XIX CONGRESO DE LA SOCIEDAD ARGENTINA DE MICROBIOLOGÍA GENERAL

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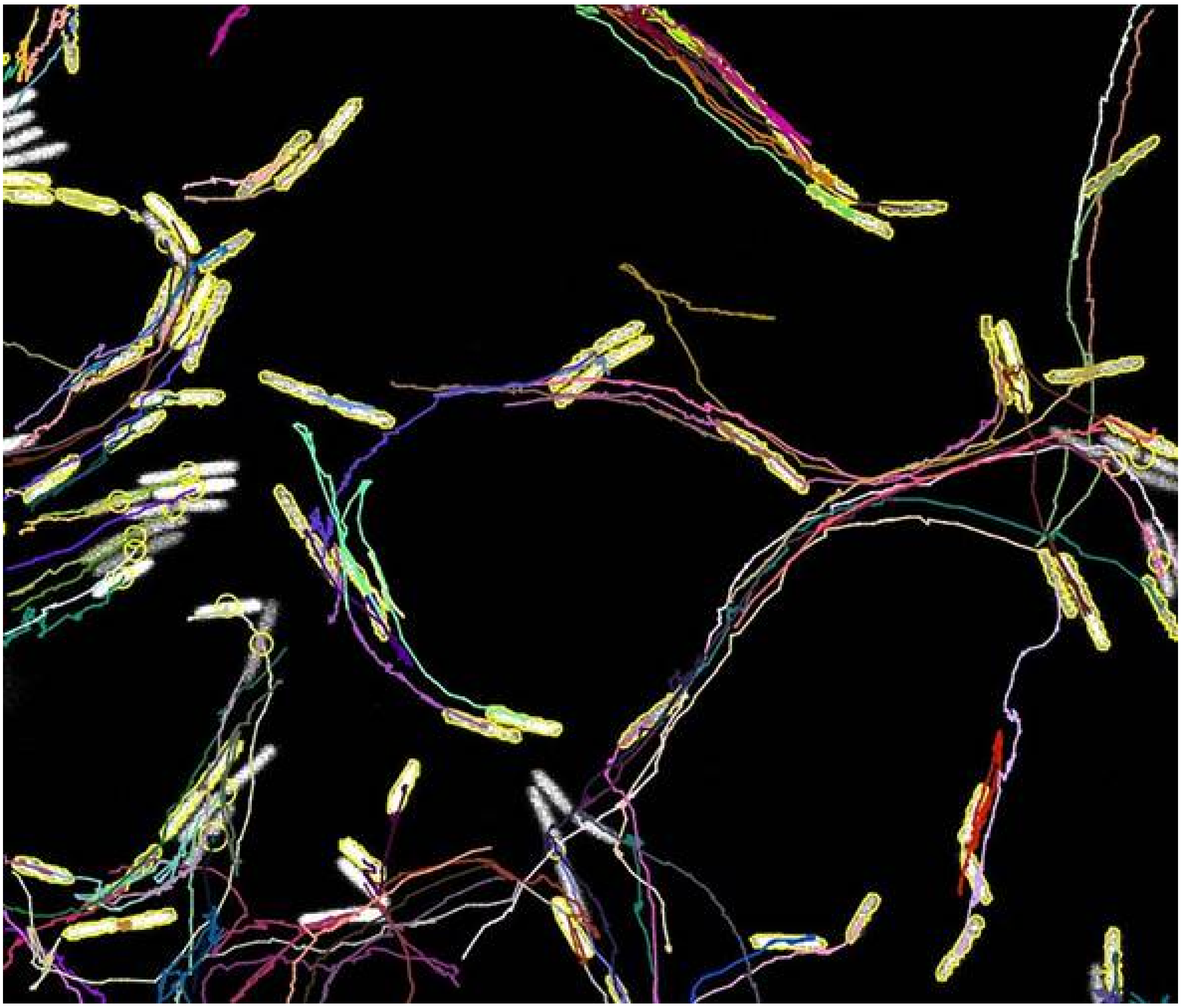

Foto: Se hace camino al andar. Celeste Dea. 1er puesto. Concurso fotográfico SAMIGE 20 años.

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PHENOTYPIC DIVERSITY OF ENDOPHYTIC BACTERIA IN WILD VS. CULTIVATED BRASSICACEAE PLANTS

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Plants of the *Brassicaceae* family, especially *Brassica oleraceae*, play significant roles in both wild ecosystems and agriculture. These plants exhibit a wide range of morphologies, encompassing wild forms and numerous cultivated varieties widely used in human diets, such as broccoli, kale, cauliflower, and others. The microbiota associated with these plants may play a crucial role in their health and development. However, the diversity of these bacterial communities in different environments and plant tissues has yet to be sufficiently studied. In this study, wild and cultivated *Brassicaceae* plants were sampled in the surroundings of the National University of Luján, Buenos Aires. Samples were collected from leaves, roots, soil, rhizosphere, and phyllosphere. After washing, only endophytic bacteria were isolated from leaves and roots to eliminate external microorganisms. The samples were grown on three types of media: nitrogen-free medium (NFB), Luria-Bertani medium (LB), and nutrient agar (NA). The quantity and types of bacterial colony morphologies were recorded. The diversity of these colonies in different media was quantified using the Shannon diversity index, chosen for its suitability in capturing the observed morphological differences. Preliminary results indicate considerable bacterial diversity in the studied *Brassicaceae* plants, with wild species showing a higher overall diversity compared to cultivated ones. For example, isolates from the leaves of wild *Brassica rapa* had Shannon diversity index values of 1.1 in nitrogen-free medium (NFB) and 0.9 in Luria-Bertani medium (LB). In contrast, cultivated varieties *Raphanus sativus* (radish) and *Brassica oleracea* var. *sabellica* (kale) tended to show lower diversity indices across similar media. Root isolates from wild *Brassica rapa* showed even higher diversity, with a Shannon index of 1.2 in NFB and 1.1 in LB, suggesting that root microbiota is more diverse than that of leaves. This pattern was consistent across other wild species like *Rapistrum rugosum*, emphasizing the role of the root environment in hosting diverse bacterial communities. These findings highlight the potential impact of different plant

tissues and cultivation practices on the microbial diversity associated with *Brassicacea* plants. This diversity may have significant implications for the health and growth of these plants, both in natural environments and in agricultural systems. Comparing the bacterial communities of wild and cultivated plants can provide valuable insights into the impact of domestication and cultivation on the microbiota associated with *Brassicaceae*.

Palabras clave: Brassicaceae - microbiota - bacterial diversity - wild vs. cultivated