

PONAŠANJE I DOBROBIT MALIH PREŽIVAČA

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SUMMARY

Behaviour is the gesture of living things which starts from birth and continues all life long. The main role of behaviour is to provide the adaptation of animal to modifications which occur in itself or in environmental conditions. Revelation of the behaviour characteristics present in genotype is based on the environment. In order to understand the animal psychology and determine how behaviour occurs is important to establish the suitable environmental conditions. To understand the species-specific basic stimuli, establishes the basis of being able to control it. Behavioural patterns have great importance in animal husbandry practices, particularly in terms of arranging care and management. Besides, behaviour is a very important criterion in measuring welfare. Therefore, in terms of improving animal efficiency and welfare, it is necessary to know various types of behaviour such as nutrition behaviour, social behaviour, agonistic behaviour, reproduction behaviour, birth and maternity behaviour, and the relationship between behaviour and welfare.

Key words: sheep, goat, behaviour, welfare

INTRODUCTION

Behaviour may be defined as the respond given from animals to internal and external stimuli (Passille et al. 1996). The responds given by the animals are not logical, but instinctive intuitions. Animal behaviours are formed by the effects of heritage and environment. Many events occurred in animal organism during the prenatal period are effective in the formation of postpartum growing, behaviour and adaptation. Every behaviour pattern has a kind of basic stimulants unless no prior experience exists. All the methods used in animal breeding practice have been developed depending upon animal behaviour (Johannesson and Ladewig 2000; Demiroren 2002).

Welfare of livestock is associated with the animals' emotions in cases such as being happy or suffering, being healthy, whether to show species-specific behaviours or maintaining their natural lives or not. In order to accept that the animals enjoy their welfare, they have to be able to express their normal behaviour. Knowing the animal behaviours has

a critical importance in increasing the efficiency of animals and optimizing the animal welfare. Accordingly, knowing various types of livestock behaviour is necessary in terms of enhancing their efficiency and welfare (Akcapinar and Ozbeyaz 1999; Unal 2004).

BEHAVIOURAL CHARACTERISTICS OF SHEEP AND GOATS

While sheep are defined as defenseless, coward by gregarious bodies covered with fleece and ruminants having the habit of grazing in meadows; goats are defined as free spirit animals as they prefer to be free (Kilgour and Dalton 1984; Mackenzie 1993). Sheep and goats usually have a good visual angle. But they can not see the 2-3 cm. distance in front of their noses. Therefore, sheep and goats use their sense of smell and touch for selecting plants and then they decide to eat the plant. Smelling has an important role in maintaining the social structure. Sheep and goats are able to distinguish the smells

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of fleece, scat and saliva, and recognize each other by their sense of smell. Moreover, the smell is also an important factor in determination of rutting ewes by male sheep and recognizing the lambs by the mother. In addition, hearing sense of sheep and goats is also quite developed. They make different sounds in situations such as mother-young relationships, while mating, starting to defend against enemy, during the attack, disease etc. (Mackenzie 1993; Taylor and Field 2001; Anonymous 2012).

Nutritional Behaviour

Nutrition of animals is quite important in terms of life continuity and obtaining efficiency. For a successful nutrition, knowing about the nutritional behaviour of animals is very important. The existence of fodder and water, seasonal characteristics, social status, taste of fodders, food contents and physiological state of animals affect the consumption of fodder and water, accordingly their nutritional behaviour. Avoiding thirst, hunger and inadequate feeding establishes one of the five basic freedoms required to be provided in terms of evaluations of animal welfare (Keeling and Jensen 2002). Thanks to their long and narrow chin structure, sheep and goats pluck the grass from the nearest point and graze selectively. Sheep prefer to graze meadow grass, while goats prefer to eat tree leaves, branches and offshoots. Selectivity takes place at maximum level when the grass or fodder is abundant, and reduces when the fodder is limited. Sheep and goats use their senses of eyesight, smell, touch and taste in selection and consumption of fodder. Goats are more active than the sheep in grazing. Goats like to wander and graze at steep slopes and rocky places, and can benefit from low quality meadows, maquis and bushes. Sheep and goats spend as much to ruminate as to grazing time or a bit less. Rumination time may vary between 1 minute to 2 hours. There is a positive relation between the cellulose content of fodder and rumination time. Behaviourists consider that the rumination time is an indication of basic natural behaviour of ruminants, and of being healthy. For rumination, the animal should feel comfortable. Sudden stress incidents (sound, fear, pain, concern, light etc.) may cause rumination to be irregular or to stop (Anonymous 2012a; Gill 2008). Savoriness, preferences and grazing information play a role in roughage selection of sheep and goats. Savoriness

is affected by fiber content, being bittersweet and water content; the preference differentiates as per previous experiences of the animal, and grazing information is gained by young animals by observing their mothers and other adult animals (Fraser 2004).

Sheep usually like to drink from places they are used to. Being without water leads to increase in movements and bleating (Cheeke 2004). Sheep prefer still water to flowing water (Gill 2008). In general, sheep consume water 2 or 3 times more than they consume dry stuff, and amount of water consumption rises as the protein and salt amount in the ration increase. The existence of water is effective in determining the grazing behaviours particularly in arid regions. The ones close to water source are exposed to overgrazing, and pave the way to parasitic diseases (Squires 1974). While water consumption decreases when the environmental temperature reduces, fodder consumption also decreases in cases where water is limited (Anonymous 2012). In seasons in which the environmental temperature increases too much, sheep and goats start and finish grazing early in the morning (Gill 2008). In such seasons, better results can be obtained by the animals grazing at night time. Goats are more resistant to thirst than sheep. Goats can well adapt to limited water consumption and short time thirst. Limited water consumption which lasts a few days reduces the amount of urine and increases the urea concentration in the urine (Anonymous 2012).

Social Behaviour

The most distinctive social behaviour of sheep and goats is their gregarious living characteristic. This behavior makes them to be easily managed by humans. Social behaviour of sheep and goats is affected by many factors (Lynch et al. 1992). It is difficult to understand that animals know each other in groups where many animals are present. But maintaining the interdependence in the group is a sign of knowing each other. Knowing each plays an important role in social organization. Even after the animals are moved to different herds; excitations such as seeing, touching, smelling and hearing are still effective to identify each other. The existence of parental relations between animal pairs is one of the most remarkable characteristics of social organization among the groups (Boissy and Dumont 2002;

Dwyer 2008). Social hierarchy allows animals to live together. In the formation of social hierarchy; temperament, age, body size and hornedness are effective. The establishment of the dominance order in goats is influenced by the aggressiveness (Rout et al. 2002; Szabo 2008). Aggressive animals and old and big animals are usually in the front in social hierarchy. Horns are important in determining the individuals' place in competitions, threats and fight. In social hierarchy, being dominant is expressed by some animals, with or without struggle, having more opportunity to benefit from present sources compared to other animals. Being dominant by threatening and attacking, and develops very quickly. Attacking behaviour is an indication of struggle for physical sources such as food, water, field and shelter; and for social status (Lynch et al. 1985). Behaviour such as butting, shouldering, poking and jumping on each other is included in attacking behaviour. A bearing positioning of an animal by making species-specific sounds and by showing various body gestures that it intends to attack its rival is a threatening behaviour (Anonymous 2012). And submission behaviour is seen after threatening and attacking behaviour. The most common sign of submission is to lower one's neck and nodding the head (Lynch et al. 1992). The animals which are higher in hierarchy completely reveal the behaviours of fodder eating, resting, mating and general activity (Barroso et al. 2000; Shrader et al. 2007). In order to maintain such positions, dominant animals spend more energy than the ones ranking lower in the hierarchy, but in return, they can reach a better shady place and more water sources (Macfarlane 1982). Animals which are lower in ranks have more difficulties than the ones in upper ranks in human directing and adapting to new environmental conditions, and this may lead to a reduction in their efficiencies.

Agonistic Behaviours

Agonistic behaviour has the biological function to influence an individual's access to vital resources, such as food, water, shelter, and space. In addition, it can influence access to reproductive partners (Ortiz-de Montellano et al. 2006). Agonistic behaviour is intended to dissuade, injure, cause pain, or reduce the freedom of an individual. Agonistic behaviour may be defined as the attack and escape behaviour shown by the animals in interaction with each other.

In goats, agonistic behaviour can be expressed as aggression with contact, i.e., biting, bumping, or aggression without contact, i.e. threat displays, chases, escapes (Tolu and Savas 2007; Van et al. 2007). During feeding, aggressive postures in goats can include side-on locking of horns, butting the flank of another feeding goat, and ear biting (Szabo 2008). Aggressiveness is one of the important problems in animal conduct and its special function is necessary to know. Environmental factors have great effect on agonistic behaviour. When animals are limited in narrow fields or are closed, since their individual distances which are naturally established by them diminish, stress indications occur in the entire herd. As a result, dominant animals make more efforts to maintain their superiority and become more aggressive in their reactions. And submissive animals become more nervous and shy compared to previous situation, and this affects the entire herd. Social ranking of animals do not considerably affect the efficiency provided that adequate fodder and water is supplied in the meadow. But when animals are closed in a sheepfold and feeding conditions are limited, social ranking gains great importance. In such conditions, dominant individuals gather at mangers, the obeying ones move away and go hungry (Demiroren 2002). Breeding system and group size in animal husbandry affect the frequency and form of social behaviour of the livestock, many of which are social species. Interactions and struggles among animals reduce to minimum level in conditions where adequate field is available for each animal (Karaagac 2002). The incidence level of agonistic behaviour between gregarious animals and other interactions between individuals are affected by the group size and settlement intervals. In bigger herds, the interactions between individuals tend to increase (Drickamer et al. 1999). Moreover, older animals learn to win by age thanks to experience they have gained in dual struggles. Therefore, if the attacked animal is older than the attacking one, the winner is usually the older one. The animals starting the fight, in other words, showing more agonistic behaviour, are the ones which have more aggressive characteristics than the others (Cote 2000). The interactions and mutual relations of gregarious livestock is an important subject which have to be taken into consideration in terms of animal husbandry. Agonistic behaviour in animal husbandry may lead to injury of animals, and to disturbance and stress

in the herd. Such incidents taking place in the herd may lead to loss of time and energy in animals, and serious economic losses in establishments (Barroso et al. 2000). The introduction of new animals to herds can increase aggression, disrupt the social structure of an established herd, and alter the social hierarchy of the group (Andersen et al. 2008). To minimize the stress on individuals, groups should be kept as stable as possible and the introduction of new individuals should be monitored closely because the integration of unfamiliar animals into a group is always a stressful event for animals (Sevi et al. 2009).

Reproduction Behaviour

Behaviour has an important place in terms of reproduction. As reproduction behaviour courtship, estrus and mating behaviour may be listed. The main observation of estrus detection in sheep and goats occurs when a female does not escape from a male and lets him climb on her and exhibit the mating behaviour (Kaymakci 2002). Signs of estrus in the ewe are much less pronounced than in the doe and usually can not be detected unless a ram is present. When mature females are in heat, they will seek out the male and stand still for him to mount them. Sometimes they wag their tails vigorously. They may nuzzle the male around the belly or scrotum and even try to mount the ram. Young females rarely exhibit such behavior. There is evidence to suggest that male and female prefer to mate with their own breed, but when there is no option female will mate with almost any breed of male (Kilgour ve Dalton 1984; Houpt ve Wolski 1982). The females which are not in heat escape from males and definitely do not allow them to jump on them (Yilmaz 1999). The estrus indications of females in rut such as bleating, tail flicking, reduction in fodder consumption are more remarkable when there is a male nearby, if there is no male, detection of estrus becomes harder (Cupps 1991; Hafez 2000). In goats, more than in sheep, olfactory signals are important, especially in sexual and maternal behaviour (Levy et al. 2004). For example, the "buck effect" is stimulated mainly through olfactory cues (Gelez and Fabre-Nys 2004). Urine is one of the main vectors for signals of individual identity and goats frequently urinate, especially when expressing their reproductive status. In addition, they secrete olfactory signals through

pedal glands and a tail gland. Typically, volatile odors are perceived by the olfactory epithelium and pheromones can be perceived with the aid of the vomeronasal organ by performing the flehmen behaviour, which is typical of the males of all ruminant species, including goats (Houpt 2004). Olfactory, vocal, and visual signals from females are important to bucks in detecting oestrus females. Signs that indicate females are in heat are more pronounced in goats than they are in sheep (Sevi et al. 2009), possibly because: there is sexual segregation among goats and females might have to attract bucks from a distance, whereas in flocks of sheep signals from females can be less obvious. The female in heat may move or walk on unless she had a prior mating experience. At that, mating for male is much harder, both his energy and time become wasted. If the said behaviour prevails, it means that there is a problem in the herd. Elimination of problems observed in terms of reproduction behaviour is important for increasing the efficiency of insemination programs. Administrative factors considerably affect the sexual development of males. For males, raised together with females, the numbers of mounting and ejaculation are higher than for the ones raised separately (Price et al. 1988).

Birth and Maternal Behaviour

Sheep and goats are social animals and show strong gregarious tendencies. However, pregnant ewes and goats show social isolation from the rest of the flock and a reduction of their behavioral response to social isolation between 24 h and about 1 h prepartum. The imminent parturition labour in sheep and goats is characterized by an initial increase in restlessness, pawing, lip licking, frequency of vocalization, and then straining in both standing and lying positions the general intolerance also increases. In ewes and goats, isolation from the rest of her conspecific could be beneficial to the early relationship with their young. Furthermore, mother selects the birth site and offspring survival is increased with increased duration spent on the birth site (Dwyer 2009). This isolation improves the establishment of the mother-young bond by preventing separations of the newborn young from their mothers and reducing interference or stealing newborns by other mothers or predators (Gonyou and Stookey 1985; Poindron et al. 1993). Therefore, this isolation with-

out interference from other females is indeed of the utmost importance for the onset of the mother-young relationship and this behavior may facilitate mutual recognition and rapid access to the udder at birth, improving the chances of newborn survival (Val-Laillet et al. 2006). The newborn stands on its feet, usually at 10 to 30 min after birth; it starts to nuzzle its mother's body and rapidly reaches for the udder, to successfully suck in 30 to 60 min after birth (Poindron et al. 1993). Mothers have an impact on the development of the offspring through their care and interactions with the young in early life. This is particularly true in the very first hours of life which are critical for the precocious young of the sheep. Care provided by mothers to their offspring is a major direct determinant for good adaptation of newborns to ex utero conditions: good mother-young relationship and good communication are related to better offspring survival (Dwyer and Lawrence 2005). Immediately after birth the mothers show intense and focused interest in the newborn and in the amniotic fluids in its coat and on the ground. In this regard, amniotic fluids are important in experienced ewes not only for the establishment of maternal responsiveness as in primiparous, but also these fluids carry some chemosensory information to facilitate exclusive bonding (Demiroren et al. 1992; Poindron et al. 2010). The survival of the newborn is dependent on the coordinated expression of appropriate behavior between both the mother and the offspring that lead to the formation of a strong relationship between them (González-Mariscal and Poindron 2002). Fundamental to the survival of the lamb is the formation of a close and exclusive attachment or bond between the mother and her offspring to ensure their early sucking and colostrum intake (Nowak et al. 2000; Dwyer 2003). Specific behaviour of the mother (licking and grooming, low-pitched bleating, co-operation with the young sucking behaviour) promotes mother-young recognition and a close association between the mother and offspring (Nowak et al. 1997). Maintenance of maternal behavior relies on behavioral cues from the neonate, particularly sucking interactions, and mothers whose offspring has died lose interest in the body of their offspring within a few hours (Dwyer 2009). Thus, the ability of the neonate to attach rapidly to its mother is a primary condition for the access to food and maintaining maternal behavior in the postpartum, consequently increases the oppor-

tunity survival of kid (Poindron et al. 1993; Nowak et al. 2000). The age of weaning is determined by the animal's development and offsprings are usually weaned when they reach 3 months of age, however, this period may be reduced to 6 weeks in case of good conditions and 10 weeks in negative conditions. The weaning means the interruption of relationship between the mother and offspring, the most important partners in after birth period (Flower and Weary 2001). For the offspring, the weaning which means leaving the mother, has an effect beyond the change that is experienced in nutrition. The interruption of relationship between mother and offspring can negatively affect the welfare of both the mother and offspring (Veissier et al. 1998; Orgeur et al. 1998; Orihuela et al. 2004; Ugur et al. 2004; Das et al. 2005). The vitality of offspring is an important criterion which determines the success in herd management. Since offspring deaths are more experienced within the first few days following the birth, knowing about the behaviour of mother during birth is necessary for minimizing the negative effects of the environmental factors. Well information about mother and offspring behaviour and controlling the mechanisms of behavioural patterns, facilitates the evaluation of problems and application of right reproduction techniques in animal husbandry (Taskin et al. 1997).

BEHAVIOUR AND WELFARE RELATIONSHIP

Behaviour is one of the most important early indicators of the welfare of an individual and its adaptation to its environment and reflects the immediate response to the interaction between the animal and its environment (Metz and Wierenga 1997). The motivation to express behaviour depends on the interactions between internal and external factors that involve feedback control mechanisms (Galindo et al. 2000). Physiological, environmental, and behavioural mechanisms that serve to maintain the balance in the relationships within a group that otherwise would be transitory or null regulate social activity (Mendl and Held 2001). In addressing the issue of how we can use behaviour in the assessment of animal welfare, we next need to ask what behaviour can tell us about animal health and also what it can tell us about what animals want. Behaviour is also the result of all of the animal's own decision-

making processes (Dawkins 2004). Welfare is the combination of subjective and objective (qualitative and quantitative) aspects of the conditions of life of animals, including health and disease, behaviour, husbandry and management. Animal behaviour is an instrument for determining animal welfare. Behaviour in animals occurs by the effect of environment it is in. If the environmental conditions are not appropriate, abnormal behaviour or behaviour disorders are seen in animals (Unal and Akcapinar 1994). When the animals are provided with an environment in which they can show their normal behaviour, it is often adequate to maintain their welfare (Ewbank 1988). Since the welfare concept is expressed as changes in acceptable limits of physical, psychological and environmental conditions of an individual, it is usually considered that the welfare of animals which can show their normal behaviour are probably better than the ones that can not (Ewing et al. 1999). Spinka (2006) identifies three examples of the importance of natural behaviour to good welfare:

- Allowing animals to behave freely in an environment with key natural features may be the most effective and prudent way of achieving the goals of the farmer.
- Natural behaviour involves patterns that are associated with positive affective states.
- Natural behaviour may bring long-term benefits to the animals that are difficult to achieve otherwise or even just to foresee.

Welfare should be regarded as an attribute possessed by the individual and deviation from the norm or accepted welfare condition of an individual can be measured in a number of ways. These include physical, behavioural, physiological, biochemical and pathological as well as emotional. To understand welfare state it is also important, therefore, to know if the environment provides for the behavioural needs of small ruminants (Faerevik et al. 2005). In determining the animal welfare, there are indications that welfare is bad or behaviour is abnormal or detrimental. For those; aggression, biting and stereotypes (behaviour arising from boredom) may be given as examples. Aggression in sheep is more sensitive to changes in space allowance, and especially wall space in the resting area, than to changes in group size (Meisfjord Jørgensen et al. 2009). The indication and the complications of a disease are considered to be among the most considera-

ble issues of animal welfare. Likewise, painful and distressed procedures performed on animals are among the most emotive of public concerns regarding animal welfare. Poor physical health, caused by disease, injury or deformity, is relatively straightforward to recognise and can often be quantified, for example, by scoring how well an animal walks or the size of lesions on its body (Dawkins 2006). Disease reduces welfare status in the individual animal, the group of animal or the whole flock.

Welfare is closely linked to the concept of stress. Stress can be defined as a biological state of disrupted homeostasis evoked by a stimulus, also called stressor (Selye 1950). Stress has acquired a negative connotation since most research is focused on using noxious stimuli. However, stress responses are first and foremost adaptive responses that enable organisms to respond to environmental changes (McEwen 2000). Animal behaviour is the main criterion in determining the factors or conditions which create stress to the animal. Because the environmental conditions provided to animals during breeding directly affect animal welfare. Therefore, the practices which will minimize the stress on an animal in animal husbandry has primacy, and studies on animal behaviour have provided a considerable support for that. There is certain behaviour that can be useful in the assessment of distress caused by environmental condition or handling. A painful injury may sometimes increase an animal's sensitivity to other painful stimuli; thus hyperalgesia is typically assessed by exposing the animals to a painful stimulus (e.g., heat or pressure) and measuring the withdrawal response. The site and intensity of distress and its duration usually affect the severity of these responses and the sorts of behaviour observed (Dolan et al. 2000; Fitzpatrick et al. 2006; Weary et al. 2006). The main behavioural responses to a range of stressors that have been identified in other species include increased immobility and increased locomotion, decreased sleeping/resting and increased alertness, decreased eating and drinking and increased vocalisation and elimination (Cockram 2004). If an animal does not consume enough feed, the factors affecting that may be lack of adequate space in the shed barn, its relation with other animals in the herd, ground properties, noise that startles the animal, reflection and similar incidents or behaviours of the keeper. The base material also affects the breast health and milk quality, in

case it is humid and defective, it causes nail and leg problems and as the result, efficiency and welfare of the animal is affected negatively (Uslucan and Ozkutuk 2007). When stress occurs in an animal, the welfare becomes worse because stress negatively affects the hormone secretions and impedes the body to maintain its normal functions (Moberg 1980, 2000; Todoni et al. 2006). Stress levels can be anticipated in most husbandry systems. The animal's welfare is therefore in a constant flux and the balance is maintained by the animal's reaction at behavioural, physiological and biochemical levels. In studies related to welfare, the stress concept is often expressed based on the physiological parameters such as stress hormone (cortisol) secretion or sympathetic nerve system activation (tachycardia) (Friend 1980; Barnett 1989; Moberg 2000; Korte 2001; Coburn et al. 2010). The stress on animals arises from climate conditions or physical and social factors. The stress arising from climate factors is the effect of conditions on animals experienced in animals' environment. The most important climate factors which may be shown as source of stress are temperature and relative humidity. The higher the humidity in the air, the more difficult to balance the body temperature. Physical stress is a concept which appears depending on the harmonization between structure and living creature. Behaviour may be altered as animals respond to the invasion of their personal space. Reducing space allowance can lead to increase in aggressive interactions and is considered to be highly important for optimum welfare and production (Sibbalda et al. 2000). The most important factor in elimination or relieving the physical stress is the suitability of structure and equipment design to animal behaviour, in other words, providing the conditions (providing adequate space for rest and moving, adequate manger and watering place, keeping the draught in optimum conditions, separation of animals by age and live weight, complying with the hygiene rules required for animals' health, building suitable sections for weak and sick animals) in which the animals will be able to show their normal behaviour in the shed. Environmental enrichment is often proposed as the way to enhance positive experiences in farm animals. The beneficial effects of supplementation are usually represented by a reduction in the indicators of poor welfare (e.g. fewer stereotypies, less aggression) rather than an increase in indicators of good welfare (Benfial et al.

2005). The term "enrichment" should be reserved for environments that are truly enriched beyond basic needs and it is this meaning of the term that is adopted here. This enhanced quality of life could be achieved by physically enriching an already varied environment with new resources (Duncan and Olsson 2001). Farm animals have evolved as social species to benefit from their social environment. Social behavior is a major determinant of farm animal welfare (Keeling and Gonyou 2001). And the stress which is caused by social factors can be eliminated or relieved by forming socially homogeneous groups, organizing the animals' relations among themselves and with the keeper, taking precautions which may facilitate the herd management (Ugurlu and Uzal 2007; Anonymous 2012b).

Animal behaviour is an important element for providing and maintaining both their internal and external balances. In providing such balance, physiological mechanisms play a big role. For example, for an animal being exposed to a cold environment; deceleration in blood circulation, acceleration in the metabolism and increasing heat production by shivering in order to prevent heat loss are physiological reactions. On the other hand, the first reaction to be observed in animals which are exposed to heat stress is the increase in number of respirations, seeking for shade, increase in water consumption, decrease in fodder consumption, demanding to stand, increase in number of respirations, body heat and salivation (Abdel-Samee et al. 1992; Marai et al. 2007). Animal welfare develops as long as the real reasons for some behaviour considered to worsen animal welfare are determined, the problems causing them are eliminated and conditions are provided to be maintained without changing. Environmental regulations can be made if behavioural characteristics of animals are known. In determining the welfare levels of the animals; signs indicating that the animals are under stress and suffer, behavioural and clinical parameters are used. Lifting the tail, decrease in body weight, pulse increase, diarrhea are all stress indications in animals. Pain, fear and frustration cause animals to suffer. Welfare of an animal is considerably based on the harmony of environment and management. In order to increase the welfare, "convenience for livestock" principle should be sought and should be taken into consideration (Kilgour 1978). Appropriate environmental stimulation favours good welfare and, in an adequately

enriched environment, positive indicators of welfare such as play behaviour tend to be more common. In addition, animals are motivated to perform such behaviour only if their primary needs are satisfied. Ruminants are gregarious and a high degree of synchronisation within the herd may indicate a positive welfare state, in particular for subordinate animals. They may be able to meet their basic feeding and resting requirements when the competition for a particular resource is low, however their welfare state would be improved if they could choose when and where to perform such behaviour (Napolitano et al. 2008). Appropriate environmental stimulation favours good welfare and, in an adequately enriched environment, positive indicators of welfare such as play behaviour and sociopositive behaviours tend to be more common (Kaiser et al. 1999). The development of an objective animal welfare index, to be applied at farm level by individual assessment, would seem to be priority; this should help integration of the behavioural observations in the diagnostic process, alongside various contributors to animal welfare measurement, i.e., physiological, biochemical, pathological, emotional and legal indicators (Gougoulis et al. 2010). In general, if the rates of death and disease are very low among animals, if there is no or very little risk of injury, if they are in good body condition, if they are completely able to show their species-specific behaviour, if there is no abnormal behaviours and no stress, if their immune systems are not depressed; we can say that there is no important problem related to animal welfare in that herd. However, providing the opportunity for natural behaviour is often a very effective way to satisfy the needs of the animals, to provide them with emotionally positive experience, and to stimulate their behavioural development in such a way that it brings long-term benefits. Therefore, natural behaviour of the species in question should be considered both when new housing systems are being developed (Lidfors et al. 2005) but also when solutions to particular problems in existing systems are being sought.

CONCLUSION

In regulating the optimum conditions for being able to get maximum efficiency from the livestock; considering, reviewing and utilising animal behaviour is necessary for a successful breeding.

In breeding, care which is continuously practised also has a very important effect on the herd welfare. The person implementing such practises should well know the meaning of being healthy for an animal. These are general state of wakefulness, freely moving, active feeding and rumination, no signs of lameness and visual injuries. On the other hand, keepers should also well know the symptoms which are indications of diseases of animals. Such symptoms may be listed as fatigue, abnormal posture and behaviour, limping, failing to ruminate, continuous coughing and getting out of breath, itching and rubbing, decline in body condition, too much fleece loss, sudden decrease in milk production and leaving the herd. Animal's inadequate contact with the other members of the herd or very small changes in sensory receptors may lead to defects in mental functions. And the animal reveals that by showing behavioural and physiological reactions. At that, solutions should be sought which may respond to the need, and the solutions found should enable the animal to stay healthy both mentally and physically. The production amount and quality is directly proportional to welfare level. The more the breeders comprehend the physiological characteristics and behavioural patterns of the animals, improve and practise their information and skills on such subjects; the more they would made progress in providing animals' welfare.

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SAŽETAK

Ponašanje je izražavanje živih bića što počinje s rođenjem i traje čitav život. Glavna uloga ponašanja je omogućiti prilagodbu životinje promjenama što se događaju u njoj ili u okolini. Otkrivanje karakteristika ponašanja u genotipu temelji se na okolini. Za razumijevanje psihologije životinje i određivanje kako ponašanja nastaju važno je utvrditi odgovarajuće uvjete okoline. Razumijevanje osnovnih podražaja svojstvenih određenoj vrsti temelj je što omogućuje njegovo kontroliranje. Uzorci ponašanja vrlo su važni za držanje životinja, osobito što se tiče organiziranja brige i gospodarenje. Osim toga, ponašanje je vrlo važan kriterij za mjerenje dobrobiti. Stoga je, u smislu poboljšanja djelotvornosti i dobrobiti životinja potrebno poznavati različita ponašanja kao što su hranidbeno ponašanje, društveno ponašanje, natjecateljsko ponašanje, reproduktivno ponašanje, porodno i materinsko ponašanje te odnos između tih ponašanja i dobrobiti.

Ključne riječi: ovca, koza, ponašanje, dobrobit