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## Protection and Animal Welfare in Farming Practices for Milk Production in Region of Northeastern Bosnia and Herzegovina

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### Abstract

The main goal of the research is to determine the conditions of welfare and housing of farm animals for milk production. Milk producers in the region of northeastern BiH are not informed enough about the protection and welfare of animals. This research was conducted in May 2012. The results were obtained on the basis of the questionnaire methodology in five freedoms in the welfare and accommodation of animals (Webster, 1987). Farms are divided into three groups, farms that have up to 5 dairy cows (they are in majority in the region), farms that have up to 20 dairy cows and farms with more than 20 dairy cows. On farms that have up to 5 dairy cows all farms possess tied system of keeping cows and cows are kept in closed conditions. Farms with up to 20 dairy cows also a large percentage of 67% related to the system of keeping cows in indoor conditions. A smaller part of the farm has a free system of keeping cows and stables open with good light and ventilation. Only 16% of farms with more than 20 dairy cows are tied housing system and the rest of the free system of keeping cows. All farms meet freedom from hunger and thirst, but the big problem is freedom from discomfort, freedom from stress and fear, freedom of injury and illness and the freedom to express natural behavior. The research was carried out within the project "Improvement of milk production in northeastern Bosnia and Herzegovina" funded by the Development Agency of the Czech Republic.

*Key words:* welfare, housing, freedom

### Introduction

Protection of the welfare of animals used for food production is not just a question of ethics or humanity, but also the quality of their products, and further the

impact on the health of consumers. In fact, studies have shown that products from animals that have suffered pain, panic or stress are not the same quality as from the animals that were carefully handled.

People can cause animal suffering mainly in two ways: committing intentional cruel acts, or "doing something they should not do," and neglecting the proper care of animals or "omission of something that should be done."

The definition of animal welfare is different from scientists to scientists. One is identified with the biological health (low benefit exists only when an animal possesses reduced ability to survive and reproduce), while the second is defined as a complete mental and physical health (the latter definition implies more criteria). Others believe that the animal has a low level of benefits only if they are exposed to an unpleasant state of mind (even if there is a health problem - if animals are not feeling it, then there is no problem in terms of well-being).

We should recall the two most widely accepted definitions of well-being:

- Welfare is the degree of animal adaptation on conditions which enable them to have quality life.
- Welfare is a state of complete mental and physical health, where the animals are in harmony with its environment.

Animal welfare presents a degree of its adaptation to the conditions that allow quality of life in terms of food and availability of water, accommodation space, existence of natural, physical and thermal comfort, safety, expressing basic behaviors, social contact with animals of the same species, the absence of unpleasant emotional and physical experiences such as pain, suffering, fear, stress, boredom, illness, injury, etc. (Broom, 1996; Bracke, 2001; Hristov et al., 2006).

Animal welfare is assessed on the basis of: clinical examination and determination of the health status of the animals (physiological, functional well-being), analyzing of manifestations of physiological behaviors and ability to meet native basic needs (behavioral well-being), testing the presence of positive emotions and the absence of negative emotions in animals (emotional well-being), as well as the testing of benefits of life conditions that needs to match the type, race, gender, age group and other characteristics animals (Rousing et al., 2000; Vučinić, 2006).

Facilities for accommodation and keeping the animals should provide to them favorable conditions in order to meet their physiological needs and that they maximally demonstrate their productive and reproductive capabilities. Among other things, must enable the rational application of modern technology and adapt to the type and kind of production; respecting ecological and ethological principles. This refers to the technological, technical and hygienic-sanitary norms of accommodation such as size of the beds, feeders, water holes/drinkers, ventilation capacity, the complex microclimate, etc. (Vučemilo et al., 2006).

In the controlled stables conditions, man can determine the size of the group, the quality and size of the beds, microclimate conditions, vaccination programs and other, so the occurrence of disease is considered his fault or the consequence of a failure. Diseases that occur in intensive farming and the ones that are directly related to the environment are called multicausal disease (Webster, 2001).

The most common failures in obtaining the welfare of cattle and pigs are reflected in the lack of plan to secure the welfare and health, then in providing physical, microclimate and hygienic conditions, which lead to different illness caused by lack of technological conditions and lack of activities and reduce production results (Hristov & Stanković, 2009)

Welfare of animals whose survival depends on the man based on the concept of *Five Freedoms* (Webster, 2001). These are:

1. Freedom from hunger and thirst - by provision of continuous availability of fresh water and food that will keep the animal healthy and strong.
2. Freedom from pain, injury and disease - by providing habitat in which animal cannot be offensive to herself or other animals, and the prevention and timely diagnosis and treatment.
3. Freedom from fear and stress - the prohibition of physical or psychological abuse by humans or other animals.
4. Freedom from discomfort - by providing sufficient space for normal body posture, for food and rest.
5. Freedom to expression of their natural behavior - enough room to move, to contact with other members of their own species and stimulating environment to prevent boredom.

*Rule 5 freedoms*, together with the *3R rule* (protection of the welfare of experimental animals), are incorporated into all existing laws on the protection of animals, both in the EU and the developed countries of the West, as well as in all other countries where the protection of animals is regulated by law (Webster, 2005; Vučinić, 2006).

Animal welfare is achieved when the animal is healthy, nourished, safe, and able to demonstrate natural behavior, if it is comfortable and if they not suffer due to the unpleasant condition as pain, fear and stress (Terrestrial Animal Health Code, OIE, 2009).

## Materials and Methods

Estimated levels of welfare in the cattle breeding is structured according to the individual requirements of the animal known as the Five Freedoms. For each of freedom criterion for evaluation has been made that are estimated during breeding. Estimation has been done as in the school from 1 to 5 (1 – the best score, for some evaluation criteria the worst score is 3).

Freedom from hunger and thirst:

1. Physical condition of cows
2. Water quality
3. The amount of water
4. Technology of water supply
5. Quality of food
6. Technology of feeding

Freedom from discomfort:

1. Floor area in the barn
2. Area of cattle pen
3. Barn technology
4. Pasture and cattle pen

Freedom from pain, injury and disease:

1. Hygiene of animals
2. Health Status
3. Veterinarian care
4. Health status of the udder
5. Condition of milking equipment
6. Climatic status in barn
7. The lighting in the barn
8. Parlor, waiting room
9. Cattle pens, pasture, barn
10. Care of breeders

Freedom from stress and fear:

1. Animal behavior
2. Animal behavior in the milking parlor
3. Convenience of cattle race

Freedom to express natural behavior:

1. Technology of the accommodation
2. Freedom of movement
3. Uniformity of the herd
4. Relaxation

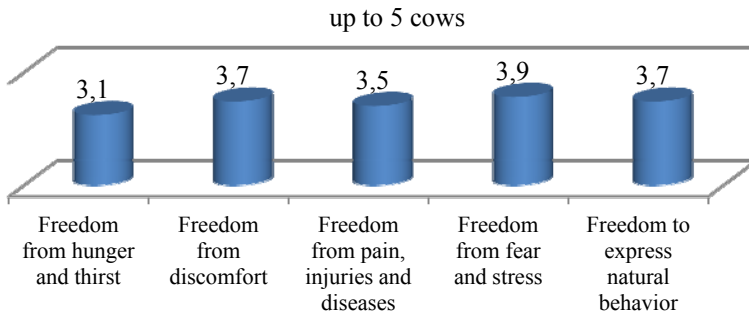
The study included 102 farms from the area of north-eastern Bosnia and Herzegovina. Farms are divided into three groups: group I farms up to 5 cows (67 farms), group II farms 5-20 cows (24 farms), group III farms with more than 20 (11 farms) dairy cows in the herd.

The assessment process

Individual chapters are evaluated and the result is entered in the assessment table. In the estimation table below scores are calculated based on the individual chapters and the average rating is a result of breeding.

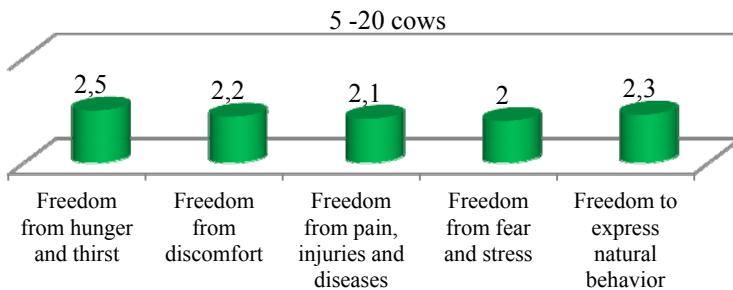
## Results and discussion

Farms with up to 5 dairy cows (67 farms) have a bad joint assessment that the conditions of animal welfare. The highest score was 3.9 in freedom from fear and stress (all barns with cows tied system), poorly lighted and poorly ventilated barns. The cows are upset at each entrance to the barn and any change in the barn.



Graph. 1. Average score for individual freedom for farms up to 5 dairy cows  
*Prosječan rezultat za individualnu slobodu za farme do pet muznih krava*

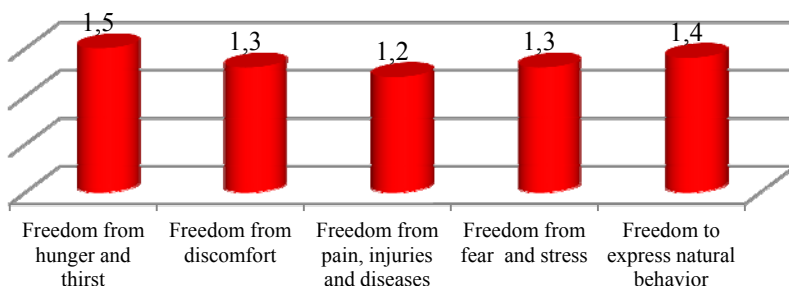
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Graph. 2. Average score for individual freedom for farms from 5 to 20 dairy cows  
*Prosječan rezultat za individualnu slobodu za farme od 5 do 20 muznih krava*

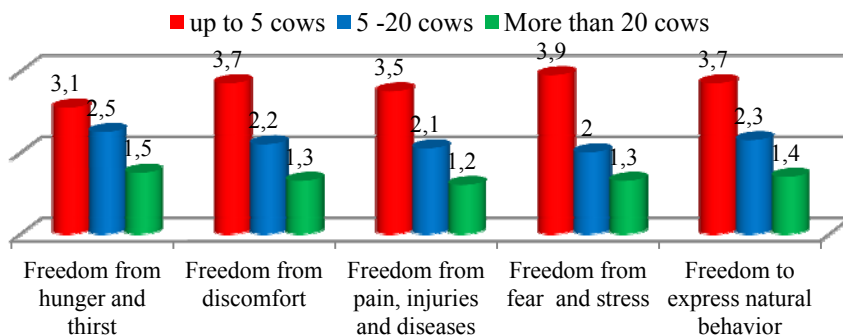
Farms with 5-20 cows and barn generally meet the standards of animal welfare. 6 farms had unsatisfactory evaluations but on average for all 24 farms satisfactory rating.

More than 20 cows

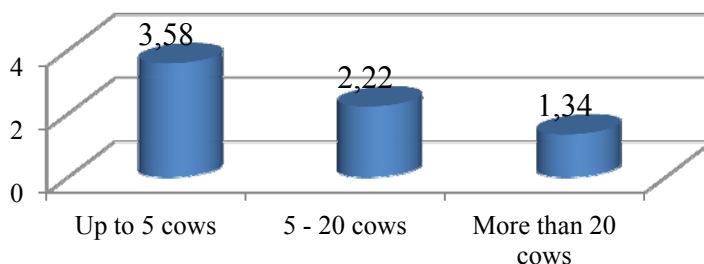


Graph. 3. Average score for individual freedom for farms with more than 20 dairy cows  
*Prosječan rezultat za individualanu slobodu za farme sa više od 20 muznih krava*

Farms with more than 20 cows are free system of keeping cows, only two farms have linked system of keeping cows. All these interactions also meet all the requirements of animal welfare.



Graph. 4. Comparative overview of the average score for the five freedoms  
*Komparativan pregled prosječnih rezultata za pet sloboda*



Graph. 5. The average score level of the animal welfare on the farms  
*Nivo prosječnog rezultata za dobrobit životinja na farmama*

## Conclusion

Farms with up to 5 dairy cows do not meet basic animal welfare standards. The main problem is the facilities for accommodation, which are old and inadequate for keeping livestock.

Farms with 5-20 dairy cows mainly meet the basic standards of animal welfare. The majority of these farms still own bound system of keeping cows. These farms are family farms that employ one to two of family members. One part of the buildings have newer structures and they were built in accordance with animal welfare demands.

Farms with more than 20 dairy cows present the concept on which the program of milk production development should rest. Only 16% of farms visited and examined possesses a tied system of keeping cows. These farms with loose system of keeping cows are modern farms, built in accordance with all standards of animal welfare.

A problem that was noticed on all farms is that a small number of farms, only 21% use grazing as one of the feeding system of dairy cows.

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## Zaštita i dobrobit životinja u praksi na farmama za proizvodnju mlijeka u sjeveroistočnoj Bosni i Hercegovini

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### Sažetak

Cilj istraživanja je utvrditi uslove dobrobiti i smještaja životinja na farmama za proizvodnju mlijeka. Proizvođači mlijeka u regionu sjeveroistočne BiH nisu dovoljno upoznati o zaštiti i dobrobiti životinja. Istraživanje je sprovedeno u maju 2012. godine. Rezultati su dobiveni na osnovu metodologije uptinika za pet sloboda u dobrobiti i smještaju životinja (prema Websteru, 1987). Farme su podijeljene u tri grupe, farme koje imaju do 5 muznih grla (kojih je i najviše u ovom regionu), farme koje imaju do 20 muznih grla i farme sa više od 20 muznih grla. Na farmama do 5 muznih grla sve farme imaju vezani sistem držanja krava i krave se drže u zatvorenim uslovima. Farme koje imaju do 20 muznih krava takođe se u velikom procentu 67% vezani sistem držanja krava i u zatvorenim uslovima. Manji dio farmi ima slobodan sistem držanja krava i štale otvorenog tipa sa dobrom svjetlošću i ventilacijom. Samo 16% farmi koje imaju više od 20 muznih grla imaju vezani sistem držanja a ostalo je slobodan sistem držanja krava. Sve farme zadovoljavaju slobodu od gladi i žeđi, ali je veliki problem sloboda od neudobnosti, sloboda od stresa i straha, sloboda od povrijeđivanja i bolesti i sloboda ispoljavanja prirodnog ponašanja. Istraživanje je realizovano u sklopu projekta "Unaprijeđenje proizvodnje mlijeka na području sjeveroistočne BiH" finansiran od strane Razvojne Agencije Češke Republike.

*Ključne riječi:* dobrobit, smještaj, sloboda

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