



Bells in small ruminant farming in Mediterranean pastures

Bellos G.K.

in

López-Francos A. (ed.), Jouven M. (ed.), Porqueddu C. (ed.), Ben Salem H. (ed.), Keli A. (ed.), Araba A. (ed.), Chentouf M. (ed.).
Efficiency and resilience of forage resources and small ruminant production to cope with global challenges in Mediterranean areas

Zaragoza : CIHEAM

Options Méditerranéennes : Série A. Séminaires Méditerranéens; n. 125

2021

pages 315-319

Article available on line / Article disponible en ligne à l'adresse :

<http://om.ciheam.org/article.php?IDPDF=00008015>

To cite this article / Pour citer cet article

Bellos G.K. **Bells in small ruminant farming in Mediterranean pastures.** In : López-Francos A. (ed.), Jouven M. (ed.), Porqueddu C. (ed.), Ben Salem H. (ed.), Keli A. (ed.), Araba A. (ed.), Chentouf M. (ed.). *Efficiency and resilience of forage resources and small ruminant production to cope with global challenges in Mediterranean areas.* Zaragoza : CIHEAM, 2021. p. 315-319 (Options Méditerranéennes : Série A. Séminaires Méditerranéens; n. 125)



<http://www.ciheam.org/>
<http://om.ciheam.org/>

Bells in small ruminant farming in Mediterranean pastures

G.K. Bellos

Ministry of Rural Development and Food, Animal Genetic Resources Center of Ioannina.
University avenue, End, 45110, Ioannina (Greece)

Abstract. Animals' bells have facilitated the work of livestock farmers around the Mediterranean since ancient times, both in mountain pastures and in lowland areas. The purpose of this study was to record the viewpoint of small ruminant farmers about the significance the bells have for them nowadays. The empirical study was conducted with 29 small ruminant farmers in Greece, by using the semi-structured interview technique. The results showed that bells help shepherds locate their flock or even individual animals within the flock at a considerable distance, thus saving time and cost. Bells also help them to check whether animals graze serenely or are exposed to external dangers. In normal grazing conditions, the soft tinkling of the bells neutralize external noises, thus promoting gentle grazing and enhancing the animals' ability to locate one another. At the same time, as far as small ruminant farmers are concerned, bells could be a source of pride and social acceptance by fellow farmers. Bells also contribute to the shepherd's enjoyment as they seek to use appropriate combinations of bells that deliver harmonious and pleasant sounds. Although nowadays there are much more modern means for locating animals and for farmers' entertainment, bells continue to play an important role for the majority of Greek transhumance farmers.

Keywords. Bells – Small ruminant farming – Pasture – Mediterranean.

Sonnailles dans l'élevage de petits ruminants dans les pâturages méditerranéens

Résumé. Les sonnailles des animaux ont facilité le travail des éleveurs autour de la Méditerranée, tant dans les alpages que dans les pâturage de plaine, et ce depuis l'antiquité. Le but de cette étude était d'enregistrer les points de vue des éleveurs de petits ruminants sur l'importance que les sonnailles ont pour eux aujourd'hui. Une enquête a été réalisée chez 29 éleveurs de petits ruminants en Grèce, en utilisant la technique de l'entretien semi-structuré. Selon les éleveurs, les sonnailles aident le berger à localiser son troupeau ou même des animaux précis au sein du troupeau et ce à une distance considérable, économisant ainsi du temps et de l'argent. Ils l'aident également à vérifier si les animaux paissent sereinement ou s'ils sont exposés à des dangers extérieurs. Dans des conditions de pâturage normales, le léger tintement des sonnailles neutralise les bruits extérieurs, favorisant ainsi un pâturage en douceur et renforçant la capacité des animaux à se localiser. Dans le même temps, pour les éleveurs de petits ruminants, les sonnailles pourraient être une source de fierté et d'acceptation sociale de la part des agriculteurs. Les sonnailles contribuent également au plaisir des bergers, qui cherchent à utiliser les combinaisons appropriées de sonnailles pour produire des sons harmonieux et agréables. Bien qu'il existe aujourd'hui des moyens beaucoup plus modernes de localisation des animaux (GPS, par exemple) et de divertissement des agriculteurs, les sonnailles continuent de jouer un rôle important pour la majorité des agriculteurs transhumants en Grèce.

Mots-clés. Sonnailles – Élevage de petits ruminants – Pâturage – Méditerranée.

I – Introduction

In the areas around the Mediterranean basin, small ruminant farming has been based on the movement of the flocks for centuries. The flocks have been moving –and in some cases are still moving nowadays– following the seasonal growth of vegetation. The movement of sheep and goat flocks takes place annually at the end of spring, from lowland areas to mountain pastures, by means

of walking or by vehicles. In the autumn, the movement follows the reverse path. The primary aim of the movement was to secure feed availability for farm animals, to reduce feeding costs and subsequently to bring the farmers in contact with the mountain communities, usually the places of their own origin (Laga *et al.*, 2005, Oregui and Ruiz, 2005).

Throughout centuries, transhumance livestock farmers have developed a set of simple objects, mild architectural constructions, complex techniques and practices that were considered to be innovations for their time. These were invented, as a consequence, in order to facilitate their daily life and included animal bells, shepherd's crooks, flutes, looms, wool weavings, flaky, capes, "Sarakatsani stables" (made of straws, reeds and clay), dry stone walling, etc. Their preservation and development over time has made a significant contribution to the formation of the natural landscape but also to the social and cultural shaping of the identity of rural societies.

Among the objects mentioned above, animal bells play a vital role in facilitating the farmer's work. Bells are simple metallic objects that transmit the sound at a great distance and help the shepherd's work during the movement and grazing of the animals. According to Bellos (2019), as many as 200 Greek different names have been recorded, in order to describe various species and variations of bells in Greece and Cyprus, especially in areas with developed livestock farming. Their names vary according to the shape, size, weight, material, method and place of manufacturing, the animals for which they are destined, the sound, the local idioms, etc. The main categories into which most bells can be classified according to their construction material and shape are (Fig. 1):

- (A) *simple bells*: the vertical intersection at any point is always elliptical,
- (B) "*kypria*": in the form of a truncated cone with two elliptical bases; its height is greater than its width,
- (C) "*tsokania*": in the shape of an isosceles trapezium,
- (D) *spherical shaped bells*: a small ball moves freely in the empty inner part of the sphere.



Fig. 1. Main categories of bells according to their construction material and shape: A. simple bell, B. kypri, C. tsokani, D. spherical shaped bell.

The first three categories belong to *open bells* while the spherical shaped are *closed bells*. As far as the method of construction is concerned, bells are separated in *hammered* and *cast bells*. Hammered bells include simple bells and tsokania, while kypria and spherical shaped bells belong to cast bells.

The purpose of this paper was to record the attitudes of small ruminant farmers about the reasons they still continue to use bells in their flocks.

II – Materials and methods

The study sample consisted of 29 small ruminant farmers who use bells on their animals. The semi-structured interview technique was used with a specifically designed questionnaire that included

open-ended questions. The questions regarded the reasons why they still use bells in their flocks, the types of bells, the ways in which bells are hanged and the criteria the farmers have in mind when selecting the appropriate combination of bells to produce the desired sound.

The interviewed farmers came from 10 communities in Western Greece (Epirus & Aitolokarnania) with a long livestock tradition. They were chosen following the suggestion of fellow farmers who considered them as “experts” in the pastoral bells. The interviews took place in 2018. Content analysis was used to get the data from the interviews. The “sentence” was used as the analysis unit.

III – Results and discussion

The sample profile included sheep and goat farmers rearing Greek native breeds, according to the contemporary extensive livestock farming system. They originated from families with a long tradition in transhumance, livestock breeding and use of bells. Their age varied from 20 to 89 years old (54.00 ± 13.76), while their average educational level was relatively low (82.76% primary school graduates, 17.24% high school or university graduates).

According to the farmers, simple bells should be hanged mainly on sheep, while kypria are fit for goats. They are attached around the neck of the animals, either with leather straps, or with wooden wreaths. The shape of the wooden wreaths varies depending on the type of small ruminant (sheep or goat). They can also bear decorative (carved or painted) patterns, double-click or triple “keys”, depending on the breeder’s style. Corresponding elements about bells are also found in other Mediterranean countries (Verdier, 2005).

In sheep and goat flocks, the larger bells and the heavier kypria are placed on the “gheshemia” (rams and/or billy goats respectively, usually castrated leading the flock to grazing). Smaller bells are placed on the other animals of the flock (lactating or dry females, lambs, etc.). The farmers avoid using bells (i) in male animals during the mating period to avoid injuring females during reproduction and (ii) in weak lactating females to avoid causing them stress and thus reducing their milk yield.

The so-called “dozen” or “bell array” has a special value for the “experienced ear” of the farmer. It is a staggered row of kypria that starts from the heaviest and biggest (it produces a lower sound) and ends up to the lightest and smallest (renders a fine sound). Each kypri produces clear, harmonious and distinct sound in relation to its neighbors. These findings have also been confirmed by recent studies (Bellos and Tsironi, 2018; Law, 2014). The number of kypria in the dozen is not defined, but it varies among regions according to the local tradition, the “taste and pride” as well as the financial capacity of the farmer. The dozen usually includes one or two very large simple bells. Although the animals move disorderly during grazing, it is worth admiring the fact that a very pleasant sound effect is produced in the end.

Moreover, the small ruminant farmers still prefer to use bells, particularly in extensive livestock farming systems:

- (i) in order to help them locate (even when they are not in their visual field):
 - the exact position of flock in the pasture,
 - individual animals unable to follow the flock due to injuries or extreme weather conditions,
 - animals of some temperament that tend to move away from the rest of the flock and cause damages to the neighboring crops,
 - animals from other farms that have entered the flock by mistake,
 - animals of their own farm which have accidentally entered other flocks,

- (ii) so as to perceive whether the animals are grazing or are in danger and panic due to external enemies (e.g. wild animals' attacks),
- (iii) because the animals may easily locate one another with the familiar sounds of their flock and can stay closely packed during grazing to deal, if necessary, with possible external risks,
- (iv) because the pleasant sound of the bells promotes animals' tranquility by neutralizing unexpected, intense external noises that could scare the animals,
- (v) because the use of many bells in the flocks that deliver high quality sound is a pride, a sign of social recognition and wider acceptance by other farmers and finally,
- (vi) in order to contribute to the fun and exhilaration of the shepherd. The sounds and melodies produced by the bells in isolated pastures have been a pleasant company for the shepherd and perhaps his only fun –along with the flute– for centuries.

These findings are in accordance with that of a previous study in Scandinavia which examined the role of cattle and horse bells (2008).

On the other hand, the use of bells in the intensive small ruminants farming systems is extremely limited, since not only it is of no practical use to the farmer, but also because animal management becomes different and more demanding.

IV – Conclusions

This work studied the attitudes of small ruminant farmers concerning the significance of the bells. The results showed that bells help shepherds locate their flock and check whether animals graze serenely or are exposed to external dangers. Moreover, the tinkling of the bells promotes gentle grazing and enhances animals' ability to locate one another. Bells also act as a source of pride and social acceptance by fellow farmers and contribute to the shepherd's enjoyment. Our results are in line with other relevant studies, bringing out the importance of the bells for both the shepherds and the flocks.

Nowadays, modern technological means are available both for the location of grazing animals (e.g. GPS) and for human entertainment (e.g. radios, portable electronic devices, etc.). Nevertheless, a number of livestock farmers continue to place great importance on pastoral bells and spend considerable amount of money to buy bells, whose style (sounds and quality of construction) satisfies their demands.

It seems that the gradual reduction of people involved in animal production as well as the shifting of young people to intensive farming systems is an inhibiting factor for the future use of bells. However, they remain tools that are inextricably linked to our folk art and, consequently, to our cultural heritage, the preservation of which is everybody's duty. For this purpose, every recording of the views of people that are involved in bells construction or use is extremely useful. At the same time, the bells could be integrated into educational awareness actions that will highlight their value as "living organisms" and will inform, especially the young urban people, about the importance they have, mainly for the Mediterranean migratory livestock farming.

References

- Bellos GK, 2019.** Bells in farm animals. *Agriculture Crop & Animal Husbandry*. 5/2019: 76-80 (in Greek).
- Bellos GK and Tsironi M, 2018.** The sound of bells in transhumance husbandry. *Animal Science Review, Special Issue 47*: 11-24 (in Greek).

- Koltveit G, 2008.** Animal Bells in Early Scandinavian Soundscapes. *Studies in Music Archaeology VI. Current Challenges and New Objectives in Music Archaeology*. Eds E. Hickmann, J. Orlamünde and R. Eichmann, pp. 147-153.
- Laga V, Sinapis E, Ambas Z and Pliatsika E, 2005.** La transhumance ovine et caprine en Grèce centrale. Poster presentation at the International Symposium "Animal Production and Natural Resources Utilisation in the Mediterranean Mountain Areas", June 5-7, Ioannina. *EAAP publication N° 115, 2005*. Ed. Georgoudis A, Rosati A and Mosconi C. *Wageningen Academic Publishers*, pp. 336-339.
- Law VJ, 2014.** Acoustic decoding of a sheep bell and trotters within a sheep herd. *Chaotic Modeling and Simulation (CMSIM) 4*: 369-377.
- Oregui LM and Ruiz R, 2005.** Dairy sheep systems and their efficiency in Mediterranean mountain areas. Oral presentation at the International Symposium "Animal Production and Natural Resources Utilisation in the Mediterranean Mountain Areas", June 5-7, Ioannina. *EAAP publication N° 115, 2005*. Ed. Georgoudis A, Rosati A and Mosconi C. *Wageningen Academic Publishers*, pp. 235-241.
- Verdier M, 2005.** *Saisons de Bergers: En Cévennes*. Edité par Editions Equinoxe. ISBN 10: 2841354822.