

## THE STAGE OF RESEARCH ON WELFARE REQUIREMENTS IN LIVESTOCK FARMS

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### *Abstract*

*In order for animals to express their genetic potential and their production not to be affected, their welfare is a must. This study analyzed the origins of the concept of welfare and what animal welfare means, which implies the 5 freedoms that must be respected. Then, it was briefly analyzed what the consumer's consent paying a higher price for products obtained from farms that applied friendly animal technologies means. After that, it was analyzed the most important aspects that the farmer faces and can affect the animals welfare. At the end, the interaction of man-animal was brought into account, which has an enormous importance for animals welfare.*

**Key words:** *animals welfare, farm welfare, farm, welfare.*

### INTRODUCTION

For studying and understand the concept of animals welfare, we have to analyze the breeding systems, the legislation for farm animals and here it should be mentioned that it is different from country to country. Another important aspect is the production costs.

Natural resources and feeding stuffs and work costs are the primary elements of competitiveness in the farm animal and meat processing areas (Van Horne & Achterbosch, 2008; Cziszter et al., 2010).

Systems that deal with animal welfare are:

- 1) Welfare Quality® protocol;
- 2) ANI 35L.

It cannot be said that they are 100% complete and that by applying and observing them strictly, the animal welfare in conventional or organic farms has been solved.

However, not all factors can be included in legislative regulations and even for those that are included, there is usually a range in which farmers can fit in. So, due to the combinations of factors that vary between certain limits, a very large number of different situations are reached. That's why, it's essential to be identified the most important elements and narrow their interval as much as possible (Venglovsky, 2010).

A final aspect to be mentioned and of major importance, is the interaction of animal man. In this interaction, so much in the farm (paddock, hall, milking parlour, etc.) but also at slaughter, must be minimized and if it can even be excluded, the fear induced by the caregiver to the animal.

### MATERIALS AND METHODS

The researches with reference to the notion of the concept of animal welfare were realize by analyzing scientific articles, publications from the European Union Commission, specialized book on the relationship between animal welfare and quality of the resulting products.

Besides the fact that the origin and concern for the concept of animal welfare was shown, it was generally followed, the implications of this concept within conventional and organic farms, with the help of welfare quality and ANI 35L systems, the major problems in farms, the legislation in force, but also some differences in terms of the price of the finished product.

It has been shown in short, the impact of human animal interaction, which can have negative effects and is undesirable. And the positive impact that is desirable must necessarily be manifested also by the suppression of the induction of fear by caregivers in animals.

## RESULTS AND DISCUSSIONS

To understand animal welfare, we must look back in time and to analyze the debates and concerns that made welfare in zootechnical farms a problem that needed to be solved but in the same time the farm to remain profitable.

The first concern and criticism of livestock internment systems was presented in the book "Animal Machines", from animal defender (Harrison, 1964; Fraser, 2008) and described cages for laying hens and crates for veal calves, and she claimed that these systems are so unnatural that they cause animals to lead miserable and unhealthy lives.

On "Animal Liberation", Australian philosopher (Singer, 1975; Fraser, 2008) based his critical remarks of confinement production on the principle that actions should be judged right or wrong on the basis of the pain or pleasure that they cause.

Into those and other quotations a crucial worry focus on words as "pleasure", "pain", "suffering", and "happiness" (Fraser, 2008).

A British committee, that was formed to classify the farm animals welfare determined: „In principle we find unacceptable of a degree of confinement of an animal which necessarily frustrates almost all the activities which create his natural behaviour” (Brambell, 1965; Fraser, 2008).

In Sweden Astrid (1989) and Fraser (2008) say: “Let farm animals see the sun just once, let them get to breathe fresh air for once, instead of manure gas”.

In USA the philosopher (Rollin, 1993; Fraser, 2008) made this statement: Welfare not only represent control of pain and suffering, also will entail nurturing and fulfillment of the animal naturalness.

If we watch closely, welfare concept comes from different persons but not from farmers and without the right of reply the confinement system it can be perceived as very cruel. To make an idea about animal welfare, we need to see other opinions: “My experience was that by and large the standard of welfare amid animals kept in the so called "intensive" systems is higher” (Taylor, 1972; Fraser, 2008). Also, Sainsbury (1986) and Fraser (2008) expresses himself in this way: Good health is the birth

right of each animal that we rear, whether intensively or under other conditions.

A good definition for animal welfare is giving by this fundamentals: The animal normal biological function (which, amid other things, means assuring that the animal is healthy and properly nourished), his emotional state (inclusive of the nonappearance of negative emotions, suchlike pain and chronic fear), and his capability to express certain normal behaviors (Fraser et al., 1997; Manteca et al., 2012). Also, in 1997 the welfare of intensively kept pigs was reviewed from the scientific veterinary committee, EU, Brussels (Fraser, 2008) and found: Several serious welfare problems for sows persist even in the best stall housing system.

The review effect was that European Union approved a regulation to interdict the gestation stall starting in 2013 (Fraser, 2008).

As is mentioned in the speciality literature from 1965, the concept of five freedoms become a necessity (Szücs & Csiszter, 2010a).

The "Five Freedoms" principle provide a very helpful and practical approach to examine welfare, specifically, to its assessment in livestock farms, during the transport and slaughtering farm animals (Manteca et al., 2012).

The five freedoms are (Manteca et al., 2012):

- 1) The animal is free from hunger, thirst and malnutrition.
- 2) The animal is free from physical and thermal discomfort.
- 3) The animal is free from pain, injury and disease.
- 4) The animal is able to express most of its normal behavioral patterns.
- 5) The animal does not experience fear or distress.

Those five freedoms mentioned above, are not something to be 100% complete and is more for animal protection in his/her productive life.

Even so, regardless of its clear helpfulness, it has two deficiencies, first, it is sometimes too general and second, there is a certain overlapping between some of the five freedoms (Manteca et al., 2012).

A solution for stopping the debate on welfare for animals, was and still is Welfare Quality® protocol, founded by the EU.

Different from other protocols, which predominantly applies environment-based parameters, the protocols of the Welfare Quality® project are mainly established on animal-based measures (Manteca et al., 2012). In conformity with Welfare Quality® protocols, animal welfare assessments need to respond to four questions (Manteca et al., 2012):

- 1) Animals are properly fed?
- 2) Animals are properly housed?
- 3) Animals are healthy?
- 4) Animals' behavior reflects optimised emotional states?

We live in a world where we need to integrate the animal products but from an animal welfare perspective. There is a new notion in economy and that notion is *circular welfare economy* (CWE) and is first time presented by Bracke (2017). *An essential element of sustainable, circular farming: Integrity & a circular welfare economy*. Retrieved from <http://marcbracke.nl/an-essential-element-of-sustainable-circular-farming-integrity-a-circular-welfare-economy/>. The idea of a CWE was to accentuate that in a transition in the direction of circular agriculture we should not forget about animal welfare (Bracke et al., 2022).

Meaning that we're supposed to not respect animal welfare only because some people find it necessary, but because it is a purpose in itself (Bracke et al., 2022).

As I mentioned earlier the purpose of the Welfare Quality® project was to provide science-based practical tools and strategies to improve the well-being of animal farms (Szücs & Csiszter, 2010b). The foundations of the project put into practice three ways to improve the well-being of farm animals, as shown in Figure 1 (Blokhuys, 2004) and Figure 2 (Blokhuys et al., 2003; Szücs & Csiszter, 2010b).

We may think and believe that is enough and by respecting the Welfare Quality® project the animal welfare issues have been resolved, but it is not so.

The next factors, presented in descending order, seem to be very necessary for welfare and protection of animals (Martelli, 2009; Csiszter et al., 2010): space allocation, friendly transport, access to outside areas, natural light exposure, nonappearance of movement restrictions by tying with chains either ropes,

natural behaviors expression, nonappearance of social contact and mutilation.

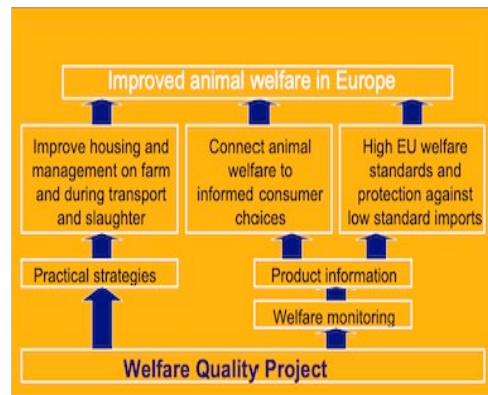


Figure 1. Directions of the Welfare Quality® Project to satisfy animal welfare (Blokhuys, 2004)

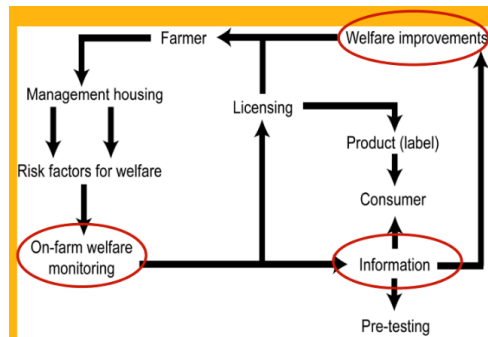


Figure 2. Schematic representation of the roles of the monitoring systems on the farm (Blokhuys et al., 2003; Szücs & Csiszter, 2010)

The reality in European Union it's another. According to an report for cattle welfare in dairy farms, member states deficiency of national systems to gather and analyze data from farms which would let a robust assessment of dairy cows welfare (DG SANTE, European Commission).

Let's analyze a little some important aspects, to really understand the concept of animal welfare and I mean husbandry technology of animal farm (intensive, semi-intensive and extensive) compared to organic farms and in the end the final product (meat, milk, eggs, etc) because animal products from conventional farms has a price and from organic farms or conventional farms but apply the animal welfare has a different price.

Even though farm animals welfare it is a problem that is of increasing concern to European citizens, there is a higher inclination to buy the most inexpensive meat (EC, 2007; Csiszter et al., 2010). Now, because we are in 2023 and price of the energy is higher from 2007 and we need to understand very well why to pay more for an animal product that's coming from organic farms or farms that apply animal welfare.

Due to selection for high productions, modern breeds of animals may be unable to reach their genetic potential in an organic system (Kovács & Konrád, 2010). Therefore it would be better to use local breeds in organic production that are better adapted from a genetic point of view to their environment (van Diepen et al., 2007; Kovács & Konrád, 2010).

But what about high production of modern breeds farm animals? The second question: What about intensive farms but to apply the animal welfare concept? And questions are many but the consumer is the last to decide and how to send the animal welfare message in the market and the consumer to pay more for it?

These products may be those that are explicitly labeled as being produced in technologies that ensure animal welfare highest level or organic products, as well as those that have a certain geographical origin (Csiszter et al., 2010).

In European Union, eggs are presented to consumers with different standards of animal welfare in the most explicit way. EU legislation provides for three accommodation systems for laying hens (Directive 1999/74/EC):

1) conventional cages; 2) enriched cages and 3) alternative systems (Csiszter et al., 2010). Danish consumers usually agree to pay more for labels indicating animal welfare production methods (Wier et al., 2005). As we can suppose and we can see this in the grocery store, those eggs with the label *ground production in shelter* and *production in freedom* will have a higher price than eggs with the label *production in conventional batteries*.

A comparison of the price of broilers in the UK's largest supermarkets indicated that whole fresh standard chickens can be bought at a price between GBP 1.78 and GBP 2.99 per kg, the price depending on the size of the finished

chicken. Free-range chickens are found at prices

ranging from GBP 3.17 to GBP 5.99 per kg (compared to the prices of organic chickens which are found at prices ranging from GBP 4.24 to GBP 6.25 per kg). This shows that the legal wealth price increase is 6% to 250% higher. It's not understandable to what degree welfare is a dilemma when purchasing organic products (McVittie et al., 2006; Csiszter et al., 2010). Here I must mention that the price is also influenced by the transportation and the addition of the store especially in free-range chickens and organic chickens.

Slovak consumers concerns about pork focus not only on safety issues, but also on price availability and eating habits (Bielik & Šajbidorová, 2009). Also in my native country Romania, pork consumption is average during the year but during the celebration of the birth of Jesus Christ, we have the habit of consuming excess pork, but the price differs from year to year.

A recent study that used the evaluation method to determine people's preference for pork produced in different systems in the U.S.A. showed that consumers consent to pay, on average, 1.50 USD for one kg of pork obtained in the cage rearing system, 1.63 USD for pigs raised in boxes, 3.33 USD for pigs raised in open shelters, 3.51 USD for pigs raised on pasture and 3.80 USD for organically produced pigs (Csiszter et al., 2010).

As for beef, the habit of eating white veal and beef meat matters a lot.

The additional prices that consumers in the U.S.A. and Canada have consented to pay for beef steak are shown in Table 1 (Dickinson et al., 2003; Csiszter et al., 2010).

The beef labeling system was adopted and imposed as a compulsory system in Finland in 1998. For consumers this means that the packaging or labeling attached to beef meat is marked with the text "Finnish beef". The study carried out to examine the consent to pay for the additional information on the label showed that 59% of Finnish consumers agreed to pay an additional price to receive this additional information on the beef label (Latvala & Kola, 2004).

Table1. Consent to pay for roast beef in U.S.A and Canada (Dickinson et al., 2003; Csiszter et al., 2010)

Attribute	Additional price (%)	
	U.S.A	Canada
Humane treatment of the animal	16	19
Greater food safety	20	18
Traceability	7	9
All of the above attributes	35	37

For dairy products there is a wide range, from different species, so I will be brief. In a study constituted consent to pay for yogurts made in Italy, (Napolitano et al., 2008; Csiszter et al., 2010) they founded that in each product studied, consumers expressed a higher consent to pay for products whose labels indicated higher standards of welfare in comparison to yogurts that had labels describing intermediary or lower standards of welfare. These results indicated that information referring to animal welfare, when provided to customers, may become a considerable factor in their acceptance to pay for products of animal origin. The price difference is also in the livestock system and because is known the difficulties faced by farmers, a strong and convincing message is required on packaging to products labeled from organic farms, free-range, extensive growth system, etc.

Pig production outside the shelter provide to animals an expanded environmental diversification and freedom of expression of behavior, but demand challenges for breed adaptation, management control, biosecurity and environmental protection (Edwards, 2005; Kovács & Konrád, 2010). In the majority conventional production systems, only adult animals and infant pigs are kept on pasture. In traditional systems and organic production systems, animals for meat can live out of the shelter for their entire life. Indirect consequences can outcome from both positive and negative impacts, the response to physiological stress before slaughter (Kovács & Konrád, 2010). When we are aware of stressors, it is known that porcine stress syndrome is the main cause of deadly under the influence of stressful conditions.

In extensive systems, animals may have the opportunity to express their natural behaviors, but environmental control is more difficult to

achieve. Intensive systems restrict the natural behavior of animals which leads to behavioral problems and aggression even if there is better environmental control and easier access to animals to control an individual (Kovács & Konrád, 2010).

In Sweden, a comprehensive research program for organic pig production in stalls with and without access to pasture was initiated to develop a sustainable and efficient pig production system for meat with a top level about animal welfare. Some of the investigations were conducted by (Olsson et al., 2007; Kovács & Konrád, 2010), with a focus on the accommodation systems in which the animal welfare, production, straw use, health status, labor needs, environmental aspects, the use of nutrients by plants and environmental pollution in connection with the losses of N, P and K were taken into account, as well as the degradation of the pasture.

As for sheep, it cannot be said exactly which system is better, conventional or organic because their growth is mostly carried out in a extensive system.

In birds, however, the differences are enormous in terms of conventional farming system and organic farming system.

In poultry, comparing organic poultry farms with conventional ones (Castellini et al., 2006; Kovács & Konrád, 2010), he concluded that all energy indicators are favorable to the organic system, especially regarding:

- High efficiency in turning inputs into the end product;
- High level to removable inputs;
- High level to local inputs;
- Low flow density of energy, materials.

The performances of the two growth systems have big differences in terms of terminal weight, slaughter age, specific consumption and mortality. Conventional systems by using fast growing genotypes bred in very well managed environments and because of veterinary treatments are able to reach heavier animals in 49 days. Organic chickens must remain on the farm for 81 days without any additional prophylactic measures. Thus, only certain growth models maximize all the potential benefits of organic agriculture. Meaning in addition to productivity and profitability and the interactions between all the

factors to be taken into account, such as the welfare and intrinsic quality of the meat in the production of organic meat (Kovács & Konrád, 2010).

In husbandry systems on freedom in large flocks, inclusive of organic systems, in lot of situations the birds began to peck their feathers which finished with a inadmissibility large proportion of cannibalism. As a consequence of this phenomenon, mortality can reach 20% per year (Kristensen, 1998; Kovács & Konrád, 2010). In addition to mortality through cannibalism, mortality caused by predators and the inappropriate behavior of birds by gathering together can sometimes produce suffocation. Thus, the high mortality rate is a real problem, especially from the perspective of welfare and on the consumers eyes (Kovács & Konrád, 2010).

In meat cattle the situation is more complex and organic growth has disadvantages. To ensure a welfare and a natural environment and I mean grazing, that means available place for grazing, as is not available for all farms. And the farms that have space for grazing, also depends on the number of animals, not all of them have space for grazing enough.

If the animals do not graze at all it means that the welfare of the animals is not satisfactory, because it is known that grazing has beneficial effects on the health of ongoans, less severe disorders and better healing and reduces stereotypes and aggression in a herd. Hard concrete and grate, especially when slippery, dirty and wet create serious risks of injury (Anonymous, 2001; Venglovsky, 2010).

In organic agriculture it is not feasible to produce intensive beef due to the recommendation that the daily ration administered should contain at least 60% volume feed and that there should be at least 150 days of grazing per year. Bulls-calf over 1 year old can be accommodated in shelters with access to an outdoor movement paddock all year round. Organic fattening of bulls-calf with concentrates

at discretion is not possible, and it can be questioned whether it is possible to obtain a satisfactory quality carcass with a ration containing 60% volume feed. Fattening of cattle of meat breeds can result in a higher concentration of unsaturated fatty acids in

intramuscular fat of meat (Kovács & Konrád, 2010).

Another aspect that have a major impact at meat or milk cattle it's detunning and opinions are for and against in terms of welfare but we must take into account the damages brought in case of non-decornation.

Arguments that are made against the use of eorn can be viewed through the prism of three major considerations (Vaarst et al., 2004; Pentelescu, 2010):

- the social function of the horns (preserving the integrity of the animals);
- the procedure itself (causes pain and suffering);
- the importance of horns in some breeding systems (biodynamic agriculture).

The major impact of detunning is that the animals can be kept in large numbers in intensive system and lack of self defending with horns. Then, udder hits can have the effect of blood appearing in the milk, resulting in economic and financial implications, because milk can not be marketed and in addition the animal needs medical care. Strong stings in the body can even result in penetrating the abdominal wall or causing abortion (Pentelescu, 2010).

At dairy cows for a farmer the most important aspect is lactation.

During a normal lactation, the cow's organism is confronted with a number of stressors, such as: calving and separation from the calf, involution of the genital apparatus, mechanical milking, the onset of estrus and the installation of a new gestation, lack of active movement, aggressive social interactions, relotizations, at the onset of lactation the energy balance is negative, the phase of mobilization of body reserves, the adaptation of the digestive tract to the increase of feed intake, etc (Gavojdian, 2010).

The second very important aspect for the farmer is to prevent the appearance of lameness. Lameness is the most important condition that

affects the welfare of dairy cows (Chaplin et al., 2000; Szücs & Sossidou, 2010a).

In a study conducted by (Bugueiro et al., 2020) to assess the interconnection between farm welfare, production of milk and reproductive performance in dairy herds on northwestern

Spain. They used Welfare Quality® protocol to collect the welfare grade out of 31 herds. Results shows the production of milk was connected with nonappearance of prolonged hunger norm. Also, good feeding was connected with raise the production of milk. Other factors that were mentioned was nonappearance of pain and injuries. Expression of social behaviors was confirmed too. As we can see, nonappearance of prolonged hunger, pain, injuries, and good feeding are a must. The next study conducted by Mitrănescu et al. (2020) was made at a farm with dairy cows in the southern region of Romania and have researched the following: health grade of the acropodium via the walk score (Gait Score), condition of animals (BCS - Body Condition Score), hygiene of the body (body hygiene index) and determination in the laboratory of blood serum from 12 Holstein breed cows on different gestation periods of 13 biochemical parameters (BUN, PHOS, URIC, Ca, TP, ALB, GLOB, AST, ALT, TRIG, GGT, GLU and LDH). At the end of the study they concluded: data from the research on the assessment of cows welfare on the farm (GS, BCS and body hygiene) including biochemical blood parameters and physical-chemical and microbiological inspection of milk, was found that the welfare of dairy cows, it's also "average". This study from my point of view, is very complex, even if was made only on 12 Holstein cows but if we are vigilant, we'll see the word "average" at the end. The purpose of the concept animal welfare is for the farmer to fully understand this concept and from perspective of farm welfare not to be at the average level but above, that means greater and exceptional.

But we can ask ourselves: What does it mean animal welfare from farmers point of view? Animal welfare can it be associated with the comfort of the animal? The answer to these questions, we will find it in Figure 3.

Now that we have formed an opinion about animale welfare and more precisely about Welfare Quality® protocol, it should be noted that there is another method to assessment the welfare of animals and it is called ANI 35L.

The "Animal Needs Index" (ANI), was made to apply on the farms like a tool to evaluate and classifying livestock habitation. The process

was held in Austria (ANI 35L) and took into account five conditions: (1) possibility of movement, (2) social intercourse, (3) condition of the floor, (4) stabilized climate (counting light and noise) and (5) farmer care. It's applied in Austria, on organic farms and to respect legislation for animal welfare (Bartuseek, 1999). Being careful, we notice that this method of evaluation ANI 35L is used especially in "organic farming" and animal welfare legislation, which warns us that "organic farming" it is not to be neglected.

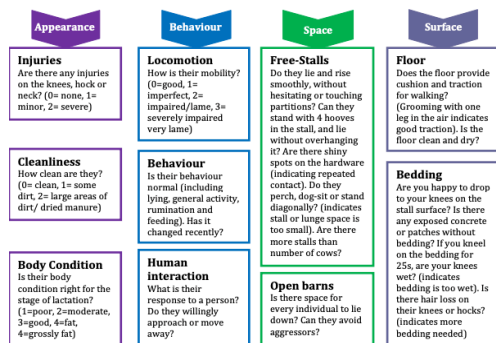


Figure 3. Welfare evaluation results for comfort of dairy cow (DCWS 2012; compassioninfoodbusiness.com "Welfare of dairy cow", 2013)

In a study that was made on dairy cows farm in south-eastern Romania to assessment of the welfare level (Funaris et al., 2016), to establish the welfare level, they used ANI 35L/2000 - Austrian Animal Needs Index. The details from the study was this: 26 objective was scored to observe 5 areas of influence for welfare indices: mobility, social interactions, floor, air and light, stockmanship. Then they came to this conclusion: Indicators with high score was those in the areas with social interactions and mobility. Areas with low score was air and light, floor and also, outside areas cleanliness. Even if, negative indicators was more than positive indicators, the score of ANI 35L was (30.5 points) and shows a great welfare. To raise production of milk, all the negative indicators must be optimize, especially light in the shelter and cleanliness on the areas outside. We are already seeing differences between Welfare Quality® protocol and ANI 35L. About Welfare Quality® protocol it can be mentioned that it is a subjective way of

appreciation and ANI 35L it is an objective way of appreciating.

Another aspect for dairy cows welfare is pasture access or grazing.

In a review about continuously housed and pasture based production system of welfare for dairy cows, Arnott et al. (2017) examined three major topics: health, behavior and physiology. And they concluded: The cows maintained on pasture based system had better health compared to the cows maintained in continuously housed system. In terms of behavior, pasture access had benefits on grazing, lying, resting and low grade of aggression. Negative aspect was mentioned to pasture based on physiology to affect the welfare on inclement weather. The outcome from the review emphasizes the benefit of including pasture access for dairy production and welfare.

According the review of Arnott et al. (2017) the most important aspects regarding dairy cows welfare within each topic was:

#### 1) Health

- Lameness;
- Hock lesions;
- Mastitis;
- Uterine disease;
- Other infectious disease;
- Endoparasites;
- Mortality.

#### 2) Behavior

- Feeding/grazing;
- Lying/resting;
- Aggression;
- Behavioural knowledge gaps;
- Cow preference.

#### 3) Physiology

- Thermal stressors;
- The impact of sunlight.

Another study made on Denmark that used Welfare Quality® protocol, to see the impact of grazing on the welfare for dairy cow herds (Burow et al., 2013), concluded that many daily grazing hours was more beneficial compared to few daily grazing hours considering welfare of dairy cow herds.

Although, when we talk about farm animals, we refer to products and by-products (meat, offals, eggs, milk and milk derivatives), we must not forget to mention the horses and their importance.

The horse evolved as an animal raised in a group on pasture in freedom and domestication resulted in some conflicts with this evolutionary path.

Horses occupy a special position among farm animals. Currently, huge percentage of the world's population of horses are still used for labor in developing countries, but this mode of use is generally decreasing and horse has gained the principal role in the developed part of the world for pleasure either sport. On world there is considerable diversity in terms of use, accommodation, management and horse breeds, but one can hardly talk about the industrial breeding of the horse. Even in large farms there is a tendency to raise a small number of animals in one shelter for several reasons. Horses are very valuable animals and many of them travel nationally and internationally to and from competitions, studs and auctions. This exchange provides ideal possibilities for disseminating the agents of infectious diseases from respiratory problems to abortion. Also, horses are kept for a long time with other farm animals and it is more advantageous to be separated by groups of use and age. Moreover, the horses are very sensitive to the air quality in the shelter and failure to ensure this requirement can seriously affect the performance of the horses (Perry, 2006; Venglovsky, 2010).

The hygiene and physical environment of a shelter can affect the welfare of horses through (Venglovsky, 2010):

- Increasing the magnitude of aggressiveness of microorganisms, parasites, harmful gases and allergenic and irritating particles;
- Alteration of the local or systemic resistance of the horse;
- Increasing the risk of physical injury;
- Inability to ensure the behavioral requirements of the horse.

The welfare problems of horses raise the greatest public concerns about this species. Welfare problems exist during the growth and fattening of these pathways, such as poor quality of accommodation, lack of free movement, improper handling, insufficient veterinary care, weaving and care of the hooves at irregular intervals of time, and others (Venglovsky, 2010). A special chapter of welfare problems is that during transport to



slaughterhouses and waiting until slaughter. All over the world thousands of horses are transported to slaughterhouses, sometimes very long distances. Preferably are young animals up to the age of 18 months. The usual problems that arise are overcrowding in vehicles, prolonged transport, handling, watering and inadequate veterinary inspection.

On EU, animals welfare during transport is stipulated in the Council Regulation 1/2005.

The last aspect to be noted is the interaction of man with animals.

Several studies have shown the influence of the behavior of caregivers on the behavior of animals. Animals that are gently treated by caregivers are less fearful in contact with humans and are easier to handle during weighing, when driven with the help of the capastre or transported (Lensink, 2001)

Understanding the perception that dairy cows have about human contact, such as palpation of different body regions, is important for improving the human animal relationship, for the welfare of animals, as well as for milk production (Schmied et al., 2008).

Improving the human animal relationship is important because it has beneficial effects on animal welfare and productivity, along with working conditions and the safety of caregivers (Rushen et al., 1999; Hemsworth, 2003).

In the man animal relationship, fear must necessarily be avoided.

Fear has significant effects on productivity and welfare in farm animals, mainly when animals are afraid by the presence of caregivers (Hemsworth & Coleman, 1998).

Depending on the events in the environment, correlated with the state of the organism at a certain time, the animal manifests a certain mood. If everything unfolds normally the animal is quiet. When pleasant events occur (feeding, watering, caressing) the animal shows good mood. The malaise presents different forms of exteriorization such as greed, the tendency to defend or flee, etc. and is due to hunger, fear or pain (Stanciu, 1999).

As we can see, the interaction of human animals is of major importance. Therefore, caregivers must be trained and made aware of the importance of their relationship with animals.

## CONCLUSIONS

According to Welfare Quality® protocol and ANI 35L, animal welfare is gaining ground on farms and many farmers are adapting to these systems. A very important factor remains the human-animal interaction, and the caregivers must be trained not to induce fear in animals. Finally, after Welfare Quality® and ANI 35L are applied on farms, it remains the task to inform the consumer in a pleasant way and to accept his own decision, to pay extra for products coming from farms where animal welfare is a priority.

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## REFERENCES

- Anonymous (2001). Scientists' assessment of the impact of housing and management on animal welfare. *Journal of Applied Animal Welfare Science*, 4, 3–52.
- Arnott, G., Ferris, C. P., & O'Connell, N. E. (2017). Review: welfare of dairy cows in continuously housed and pasture-based production systems. *Animal*, 11, 261–273.
- Astrid, L. (1989). *How Astrid Lindgren achieved enactment of the 1988 law protecting farm animals in Sweden: A selection of articles and letters published in Expressen, Stockholm, 1985–1989*. Stockholm, SE: Animal Welfare Institute.
- Bartuseek, H. (1999). A review of the animal needs index (ANI) for the assessment of animals' well-being in the housing systems for Austrian proprietary products and legislation. *Livestock Production Science*, 61, 179–192.
- Bielik, P., & Šajbidorová, Z. (2009). Elasticity of consumer demand on pork meat in the Slovak Republic. *Agric. Econ. – Czech*, 55, 2–19.
- Blokhuis, H. (2004). Improving animal welfare in the food quality chain. *FOOD-CT-506508*.
- Blokhuis, H. J., Jones, R. B., Geers, R., Miele, M., & Veissier, I. (2003). Measuring and monitoring animal welfare: Transparency in the food product quality chain. *Animal Welfare*, 12, 445–455.
- Bracke, M.B.M., Boumans, I.J.M.M., Nijland, H.J., & Bokkers, E.A.M. (2023). Review: Connecting circularity to animal welfare calls for a 'novel' conceptual framework based on integrity. *Animal*, 17, 100694.
- Brambell, F.W.R. (1965). *Report of the technical committee to enquire into the welfare of animals kept*

- under intensive livestock husbandry systems*. London, UK: Her Majesty's Stationery Office.
- Bugueiro, A., Fouz, R., & Diéguez, J. F. (2020). Associations between on-farm welfare, milk production and reproductive performance in dairy herds in northwestern Spain. *JAAWS*, 24, 29–38.
- Burow, E., Rousing, T., Thomsen, P. T., Otten, N. D., & Sørensen J. T. (2013). Effect of grazing on the cow welfare of dairy herds evaluated by a multidimensional welfare index. *Animal*, 7, 834–842.
- Castellini, C., Bastianoni, S., Granai, C., Dal Bosco, A., & Brunetti, M. (2006). Sustainability of poultry production using the emergy approach: Comparison of conventional and organic rearing systems. *Agriculture, Ecosystems and Environment*, 114, 343–350.
- Chaplin, S. J., Ternent, H. E., Offer, J. E., Logue, D. N., & Knight, C. H. (2000). A comparison of hoof lesions and behaviour in pregnant and early lactation heifers at housing. *Vet J*, 159, 147–153.
- Cziszter, L. T., Szűcs, E., Sossidou E. N. (2010). *Basics of the relationship between animal welfare and product quality*. Timișoara, RO: Agroprint Publishing House.
- DG SANTE (European Commission), (2017). 10.2875/815860, *EW-BC-15-041-EN-N*.
- Dickinson, D. L., Hoobs, J. E., & DeVon, B. (2003). A comparison of U.S. and Canadian consumers' willingness to pay for red-meat traceability. *Economic Research Institute Study Papers*, Paper 264.
- Edwards, S. A. (2005). Product quality attributes with outdoor pig production. *Livestock Production Science*, 94, 5–14.
- Fraser, D. (2008). Understanding animal welfare. *Acta Veterinaria Scandinavica*, 50, S1.
- Fraser, D., Weary, D. M., Pajor, E. A., & Milligan, B. N. (1997). A scientific conception of animal welfare that reflects ethical concerns. *Animal Welfare*, 6, 187–205.
- Funaris, F., Ghimpeteanu, M. O., & Predoi, G. (2016). Dairy cows' welfare assessment in a farm from south-eastern Romania. *Agriculture and agricultural Science Procedia*, 10, 403–407.
- Gavojdian, D. (2010). *The behavior of dairy cows* (165–184). Timișoara, RO: Agroprint Publishing House.
- Harrison, R. (1964). *Animal machines: the new factory industry*. London, UK: Stuart Publishing House.
- Hemsworth, P. H. (2003). Human-animal interactions in livestock production. *Applied Animal Behaviour Science*, 81, 185–198.
- Hemsworth, P. H., & Coleman, G. J. (1998). *Human-livestock interactions: The stockperson and the productivity and welfare of intensively farmed animals*. Wallingford, Oxon, UK: CAB International.
- Kristensen, I. (1998). Organic egg, meat and plant production – biotechnical results from farms. *Report of the Danish Institute of Agriculture Science*, 1, 95–169.
- Latvala, T., & Kola, J. (2004). Consumers willingness to pay for information about food safety and quality. (*EAAE*), 84th seminar, Zeist, The Netherlands.
- Lensink, B. J., Fernandez, X., Cozzi, G., Florand, L., & Veissier, I. (2001). The influence of farmers' behavior on calves' reactions o transport and quality of veal meat. *J Anim Sci*, 79, 642–653.
- Manteca, X., Mainau, E., & Temple, D. (2012). What is animal welfare. *FAWEC*, 1.
- Martelli, G. (2009). Consumers' perception of farm animal welfare: An Italian and European perspective. *Italian Journal of Animal Science*, 8, 31–41.
- McVittie, A., Moran, D., & Nevison, I. (2006). Public preferences for broiler chicken welfare: Evidence from stated preference studies. *SAC, Land Economy & Environment Research Group*, 3.
- Mihai, R., Mărginean, G.E., Marin, M.P., Hassan, A.M., Marin, I., Fintineru, G., & Vidu, L. (2020). Impact of precision livestock farming on welfare and milk production in Montbeliarde dairy cows. *Scientific Papers. Series D. Animal Science, LXIII*, 308–313.
- Mitrănescu, E., Simion, V., Pîrvu, M., Andronie, I. C., & Tudor, L. (2020). Welfare of dairy cows – Guarantee of quality milk in a professional holding. *Rev Rom Med Vet*, 30, 75–80.
- Napolitano, F., Pacelli, C., Girolami, A., & Braghieri, A. (2008). Effect of information about animal welfare on consumer willingness to pay for yogurt. *Journal of Dairy Science*, 91, 910–917.
- Olsson, A. C., von Wachenfelt, H., Jeppsson, K.H., Svensson, G., Botermans, J., Svendsen, J., & Andersson, M. (2007). Organic growing-finishing pig production. *Alnarp*, 147, 13–18.
- Pentelescu, O. N. (2010). *Bull grooming - methods, effects, alternatives* (185–212). Timișoara, RO: Agroprint Publishing House.
- Perry, T. L. (2006). The history of COPD. *Int J Chron Obstruct Pulmon Dis*, 1, 3–14.
- Rollin, B. E. (1993). Animal welfare, science and value. *Journal of Agricultural and Environmental Ethics*, 6, 44–50.
- Rushen, J., De Passillé, A. M., & Munksgaard, L. (1999). Fear of people by cows and effects on milk yield, behavior and heart rate at milking. *J Dairy Sci*, 82, 720–727.
- Sainsbury, D. (1986). *Farm animal welfare: cattle, pigs and poultry*. London, UK: Collins Publishing House.
- Schmied, C., Boivin, X., & Waiblinger, S. (2008). Stroking different body regions of dairy cows: effects on avoidance and approach behavior toward humans. *J Dairy Sci*, 91, 596–605.
- Singer, P. (1975). *Animal liberation: a new ethics for our treatment of animals*. New York, S.U.A.: Discus Book/Avon Books.
- Stanciu, G. (1999). *Cattle breeding technology*. Timișoara, RO: Brumar Publishing House.
- Szűcs, E. & Sossidou, E. N. (2010a). *Animal welfare, performance and product quality: Implications for animal welfare and product quality* (47–76). Timișoara, România: Agroprint Publishing House.
- Szűcs, E., & Cziszter, L. T. (2010b). *Societal attitudes towards animal welfare: Sustainability and farm animal welfare* (1–16). Timișoara, RO: Agroprint Publishing House.
- Taylor, G. B. (1972). One man's philosophy of welfare. *Vet Rec*, 91, 426–428.

- Vaarst, M., Roderick, S., Lund, V., & Lockeretz, W. (2004). *Animal health and welfare in organic agriculture*. Wallingford, Oxon, UK: CABI Publishing House.
- Van Diepen, P., McLean, B., & Frost, D. (2007). Livestock breeds and organic farming systems. *ADAS Pwllpeiran*.
- Van Horne, P . L. M., & Achterbosch, T. J. (2008). Animal welfare in poultry production systems: impact of European Union standards on world trade. *Worlds Poultry Science Journal*, 64, 40–52.
- Venglovsky, J. (2010). *Animal welfare and the environment: The impact of industrial animal production systems on animal welfare* (127–164). Timișoara, RO: Agroprint Publishing House.
- Wier, M., Andersen, M . L., Millock, K., Jensen, K. O'D., & Rosenkvist, L. (2013). Perceptions, values and behaviour: The case of organic foods. <http://orgprints.org/5004>.