

Mobile slaughterhouse - Short overview

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Abstract

The mobile slaughterhouse has long been a well-known system for the slaughter of animals in the European Union (EU) and worldwide. However, it is not yet in use as an established form of animal slaughter in the EU, but it has the potential to be. Primarily because it eliminates the need to transport live animals to the slaughterhouse. Animal transport is very stressful for the animals, so slaughtering them in their familiar environment makes an important contribution to a higher level of animal welfare and consequently better meat quality. However, when using a mobile slaughterhouse, all general requirements for slaughtering animals, as well as hygienic and sanitary conditions, must be met. The main purpose of the mobile slaughterhouse was to ensure the slaughter of animals in remote areas from which transporting the animals to a stationary slaughterhouse would be time-consuming and difficult. Also, in some countries, large slaughterhouses are not interested in slaughtering a small number of animals from small farms, especially in cases where the meat of the slaughtered animal is returned to the same farm. Given the development of infrastructure in the European region, the latter possibility is relatively rare. This problem could be replaced by smaller local slaughterhouses, but this would also require transportation and the associated stress for the animals. Therefore, the main potential of a mobile slaughterhouse is to minimise manipulation and transport of the animals prior to slaughter and, consequently, to improve meat quality. On the other hand, the advantage of a mobile slaughterhouse is also to replace home slaughtering. The mobile slaughterhouse has a properly equipped slaughter line with all equipment, a possible meat cold room, a clean hot water supply and its own disposal slaughter line and storage. The latter certainly contributes to the protection of the environment, as animal by-products are not illegally disposed of. The mobile slaughterhouse is certainly a more expensive way of slaughtering animals, but considering its mission, it is very well accepted by the public. The results of the questionnaires show that the public is very much in favour of mobile slaughterhouses and is willing to buy the meat obtained in this way, even at much higher prices. In any case, the idea of a mobile slaughterhouse is still relatively unused, which is why we give some facts in the following overview.

Keywords: mobile slaughterhouse, animal welfare, stress, meat quality

Introduction

The legislation on the protection of animals at the time of killing establishes the procedures and methods of slaughtering and killing animals. The basic content of the regulation is the protection of animals during handling, which

includes the proper movement, loading, transport, unloading, and housing of animals before slaughter (Council Regulation (EC) No. 1099/2009). The legislation states that all animals must be stunned before slaughter, except for religious slaughter. The

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basic criteria for the protection of animals before slaughter are the layout, construction and equipment of slaughterhouses and the proper housing and treatment of animals. According to the Council Regulation (EC) No. 1/2005 EU, in order to protect animals during transport, loading and unloading, it is required that the transport time should be kept as short as possible.

These regulations are essentially aimed at ensuring an appropriate level of animal welfare and minimizing unnecessary animal suffering. This is because for the animals, transportation to the slaughterhouse is probably the greatest stress in their lives (Ljungberg et al., 2007). The stress caused by travel, sorting, transport, and adaptation to the new environment at the slaughterhouse contributes significantly to the increase in stress hormones-particularly cortisol and corticosterone in serum and epinephrine in plasma-which significantly affect the animals' psychological and physical welfare (McCorkell et al., 2013). As a result, the animals increase their respiratory and heart rates. In addition, the animals are anxious, which may be manifested by aggression and escape attempts. As a result, large amounts of glycogen are depleted in the muscle, which is otherwise responsible for breaking down to lactic acid, thus lowering the pH, which contributes to the quality and shelf life of the meat. Long-term stress leads to a lack of glycogen in the muscle, resulting in excessively high pH and thus dark, firm, dry meat (DFD). While stressing animals shortly before slaughter leads to excessively rapid glycolysis immediately after slaughter and, due to the concomitant high temperature of the muscle tissue, protein breakdown and thus pale, soft, exudative meat (PSE) (Galbraith, 2011).

From this point of view, primarily in terms of animal welfare slaughtering animals in the home environment is therefore the more appropriate solution, which can be carried out at home as backyard slaughter, in local slaughterhouses, or even in mobile slaughterhouses (Hultgren et al., 2020). Slaughtering animals at home can be less stressful for the animals, but is highly questionable in terms of procedures, equipment, and hygiene. Even more, if the people performing the movement, stunning, and slaughter are not trained and have no practical experience, animal welfare is compromised.

Mobile slaughterhouses are a better solution than backyard slaughter, both from the point of view of animal welfare and hygiene, especially

because their equipment and personnel should ensure slaughter in accordance with the procedures prescribed in Council Regulation (EC) No. 1099/2009. The original purpose of developing mobile slaughterhouses was to bridge long distances between farms and slaughterhouses in order to save time and long-term transportation costs. Today, it is noted that the main purpose of a mobile slaughterhouse is to reduce the stress during slaughter of animals, which is the greatest contribution to animal welfare while ensuring higher quality of locally produced meat (Hultgren et al., 2018). To a lesser extent, mobile slaughterhouses could replace a decreasing number of small local slaughterhouses in the EU (SG). Mobile slaughterhouses are not yet widespread in the EU, except for some in Sweden that were operational between 2015 and 2019, in Norway that were operational between 2006 and 2015, in France as an experimental introduction since 2017, in Austria and Germany as a pilot project from 2018/19, and in the Netherlands as a project of some large slaughterhouses ((SG), County Administrative Board of Dalsland, 2020). The most important reason is the high investment costs and profitability, better planning and higher utilization of the mobile slaughterhouse, the possibility to slaughter different types of animals, larger cooling capacities, more appropriate handling and storage of waste, wastewater, and animal by-products, as well as the prevailing slaughter policy in large or local slaughterhouses (Babb and Kennedy, 2013; Caldwell, 2013).

What is a mobile slaughterhouse?

A mobile slaughterhouse is a self-contained processing unit that can be moved between farms and is intended for on-farm slaughter. Slaughter can be done on any farm large enough to accommodate it. There are several solutions regarding the construction of mobile slaughterhouses, also depending on the type of slaughter (cattle, pigs, poultry). For example, a mobile slaughterhouse for cattle is typically a truck with several separate interior rooms and enclosures (which may be external) with equipment for restraining and stunning animals, in which animals can also be bled (Hultgren et al., 2020, McCorkell et al., 2013, Stevenson et al., 2011). The first room, accessible from the outside, is used for hanging, bleeding and skinning or bristle treatment and evisceration; the second part is for cutting halves or quarters and

for veterinary examination; and the third part is a cold room. The mobile slaughterhouse must also have a dedicated room for veterinary detained meat and/or offal and a room for technical equipment – power generator, compressor, water heater, high-pressure cleaner, etc. The space for cleaning equipment and detergents must also be provided (Agri4Africa, 2019). Livestock, reindeer and poultry are slaughtered in mobile slaughterhouses in several countries, but the total volume of mobile slaughter is unknown.

Why use a mobile slaughterhouse?

At this point, the question arises as to why a mobile slaughterhouse should be used instead of a conventional slaughterhouse (Stevenson et al., 2011). Good animal welfare practices not only reduces unnecessary suffering, but also helps to make animals healthier. This is a key element for the food chain safety given the close links between animal welfare, animal health, and food-borne diseases, in line with the One Health principle. First and foremost is certainly the fact that animal transport prior to slaughter is virtually eliminated, especially when animals are stunned on pasture or in the yard in the front of stable. In addition, animals slaughtered in a mobile slaughterhouse in depots or barns do not have to wait for slaughter. It is particularly important that the animals are in a familiar environment among their peers.

In addition, the European Food Safety Authority published a scientific opinion in 2022 on the transmission of antimicrobial resistance (AMR) during animal transport. Their conclusion states that the duration of transport contributes to the likelihood of transmission of antimicrobial resistant bacteria during transport and that transmission increases as a result of longer transport duration. As a result of stress during transport. One of the solutions would be to transport meat rather than live animals.

The mobile slaughterhouse could solve a problem with Scottish highlander and other cattle that don't fit into traditional slaughterhouses holding pens and race leading to stunning boxes. Typically, EU countries solve this problem with on-farm or on-slaughterhouse emergency slaughter. A mobile slaughterhouse would help owners and FBOs to slaughter this type of cattle in accordance with animal welfare.

In traditional slaughterhouses, stunning

boxes are required to restrain animals before stunning. Immobilising animals by restraining the head (laterally and horizontally) and body causes additional stress. In mobile slaughterhouses, it is usually easier and faster to immobilise the animals, so the stress on the animals is lower than in conventional slaughterhouses (Eriksen et al., 2013). The frequency of daily slaughter in mobile slaughterhouses is lower, usually 5 to 10 animals per day. As a result, workers have time and are not under time pressure. Coleman et al. (2012) found that a work situation under pressure is associated with more violent handling due to a perceived lack of control and lack of time. Therefore, the stunning process in mobile slaughterhouses could be more precise and successful, and the bleeding of animals is more complete than in conventional slaughterhouses. However, this also depends on various personal and equipment requirements. The idea of the mobile slaughterhouse is to keep the animal's calmer before slaughter, which means a higher level of animal welfare and a lower likelihood of DFD and PSE meat, as well as ensuring the quality and shelf life of the meat. Mobile slaughterhouses are therefore an indispensable part of organic farming and a logical solution. Animal welfare is taken care of at slaughter, which is a next important step after ecological farming, where the ethological needs of the animals are considered. This includes free grazing, feeding with organic feed, health care and suitable housing. A similar result could be achieved by slaughtering in small local slaughterhouses, but in this case, more handling of the animals, including transport, is likely to be required, especially if local slaughterhouses are far away or difficult to reach. The main advantage of a mobile slaughterhouse is that it can be brought directly to the barn or pasture, allowing animals to walk to the stunning area with minimal involvement of stockperson. In addition, the mobile slaughterhouse should meet all the requirements of Council Regulation No. 1099/2009 in terms of equipment and slaughter conditions. According to Regulation (EU) No. 2017/625, an official veterinarian must be present at slaughter to perform ante-mortem inspection, i.e., to verify the health and welfare status of the animal and to check food chain information prior to slaughter. Post-mortem examination must be performed, and in some cases, samples must be taken for analysis (e.g., parasitological, bacteriological, rapid test specifically for bovine spongiform encephalopathy

(BSE), etc.). For slaughterhouses slaughtering less than 1,000 livestock units of mammals or 150,000 birds or rabbits per year (e.g., mobile slaughterhouse), the animal welfare officer is not required (European Commission, 2015). However, the official veterinarian can more easily verify animal welfare with regard to the actions of the parties involved due to the slower line.

According to Regulation (EC) No. 1069/2009 and Regulation (EC) No. 999/2001, hides, blood, horns, gastrointestinal tract, intestinal contents and specific risk material (SRM) must be stored in special containers to be taken to a rendering plant, composting plant or biogas plant after slaughter, depending on the category of animal by-products. The same applies to wastewater, which is collected in a container and taken to a municipal wastewater treatment plant for treatment. In this way, we avoid uncontrolled contamination and environmental pollution.

The mobile slaughterhouse must be equipped with appropriate equipment for cutting and processing meat (Regulation (EC) No. 853/2004). It must also have a slaughter line that allows for the slaughter of one or more species of animals and cold storage for the initial chilling of carcasses, which are then stored in the farm chiller or transported to the slaughterhouse for chilling (Babb et al., 2013). All Hazard Analysis Critical Control Point (HACCP) principles established by the food business operator must be followed during slaughter, and the premises and equipment must be properly cleaned and disinfected after slaughter or after completion of individual processing steps (Gwin, 2010).

Workers must be properly equipped and protected and meet all requirements for personal hygiene standards (Regulation (EC) No. 852/2004). In the EU, all slaughterhouse workers must have a certificate of competence that demonstrates their ability to handle animals (Council Regulation (EC) No. 1099/2009). Although such a certificate of competence should improve the conditions under which animals are handled, it does not prevent questionable handling of live animals (Coleman et al., 2012).

Water used in the operation of mobile slaughterhouses must meet the drinking water standards required by law (Decree of Drinking Water, 2013). If water from the farm is used, it must be tested by an officially approved institution and the water integrity results must meet regulatory

requirements. Until these results are available, no water from the farm may be used, only water from the mobile slaughterhouse storage facility, which must also be intact (Tum Tum's Black Gilt Meats LTD, 2020).

What may restrict the use of a mobile slaughterhouse?

Despite the many positive features of a mobile slaughterhouse, there are also its disadvantages. The first is the purchase price (Gibson, 2017). This depends on the size of the truck, the slaughter capacity, and the type of slaughter line. The price of the truck and its conversion is usually up to 176.000 euros (Turšič, 2019). In addition, the mobile slaughterhouse must obtain the appropriate permits for the operation, which requires that the slaughterhouse is adequately equipped with respect to the requirements of various regulations. Some requirements may vary from country to country.

The next factor is the cost-effectiveness of the mobile slaughterhouse, as Turšič (2019) described in detail in her master's thesis. Its use becomes cost-effective when it is used daily and covers the maximum slaughter capacity. It is important that it is in operation throughout the year and not only during seasonal slaughters (Babb et al., 2013; Turšič, 2019)). This means that a sufficient number of animals are slaughtered daily. Given the restrictions on slaughtering cattle at home, it is essential for a mobile slaughterhouse to obtain the necessary permits to slaughter cattle. Cutting and processing meat in a mobile slaughterhouse goes a long way toward improving profitability. The cost of operating a mobile slaughterhouse is also determined by the staff and the presence of an official veterinarian to oversee slaughter, and the cost of mileage and staff salaries also play an important role (Turšič, 2019). The depreciation and maintenance costs for the vehicle are no less important. The cost of fuel for the truck and the power generator, as well as other consumers, must also be considered (Wagner, 2021). Therefore, based on operating costs, mobile slaughterhouses with higher slaughter capacity are likely more profitable despite higher investment costs. In addition, mobile slaughterhouses with equipment for slaughtering different types of animals (except poultry) are more suitable and economically profitable (Turšič, 2019; Angioloni, 2015).

The operation of a mobile slaughterhouse

se also includes the problems of burning and scorching the skin of pigs and the capacity of the cold store. The latter should be sufficient for the initial cooling of one-day slaughtered animals, especially in cases where farmers do not have their own cooling capacity and carcasses must be transported to the slaughterhouse cold storage for final cooling. Such transportation further increases the cost of slaughter (Turšič, 2019). All activities require a lot of energy, and singeing of pig skin is a relatively dangerous process when it takes place in a transport vehicle. Air conditioning of the mobile slaughterhouse premises also consumes large amounts of energy.

The capacity of the drinking water tank, the quantity of which must be sufficient for the processes of one-day slaughter of animals and final cleaning. The quantities depend on the slaughter capacity. For this reason, it is best to provide standardized drinking water on the farm, which can be a problem. At the same time, sufficient hot water (82°C) must be provided, which in turn requires the consumption of a large amount of energy from the power generator if the mobile slaughterhouse cannot be connected to the farm's power grid (Regulation (EC) No. 853/2004, Tum Tum's Black Gilt Meats LTD, 2020).

It is worth mentioning the required provision of sufficient capacity for slaughterhouse and wastewater tanks and the cost of their removal and disposal. The storage and utilization of slaughterhouse waste classified as animal by-products must be carried out in accordance with the legislation on the management of waste from animal tissues and waste from the preparation and processing of meat, fish and other food of animal origin, while wastewater must be removed and treated based on the legislation in the field of wastewater management from food production plants of animal origin and animal by-products processing plants (Regulation (EC) No. 1069/2009, Commission Regulation (EU) No. 142/2011).

The smooth operation of mobile slaughterhouses requires sufficient time for travel to the farm and time for the relatively long preparation for slaughter. Time for cleaning, disinfection, and cleanup after slaughter must also be considered. For this reason, time can be an important limiting factor in the daily operation of mobile slaughterhouses.

Accessibility to the farm can also be a limi-

ting factor, especially due to remoteness and poor road conditions. The farm still requires a lot of space for a truck on level ground, which must be in direct contact with the barn or pasture from where the animals are destined for slaughter, which is often difficult to ensure (Tum Tum's Black Gilt Meats LTD, 2020).

Finally, meat prices are much higher due to the above factors, so consumers must be willing to purchase meat from animals slaughtered in mobile slaughterhouses. The same is true for organic meat prices, for which a certain percentage of consumers are willing to pay more (Carlsson et al., 2004).

Conclusion

Mobile slaughterhouses are currently a rare form of slaughter in the EU. The biggest problem in Slovenia are the investment costs. Slovenia is one of the smallest countries in the EU. It is almost impossible to be more than a hundred kilometres away from the slaughterhouse. Thus, the negative constraints described by Turšič (2019) in her master thesis apply to Slovenia. However, this does not apply to larger EU countries, where the transport distance of live animals is much greater.

Meat from animals slaughtered in mobile slaughterhouses would continue to be a niche product but could also ensure better meat quality due to less stress on the animals, perhaps in combination with organic farming. Given the increasing demand for self-sufficiency in food, mobile slaughterhouses could also help promote local agriculture. Proper control of meat and recycling of animal by-products and wastewater would also ensure adequate safety of food of animal origin and environmental protection, which is often a negative factor in home slaughtering. Based on these facts, the mobile slaughterhouse can contribute to ensuring a higher level of animal welfare and providing higher quality food of animal origin.

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Pokretna klaonica – Kratki osvrt

Sažetak

Pokretna klaonica je već dugo dobro poznati sustav za klanje životinja u Europskoj Uniji i u svijetu. Međutim, u EU se još ne koristi kao uspostavljena metoda klanja, no ima potencijal, poglavito jer eliminira potrebu za transportom živih životinja do klaonice. Transportiranje je za životinje vrlo stresno, stoga klanje životinja u njima poznatom okolišu značajno doprinosi višoj razini dobrobiti životinja i posljedično boljoj kvaliteti mesa. No, kada se pokretna klaonica koristi svi opći zahtjevi za klanje životinja, kao i higijenski i sanitarni uvjeti, moraju biti ispunjeni. Glavna svrha pokretne klaonice bila je osigurati klanje životinja u udaljenim područjima s kojih bi transport u stacionarnu klaonicu bio vremenski zahtjevan i težak. Također, u nekim državama, velike klaonice nisu zainteresirane za klanje malog broja životinja s malih farmi, posebno u slučajevima gdje se meso zaklane životinje vraća na istu farmu. Uzimajući u obzir razvoj infrastrukture u europskoj regiji potonja mogućnost je relativno rijetka. Ovaj problem bi se mogao zamijeniti s manjim lokalnim klaonicama, no ovo bi također zahtijevalo transport i za to vezani stres životinja. Stoga, glavni potencijal pokretne klaonice je minimizirati manipulaciju i transport životinja prije klanja te posljedično poboljšati kvalitetu mesa. S druge strane, prednost pokretne klaonice je također zamjena klanja u domaćinstvu. Pokretna klaonica ima prikladno opremljenu liniju za klanje sa svom opremom, eventualno i hladnu prostoriju za meso, opskrbu čistom vrućom vodom te vlastitu liniju za odlaganje i pohranu. Potonje zasigurno doprinosi zaštiti okoliša s obzirom na to da se životinjski nusproizvodi ne odlažu ilegalno. Pokretna klaonica je svakako skuplji način klanja životinja, no uzimajući u obzir njenu svrhu vrlo dobro je prihvaćena od strane javnosti. Rezultati upitnika pokazuju da je javnost prilično u korist pokretne klaonice i voljna kupiti meso dobiveno na ovaj način, čak i po znatno većoj cijeni. U svakom slučaju ideja pokretne klaonice je i dalje relativno neiskorištena, zbog čega u osvrtu koji slijedi iznosimo neke činjenice.

Glavne riječi: pokretna klaonica, dobrobit životinja, stres, kvaliteta mesa

Mobiler Schlachthof - Kurzer Überblick

Zusammenfassung

Der mobile Schlachthof ist seit langem ein bekanntes System für die Schlachtung von Tieren in der Europäischen Union (EU) und weltweit. Es ist jedoch noch nicht als etablierte Form der Tierschlachtung in der EU im Einsatz, hat aber das Potenzial dazu. Vor allem, weil der Transport lebender Tiere zum Schlachthof entfällt. Tiertransporte sind für die Tiere sehr stressig, so dass die Schlachtung in ihrer gewohnten Umgebung einen wichtigen Beitrag zu einem höheren Tierschutzniveau und folglich zu einer besseren Fleischqualität leistet. Beim Einsatz eines mobilen Schlachthofs müssen jedoch alle allgemeinen Anforderungen an die Schlachtung von Tieren sowie die hygienischen und sanitären Bedingungen erfüllt werden. Der Hauptzweck des mobilen Schlachthofs besteht darin, die Schlachtung von Tieren in entlegenen Gebieten zu gewährleisten, aus denen der Transport der Tiere zu einem stationären Schlachthof zeitaufwändig und schwierig wäre. Außerdem sind in einigen Ländern große Schlachthöfe nicht daran in-

teressiert, eine kleine Anzahl von Tieren aus kleinen Betrieben zu schlachten, insbesondere in Fällen, in denen das Fleisch des geschlachteten Tieres an denselben Betrieb zurückgegeben wird. Angesichts der Entwicklung der Infrastruktur in der europäischen Region ist die letztgenannte Möglichkeit relativ selten. Dieses Problem könnte durch kleinere lokale Schlachthöfe ersetzt werden, aber auch dies würde Transporte und den damit verbundenen Stress für die Tiere erfordern. Das Hauptpotenzial eines mobilen Schlachthofs besteht daher darin, die Manipulation und den Transport der Tiere vor der Schlachtung zu minimieren und folglich die Fleischqualität zu verbessern. Andererseits besteht der Vorteil eines mobilen Schlachthofs auch darin, dass er die Hausschlachtung ersetzen kann. Der mobile Schlachthof verfügt über eine ordnungsgemäß ausgestattete Schlachtlinie mit allen Geräten, ggf. einen Fleischkühlraum, eine Versorgung mit sauberem Warmwasser sowie eine eigene Entsorgungs- und Lagerungslinie. Letzteres trägt sicherlich zum Schutz der Umwelt bei, da tierische Nebenprodukte nicht illegal entsorgt werden. Der mobile Schlachthof ist sicherlich eine teurere Art des Schlachtens von Tieren, aber in Anbetracht seiner Aufgabe wird er von der Öffentlichkeit sehr gut akzeptiert. Die Ergebnisse der Fragebögen zeigen, dass die Öffentlichkeit die mobilen Schlachthöfe sehr befürwortet und bereit ist, das auf diese Weise gewonnene Fleisch zu kaufen, auch wenn es wesentlich teurer ist. Allerdings wird die Idee des mobilen Schlachthofs noch relativ selten in Anspruch genommen, weshalb wir in der folgenden Übersicht einige Fakten nennen.

Schlüsselwörter: Mobiler Schlachthof, Tierschutz, Stress, Fleischqualität

El matadero móvil - Un breve resumen

Resumen

El matadero móvil es desde hace tiempo un sistema muy conocido de sacrificio de animales en la Unión Europea y en el mundo. Sin embargo, aún no se utiliza como método de sacrificio establecido en la UE, pero tiene potencial, principalmente porque elimina la necesidad de transportar animales vivos al matadero. El transporte es muy estresante para los animales, por lo que el sacrificio de animales en un entorno familiar contribuye significativamente a un mayor nivel de bienestar animal y, en consecuencia, a una mejor calidad de la carne. Sin embargo, cuando se utilice un matadero móvil, deberán cumplirse todos los requisitos generales para el sacrificio de animales, así como las condiciones higiénicas y sanitarias. El propósito principal del matadero móvil era asegurar el sacrificio de animales en áreas remotas desde donde el transporte a un matadero estacionario llevaría mucho tiempo y sería difícil. Además, en algunos países, los grandes mataderos no están interesados en sacrificar una pequeña cantidad de animales de granjas pequeñas, especialmente en los casos en que la carne del animal sacrificado se devuelve a la misma granja. Teniendo en cuenta el desarrollo de la infraestructura en la región europea, la última posibilidad es relativamente rara. Este problema podría ser reemplazado con mataderos locales más pequeños, pero esto también requeriría transporte y el estrés animal asociado. Por lo tanto, el principal potencial del matadero móvil es minimizar la manipulación y el transporte de animales antes del sacrificio y, en consecuencia, mejorar la calidad de la carne. Por otro lado, la ventaja del matadero móvil es también la sustitución del matadero doméstico. El matadero móvil tiene una línea de matanza adecuadamente equipada con todo el equipo, posiblemente también una cámara frigorífica para carne, un suministro de agua caliente limpia y su propia línea de eliminación y almacenamiento. Este último sin duda contribuye a la protección del medio ambiente, dado que los subproductos animales no se vierten ilegalmente. Un matadero móvil es ciertamente una forma más costosa de sacrificar animales, pero teniendo en cuenta su propósito, es muy bien recibido por el público. Los resultados del cuestionario muestran que el público está bastante a favor del matadero móvil y está dispuesto a comprar la carne obtenida de esta forma, incluso a un precio significativamente mayor. En cualquier caso, la idea de un matadero móvil todavía es relativamente poco utilizada, por lo que presentamos algunos datos en la revisión que sigue.

Palabras claves: matadero móvil, bienestar animal, estrés, calidad de la carne

Impianto di macellazione mobile – breve recensione

Riassunto

L'impianto di macellazione mobile è da tempo un sistema di macellazione ben noto tanto nell'Unione europea, quanto nel resto del mondo. Nell'Unione europea, però, non è ancora tra i metodi di macellazione consolidati, nonostante abbia un gran potenziale d'utilizzo, soprattutto perché elimina la necessità di trasportare animali vivi al macello. È noto come il trasporto rappresenti una fase molto stressante per gli animali avviati al macello. La macellazione degli animali in un ambiente a loro familiare, invece, contribuisce in modo significativo ad elevare il livello di benessere dell'animale stesso e, di conseguenza, a migliorare la qualità della carne. Tuttavia, quando si utilizza un impianto di macellazione mobile, va garantita la soddisfazione di tutti i requisiti generali e delle condizioni igienico-sanitarie previste dalla normativa in vigore. Lo scopo principale dell'impianto di macellazione mobile consiste nel garantire la macellazione degli animali in aree remote, dalle quali il trasporto a un impianto di macellazione fisso sarebbe lungo e gravoso. Inoltre, in alcuni paesi, i grandi impianti di macellazione non sono interessati alla macellazione di un piccolo numero di animali provenienti da piccoli allevamenti, soprattutto nei casi in cui la carne dell'animale macellato deve essere restituita allo stesso allevamento. Considerando lo sviluppo delle infrastrutture nella regione europea, quest'ultima possibilità è relativamente rara. Questo problema potrebbe essere risolto con la creazione di macelli locali più piccoli, il che, tuttavia, non eliminerebbe né il problema del trasporto, né il conseguente stress cui verrebbero sottoposti gli animali avviati al macello. Pertanto, il principale vantaggio dell'impianto di macellazione mobile consisterebbe nel ridurre ai minimi termini la manipolazione e il trasporto degli animali prima della macellazione, con conseguente miglioramento qualitativo della carne. D'altra parte, il vantaggio del macello mobile è anche quello di avviare la macellazione in ambito domestico. L'impianto di macellazione mobile, infatti, dispone di una linea di macellazione opportunamente attrezzata, eventualmente dotata anche di una cella frigorifera per le carni, con acqua calda pulita e una propria linea di smaltimento e stoccaggio. Quest'ultimo aspetto contribuisce certamente alla tutela dell'ambiente, dato che i sottoprodotti di origine animale verrebbero smaltiti a norma di legge. Insomma, sebbene sia un metodo più costoso degli altri, visti i vantaggi che ne derivano, l'impianto di macellazione mobile incontra i favori dell'opinione pubblica. I risultati del questionario mostrano che l'opinione pubblica si dice abbastanza favorevole all'impianto di macellazione mobile e che sarebbe disposta ad acquistare la carne così ottenuta, anche a un prezzo significativamente più alto. In ogni caso, l'idea dell'impianto di macellazione mobile è ancora relativamente poco diffusa e utilizzata, motivo per cui nella recensione che segue presentiamo alcuni fatti a sostegno del suo impiego.

Parole chiave: impianto di macellazione mobile, benessere animale, stress, qualità della carne