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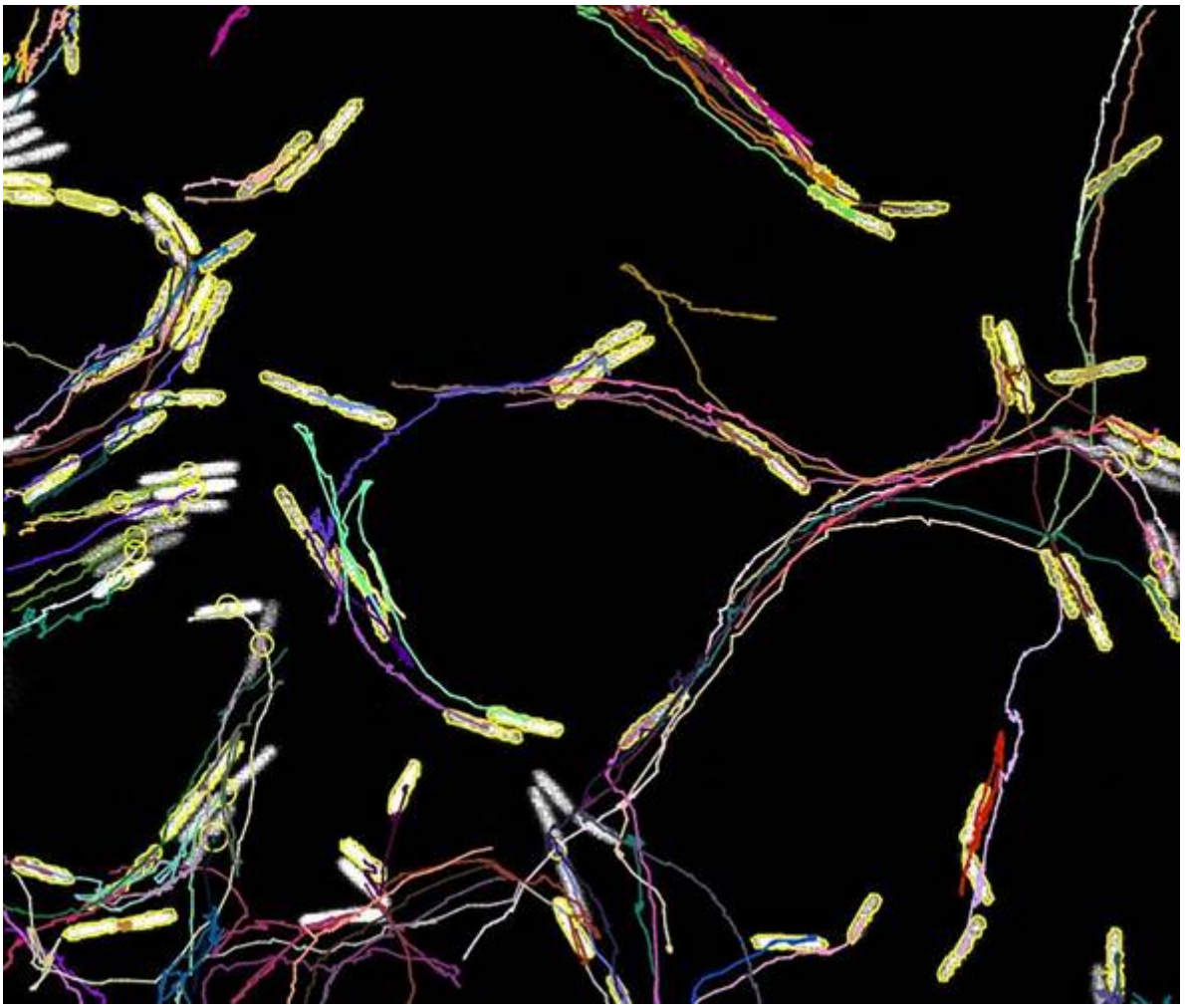

Foto: Se hace camino al andar. Celeste Dea. 1er puesto. Concurso fotográfico SAMIGE 20 años.

THE NATIVE PLANT GROWTH PROMOTING BACTERIA: Pseudomonas 42P4 IMPROVE THE GROWTH AND ROOTING IN THE ROOTSTOCK 1103 PAULSEN DURING IN VITRO PROPAGATION.

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Viticulture is a highly significant activity worldwide. Argentina ranked as the seventh country with the largest cultivated area (OIV, 2023). To establish a vineyard *Vitis vinifera* scions are commonly grafted onto American rootstocks, which are resistant to phylloxera. In nursery production, synthetic auxins, such as indole acetic acid (IAA) or indole butyric acid are used to accelerate rooting. However, the use of synthetic products is not compatible with organic production. Therefore, it is necessary to develop tools that promote sustainable agriculture. Plant Growth Promoting Rhizobacteria (PGPR) are plant symbiotic bacteria that contribute to foliar and root growth and development through the production of indole acetic acid, nitrogen fixation, and phosphate solubilization. The aim of this study was to evaluate the effect of the native PGPR strain from Mendoza, (*Pseudomonas* 42P4) on the in vitro rooting of the 1103 Paulsen rootstock and its effect on aerial growth. 1103 Paulsen plants were grown in vitro on ½ Murashige and Skoog medium, with and without the addition of IAA (1 mg L^{-1}). After nine days of growth, each group of plants was divided into two subgroups and subjected to the following treatments: 1) Control (100 ?L NaCl 85%), and 2) 42P4 (106 CFU mL^{-1}) centrifuged and resuspended in 100 ?L NaCl 85%, resulting in four treatments of 12 plants each. The plants were maintained in a growth chamber at 24°C for 45 days, with a photoperiod of 16 h of light. After this period, several rooting parameters were evaluated: number of leaves and nodes, neck diameter, shoot and root length, foliar and root area, and aerial and root biomass per plant. The data were analyzed using mixed linear models (MLM and MLGM) with Infostat software. The results showed that the combination of *Pseudomonas* 42P4 plus IAA increased shoot length by 25% and root length by nearly 50% compared to the other treatments. Additionally, this treatment increased shoot biomass by 15% and root biomass by nearly 70% compared to the other treatments. The control plants showed a significant reduction in foliar area (50% less) and root area (90% less on average) compared to the other treatments, highlighting the importance of IAA (synthetic or not) for rooting. No significant differences were observed in the number of leaves and nodes or in

the neck diameter among the treatments. In conclusion, the *Pseudomonas* 42P4 strain shows great potential to promote the rooting of 1103 Paulsen plants in vitro, increasing leaf and root area when used alone, and aerial and root biomass when combined with IAA. This native PGPR strain could be used as a sustainable tool for the in vitro propagation of 1103 Paulsen, reducing the use of synthetic products.

Palabras clave: RHIZOBACTERIA - PLANT PROPAGATION - GRAPEVINE - ROOTSTOCK - AUXINE.