

WADI Project

Protocol for arthropodofauna sampling along a salinity gradient in the Maremma Regional Park

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The Alberese Farm cultivates biological cultures in an about 9km long stripe of land along the Ombrone river course. Salinity problems were here highlighted by salt efflorescence and detected by the land owners. The aim of the study on arthropod in this area was the identification of any change in the arthropodofauna diversity related to salinization and the detection of some salinity bioindicators.

A preliminary protocol was applied in the field in May-June 2007 and basing on the results it was improved during the 6th WADI International Meeting. This final version will be followed in September – October 2007 in the same sites.

The whole sampling will be done in Autumn (September-October) and Spring (April-May). In each station two samplings will be done at not less than 15m one from the other, and at least 15m from the field side to avoid the effect of transitional areas fauna.

Pitfall traps:

5 transparent polystyrene glasses (diameter 9cm, height 13cm) will be positioned in a cross at 1m the one from the other and filled with 3cm of salty water near to saturation as preservative. Baits will not be used to avoid to attract into the traps not resident fauna. The traps will be covered with a flat rock leaving a space of a few centimetres above the rim to avoid evaporation, and positioned in the site for 7 days.

Soil samples for Berlese – Tullgren extractor:

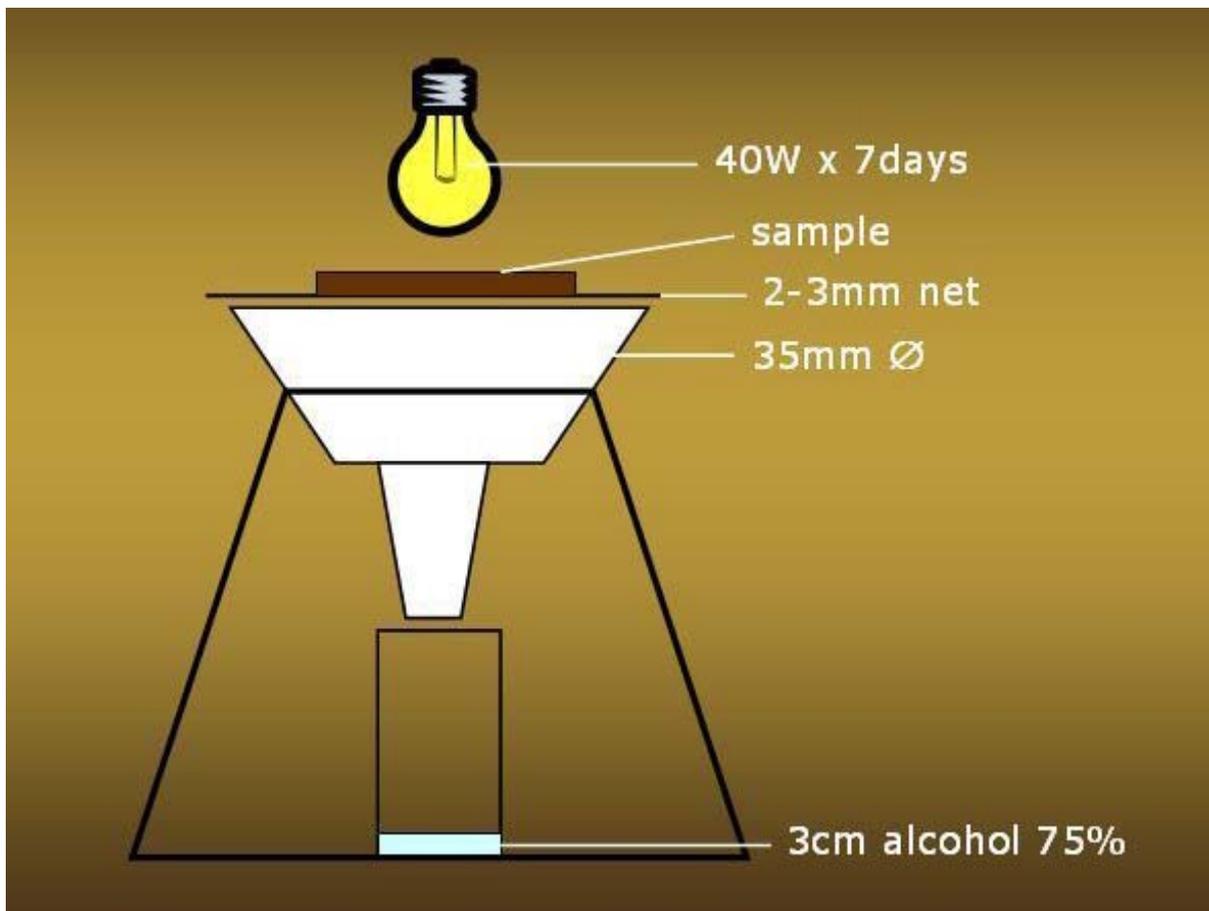
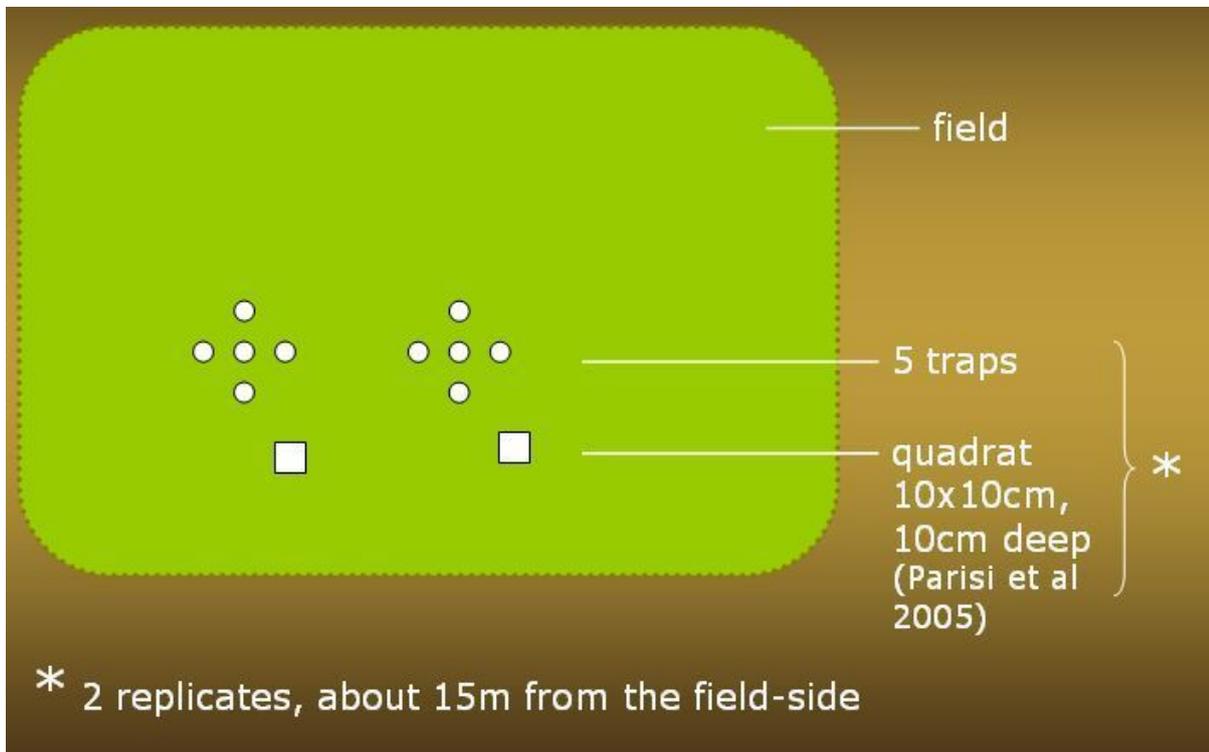
10x10x10cm (Parisi 2005) soil samples will be taken near (within 2m) each pitfall trap cross and put in plastic bags for no more than 48h to extract the mesoarthropod fauna in lab by mean of a Berlese-Tullgren extractor. We will use a 35cm diameter funnel with a 2-3mm net to support the soil sample, a 40W lamp at about 20-25cm distance from the soil and alcohol 75% to collect the samples under the funnel. The soil samples will be positioned under the light for 7 days to perform the complete extraction (the length of a 7 days extraction was defined during the May- June sampling removing the extracted arthropods and controlling each 2 days the presence of new arthropods).

Flora identification:

Identification of plant cover and density in a 10x10m square around each cross of traps, following a percentage scale for the partial cover of each representative species and a 1 to 5 scale for density.

Soil characteristics:

On the dry sample processed with the Berlese-Tullgren extractor, salinity, pH and texture will be determined.



References:

Parisi Vittorio, Menta Cristina, Gardi Ciro, Jacomini Carlo, Mozzanica Enrico 2005. Microarthropod communities as a tool to assess soil quality and biodiversity: a new approach in Italy. *Agriculture, Ecosystems and Environment* 105: 323–333