



A REVIEW ON COMPARISON OF CATTLE BREEDING IN TRADITIONAL LIVESTOCK ESTABLISHMENTS WITH TRADITIONAL BARNs IN TERMS OF INTERNAL MEDICINE PARAMETERS

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Abstract: Animal welfare is a combination of qualitative and quantitative characteristics that determine the living conditions of animals such as health and disease, behavior, care and management in the environment. The concept of prosperity was formerly used only for physical environmental conditions such as accommodation and feeding, which made the animal healthy and productive. For now, it is possible for an animal to come to the top of the conditions it lived in. An animal is in good health if it is healthy, if it is healthy, if it is comforting, if it is well fed, if it is safe, if it can exhibit behaviors specific to the species, if not afraid, without pain, Stress is a very important parameter in terms of animal welfare. Proper nutrition and shelter conditions, adequate humidity and temperature, adequate light and uncompressed stables will allow the animals to be strasted away and to live in prosperity. This will have positive effects on yield and blood parameters. The aim of this article is to compare the occurrence of animal welfare in modern and traditional feeds with current literature.

Keywords: Animal, welfare, traditional, modern, barn, stress

Introduction: As the concept of animal welfare is in the whole world, especially in Europe, it is a concept that has received important response in our country in recent years. Essentially, prosperity is expressed as the concepts of "goodness", "good fortune", "happiness", "wealth". Prosperity in farm animals is generally described as "animals can adapt to

human beings without any pain or discomfort" (1,2,3,4)

In another definition, prosperity is defined as a combination of qualitative and quantitative characteristics that determine the living conditions of animals such as health and disease, behavior, care and management in the environment of animals (2,3).

Prosperity in animals is a concept defined by different people and institutions in different ways. The concept of well-being in animals was used in the past for physical environmental conditions, such as accommodation and feeding, which made the

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animal healthy and productive. Later on, this concept is maintained on the basis of body systems using physiological criteria such as heart rate, plasma cortisol level and endorphins (brain-generated hormones for reducing pain in painful tissues) to come from above the conditions of the animal (4, 5).

Animal welfare is described in the "Terrestrial Animal Health Code" legislation of the OIE (International Agency for Disease Control) under the heading "Recommendations for animal welfare" (6).

Under the heading "Proposals for Animal Welfare" of the OIE's "Terrestrial Animal Health Code" legislation, 8 general principles have been set out.

1. There is a critical relationship between animal health and animal welfare.
2. Five internationally recognized freedoms are a valuable guide in animal welfare. These;
 - a) freedom to stay hungry and thirsty and to be well fed;
 - b) freedom from fear and stratification;
 - c) freedom from physical and thermal discomfort;
 - d) freedom from pain, injury and illness;
 - e) Freedom to show normal behavioral models.
3. Three internationally accepted practices (reduction in number of animals, refinement in research methods, replacement of animals with non-animal methods) are a valuable guide in the use of animals for scientific purposes.
4. Scientific assessment of animal well-being involves different elements that need to be addressed together. The choice of these elements and the grade of the given grade usually involve value-based assumptions and should be as clear as possible.
5. The use of animals in agriculture and scientific studies, pet ownership, recreation and recreational purposes make a great contribution to the well-being of people.
6. The use of animals carries an ethical responsibility to guarantee their welfare to the best extent possible.

7. The improvement in the prosperity of farm animals will generally increase economic efficiency by providing increased productivity and food safety.

8. Equivalent outcomes based on performance criteria rather than identical systems based on design criteria will be essential for making comparisons and recommendations in animal welfare standards (5,6).

In another approach, animal welfare is expressed not only in terms of the physical conditions in which the animal exists, but also in its emotions. Most of the work carried out combines that the feelings of the animals (fear, frustration, etc.), that the welfare is based entirely on the animal's feelings, and that they are developed to meet the basic needs of the animal. As a result, if the emotional response of the animal is normal, it can be concluded that the applications are correct (6-7). In another definition based on feelings, it is stated that when the animals are left in their natural environment, they can easily escape from the conditions and show their behavior in the best way. However, studies related to this matter have not given much importance to the natural life of the animal at the point of mental and physical condition. Rather than improving animal welfare both in natural life and in the mental and physical aspects, ethical issues are emphasized. Therefore, most definitions of animal welfare cover the issues of body and mental health (1,2,5). The definition of animal welfare as "a state of being in harmony with the living environment" is one of the most accepted approaches in technical terms today (4,5,8). At the same time, this definition is that prosperity is directly related to the animal; a dynamic feature that changed very badly to very bad; can be measured by scientific methods independently of moral assessment; that the information about the animal's preferences contains useful clues as to which conditions may have positive characteristics in terms of prosperity (4). In the direction of this proposed approach, it is stated that prosperity will be

measured by using physiological changes and production parameters known to be related to stress, as well as detection of diseases, injuries and abnormal behaviors (1,3,6).

The animal protection movement has come about in the 19th century in America due to torture of horses and livestock. The first law on animals is designed to provide water and food during the transport of livestock and to establish a four-hour resting environment for animals every 24 hours. Fifty years later (1955), for the first time, the "Humanitarian Draft Bill" was presented to the US Congress (9)

Ruth Harrison's Report on chronic problems in England in 1965 led to the formation of the Brambell Commission. This commission brought to mind the statement "five freedoms" for "lying, rising, turning around, taking and grooming". Along with the Brambell Report, interest in society in Europe has gradually begun to increase in this regard, but not until the animal welfare meeting for the first time in 1979. After the publication of this report, it was reported that in 1968, it was a criminal offense to cause suffering or distress in animals without cause for some reason (10).

However, in the last 20 years, governments have been transferring more financial support to alternative systems, and the interest of European societies on the behavior and welfare of livestock has been increasing. In the U.S., this level of interest is lower. The first article on this subject was prepared in 1971 by veterinarian Franklin M. Loew. In recent years, pressure on farmers and production scientists has been increasing; Due to the complexity of the subject, the intensity of discussion is also increasing. Due to the complexity of the animal welfare debate, it is stated that deontology (law), ethics (values), technology, economics and scientific knowledge are required for evaluation in the livestock welfare analysis (8,10).

Table 1 shows the chronological distribution of major developments in animal

welfare in Europe from 1950-2001 (11, 12, 13, 14)

Table 1. Chronological distribution of important developments in animal welfare

<u>Year</u>	<u>Europe</u>
1950	Denmark - Animal Protection Act
1964	Ruth Harrison's Machine Animals
1965	UK- Livestock welfare Brambell Report
1967	UK-Livestock Animal Welfare Advisory Board
1968	Farm Livestock Hosting and Administration Application Code and Law
1969	European Council of Traditional Animal Carriage
1971	A. B. Poultry cutting direction
1972	West Germany - Animal Protection Act
1974	A. B. Poultry Pre-Cutting Directive
1976	Conservation Treaty for Livestock Feeding
1977	A. B. Animal Transfer Directive
1978	Universal Declaration of Animal Rights
1978	Swiss-Animal Welfare Act- Humanitarian Slaughtering Methods Act
1979	A. B. Cutting Directive - Netherlands - First European Conference on Livestock Animal Welfare
1980	European Group of Animal Welfare in Brussels established
1981	A. B. Egg Chickens Standards Directive First European Symposium on Poultry Welfare
1982	Second European Conference on Livestock Welfare
1985	Second Poultry Welfare Symposium
1986	A. B. Egg Hens Directive - West Germany - Animals
1987	Revised Protection Act
1988	Revised Dutch Animal Health Act
1989	Swedish Animal Welfare Act
1990	Third European Poultry Welfare Symposium

1993	A. B. Egg and Poultry Marketing Standards
1994	The Fourth European Poultry Welfare Symposium
1996	Alternatives to battery-powered cages seminar, Sweden
1997	Ministers of Agriculture in Europe "
1999	Gönenci "Treaty
2001	Protecting Animals and Welfare Protocol (Amsterdam)

While the process of animal welfare in Europe and the United States is this way, the welfare practices of livestock in Turkey can be summarized as follows:

Within the context of the Twinning Project carried out within the scope of harmonization studies with the European Union legislation of the Ministry of Food, Agriculture and Livestock; As regards animal welfare pursuant to the contract signed with Germany; studies have been undertaken to prepare the secondary legislation concerning the housing, transport and slaughtering of livestock, in line with EU requirements, and to develop an appropriate animal welfare concept for the veterinary curriculum. In view of the EU legislation, in relation to the welfare of farm animals; the minimum standards for the protection of livestock, laying hens, chickens and pigs have been established and there are 4 different basic council directives and additional amendments thereto. In this context, as a secondary legislation of Ministry, "Regulation on the Welfare of Livestock", in which these 4 basic EU directives were collected in one regulation, was published in the Official Gazette on 23 December 2011. The Regulation has been prepared based on Article 92 / A of the Animal Health and Accident Regulation Regarding the Establishment and Operation of Farms, Law No. 3285 on Animal Health and Registration, and Articles 5 and 10 of the Animal Protection Act No. 5199 dated 24.06.2004. Other legislation including animal welfare matters are as follows; The Law on the Protection of Animals, the Regulation on the Establishment,

Opening, Licensing, Operation and Supervision Procedures and Principles of the Sale, Housing and Education Places of Home and Decorative Animals, The Law on the Approval of the European Convention for the Protection of Domestic Animals, Regulation on the Establishment, Operation, Supervision, Procedures and Principles of Laboratories Experimental Animals to be Experimentated with the Production Animals of the Experimental Animals, Regulation on the Procedures and Principles of the Operation and Inspection of the Red Meat and Meat Products Production Facilities, Regulation on the Preservation of Experimental Animals Used for Other Scientific Aims, Regulation on the Procedures and Principles of Operation and Inspection of Poultry Meat and Meat Products Production Facilities, Animal Health Registration Law (8,11,15).

In Turkey and the European Union, it is necessary to touch on the effects of stress refinement and welfare on nutrition, yield and blood parameters while this is the general opinion about animal welfare. When these interactions are examined, it should also be emphasized that the main factor that has a negative impact on refuability is stress. Observation of how the stress factor reflects the health and well-being of animals in today's conditions of marriage, and the relationship between animal welfare and health will also be indicators of how effective stress is (16,17). Stress can be defined as a reaction of the body to stimuli resulting from internal and external influences. It is composed of three consecutive stages in the form of physiological and behavioral patterns. These are respectively; The alarm period (this period is the period when the organism perceives external influences as stress), the adaptation / resistance period and the stress response period (18). The response to any stress factor begins with the central nervous system (CNS) perceiving stimuli as a potential threat to the body's balance of the animal. Although these warnings are not a real threat to

the animal, animal warnings are perceived as a threat. Along with the perception of the alerts, various physiological changes occur in the living body (19,20,21).

Stress can adversely affect daily life events in cattle or the continuation of social activities in the herd. At the beginning of these negativities; fertility, development and various yield characteristics. Stress can also reduce resistance to certain diseases, other than directly or indirectly affecting the yield (20,22,23).

Among the factors causing the stress; environmental conditions (temperature, humidity, lighting, ventilation, etc.), animal treatment, animal environment. In cattle exposed to stress, the change in nutrient utilization causes significant decreases in yield (19, 20, 21). Especially high-yielding cows were reported to be more sensitive to temperature stress than to low yields (17,18,19). The characteristics of hearing, tasting, touching are well defined in the cattle (2,4,14).

Temperature is an important stressor. Decline in the current state of the animals at high temperature can be seen (4). The most pronounced effect of temperature pressure is the decrease in daily feed consumption due to the decrease in dry matter consumption. Farm animals keep their body temperature in balance despite the changing environmental temperatures. As a result, cattle will have to make some behavioral and physiological adaptations depending on the level of environmental temperature change. Cattle increase the level of sweating and breathing as the ambient temperature increases and the number of pulses on the other hand. In particular, the number of respirations requires extensive energy use in the body. For this reason, the heat production level of an animal in hot press increases. The resulting heat becomes an element of stress by affecting the metabolism of the animal (17). As a result of this pressure, important problems can also arise in the welfare of animals.

One of the important environmental conditions in cattle breeding is relative humidity. The effect on the specific temperature and relative humidity of cows is very closely related to the ambient temperature. For this reason, besides the recommended temperature values for cattle, nematode is also required to be within the appropriate limits (20). Often, high temperature and relative humidity reduce the consumption of animals by animals in need of food for their maximum productivity, resulting in loss of appetite. High temperature and proportional humidity reduce appetite, which in turn makes it easier for animals to catch diseases (21, 22). Cattle are more affected by cold and humid air. High proportional nematode affects animal health negatively while too much proportional nematode can cause respiratory diseases (17,18). It is also undesirable that the indoor air in the animal shelters is constantly at low humidity. The continuous inflow of respiratory tract infections in animals can be caused by excessive pollution of shelter air (7).

Lighting is one of the factors that complements the health conditions in an important environment condition and shelter in animal shelters. Adequate lighting is important for animal health and for the comfort of employees in the shelter. For this reason, animal shelters should be illuminated by using natural and artificial light (16,17). The ratio of total window area to total shelter floor area in animal shelters is a good criterion for lighting. Incorrect lighting practices in poultry have been associated with stress-related diseases such as cannibalism (2).

Ventilation is defined as the replacement of the air contaminated with harmful gases by natural and artificial methods and used in any structure. The aim of ventilation during winter season is to throw out the excess nemu that accumulates in the shelter and to keep the proportional humidity inside the shelter at the desired level. The amount of ventilation made for this purpose gives the lowest aeration capacity required for animal shelters. The

purpose of ventilation in the summer season is to keep the temperature within the proper limits by throwing out excess heat accumulated in the shelter. The amount of ventilation made for this purpose gives the highest ventilation capacity for animal shelters and can be about 8-12 times the ventilation capacity in winter (14,15,20). The main purpose of ventilation in animal shelters is to provide fresh air for animals, control temperature and humidity, prevent construction elements and feed degradation, and protect animals from diseases (11,13,15). Often, other requirements of ventilation, such as oxygenation, removal of carbon dioxide, ammonia, dust and odors, are adequately met if sufficient airflow is available to expel the animal's shelter from the shelter. Problems caused by ventilation in animal shelters are caused by animal diseases

The fear created by the strasse in animals is an indication of harmony and reflects the self-preservation behavior. If the state of fear continues constantly and intensively, the animal becomes stressed (21,22). The factors that cause fear in an animal can be either an animal or a human or any object. Fear and pain both mean pain and suffering for the animal. An animal in which fear and pain are formed in different parts of the brain and in which the cortex is taken, has been found to be scary even though pain does not occur (1,5,11). Breeding practices that are painful to animals are easy to remember and try to protect them with fear when they encounter similar practices (22). For this reason, sound images, movements and contacts, which negatively affect the sensory properties of cattle, cause stress in cattle (21,22). The inadequacies of accommodation and equipment are also a source of stress. Many practical breeding jobs in intensive cattle breeding can cause some health problems in animals. Inadequate solids and locomotion in animals increase the level of the stress hormones, which leads to significant economic problems in animals (18,19).

While this is the case in terms of stressing welfare standards in animals; the relationship between nutrition and welfare is not much different from the stress factor.

For proper feeding in dairy cattle, it is useful to know the nutrient requirements at different physiological periods. Otherwise, it can not be said that it is a rational feeding. Avoidance of conditions such as thirst, hunger, and malnutrition constitute the fundamental freedoms declared in the name of animal welfare. It has become increasingly necessary to take into consideration not only the quantitative sense but also the qualitative specific physiological traits at the same time. It is directly under the responsibility of the grower to fulfill the requirements of animal welfare with the domesticization. In addition to the aquaculture practices to control growth rate and product quality, health and welfare problems caused by negative energy balance, especially in dairy cattle in the early lactation period, are among the first examples (20).

It is also necessary to mention the feeding methods, feed consumption and water need within the nutrition. A rationale aimed at dairy cows; to ensure consumption of the amount of feed determined according to the yield level. In this context, factors to be considered in nutrition management are; the condition of the shelters, the physiological condition of the animal, the equipment requirements and the herd size (21,22). When the feeds are consumed as a mixture, the fermentation of the rumen is more regular and the feeds are used more efficiently than when the nutrients are given separately. In computerized herd management, feeding of cattle can be controlled more easily. With computerized herd management, it has been reported that successful feeding is made without making loss of milk production for intensive feeding, making the feeding more economical (20).

It has been determined that removing the feeding frequency from the two at a time in the

day increases the feed consumption in cattle by 19%. They reported that this increase was greater when cattle were fed with intensive feed-containing rations (2,11,13). The cows fed intensive feeds six times a day reported that they were consuming more feed than animals fed intensive feed only twice a day when fresh intense feed was given. This suggests that stimulating the feeding process or feeding the animal is a stimulating effect on the feeding (15,16).

Feed preference; Feeding behaviors begin to occur in the offspring, depending on species, age, environmental conditions and the physiological state of the animal (pregnancy, lactation, etc.). The offspring can learn from the mother or other experienced adult ruminants whether the food is suitable for consumption. In this regard, it is stated that group or herd feeding is advantageous (2,3,7,22). Feed selection for cows may be due to 1) hedgehog, 2) hedcagic, 3) body structure (size and morphological structure), and 4) feed feed back due to digestive effects.

Cattle are ruminants and have different digestive system and food consumption habits than other species. It is known that ruminants prefer to be able to meet the requirements of ruminant conditions and nutrients when the possibility of selecting feed is known (23). They report that 75% of their drinking and grazing behavior in cattle is in daylight hours and in a synchronized manner. The investigator reports that the day the new puddle was to be taken from the paddock, the animals did not graze, roamed around and looked like they were waiting for change (14).

They also report that there is an important relationship between environmental temperature and grazing activity. However, it is useful to check the group size if the order of feeding the animals in the barn is coming out one at a time or if you are waiting in front of the feeder. Considering that cattle are herd animals at this point and feeding behavior is performed as a group in the herd, as in other behaviors,

sufficient space is allocated per unit animal and the importance of grouping arises. Behaviors during feeding are often influenced by social dominance. In general, older and predominantly dominant cows have been reported to spend more time feeding on socially lower cattles if the feed area is limited (1,5,7). It was observed that the cows consumed more food in a short period of time.

Cattle must be able to access the water easily and the quality of this water is very important for both animal health and milk production. There is an important relationship between water consumption and feed consumption. This need to be taken into consideration when the consumption of feed is high (1,3). Cultivators often pay attention to feeding. However, if the amount of water quality required for cows is not provided, the desired maximum yield level can not be achieved. If the animals are not adequately and easily accessible, the yield will decrease rapidly and sharply. While contaminated water threatens the presence of animals, it is not known how long the removal of many substances found in low concentrations in water has affected it. On the other hand, poor water quality can lead to poor yields and possible problems, even though they do not cause extensive specific production problems in animals. (4).

Water is responsible for processes in the nervous system, metabolic processes, protein hydrolysis, acid-base balance protection, regulation of body temperature, hearing and vision. In cattle, cattle need to drink water in order for normal rumen functions to occur, feed intake to continue, digestion, and absorption of nutrients (4,5,22,23). Dehydration occurs in a cattle whose water supply is not fully met, a decrease in appetite is observed, a decrease in the level of yield and utilization of nutrients is observed, and body weight loss is observed. The animal is constantly nervous, timid and upset. It is imperative that fresh and clean water is constantly found in front of cattle. The problem

of restricted water supply or access to cattle water in the barn will cause the animal to lose its efficiency and reduce its effectiveness (22). For this reason, water bottles operating on the basis of automatic bottles or composite containers can be used to ensure continuous and fresh water intake of cattle (23).

During the stress of temperature, water becomes particularly important. In the summer months, cows without shade consumed 18% more water than those with shadow (1,5,8,11). At least one automatic juice is required for the cow. If the water is to be given in water, 5 cm of water per cow is enough. Optimal bowel height is reported as 90 cm (3,20,22). At the same time, about 10% of the hyenas should be allowed to drink water (1, 18, 19, 23).

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