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EVALUATION OF THE ABRUZZESE SHEPHERD DOG ON HERDS DEFENCE AGAINST PREDATORS IN TUSCANY

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Abstract: Due to the gradual increase in number of wolves in Tuscany, occurred in the last years, damages to livestock sector have remarkably increased. In order to lessen the problems caused by this predator species and to make them sustainable both from an ecologic and an economic point of view, the Inter-provincial Breeders Association of Firenze-Prato (A.P.A) and the Centre for Wolf Research and Documentation (C.S.D.L) carried out an interesting project in the Florence province financed by the Provincial Administration of Florence. Implemented interventions included informative actions, and both realization of electric fences (by financing and technical support) and adoption of puppies of Abruzzese shepherd dog from specific lines selected, in Abruzzo Region, for this specific aim.

The aim of this work was to assess the applicative effectiveness of this dog breed, by the study and the analysis of flock-defence behaviour against predators. That has been possible by means of direct meetings with breeders and their dogs, and questionnaires.

Questionnaires have been divided into three main sections, concerning: attention, reliability and protection, the three main characteristic of a good flock-defence dog. In addition to these, other characteristics were considered, like flock behaviour towards dogs, and dogs' management regarding diet, bitch heats and litters.

So, it was possible to rate the examined parameters in a synthetic and objective way, by answers provided by shepherds, their assessments about these three aspects, and finally by an expert's overall rating, based on questionnaires and field results.

The results were very good, in fact, all shepherds were very satisfied by their dogs' work: predations, common in the past, disappeared, and furthermore each of them recommended this prevention technique to other shepherds.

Key words: wolf, Abruzzese shepherd dog, Tuscany

Introduction

The wolf (*Canis lupus*) is present now, in a more or less stable way, in all provinces of Tuscany; his return in this areas, from which was absent for many decades, was helped by mountain abandonment, by increasing of wild ungulates (mainly wild boar and roe deer) and also by wolf protection regime established by national law (157/92) and EU regulations (Berzi, 2008, 2010).

If this situation demonstrates good ecological environmental conditions also around urbanized areas, on the other hand causes many problems on livestock rearing and provokes illegal behaviours, as utilisation of poison baits and others poaching activities by the side of local community (hunters, farmers, excursionists) which could causes irreversible damages to this protected species.

Wolf predation in Tuscany, as regards domestic animals, centres on sheep and goats, followed by young cattle and horses. The recent Regional Law 26/05 "Protection of livestock subjected to predation" forecasts contributions to take out a policies (co-financed with contribution rates of 80%) on damages from attack by wild carnivorous species (that is wolf, wild cat and royal eagle), which cover direct (death) an indirect damages (wounding, miscarriages). Damages are refunded with a franchise of 20%-30%, depending on regions.

Besides, there are contributions also to realize prevention works (maximum 50%), as fences, sheepfolds, shelters and alert photo systems. A project of Inter-provincial Breeders Association of Firenze-Prato (A.P.A) and Centre for Wolf Research and Documentation (C.S.D.L), financed by Florence administration province, tried to solve this problem by mitigation of conflict between animal husbandry and protected predator species. Main actions were: information activities (through distribution of informative material and open meetings for all stakeholders), realization and monitoring of electric fences (through financing and technical support), supply of electronic dispersals (e.g. acoustic dispersals), and mainly buying a pair of Abuzzese shepherd dog puppies for each sheep farm. After a meeting between sheep farmers and dog educators to show characteristics and potentialities of these animals, puppies were leaved in shepherds' care. These had to attend to dog register inscription, microchip installation and veterinary examination with anti-parasitic medication and vaccination.

Dogs utilised in this project come from Association of Abruzzese Shepherd Dog (<http://www.canidapecora.it/>), founded on 2005 in Abruzzo region, to recover and safeguard original characteristics of this shepherd dog. Genetic selection is based more on character/behaviour than in aesthetic characteristics. For this reason, many times dogs selected by this Association don't respect official standard by Fédération Cynologique Internationale (FCI) for Maremmano Abruzzese shepherd dog (<http://www.cpma.it/standard.php>) which favours only aesthetic characteristics (Pischedda, 1954; Breber, 1988;

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Mancini, 2006). The three main characteristic of a good flock-defence dog are: attention, reliability and protection (Coppinger, 1982, 1983, 1992).

'Attention' indicates the link between sheep and dog: a strong dog is more capable of doing its work. If it shows feeling with its sheep, is abler to execute its job. Afterwards, shepherd dog attention is based on its devotion to sheep, has to prefer sheep company and never, by any means, to abandon them. The dog has to go with sheep at the pasture during all the day, and to sleep with them during the night. A good flock-defence dog never leave sheep, has to keep under the flock to be ready, in any moment, to chase away any predator.

'Reliability' means absence of predatory instinct towards domestic livestock. Shepherd dogs have to show behaviours of submission and investigation towards flock and never menacing attitudes. When they walk up to livestock, hold back the ears (typical submission behaviour) avoid the direct look, sprawl on the back, smell the anal area and the head (typical investigation behaviour)

'Protection' results from a good 'attention' and a good 'reliability' and is skill to intervene in dangerous or strange situations. The right dog reaction, in these situations, is to bark blatantly keeping in high the tail. If it is challenge, withdraw between the sheep, showing the 'approach-withdrawal behaviour'. Usually, predators avoid attacking the livestock in presence of a dog, which behave in this way.

Materials and methods

The aim of this work was to assess the applicative effectiveness of this dog breed, by study and analysis of flock-defence behaviour against predators. That has been possible by means of direct meetings with breeders and their dogs, and of a questionnaire compilation.

The questionnaire included various questions about many aspects of dogs, to which the sheep farmers responded with a lot of willingness. In particular, in addition to general information on dogs and flock, we gave a lot of emphasis to the three main characteristic of a good flock-defence dog (attention, reliability and protection). The farmers' evaluations were compared with those of researchers who carried out the surveys. Very important were the researchers' impressions when they closely met all the dogs involved in this trial, because from theirs reactions it was possible to understand many things regarding theirs way of reacting in the front of unfamiliar people, with or without the presence of theirs master.

The last part of questionnaire was dedicated to the possible litters born from the dogs' pair fostered with the sheep farmers, while the final part collected the opinions and the satisfaction level of masters.

A global evaluation was obtained considering, beyond the sheep farmers' answers, also the researchers' observations and the possible

incongruities with the shepherds' furnished answers and the attitudes and behaviour of dogs at the time of visit.

The evaluation scale adopted for the global evaluation was composed by five values: excellent, very good, good, fair and insufficient. On the whole, six sheep farms were visited, localized in the provinces of Firenze and Pistoia. In each farm, before the dogs' arrival, predatory wolf events were verified. Abruzzese shepherd dogs considered in this trial were fourteen: 8 males and 6 bitches.

Results and discussions

About the dogs' nutrition, the majority of sheep farmers (except for one who doesn't produce milk) feed their animals with milk serum from their dairy sheep and stale bread. Feeding with milk serum binds more the dogs with their flock and produces shiny and thick hairs. Feeding with meat, on the contrary, could make more restless and aggressive the dogs, due to excessive protein content.

In all sheep farms visited, the flock was closed in the sheepfold together dogs during the night. Indeed, the Abruzzese shepherd dogs have to stay always with the flock, in the sheepfold or in the fences during the night and never to leave sheep unattended.

In all six farms, the relationship between shepherds and dogs were evaluated 'good' by sheep farmers, namely the dogs were obedient and learned to recognize the master as only leader and to respect his orders.

Besides, we asked sheep farmers how they manage bitch heats, in particular if they divide or not the male from the bitch in this period. The report brings out the fact that the majority of sheep farmers prefer dividing them, closing the bitch, mainly to avoid that she mates whit dogs of other breeds. Only one farmer didn't separate his dogs during the bitch heats period.

Regarding the three main characteristic of a good flock-defence dog (attention, reliability and protection), we carried out a more exhaustive analysis. Altogether, the 'attention' of Abruzzese shepherd dogs resulted 'excellent' in the 50% of cases, 'very good' in the 33,30% and 'good' in the 16,60%. In synthesis, the results were satisfying (figure 1).

The results on the global evaluation on dogs' 'reliability' resulted more positive than on 'attention', indeed reliability level of Abruzzese shepherd dogs' resulted 'excellent' in the 50% of cases, and 'very good' in the 50% (figure 2).

The evaluation of 'protection' of Abruzzese shepherd dogs did the most heterogeneous result. Indeed it resulted 'excellent' in the 33,33% of cases, 'very good' in the 16,66%, 'good' in 16,66% and 'fair' in the 16,66% (figure 3).

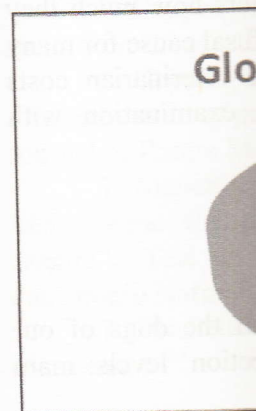
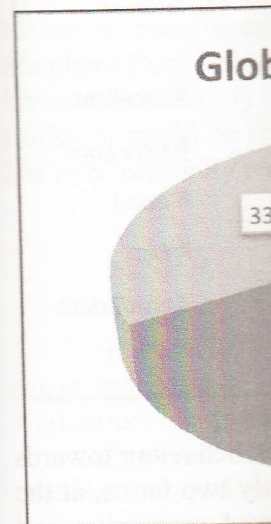


Figure 1 'Attention':

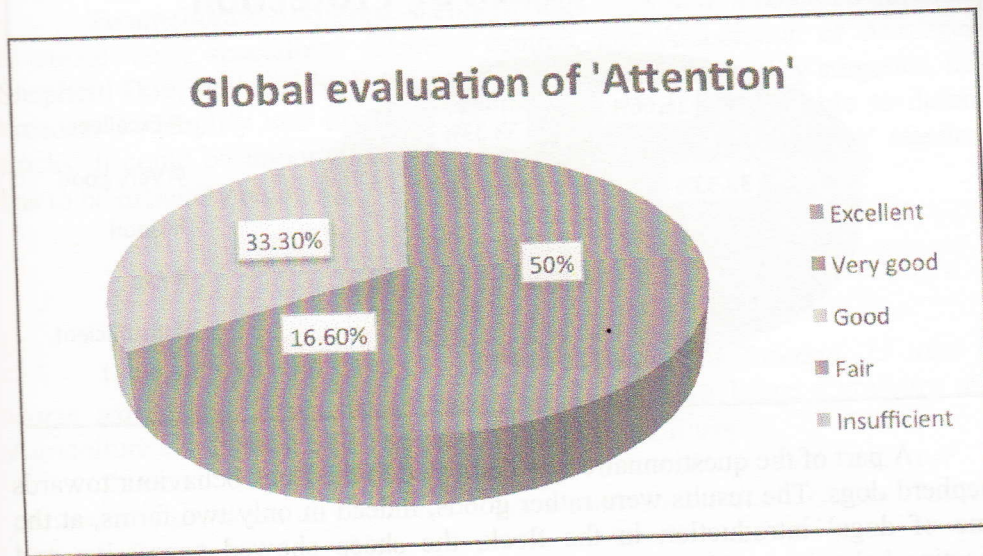


Figure 2 'Reliability':

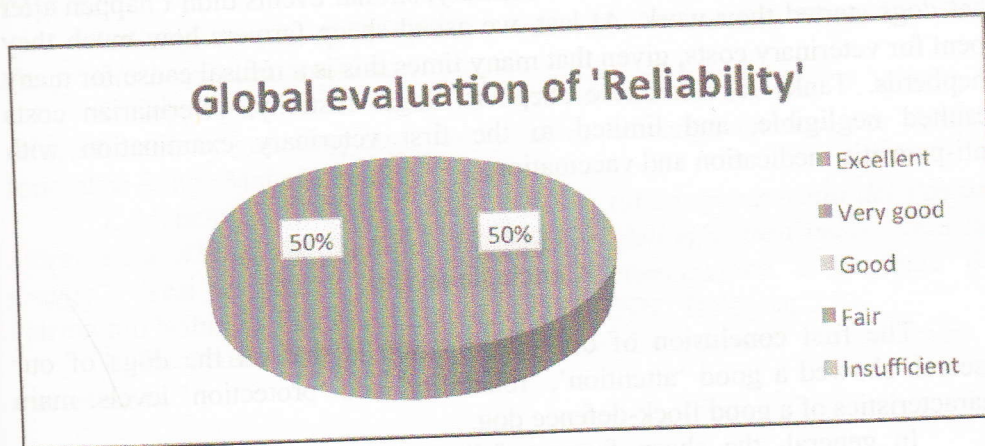
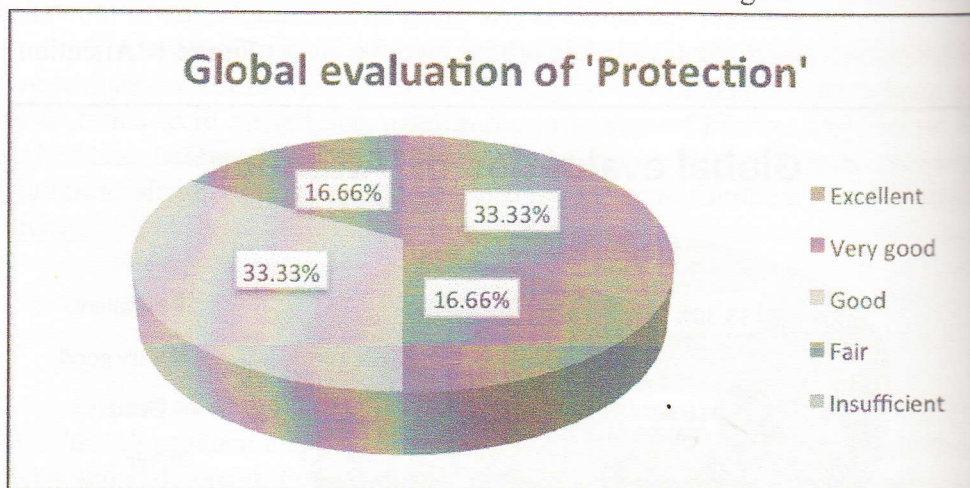


Figure 3 'Protection'



A part of the questionnaire was dedicated to the flock behaviour towards shepherd dogs. The results were rather goods, indeed in only two farms, at the time of dogs' introduction in the flock, the sheep showed aggressive and rejecting behaviours. About the satisfaction level of shepherd, we ask them if, after the introduction of dogs in the farm, there were predation events. Only in one farm, there was a certain predation event from wolves.

In the all other farms, on the contrary, similar events didn't happen after that dogs started their work. At last, we asked sheep farmers how much they spent for veterinary costs, given that many times this is a refusal cause for many shepherds. Tanks to Abruzzese shepherd dogs' rusticity, veterinarian costs resulted negligible, and limited to the first veterinary examination with anti-parasitic medication and vaccination,

Conclusions

The first conclusion of our investigation is that all the dogs of our research showed a good 'attention', 'reliability' and 'protection' levels: main characteristics of a good flock-defence dog.

In general, the sheep farmers followed the right rules on correctly managing the Abruzzese shepherd dogs regarding either nutrition or education. In this manner, any dog resulted to be a problem in any sheep farm.

Each shepherd affirmed to be satisfied or even very satisfied by his dogs' work. They seemed also very proud of theirs Abruzzese shepherd dogs, also because, beyond the essential service that these dogs have in the farms, a natural relationship of confidence and mutual respect was born.

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All shepherd would advise the others sheep farmers whit predation problems to adopt this solution, and this is very important because of shepherds' hostility to accept flock-defence dog.

To ameliorate Abruzzese shepherd dogs' selection, it could be important to create many specialized selection centres, like Association of Abruzzese Shepherd Dog, followed by behaviourists, geneticists, veterinary surgeons, dog breeders to amplify and diversify the production of subjects able to defend flocks. It could be important also that the Abruzzese shepherd dogs' standard has to be officially recognized by FCI.

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