

refuge plant studies conducted in Peru have shown that planting flowering species to attract beneficial arthropods such as *Chrysoperla externa* can effectively enhance the natural regulation of *Planococcus* pests (Cocco et al., 2020).

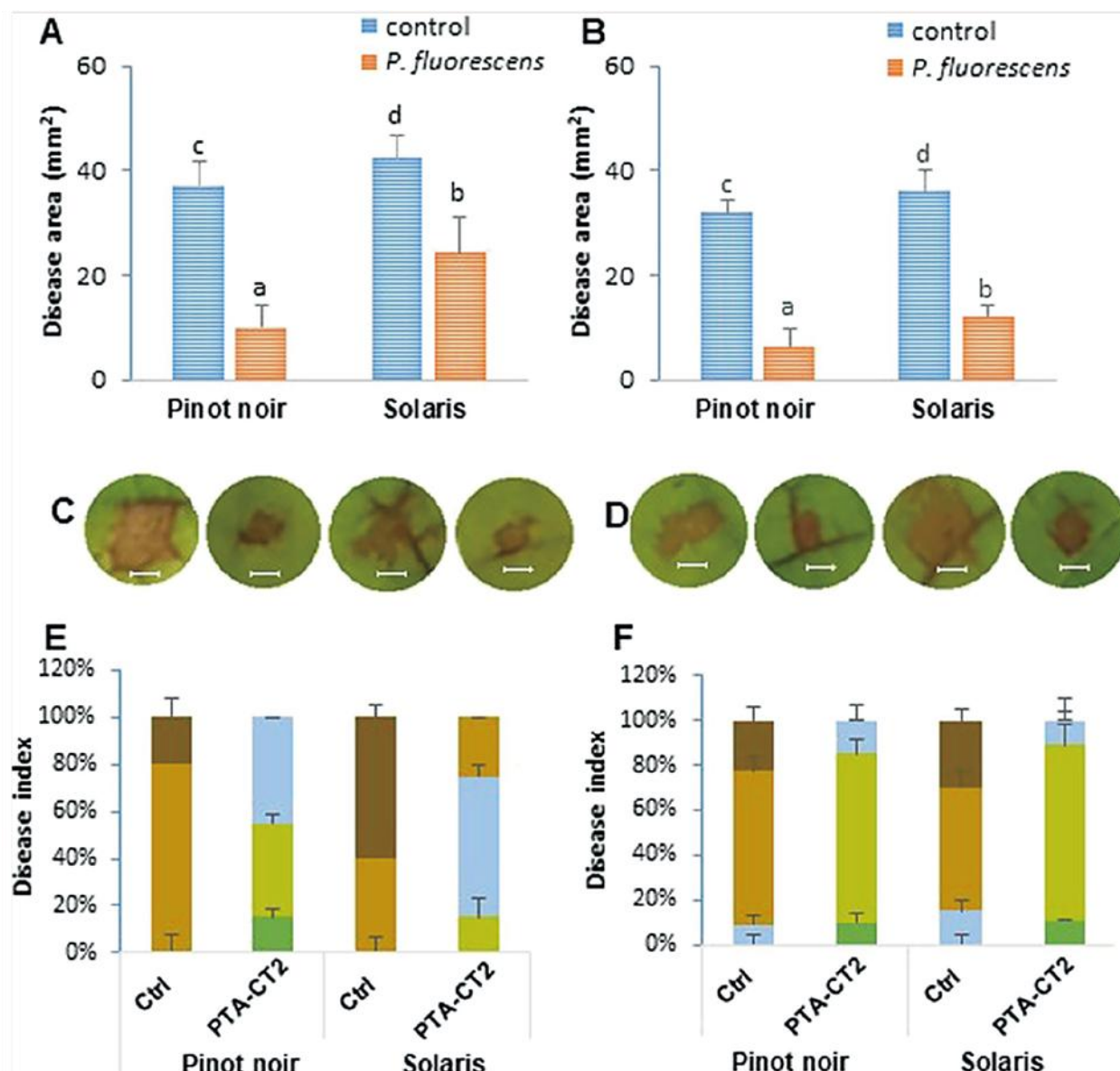


Figure 1 *Pseudomonas fluorescens* PTA-CT2 induces systemic resistance against *Botrytis cinerea* in Pinot noir and Solaris cultivars. Plants were treated at the root level with *P. fluorescens* at  $10^7$  CFU  $g^{-1}$  of soil. Two weeks later, leaf disks were collected from the upper third and fourth leaves and inoculated with  $5 \mu l$  of  $10^6$  conidia  $ml^{-1}$  of *B. cinerea*. Necrotic lesion area was measured at 7 dpi with Compu Eye, Leaf & Symptom Area software (A, B). Panels C and D show representative disease symptoms on control and PTA-CT2-treated leaf disks at 7 dpi. Bars = 4 mm. Disease index (E, F) shows the proportion of leaf disks in symptom classes ranging from no visible symptom to lesions larger than  $40 mm^2$ . Data are means from three independent experiments with 30 leaves per condition in 2016 (A, C, E) and 2017 (B, D, F); error bars indicate standard deviation. Different letters indicate significant differences among treatments (ANOVA Tukey test,  $P < 0.05$ ) (Adopted from Lakkis et al., 2019)

The key to conservation biological control lies in optimizing habitat management. Maintaining inter-row vegetation, alternating mowing, and establishing flowering strips can provide food resources and shelter for parasitoids, lacewings, and spiders, thereby increasing their populations and pest control capacity (Cargnus et al., 2024). At the same time, surrounding forests and semi-natural habitats help attract birds and bats, strengthening