



DESERT ADAPT

PREPARING DESERTIFICATION AREAS FOR INCREASING CLIMATE CHANGE

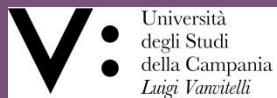
NEWSLETTER

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MEET THE PARTNERS

SUN - Università degli Studi della Campania "Luigi Vanvitelli (IT)
Project Coordinator (SUN)



SUN has a team of experts covering all the aspects related to **soil science, hydrology, soil biology, ecology ecosystem services.**



All the team members work in the **Department of Science and Technology for Environment, Biology and Farmaceutics**

(DISTABIF) of the University Luigi Vanvitelli. To learn more on team member visit Desert-Adapt webpage and the University webpages

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Studying EROSION at Campo Experimental de Vale Formoso with Prof. Maria Roxo

In the Alentejo region (PT), there is a unique long term experimental site at the Campo Experimental de Vale Formoso, where erosion is studied. The study is coordinated by Prof. Maria Roxo from NOVA FCSH of University of Lisbon, partner of Desert-Adapt. She has dedicated many decades to maintain and implement the facilities of the laboratory and experimental station. This is provided with 17 delimited blocks where a specific land use is simulated, each connected downhill to a collector for the eroded soil, which is periodically measured and analysed for qualitative analyses. The site has been collecting data for over 40 years. **For more information get in touch with us at www.desert-adapt.it**



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Lab activities: Water Retention capacity (WRC)

Water retention capacity (WRC in $\text{cm}^3 \text{H}_2\text{O}/\text{cm}^3 \text{d}^{-5}$) measures how much water a soil can retain. For the project WRC was calculated according to the “European method”

- Soil samples are taken using cylinders and care is taken to fill the whole cylinder volume and close both ends with lids to avoid soil loss
- The soil cores are blocked with a fine net at the bottom end and then placed in a tank with 2 cm of water overnight till water reaches the top surface by capillarity filling all the micropores.
- The core is then left free to leach excess gravimetric retained water and then dried at 105°C for 24-48 h
- The water retention capacity is calculated as the net fresh weight loss (water) on soil dry weight

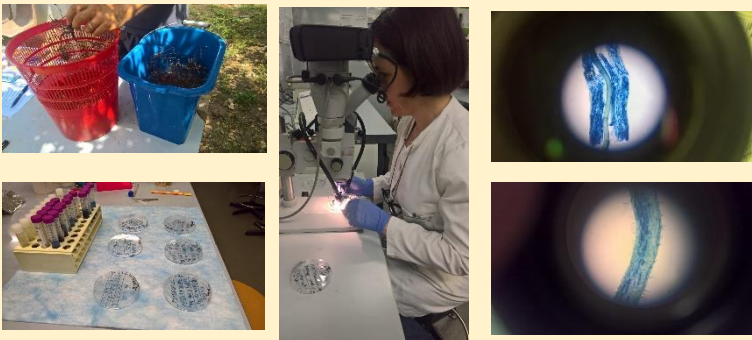


Plant roots and mycorrhizae analysis

The arbuscular mycorrhizal fungi (AMF) colonize the roots of the vast majority of plants, including most crop plants, by forming an extended, intricate hyphal network that expands the plant root system. Mycorrhizae directly and indirectly affect plant competitive abilities and thereby help to maintain the biodiversity and productivity of natural ecosystems. AMF were monitored by UNIPA in the project sites by measuring their percentage of root colonization and spore number in soil.

Root colonization

Subsamples of the finest roots are thoroughly washed, cleaned with KOH and subsequently acidified by HCl. Finally they were stained with trypan blue in lactic acid. Stained roots 1 cm-long (diameter # 0.5 cm) were placed in a Petri dish for microscope inspection.



Spore number in soil

Spores of AMF were isolated from a root-soil mixture by wet sieving, placed in Petri dishes and counted under a compound.



ANNOUNCEMENTS

- **Life Desert-Adapt training courses «WORKING WITH SOIL» and «HYDROLOGY»**
6/09/18 Mertola, ADPM (PT), 07/09/18 Hoyos, Municipality of Hoyos (SP), 11/09/18 Palermo (IT)
- **Life Desert-Adapt training course “DESERTIFICATION ADAPTATION MEASURES: Training in depth”**
27/09/18 Mertola, ADPM (PT), 28/09/18 Hoyos, Municipality of Hoyos (SP), 1/10/18 in Caltagirone, CSL Azienda Michele Russo (IT)
- **Life MediNet Project, Farmer’s Day Portugal, 9th October, Lisbon.**
- **LIFE GreenLink Project Conferenza «Affrontare la desertificazione nel Mediterraneo», 23rd October, Rome.**
- **Life Desert-Adapt training courses «Plant Biomass Evaluation» and «Indicators of Desertification»**
24/10/18 Valverde, Casa de Cultur (SP), 26/09/18 Mertola, ADPM (PT), 29/10/18 Caltanissetta, ReaM (IT)