THE WILD BOAR'S IMPACT ON AGRICULTURE IN PIEDMONT (ITALY): A STUDY ON ADMINISTRATIVE REPORTS

Macchi E.*, Sicuro B.**, Perrone A.*, Gallo Orsi U.*, Durio P.**

* C.R.E.A. - Centro Ricerche in Ecologia Applicata, via Catti, 12, 10146 Torino, Italy.
** Dipartimento Produzioni Animali, Epidemiologia ed Ecologia, via Nizza 52, 10126 Torino, Italy.

Abstract: The damages caused by Wild boar in Piedmont region (NW Italy) in the period 1986-1990 are presented. An analysis was performed on the data from Cuneo Province. This area represents well most ecological and agricultural landscapes of the region.

1. Introduction

The economical impact of the Wild boar have reached, in these last years, such an extent that the local administrations were led to develop management plans. In Piedmont, since 1986, the Provinces refund farmers for crop damages caused by game.

In this paper a general picture of the situation in the six piedmontese provinces is first given, the data of Cuneo Province are then analysed for the five-year period 1986-1990.

Table 1: Anova two ways test. Values for independent variables - Class Level Information.

Class	Levels	Values
CROP	9	Other Chestnut Cereals Orchard Corn Maize Vegetables Potatoes Grasslands
Year	5	86 87 88 89 90

Numbers of observations in data set = 3898

2. Material and methods

The data are drawn from the appraisals filled by the experts appointed by the provincial administrations. A total of 3898 reports from Cuneo Province were analysed and data on crop type, damaged surface (in m^2), month of occurrence, location and altitude were recorded.

The statistic test used is the ANOVA two ways test with interaction. Means were compared by the Ryan-Einot-Gabriel-Welsch multiple range test that defends against first type error. The software used was the SAS.

3. Results and conclusion

Among the six provinces, Cuneo and Torino are those that suffered the heavier Wild boar impact. This must be related to the species' range. On the whole a decrease, both in numbers of requests and in amount of refunds, has been shown.

The analysis of variance of the damaged surfaces by year and by crop type (Tab.1), demonstrated that highly significant differences exist between the years ($F=4.92$, $df=4$, $p=0.0006$) and between crop types ($F=2.69$, $df=8$, $p=0.006$).

The comparison test of the averages indicates that 1987 was the year of maximum damage (Tab. 2).

The comparison test of crop type indicates that the Wild boar choice did not change along the years and this underlines the opportunism of the species that can optimise the exploitation of the environmental resources.

Table 2: Ryan-Einot-Gabriel-Welsch Multiple Range Test for variable: "Damaged Surface" - Means with the same letter are not significantly different. Note: This test controls the type I experimentwise error rate.

Grouping	Mean	N	Years
A	35230	641	1987
B	15440	1547	1990
B	6746	414	1986
B	5097	607	1989
B	1022	340	1988

It is noteworthy that the high variability of the data influenced the interpretation of the results. This is due to the fact that the parameter "damaged surface" actually states, in most cases, the loss estimated by the farmer rather than objective damage caused by the animals. In order to allow optimisation of the administrative intervention on the damages caused by game, it is desirable to better separate the loss suffered by the farmers from the damages caused by the animals.