

Conference on Mediterranean populations of the genus *Alectoris*

ABSTRACT BOOK

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Oral communication

Relation between parasites, reproductive index and habitat change in Rock Partridge (*Alectoris graeca*) populations in the central southern alps.

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Within the hunting district of Val Brembana the presence of parasites along the intestinal tract in 60 individuals (32 adults and 22 juveniles, 6 indeterminate) has been studied and correlated to the reproductive indexes (R.I, measured on 3 and 6 years) of Rock Partridges *Alectoris graeca saxatilis* in 6 different sectors and the habitat change. Within these sectors the coverage (%) of several environmental classes in different sample areas has been identified through photo interpretation over a time interval of 25 years. In the whole area a high spread of the nematode *Ascaridia* was observed and high values of prevalence (P = 69.49%) and mean abundance (MA = 15.21) have been found, while the presence of genus *Capillaria* was low with MA = 0.17 and P = 13.56%. *Heterakis* was isolated in 33.90% of the Rock Partridges, with MA = 1.45. For *Ascaridia* and *Heterakis* the relationship between variance and mean abundance (s^2/MA) was significantly greater than one (*Ascarids* = 48.94; *Heterakis*: 7.90) and the aggregation index k ($s^2 / (s^2-MA)$) was very close to zero, proving that these parasites show a highly aggregated distribution within host populations. When analyzing separately the 2 age classes there seemed to be no significant difference in parasitic infection susceptibility between juveniles (P = 95.45%) and adults (P = 84.95%). Only MA and P of *Heterakis* in different sectors was negatively correlated to a change in reproductive success, both in short and medium term, while the sectors with the greatest MA of *Ascaridia*, both in short and medium term, showed the highest mean reproductive rates and the sectors with the highest k of *Capillaria* had the highest R.I. The presence of parasites and particularly the value of MA of *Capillaria* and the average total number of parasites seemed to increase with the decreasing of open areas (coverage) in the different sectors of the study area, as well as with the decreasing of this observed coverage throughout the 25 year period. A negative correlation between open areas and the s^2/AM ratio was discovered to be very clear. The presence of open areas seemed to affect significantly the abundance of parasites that in turn seemed to only partially drive R.I changes. The research was supported by Comprensorio Alpino N° 1 Val Brembana Hunting district.