less than one hour	3.80%	7
2 - 3 hours	18.48%	34
5 - 6 hours	20.11%	37
Some days none, if I don't need to use him for any task	2.72%	5
Almost always off the chain/out of run	21.74%	40
Only locked up at night	33.15%	61
TOTAL		184

20. What is the biggest animal health problem you have on your farm? (e.g.: lameness, facial eczema etc)

Answers discussed in the “Results and Analysis” section of report

21. In relation to the previous question, how do you manage this issue?

Answers discussed in the “Results and Analysis” section of report

22. Have you ever witnessed what you would personally consider animal abuse from another farmer?

ANSWER CHOICES	RESPONSES	
Yes	56.10%	138
No	43.90%	108
TOTAL		246

23. If you answered yes to the previous question, did you take any action on what you saw? Please describe

Answers discussed in the “Results and Analysis” section of report

24. Dairy farmers: before the new bobby calf rules came about, what set up did you use for your bobby calves?

Answers discussed in the “Results and Analysis” section of report

25. What do you believe is the most effective method of getting farmers on board with animal welfare standards? (e.g.: new legislation, education programmes, prosecution etc)

Answers discussed in the “Results and Analysis” section of report

26. In your opinion, are there any guidelines/laws that you believe are lacking regarding animal welfare? (e.g.: minimum amount of time a dog needs to be off his chain every day)

Answers discussed in the “Results and Analysis” section of report

27. If you are euthanizing an animal for health reasons, or performing a home kill, please describe your usual process, and what tools you use

Answers discussed in the “Results and Analysis” section of report

28. Vet/rural contractor question only: How well do you believe, on average, your farming clients look after their animals? (0 being "very poorly" to 100 being "excellent")

Responses ranged from zero to 100, with the average response being 67, out of a total of 35 respondents.

29. Vets/contractors: for the above question, please elaborate on the things you find lacking or the things you find excellent

Answers discussed in the "Results and Analysis" section of report

Appendix 2: Urban consumer survey questions and responses

1. On a scale of 0 to 100, how well do you believe farmers care for their animals? (0 being "extremely poorly" and 100 being "excellently")

Responses ranged from three to 97, with an average response of 67, out of 73 responses

2. For the above question, why did you give this score?

Answers discussed in the "Results and Analysis" section of report

3. Dog owners: how much time does your dog get off the leash/out of the run each day?

ANSWER CHOICES	RESPONSES	
Less than one hour	1.82%	1
2 – 3 hours	12.73%	7
5 – 6 hours	5.45%	3
Some days none	1.82%	1
Almost always off the chain	60.00%	33
Only tied up at night	18.18%	10
TOTAL		55

4. What, in your opinion, is the minimum amount of time a dog needs outside/off his leash/out of his run for every day?

ANSWER CHOICES	RESPONSES	
A few minutes	1.39%	1
An hour	6.94%	5
2-3 hours	27.78%	20
5-6 hours	37.50%	27
Not necessary to let him off every day, so long as he is well cared for in other respects (e.g: healthy, fed correctly)	2.78%	2
Only acceptable to lock him up at night	23.61%	17
TOTAL		72

5. How much does the following statement apply to you?: "I would pay more for food for which I knew the animals that produced it were treated well" (0 being "does not apply at all" and 100 being "strongly applies")

Responses ranged from zero to 100, with an average response of 70, out of 73 responses

6. **For the above question, why did you give this score?**
Answers discussed in the “Results and Analysis” section of report
7. **How well do you believe that the current systems in place take care of animal welfare concerns, in terms of efficiency, acknowledging the issue, and fair repercussions? (0 being “very poorly” and 100 being “excellently”)**
Responses ranged from one to 100, with an average response of 51, out of 72 responses
8. **For the previous question, why did you give this score?**
Answers discussed in the “Results and Analysis” section of report
9. **How much does the following statement apply to you? “I do not really look into the livestock farming systems, I just trust that the agriculturalists are doing a good job” (0 being “does not apply at all” and 100 being “very applicable to me”)**
Responses ranged from zero to 100, with an average response of 54, out of 73 responses
10. **For the previous question, why did you give this score?**
Answers discussed in the “Results and Analysis” section of report
11. **Of the farming practices that you know about, are there any that you don’t agree with from an animal welfare perspective?**
Answers discussed in the “Results and Analysis” section of report
12. **If any practices were listed in the previous question, please explain why you disagree with them**
Answers discussed in the “Results and Analysis” section of report
13. **Do you believe the public is well informed on how and why certain activities/procedures are done to animals?**
Answers discussed in the “Results and Analysis” section of report
14. **How would you prefer to receive information about the animal welfare status of the animals that produced a product you buy? Select all that apply**

ANSWER CHOICES	RESPONSES	
Through the media	38.36%	28
On the product packaging	82.19%	60
On the producing company's website	49.32%	36
In advertisements for the product	49.32%	36
Signage on the shelves where the product was stacked	36.99%	27
QR codes on the package	24.66%	18
I do not want that information	10.96%	8
Other (please specify)	5.48%	4
Total Respondents: 73		

15. What age bracket are you in?

ANSWER CHOICES	RESPONSES	
Less than 30	23.29%	17
31-40	27.40%	20
41-50	24.66%	18
50+	24.66%	18
TOTAL		73

16. Do you have any other comments to add about animal agriculture in New Zealand?

Answers discussed in the “Results and Analysis” section of report