EFFICIENCY EVALUATION OF AN ACOUSTIC WILDLIFE DISSUADER IN A GPI CHESTNUT WOOD IN APPENNINNES AREA

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Acoustic dissuasion represents one of the prevention methods used to defend agricultural and forest productions from damages caused by wild fauna, particularly ungulates.

The aim of this work is to present the preliminary results of a research carried out in a GPI chestnut wood where the efficiency of an animal-activated acoustic dissuader (Alarm Guard) has been tested.

The dissuader function is to protect chestnuts by Red deer (*Cervus elaphus*), Roe deer (*Capreolus capreolus*) and Wild boar (*Sus scrofa*) grazing.

The research was carried out in an Apennines area, in the municipality of San Godenzo (Florence Province) during chestnuts harvest period in 2009 and 2010, and is still in progress.

The chestnut wood is composed by 140 plants, it extends over 2 hectares and it is located at 700 meters above sea level.

During the experimentation we have used: n°4 Acoustic dissuaders "Alarm Guard", n°10 video-traps "Scout Guard SG-550", n°4 video-traps "Keep Guard KG - 5BS", n°4 video-traps "Boly Guard SG-560", n°2 video-traps "VideoGuard IR", n°10 Wireless sensors and n°6 solar panels.

The work developed through the following phases:

- surveys on the wild fauna living in the study area using automatic infrared video traps;
- installation and activation of acoustic wildlife dissuaders and fauna monitoring by video traps;
- deactivation of acoustic wildlife dissuaders and further monitoring on wild fauna;
- surveys of the damage and estimation of the production of chestnuts;
- analysis of animals frequency recorded in the area during the experimentation.

The analysis of the videos have been proved that the attendance of deers and wild boars, that usually grazed in the study area before dissuaders activation, highly decreased.

As the animals entered into the protected area, they was soon driven away by the dissuaders; in this way the grazing time was widely shorter than usual.

Analyzing the harvest data, an increase of 80% production of chestnuts has been estimated.

Outside the protected area we have been verified an high chestnuts consumption level, contrary to what happened inside.

At the end of chestnuts harvesting, acoustic wildlife dissuaders were disabled and video-trap were been active. In this way it has been possible to document a fast and large reappearing of animals in the area.

The 2010 tests confirm the results of 2009 data and seem to demonstrate the efficiency of this protection system during the Chestnut harvest period. The tests are still in progress in order to verify the durability of the effectiveness of the devices.