

Press release

GALÁPAGOS - WHY DON'T THE PINK IGUANA AND THE YELLOW IGUANA MATE WITH EACH OTHER? IT COULD BE A MATTER OF CHEMISTRY

The secretions from the femoral pores could contribute to the reproductive isolation between the two species that live on the Wolf volcano, on Isabela Island, in the Galápagos archipelago. This was revealed by a study, published in "Scientific Reports", conducted by researchers from "Tor Vergata" University in collaboration with the San Diego Zoo and the Galápagos National Park.



Fig. 1 Pink iguana (*Conolophus marthae*)



Fig.2 Yellow iguana (*Conolophus subcristatus*)

Rome, 03/09/2020 - Although there may be several factors that contribute to preventing the hybridization between *C. marthae* and *C. subcristatus* living

together on the Wolf volcano, the study conducted by researchers from the **University of Rome "Tor Vergata"**, the **San Diego Zoo**, and the **Galápagos National Park**, led by prof. **Gabriele Gentile**, **evolutionary biologist of the Department of Biology of the University of Rome "Tor Vergata"**, and just published in the journal ***Scientific Reports***, provides the first evidence to support the hypothesis that some molecules play a role in maintaining the reproductive isolation between the two species. "Chemical recognition as a possible way to prevent interspecific hybridization is known in several species of lizards and the chemical signature of femoral pore secretions is important for intra and interspecific chemical communication in reptiles," say the authors of the study who compared the chemical profiles of the femoral gland exudate of the adults of the two species captured on the Wolf Volcano. "The data for three different years were collected and focused on two years in particular, when the exudate of the femoral gland was collected from the adults during the breeding season. The samples were processed using gas chromatography coupled to mass spectrometry (GC - MS) by which over 100 different chemical compounds were found. The results of the statistical analyzes indicate that the separation between the two species is significant », underlines Gentile, biologist of "Tor Vergata".

Scientists note that there is evidence to suggest that certain dietary traits may affect the type of chemicals produced in glandular secretions. Therefore, annual differences in food availability could potentially affect the production and concentration of different chemical components in the two species.

«The alteration of the delicate and unique environment on the Wolf volcano, due either to direct human impact or climate change - underlines Gabriele Gentile - could have an effect on these mechanisms. To fully investigate this hypothesis, however, we need more detailed data on the temporal use of the habitat by the two species ".

THE DISCOVERY OF THE PINK IGUANA

The only survivor of an evolutionary line that appeared millions of years ago - when some of the current Galápagos islands were not even formed - the **pink iguana** (***Conolophus marthae***), unmistakable due to its intense pink coat streaked with

black, is now recognized as an important flag species: a means to maintain global attention on issues such as the importance of biodiversity and its conservation. The only site where the species lives is the **Wolf volcano**, on **Isabela Island**, in the Galápagos. The approximately **300 remaining individuals** inhabit an area of only **25 square km**.

"The species is reported to have the highest degree of extinction risk by the IUCN, International Union for the Conservation of Nature, which is why the pink iguana is subject to continuous study and monitoring. - says prof. **Gabriele Gentile**, **coordinator of the international research and conservation program** in the frame of which, in **2009**, the discovery of this **new species of terrestrial iguana** took place.



Fig. 3 - Crater of the Wolf Volcano, Isabela Island, Galapagos Archipelago. The volcano is 1700 meters high and its crater has a diameter of 18 kilometers: this is the delicate environment where the pink iguana lives.

(photos to courtesy of G. Gentile)

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