Hygiene and Welfare in the Dairy and Beef Industries

Instituting Hygienic Practices to be used on the Cattle Farm

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Summary (JE)

Hygiene is an ever constant concern in the dairy and beef cattle industry of America. Currently, there are no enforceable regulations in place concerning proper hygiene of dairy and beef cattle. These are necessary to ensure that the animals are cared for appropriately and the food products obtained from these animals is of high quality. We have written a letter to The Agricultural and Bioethics Committee, (NCCC209), of the USDA with the hopes that they will initiate putting in enforceable regulations that would provide appropriate hygienic practices in the dairy and beef cattle industry.

Video Link (NC)

http://youtu.be/DFvTY1GpK0k

Introduction (JE)

The cattle industry in America is not a struggling business. Though there are fewer farms now in America than there used to be, the farms that are in existence are huge. These farms pump out exuberant amounts of milk and meat from cattle each year. These farms are called factory farms and their productivity comes at a cost. The cost is paid by both the animals and the consumers. The push for high levels of efficiency is responsible for a break down in the quality of products being sold, and the humane treatment of animals. All of the problems in this industry boil down to lack of hygiene, which leads to unnecessary stress to animals at four key points in their lives: husbandry, housing, transportation, and ultimately slaughter.

Hygiene Related Issues Affecting Methods of Husbandry (NC)

In the US, farms produce meat and dairy products at alarming rates to satisfy the high demand imposed by consumers. According to the “Economic Research Report” by the United States Department of Agriculture, the cost of production depends on the size of the farm. Although, it may seem that smaller farms have lower production costs, it is actually the larger factory farms that do (11). The reason for this occurrence is that larger farms are able to produce more cattle and gain more profit to offset their expenses. These cattle are mostly produced by
industry farms; therefore some of the care that would regularly be given on small farms is no
longer there. Lack of hygiene is just one amongst many of the problems that affect the lives of
cattle in large industry farms, especially during husbandry.

Compared to the average chicken, cattle have a much longer gestation period which
affects the farmer’s rate of production. Since beef and dairy products are both in high demand,
farmers ultimately want to produce cattle with the strongest genes for their acquired purpose.
Procedures such as artificial insemination, embryo transfer and selective breeding are some of
the types of breeding methods exercised by farmers to achieve this goal. Some of the more
invasive procedures include artificial insemination and embryo transfer. During artificial
insemination the farmer can choose the best bull to mate with the cow/heifer, by collecting
seamen from the bull and injecting it into the cow to impregnate her. Similarly during embryo
transfer, the farmer will implant a fertilized egg of a fit breeding cow into another cow, which
will ensure strong offspring. With less invasive procedures such as selective breeding the farmer
will still get to choose which two animals will mate but it will occur naturally. Again the farmers
base their decision on the cattle’s fitness level. These processes are more efficient than random
matting, which enables companies to produce cattle by the masses.

Although there are more procedures farmers can exercise than listed, farmers will choose
specific procedures that will benefit the type of cattle they wish to produce. Cattle in the beef and
dairy industry are very different physically due to their purpose. In the beef industry, fat to
protein production is very important to maximize the farmer’s profit (2). It is very important that
a calf is able to put on enough weight at a young age. To ensure that the calf gains weight, the
calf must constantly be fed after birth. As a means to minimize financial cost, farmers prefer
supplying minimal milk and feed as needed (5). The farmers want to use cattle with genes that
would most likely produce bulky offspring. The selection of cattle would most likely be based on
past performance of the cattle as well as its family’s history.

Similarly, the best cattle are also chosen for dairy use. Milk prices for larger farms are
much lower than smaller farms, which help industry dairy farms acquire more profit (11).
According to the US Environment Protection Agency, there is a constant lactation cycle farmers
have cows on to extract maximum amounts of milk. About 60 days after a cow gives birth, a
farmer will impregnate the cow again (3). The lactation period can last from 12 to 14 months so
large dairy industries prefer to produce cows that can handle producing milk all year long.
Farmers specifically chose bulls which have the ability to produce good candidate daughters, to
mate. To accomplish this task, farmers use any of the methods mentioned above.

Although there are animal welfare laws in place that help protect against cruelty acts,
very few, if any, highlight the problem of hygiene during breeding. Most regulations by the FDA
and USDA, are geared towards the consumer health. Proper hygiene can severely affect the
production of these animals which in turn can affect consumers. It is crucial that the animals
mating are both healthy. It is also important to have a clean area to breed the cattle because it can
affect the outcome of the cattle’s pregnancy.

Precautionary measures should be taken when selecting which cow/heifer and bull should
mate. Regulating the health of the bull is as important as the cow’s because diseases can be
easily passed on through sexual intercourse and infection can occur. Trichomoniasis is a parasite that resides in preputial folds of bulls and can be sexually transmitted to a cow/heifer (8). It is not easy to tell if a bull has this infection. This should increase the importance of regulations. Infection can cause many complications during the pregnancy and can result in possibly passing the infection onto the calf, abortion, infertility, and even death of a cow (8). Currently, there is no such treatment for the infected bulls so most will have to be killed after testing positive for Trichomoniasis. Cows, on the other hand, have a vaccine but it does not help them against infection of the small parasite.

In response to invasive procedures such as artificial insemination and embryo transfer, hygiene of the work space and instruments are vital to a successful pregnancy. There are always great risks to overcome due to external environment which can also lead to infection. Some of these procedures are prone to cause bleeding. Having a clean, sanitary area could increase the probability of the cow becoming pregnant. After the cow is expecting, monitoring her and her living space could prevent dangers such as miscarriages. Cows have a long gestation period which means that the farmers would benefit if breeding cattle came without any complications. Otherwise this would mean that time and money was spent without any chance of profit.

One of biggest dangers that a cow can face after pregnancy is a post-calving condition called metritis. Once the cow has given birth to the calf, the uterus is exposed to the external environment. This period of time is critical because about 90% of bacteria can enter the cow (9). If by chance the area is filthy the cow has a high probability of contracting metritis, which is a uterine infection (1). Due to this very painful condition, cows become distressed and irritable. As a result a cow can refrain from eating for a period of time. Bodily effects occur as the cow’s temperature will increase and will cause diarrhea. Most importantly, from the dairy farmer’s point of view, metritis can cause the cow to stop producing milk (1). During this time they are at high risk of other infections that can be brought on by the external environments. Due to these internal reactions, including stress, the quality of milk is affected. When a cow is no longer used as a dairy cow it can be sent to the slaughter house to be used for the beef industry. In this case, stress and hormones can remain within the cow’s muscle and ultimately affect the consumer.

To prevent metritis, or complications from occurring it is crucial to address the issue of hygiene. Human error is almost inevitable where there is chance of using contaminated calving equipment (9). All equipment should be carefully disposed or sanitized thoroughly after every use. Providing the animal a clean area without manure is an example of how simple some of these procedures for better management can be.

If producers do not see a cow or bull fit then they will send the animal to be culled. Odds are that would be the best less expensive choice for them, other than trying to get the cow, if possible, back to health. This seems counterproductive after using all resources to impregnate the cow and lose the offspring. The farmer would be able to save money if they only took time to tend to the animals’ well-being before, during and after birth. Not only will it benefit the producer but the animal will live a better quality of life, and in turn provide the producer with a better quality product.
Increasing awareness by addressing the issue is very crucial. There needs to be more regulations that farmers should abide by. Many people are simply not aware of where their food might have come from. Cattle have to suffer for a good period of their lives due to the mass production from the dairy and beef industries in the US. Their well-being is vital when producing healthy products for the consumers.

Animal Housing and Hygiene (CH)

When housing farm animals, hygiene is the most important aspect to maintaining health, but it also seems to be the most overlooked in the industry, because it is easily compromised in the name of low costs and a high number of animals kept in a small space. “Farm animals represent ninety-eight percent of the animals raised and killed in the [United States]” (12). A key part of raising farm animals is housing them. Animals must be housed properly and humanely, but not all forms of housing may necessarily be profitable to the farmer, especially to the factory farmer, where profit margins are very important to a company that is very large. Very often, the cheapest method of housing is the most important to a factory farmer whose main goal is to make money. Regulations are put in place dictating certain protocol for housing farm animals, but all too often, factory farms are barely meeting these requirements, or cutting corners by finding loopholes in existing legislation. Hygiene is arguably the most difficult aspect of housing to regulate, because there are many stipulations as to what constitutes a clean environment for an animal, if animals have a different hygienic standard than humans, and other different factors that will change depending on varying opinions. A large amount of animals must be housed in as little space as possible. More animals mean more revenue to alleviate costs. Both dairy and beef cattle are kept on factory farms, although not always in a very humane or hygienic way.

For example, “calves raised for veal are typically tethered by the neck or confined in individual stalls, or both; the stalls are so small that the calves cannot turn around during their entire sixteen to eighteen week lives” (12). Such an act is prohibited by federal regulations, yet these rules continue to be ignored. From a young age, cattle are kept in truly miserable conditions, and the problem does not get any better as they age. Not only are the calves confined to a small space, but they must also be confined in urine and feces they expel. The small stalls are to cut down costs, but the quality of life of the calves is cut down as well. This is often done also for the customer, since the pale color preferred is due to the lack of muscle tone. Muscle is tough and hard to consume, and often discarded, making it a cull part of the calf that would result in a loss of profit for the farmer. Some would question if the pursuit of the ideal cut of veal is worth it if the young calves are not humanely housed. Others look the other way and believe that if the problem is not seen, then the problem does not exist.

Beef cattle that are not used for veal have the privilege to live longer, but not happier. “Upon reaching maturity, they are trucked to a feedlot to be fattened and readied for slaughter...crowded by the thousands into dusty, manure-laden pens” (13). Cramming so many beef cattle in a confined space can lead to disease, infection and injury for the animal, which is counterintuitive for the farmer, as an injured animal means a loss of profit for that animal. When out on a feedlot, “The air is thick with harmful bacteria subjecting the cattle to a constant risk of respiratory infections” (13). This is not only harmful for the animals, but also to the farmers who
work in such an environment. While the feedlot may be outside with ventilation present, the dust and gases still linger in the air around the cattle. Still, the issue of giving cattle a hygienic environment in which to live continues to be ignored by factory farmers.

Dairy cattle do not have an easier time being housed in factory farms. Dairy cattle are used for milk production, so hygiene is very important. People of all ages consume milk, and if the milk is not sanitary, it can be potentially fatal. But while the milk may be sanitary and compliant to federal regulations, the way in which dairy cattle are housed is anything but sanitary. Like beef cattle, dairy cattle are also sometimes tethered and confined to a small space. Since the main purpose of a dairy cow is to produce milk, life from 25 months and beyond are spent either pregnant or lactating. Overlooking hygiene here can be potentially harmful for both the cow and the calf.

With all of the problems present in farming welfare, it would appear as if this industry is completely unregulated, and the farmers are not being held accountable for their actions. This is half true: there are regulations in place but there seems to be a lack of implementation. In addition, of the regulations in place, they set the standards at adequate levels which may still not satisfy the living conditions of the animal. According to Humane Farm Animal Care for young dairy beef, “There must be enough bedding in the hutch to exclude any drafts, and to keep the calves clean (6). They then specifically state that “there is a serious problem if more than 5% of the calves have soil on their bellies. Bedding must not transfer soil on the calves” (6). However, because many factory farms go under the radar of regulations such as these, calves continue to live in filthy conditions. The tethering of calves is also prohibited, although many farms continue to do this to their animals. They are confined for long periods of time, despite the fact that “calves must not be confined for more than 2 hours, unless directed otherwise by an attending veterinarian” (6). In conjunction with wallowing in filth, the calves are not being housed in a hygienic or human way. Humane Animal Care also specifies what is considered adequate space for housing the animals, yet they continue to be ignored.

Another important stipulation for the housing of dairy beef is that “an outdoor exercise area must be provided, weather permitting” (6). If the weather is unfavorable, then it would make more sense to house the animals inside to prevent infection. Many times, this detail is overlooked, and the animals very seldom get to go outside at all in order to save space. It would be too much of a hassle to let the animals roam outside, because the farmers have not created an open space for the animals to roam, and when they do, it is on a feedlot overcrowded with thousands of other animals. The cattle cannot freely graze on fresh pasture. Instead, they feed on “unnaturally rich diets designed to fatten them quickly and profitably” (13). This leads to metabolic disorders, since cattle are biologically fit for consuming a grass-based high fiber diet.

Federal regulations are put into place to ensure the well-being of the animals. A majority of factory farmers would say that the regulations are too strict, and that it gets in the way of making profits and increases costs of production. However, it is important to note that regulations are done more for the protection of the animals rather than the productivity of factory farmers. Furthermore, the estimated cost increase incurred from more humane methods pales in comparison to potential revenue. Gaverick Matheny breaks down the cost increase over normal
practice for several types of farm animals. Humane practices will increase the costs of group housing of calves 1-2 percent. This would be a small dent in the profit margin, and in the long run, healthier calves will have a higher output and could be of better use to the farmer. The main issue with the regulations is implementing them. In order to successfully regulate a business, there must be people who inspect facilities for compliance, and this takes time and money. Due to the high number of factory farms in the United States, it is nearly impossible to oversee the operations of everything that occurs within the industry. Factory farmers are aware of this fact, and use it to get away with inhumane treatment of animals to maximize profit margins. The animals are seen as equipment to produce beef and dairy products. Even if the factory farmers are heavily regulated, there are several loopholes present that the farmers exploit, and there is nothing the federal government can do about it. Such a slight detail to fall in the cracks can be devastating.

Government regulation is a political issue that affects the whole country. Each side has their own strengths and weaknesses, as well as their own extremes. Because of this, it is often difficult to make regulations on such a serious subject. When regulation is present, the high polarity of opinions makes it hard to effectively implement. Animal welfare in the beef and dairy industry is a very sensitive issue, because it involves the lives of living beings. Some regard animals as equipment, while others may have an emotional attachment, and even see them as other human beings.

**Poor Transportation Practices Lead to Hygiene and Welfare Issues (JE)**

Transportation practices in today’s cattle industry inevitably lead to stress. Animals are guided into unfamiliar conditions, packed tightly, and deprived of food and water for extended periods of time. In the time they spend in close proximity to each other, there is an elevated risk of disease transference through both animal to animal and animal to the environment to another animal (14). During this time, they are also at a high risk for injury. These injuries tend to not be monitored unless they are gaping wounds. These wounds lead to poor meat quality and even more stress on the animal. It has been shown that stress in animals can lead to further hygiene problems, poor meat quality, and ultimately a lack in the welfare for the animal and can ultimately be fixed though better human practices.

While everything about transport appears to be stressful to cattle, the time spent in the vehicle while it is moving had been shown to be the most stressful (14). This extreme state of stress leads to higher rates of defecation in the cattle (15). Large amounts of cattle standing for long periods of time in feces is extremely unsanitary and can be easily avoided through proper driving and handling techniques, such as avoiding potholes, traveling smoother roads, and gentle stops and starts (14). It has been shown that stress can impact the microflora of the bovine intestinal tract ultimately leading to the expulsion of pathogens in feces (4). In the case of E. coli 0157, a study done by Stanford et.al showed that the shedding of E. coli 0157 was positively correlated with length of transport. Their study included ten loads of forty-five cattle each. The cattle were swabbed for E. coli 0157 before transport and upon arrival to the destination. It was shown that where the animal was located had an effect on the amount of E. coli 0157 present on the animal, such that animals in the front of the truck showed less amounts. The study ultimately concluded that factors such as stress from travel and the deprivation of food and water during
travel lead to higher amounts of E. coli 0157. This lead to large amounts of E. coli 0157 infecting the meat produced by these animals (15), thus creating a poor quality consumer product.

Another disease relating to transport is known as shipping fever. It is directly associated with the transportation of cattle of all ages. Shipping fever is a respiratory illness easily spread when animals are in close proximity. This disease is common in stressed animals rather than non-stressed because of the toll stress takes on the immune system. Stressed animals are far more prone to getting this disease and thus it is known as the trigger for this disease. Ultimately, there is stress put on cattle during their transportation and this is a causative factor in, “An increase in the prevalence of pathogens on the hides of cattle caused by the unavoidable physical contact between animals and with environmental surfaces,” (14)

Hygiene is not the only factor leading to a poor quality consumer product. Physical stresses are also put on cattle in transportation and this translated to further stress and degradation of meat quality along with quality of life. Transportation is a rigorous process, and “When animals are forced to take strenuous exercise, muscle is prone to forming lipid peroxidation metabolites,” (4). While this is an internal effect, outer problems are easier to observe yet are commonly overlooked. In a study done by N.G. Gregory, it was found that in 1999, out of three hundred-sixty-eight cattle in a market, forty-six percent of animals had wounds from nose rings, fifty-one percent of animals suffered broken tails, and eighty-four percent of the animals had integumentary injuries. Of the integumentary injuries, roughly seventy-three percent of the cattle endured abrasions and almost fifty percent were lacerations. About half of these animals had scars as well (4). These numbers are staggering and show a lack of quality care for these animals. This study also showed how prone animals are to bruising in transport, undoubtedly leading to further stress. Smith et.al. referred to this poor quality of care through stating that the, "most common hazard on the moving vehicle is overloading, which greatly increases the risk of animal injury and damage to carcass and meat quality,” (14). In addition to simple bruising, many animals become, “downer animals” during the transportation process (4). This may be because of slippery floors due to water, urine, and feces (14). While the percent of animals that are truly downed is small, showing roughly around one percent throughout the years between 1994 and 1999, there are plenty of animals that suffer falling. Cattle are extremely prone to falling upon entering a truck due to poor perception, commonly failing to lift a leg high enough to clear the tailboard properly (4).

There are physical stresses and health stresses put on cattle during transport, but there is also emotional stress out on them resulting from poor welfare practices. The quality of the loaders, drivers, cleaners, and lairage play a large part in the stresses put on cattle. While the cattle are being transported, the temperature of the trucks has been shown to be roughly in the eighties, but climbing to ninety-five degrees upon the halting of the truck for extended periods of time. These temperatures tend to result in weight loss (4). The individual driving the truck has a huge amount of influence over stress levels in the cattle being transported. Smith et.al. states, "The skill of the driver and the quality of the road appear to be more important in determining transport stress and losses in carcass value than the distance traveled," (14). This shows that if humans have a huge role in the stresses during the trip.
Not only should he or she be aware of the condition of the road so as to make the trip as smooth as possible, but he or she should also be aware of the age of the animals being transported. Smith et.al. explains that while, “Young calves exhibit less physiological stress with transport, but succumb to postsecondary mortality, which is correlated with age at transport,” (14). If the calves are too young, it can leave them even more vulnerable to shipping fever. While stress appears to be inevitable, there is a genetic factor to it along with the history of the animal. This means that better quality practices need to be taken from birth to slaughter to ensure the animal is as least stressed as possible. There are now non-invasive ways to see the stress level of animals besides behavioral signs. To check up on the emotional status of a heard, one simply needs a sample of saliva or urine. Humans also need to take into account the state of mind of the cattle and account for what the animal may see as a threat even if one is not exactly there (16). The human factor is of extreme importance in how cattle see the world and how stressed they get upon transportation.

While transportation is necessary for the American Cattle industry, it is viewed as an extreme source of stress. This ultimately has a huge effect on meat quality and welfare through poor hygiene and human behavior. Unfortunately all the stress and poor hygiene does not end with the transportation. The effects of poor transportation practices carry over into the slaughter of the animal and the quality of meat that ends up on the plates of Americans.

**Archaic Slaughtering Methods lead to Poor Hygiene and Welfare Outcomes (MP)**

The beef cattle industry is the largest portion of agriculture in the United States, which makes up about twenty three percent of all farms (10). On average cattle head have increased in number by over one million head/year. This is largely due to advances in technology. Indirectly the advances in agriculture and corn subsidies have led to a higher overall gain in crop yield. This means that there is more food for more animals. Also, more advances in agriculture led to more information about nutritional quality for the animals. This led to a greater finishing weight in animals, which boosted the market for cattle. There was also a shift in the meat packing industry. Larger meat packing companies built modern meat packing establishments on the high plains, which led to a shift away from the centralized ‘river markets’ (10). Due to this decentralization, the size of the meat packing facilities increased, which means that the number of animals that could be slaughtered per day went up, decreasing the price of beef and making it more competitive with other meats on the market, such as poultry and pork.

In recent years the cattle industry has taken a bit of a decline in production. The acreage needed to house the animals and the carcasses in much greater than any other meat product that is currently on the market. In addition, they don’t have a high turnover rate.

“The average cow produces less than one progeny per year, which (in terms of slaughter weight) is only about seventy percent of their body weight. The average sow produces fourteen progeny per year, and those pigs represent a total market eight times the sow’s body weight. The average broiler hen produces one hundred fifty progeny per year and one hundred times their body weight. These differences in reproduction rate have a profound effect on the relative costs of production of the different meats (10).
Since cattle have the lowest reproduction rate and use a higher number of resources, the per pound cost to manufacture beef is the highest comparatively. “In the early 1950’s, the retail price of poultry was eight percent of beef and in recent years, chicken prices have averaged to about thirty percent of those of beef” (10). Beef has no longer been able to compete with other meats, therefore in order to keep competitive prices but still maintain a profit, the cattle industry has resorted to decreasing precautionary measures against food-borne illnesses and animal welfare.

The current practice for slaughtering cattle in the United States is electrical stimulation, which is considered an anesthetic, and exsanguination being the cause of death. These methods are approved by the FDA as the most humane methods to process the animals. Bailhere's Comprehensive Veterinary Dictionary (1988) defines it as "producing unconsciousness of head in carbon dioxide, gas, electrical shock ... all of them aiming to allow the animal to bleed out while it is still alive.” Whereas the Oxford English Dictionary (1989) says that the aim of stunning is “to deprive of consciousness or power of motion by the blow, a fall or the like.” The FDA constitutes humane stunning as the latter definition. However, by saying “or power of motion” this entry also states that paralysis as an acceptable alternative to loss of consciousness but, these two terms are not synonymous. Loss of consciousness is the inability for the brain to sense and response to its surrounding environment, which would include a paralysis, or loss of body movement. On the flip side an animal or person may not be able to have any motor control, but still be consciously aware of its surrounding environment, an example of this would be shock. The electrical shock is designed to stun the animal and render it unconscious, after the animals’ carotid artery is cut and the animal will bleed to death. Stunning is not a sure fire way to make sure that the animal will experience minimal pain. In theory this is supposed to be the most humane way to process these animals, however, that is not always the case. The animal may regain consciousness while they move along to be exsanguination, which is not humane in the slightest. Some facilities don’t use any form of anesthetics at all, the just cut the carotid jugular complex while the animal is still conscious (“sticking”). The animals are able to feel the pain of this procedure and it does not follow FDA regulations at all. It is assumed that the voltage that is passed across the brain is painless and inflicts instantaneous unconsciousness; however, there is not evidence to support that statement.

Another practical alternative that is still practiced in some cattle farms is the use of carbon monoxide gas. This gas has a higher affinity to hemoglobin than oxygen does. The animal essentially suffocates and dies. This process was rendered inefficient after the use of high voltage shocks were implemented, because of prolonged time that it takes to kill the animal. High voltage electrocutions are used in many torture devices in third world countries. Therefore, we know that these procedures are in fact painful, since the animal is fully conscious of the shock when it is applied. However, many farms are hesitant to use other methods because this is the most practical way to slaughter a high volume of animals. If they reverted to slower more humane methods the facilities would not be able to process the same number of animals, which would increase the price of their meat, making it less competitive than the other meats on the market.

In England, they use a different, more humane approach to animal slaughter. They use what is called a captive- bolt penetration. This method penetrates the skull and destroys
that brain tissue. If the brain tissue is destroyed there is no way that the animal can regain consciousness when the carotid artery is cut. As long as the animal is still, this is the most accurate and humane way to make sure the animal is completely unconscious and still creates a good product that can go to market.

Animal welfare is not the first thing people usually think of when biting into a burger. Many people don’t know how the animal is process and frankly just don’t care. As long as their mean is dead and on a plate they are happy. Even if a person isn’t concerned about the welfare of the animals, they should at least be aware of the quality of the product they are eating. “In the past twenty three years there have been many human illness outbreaks that have been traced to undercooked beef and other beef products contaminated with Shiga-toxin producing Escherichia coli (STEC)” (7) This toxin has been isolated in beef and causes Shigga Disease. Some symptoms include stomach pains, bloody diarrhea, and hemorrhagic colitis which can result in life threatening hemolytic uremic syndrome. Many studies have shown that the high prevalence to pathogenic STEC in beef cattle emphasized the critical need for control measures to assure beef consumption safety.

Community Action: Instituting Hygienic Practices in the Cattle Industry (JE)

It has come to our attention, that there are few USDA regulations in place that would ensure hygienic practices on the beef and dairy cattle factory (or small) farm. It is possible to obtain meat and dairy products from cattle that have been maintained under hygienic conditions without deviating too far from current industrial practices. All of the problems in this industry lead back to human behaviors that need to be changed through legislation.

Based on what we have complied in this paper, the best start to a solution is to write a proposal to fix the hygiene and welfare in the system as it stands. We have compiled some recommendations to be sent in a letter to the Agriculture and Bioethics Committee (NCCC 209), of the USDA that focus in animal welfare and hygiene in four main areas: husbandry, housing, transport, and slaughter. The letter is as follows
Letter to NCCC209

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RE: Concerning the Hygiene and Welfare in the American Cattle Industry

Dear NCCC209: Agricultural Bioethics Committee

As students at Rutgers University, taking an Animal and Agriculture Colloquium course with Dr. Julie Fagan, we found the current legislation concerning hygiene in the cattle industry to be seriously outdated. Numerous problems relating to humane welfare of both dairy and beef cattle ultimately lead to poor quality of products that humans extract from these stressed animals. All of the problems boiled down to how welfare can affect hygiene on the farm. The goal of this letter is to show the problems in the industry and implore that they be fixed. There are four main areas that need to be addressed in the cattle industry: husbandry, housing, transportation, and slaughter. All of the problems in these four areas result from poor human management of the cattle and should be altered to ensure better quality of life for the cattle and consumer product.

During methods of breeding cattle there are always precautionary measures farmers should take which will help reduce any complications. Cattle in the beef and dairy industry are often bred selectively in order to attain offspring that exude the most favorable qualities. Invasive procedures such as artificial insemination and embryo transfer can cause infections if the breeding area and instruments are not clean. Hygiene can cause post-calving conditions after birth such as metritis. This condition can be very painful for a cow/heifer and will usually show symptoms such as diarrhea and temperature increase (1). Not only will this affect the cattle but the farmer as well, since cows refuse to eat and produce milk during this time.

The best way to prevent metritis and other dangers is to focus on rules and regulations that deal with proper hygiene when handling cattle husbandry. A majority of current regulations are focused on consumer welfare. When cattle suffer from these occurrences it could also be detrimental to the offspring, as well as the consumer because the quality of product degrades. New laws at the local level could increase farmer’s profit because they would be yielding healthy products for the customers.
If animals are going to be housed and raised for slaughter, then they should be housed in a humane way. It is true that there are rules and regulations for farms to follow pertaining to what is considered humane, such as what is stipulated in Farm Animal Care for young dairy beef, but still, there are so many farms who continue to cut corners under the radar of these mandates. Young beef calves are restrained so that they are unable to move for their entire sixteen to eighteen weeks of life, and cattle that are lucky enough to go outside are crowded by the thousands in pens without adequate pasture. (4).

The problem is not that there needs to be more laws in place, but rather that there needs to be amendments to the existing laws to prevent farmers from continuing to cut corners. Furthermore, there needs to be a more localized regulation system, in which regulations are mandated by the federal government, and carried out on a local level. It is much easier to oversee operations of one than of many. Tyson corporation has already begun to do this, implementing a practice to actively audit the treatment of farm animals on their premises in the middle of 2012. If more farms had honest and responsible regulations like these, there would be little to no animal welfare violations according to the amended laws that would be put into place.

Transportation will always be stressful on animals. However, this does not mean that unnecessary stress needs to be put on animals out of human neglect and ignorance. It has been shown that stressed animals are more prone to contract diseases, such as E. coli O157 (6), and shipping fever (5). Animals are also needlessly tossed about during transport. When drivers take the time to know the roads they will be using, and plan for a smoother ride, the cattle get less stressed and less knocked about. Cattle on rough roads, with uncaring drivers get tossed about and this stresses them out more, and creates poor quality meat that will go unnoticed to market.

The laws need to be revisited regarding transportation. The only law applying to livestock transportation was enacted in the 1800s. The 49 USC 80502 law is also known as the, “28-hour law.” This is because it does not allow animals to be confined for more than twenty-eight hours without food, water, or rest. This law has many flaws such as not applying to transportation facilities with food and water available, and it only applies to interstate travel. As discussed earlier, many animals are confined to one area of the transportation vehicle and thus cannot always move towards to food and water that may be available. This law also does not mention the temperature the animals are allowed to be kept in. Many times it can reach up to ninety-five degrees, averaging in the eighties for most of the trip. These high temperatures have been shown to lead to weight loss, which is against the goal of the seller, and thus counterproductive (2). Overall, the laws need to be revisited to ensure the safety of the cattle and the quality of product for the American consumers.

Slaughter is the final process that all animals in the cattle industry undergo. Since every this is a critical step in the processing of the animals proper steps need to be taken to ensure the animals’ welfare as well as the safety the consumer. As previously stated, the animals can get E.coli at a number of different stages during animal processing. At the final stage it is important for industry professionals to do a proper inspection of all the animals that come in and all the meat that exists the facility. In the past twenty three years there have been many human illness outbreaks that have been traced to undercooked beef and other beef products contaminated with
Shiga-toxin producing *Escherichia coli* (STEC)(3) This toxin has been isolated in beef and causes Shigga Disease. Many people, especially those with weaker immune system, have become fatally ill and some have even died from this disease. There needs to be more regulations that ensure E. coli infected meat does not leave the facility.

The current practice for slaughtering cattle in the United States is electrical stimulation, which is considered an anesthetic, and exsanguination being the cause of death. These methods are approved by the FDA as the most humane methods to process the animals. The FDA constitutes humane stunning as “deprivation of consciousness or power of motion by the blow, a fall or the like”. However, by saying “or power of motion” this entry also states that paralysis as an acceptable alternative to loss of consciousness but, these two terms are not synonymous. These animals are literally being tortured to death. There is no research that proves electrical stimulation a humane form of anesthetic. Many countries use electrocution as a form of pain and torture, so we know for a fact that this method is painful to these animals, especially if the animal maintains consciousness. These archaic forms of slaughter need to change to ensure that animals safety and welfare of these animals. Legislation needs to change so there can be a safer and more humane product on the grocery shelf.

In conclusion most, all of the problems in the American cattle industry result from human behavior. This behavior affects animal welfare and hygiene in negative ways, resulting in poor quality products for the American public to buy. The laws pertaining to the cattle industry are out of date and must be revisited. Poor welfare relating to hygiene can be fixed through enacting enforceable laws and regulatory guidelines. It is hoped that your committee on Agriculture Bioethics can get the ball rolling and see that this be done.

References


**Works Cited**


11. MacDonald, J.M., McBride, W., Mosheim, R., Nehring, R., O’Donoghue, E., Sandretto, R.M.


Letters to the editor

Jenny- I am going to write my letter to the editor to the Salt Lake Tribune newspaper here is the link to the story I found: http://www.sltrib.com/sltrib/news/55129649-78/beef-coli-products-safety.html.csp

With regards to the article, Salt Lake Company Recalls Beef Products in E. coli Scare, I think this could have been prevented, had the people who worked with the cattle taken precautions to keep the cattle less stressed, as well as requiring a higher standard of hygiene. I am a senior at Rutgers, the State University of New Jersey. I am currently in a colloquium class in which I am trying to raise hygiene standards in the cattle industry. The poor quality products that most of this industry creates can be traced to simple behaviors that can be altered.

A study on the effect of transportation practices and E. coli amounts was done in 2011 by Stanford et. al. found that stress during transportation can lead to immunosuppression. This leads to a far higher incidence of E. coli in particular, but many other illnesses that slip under the radar of our health standards. My goal is to try to gain the attention of the NCCC209, which is connected with the USDA. The NCCC209 deals with Agricultural Bioethics. If we can bring to their attention that the laws referring to cattle welfare and hygiene are extremely outdated and need to reflect higher standards, we can make more humane beef, and a far safer consumer product.

Sincerely,
Jenny Evanowski

Crystal-I wrote my letter to the editor to the Shelbyville Times-Gazette: http://www.t-g.com/story/1909763.html

The article "Tyson Audits Animal Care" has given me some hope for the regulation of the food and farming industry. Tyson is a well-known brand name that anyone could recognize, and by taking the initiative of responsibility, consumers have a positive outlook on the company. By Tyson foods beginning to audit the treatment of farm animals, it shows accountability in an issue of which many try to ignore. This will also ease the need for government regulation, because while mandates have been established in the past, it is much easier to face the problem on a local level, where seeing the problem firsthand is easier.

Currently, I am hoping to get the attention of the NCCC209, an organization that collaborates with the USDA to address the issue of farm animal welfare, specifically for dairy and beef cattle. Perhaps the steps taken by Tyson foods can be used to help the USDA rewrite outdated rules and regulations, and can give the incentive for other food and farm companies to do the same.

Upon reading an article in the “Animal News Desk” written by Cathy Kangas, I have seen correlations between swine and cattle husbandry. In the article, issues of inhumane swine breeding were addressed where it stated that many of these animals are kept in close corridors for most of their life. They are bred successively by producers, but fortunately now they are trying to rectify these circumstances for the betterment of the animals. Cattle used in the dairy and beef industry are also affected by such practices where they have to be bred in areas that are unsanitary. Breeding in such areas can cause massive infection such as “Metritis”, which can lead to abortion, infertility or even death. These situations could be avoided if we were to improve the standards of existing legislation that deal with animal health practices.

I am currently working to contact the NCCC209, an organizational who dedicates their time dealing with animal welfare. The NCCC209 works with the USDA, United States Department of Agriculture, which will be a tremendous help when proposing to improve some areas in regulations. If we bring attention to this problem than industries will hopefully change their cattle breeding practice, as they are trying to do with pigs, which will benefit both consumers and the animals.

Sincerely,
Natalie Calderon


I would like to respond to the article "Recent E.coli outbreak calls attention to food safety rules". I am sorry to hear that people have lost their lives over diseases that could have been prevented if the proper safety precautions were taken. I am currently a senior at Rutgers University in New Jersey, and I working with a group of students that are trying raising awareness of hygiene standards in the cattle industry. Many of these E. coli outbreaks can be traced back to poor practices that can be easily avoided, if the proper authorities would have stricter enforcement on the quality of meat.

In a paper written by Hussein, they have found that in the past twenty three years there have been many human illness outbreaks that have been traced to undercooked beef and other beef products contaminated with Shiga-toxin producing Escherichia coli (STEC). This toxin has been isolated in beef and causes Shigga Disease. If the current practices are allowed to continue, the number of people affected by these diseases will increase dramatically. In order to raise more awareness about the unhygienic practices we are contacting the NCCC209, who are associated with the USDA. The NCCC209 deals with Agricultural Bioethics, which can help bring some of
these issues to light. Many of the hygienic regulations are archaic and need to be updated. In order to do this the public needs to get the attention of the proper authorities in order to produce a safer consumer product.

Sincerely,

Mira Patel