THE INFLUENCE OF ENVIRONMENTAL FACTORS ON THE BEHAVIOR OF MEAT CATTLE

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Abstract: *The stress caused by weaning and loading in the transport means as well as the effort to maintain its balance is manifested by the irregular social interaction and the physical tiredness. The inability of animals to deal with stress requires greater attention to their behavior. It has been demonstrated that a high density of animals during transport results in a lesser frequency of these interactions, which also means an obvious benefit for the producers. Cattle grown and exploited in small spaces are exposed to a wide range of stress factors, forming abnormal behaviors such as straddling syndrome, non-adjusting diets, and failure to adapt to extreme temperatures. The degree of incidence of stinging syndrome increased after the implementation of bull growth in enclosed areas, being an important problem because the individual can not escape and fall, loses his hair from the back. The main causes that cause this syndrome in intensive meat exploitation system are technological weaknesses, inadequate density and social interactions. It is necessary to improve the welfare of cattle by removing abnormal behaviors, by implementing the best management practices of fattening.*

Key words*: cattle, environmental factors, behavior*

INTRODUCTION

Production obtained from meat or milk cattle represents an important technical-economic index, which is estimated in each production unit and is expressed by the live weight of the animals intended for slaughter or by the quantity of meat in the carcass, milk per head of animal or farm, which are dependent by the individual production and the number of animals destined for each type of production. [1,6,7]

Meat production, expressed by live weight of the animal at slaughter, depends on growth energy, market demand and fattening technology. The current trends aim the capitalization of the cattle at large body masses, in conditions of maximum favorability regarding the quantity and quality of production. The live weight of the meat cattle at world level is 360-380 kg, with significant variations between countries, in Romania slaughtering body weight is 450 kg for young cattle and over 500 kg for adult animals. According to the new guidelines, we believe that the live mass of exploitation should exceed 450 kg for young people and 600 kg for adults, which in relation to the actual staff will lead to an increase in the availabilities of slathering with 35%. Alongside the living mass of the animal, meat production is influenced by cutting yield, which represents a significant production index depending on the age of the animal (Table 1). [4,5,11,12]

The values of yield at slaughtering varies depending on: [2,3,9] the morphological type of cattle; the age of slaughtering of cattle, and the cattle fattening status.

Along with individual production, an important factor is the number of cattle destined for cutting, the total meat production being the result of the product of these two main indicators. [8,13] The number of bulls designed for cutting is also influenced by the population's consumption needs, the exploitation intensity, the existing technical and material basis and the evolutionary character of the herds, which may be stationary, ascending or descending. [10,14,15]

Table 1

Slaughtering yield according to age

Îtem	U.M.	Age category (in months)						
		0,5	2,5	6	12,3	14	18	60
Mass of the carcass	kg	27,500	48,815	109,880	197,596	234,668	300,510	493,93
Slaughtering yield		58,51	57,19	56,61	56,26	55,91	55,65	7
Meat in the carcass	kg	65,06	61,78	58,42	55,96	55,22	55,18	56,45
								55,11

Source: processing after different authors

The efficient management of cattle exploitation requires substantial knowledge of behavior, nutrition, reproduction and health. [1, 98] because, they have special needs in case of each of the weight categories.

MATERIALS AND METHODS

In order to analyze the influence of environmental factors on the behavior of cattle for meat production, we conducted studies on relational behavior of cows-calf, of exploitation technologies and on the influence of transport on meat production in order to develop measures to improve the exploitation and contributes to obtaining an increased amount of quality meat.

RESEARCH RESULTS

In the first week after parturition, the calf is separated from the cow, a good management of meat production should consider ensuring:

- good conditions for maintenance of the calf;
- avoiding contamination;
- ensuring adequate nutrition.

Regarding maternal care, a distinction must be made between a protective mother and an aggressive mother, the latter one may be dangerous for persons who take care of animals and must be removed to prevent their bodily injury. Weaning is the next important event in the life of the calf. Maternity deprives the calf of nutrients from suckling milk, but separation is stressful. The stress through which the calf passes is evident in the way it walks along the fence, roaring. There are ways to reduce stress after weaning, these include the following:

- separation of the calf from the mother;
- placing in pens where they can establish contact with the cow;
- inserting a ring into the calf's nose to prevent it from sucking for 14 days before weaning.

Transport is stressful for animals, as it shows the studies made using physiological and behavioral techniques. Reducing stress caused by transport is very important for meat cattle producers because:

- the stress caused by transport can reduce the quality of meat;
- affects the quality of the carcass;
- induce the sufferance among animals.

The stress caused by the load on the transport means and the effort to maintain its balance is manifested by the irregular social interaction and the physical fatigue. The inability of animals to deal with stress requires greater attention to their behavior. It has been demonstrated that a high density of animals during transport results in a lesser frequency of these interactions, which also means an obvious benefit for the producers. In the case of transports where the stocking density is high, the inability to move leads to physical fatigue and finally the animals fall, they can no longer rise and are injured or

trampled.

The optimal density at embarkation at cattle for slaughtering is 1,4-1,6 m2 for bulls, 1,3-1,4 m2 for adult cows and 0,9 - 1,3 m2 for young cattle. The way in which cattle respond to transport suggest that it is stressful for them, which means raising of: the cortisone level, the heart rate and the frequency of physiological needs.

Cattles grown and exploited in small spaces are exposed to a wide range of stress factors, forming abnormal behaviors such as straddling syndrome, non-adjusting diets, and failure to adapt to extreme temperatures.

Straddling syndrome has been known for a long time but the incidence degree of this syndrome increased after the implementation of bulls' growth in closed spaces. It can be an important problem because the individual cannot escape and fall, losing his hair from the back. We believe that the main causes that cause this syndrome in intensive exploitation system for meat are:

- technological deficiencies;
- density of animals;
- the use of hormonal implants;
- specific social interactions.

At the formation of cattle, the transition is usually stressful and coincides with:

- decrease in ingested feed;
- the difficulty of adapting to the environment;
- weight loss;
- decrease of the reactivity to antibiotics administered.

Cattle meat can also be obtained from calves of dairy cows which, in order to produce milk, must have girls in every year, so the fate of calves is sealed from the very beginning:

- a small part of the heifers take their mother's place in the herd of dairy cows;
- the poorest calves are sacrificed;
- other calves are fattened to obtain calf meat.

At first they are fed with milk replacers before going to the energy-intensive cereal diet, they rarely eat grass, they are raised on concrete floors or grate. Body injuries and diseases are predictable in this case. Routine mutilations include dangling, clamping, and cutting the horns.

The welfare of cattle meat can be ensured by paying attention to health and reducing stress. Exposure to some environments and management techniques can cause both physical stress and mental stress, especially in conditions of increased animal production. Stress has negative effects on the immune system, causing animal illness. It is necessary to improve the welfare of cattle by removing abnormal behaviors by implementing the best management practices of fattening.

CONCLUSIONS

In farms, besides the implementation of modern exploitation technologies, it is necessary to pay attention to the behavioral principles and to support the animals in the sense of manifesting normal and abnormal behaviors for the improvement of animal welfare by applying the best management practices. Since some management procedures - weaning and transport - are extremely stressful, particular attention should be paid to managing the growth and exploitation of meat cattle. The welfare of meat cattle can be ensured by paying attention to health and reducing stress and exposure to unfavorable environments because management techniques can cause physical and mental stress, especially in conditions of increased animal production.

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