Supplementary Material

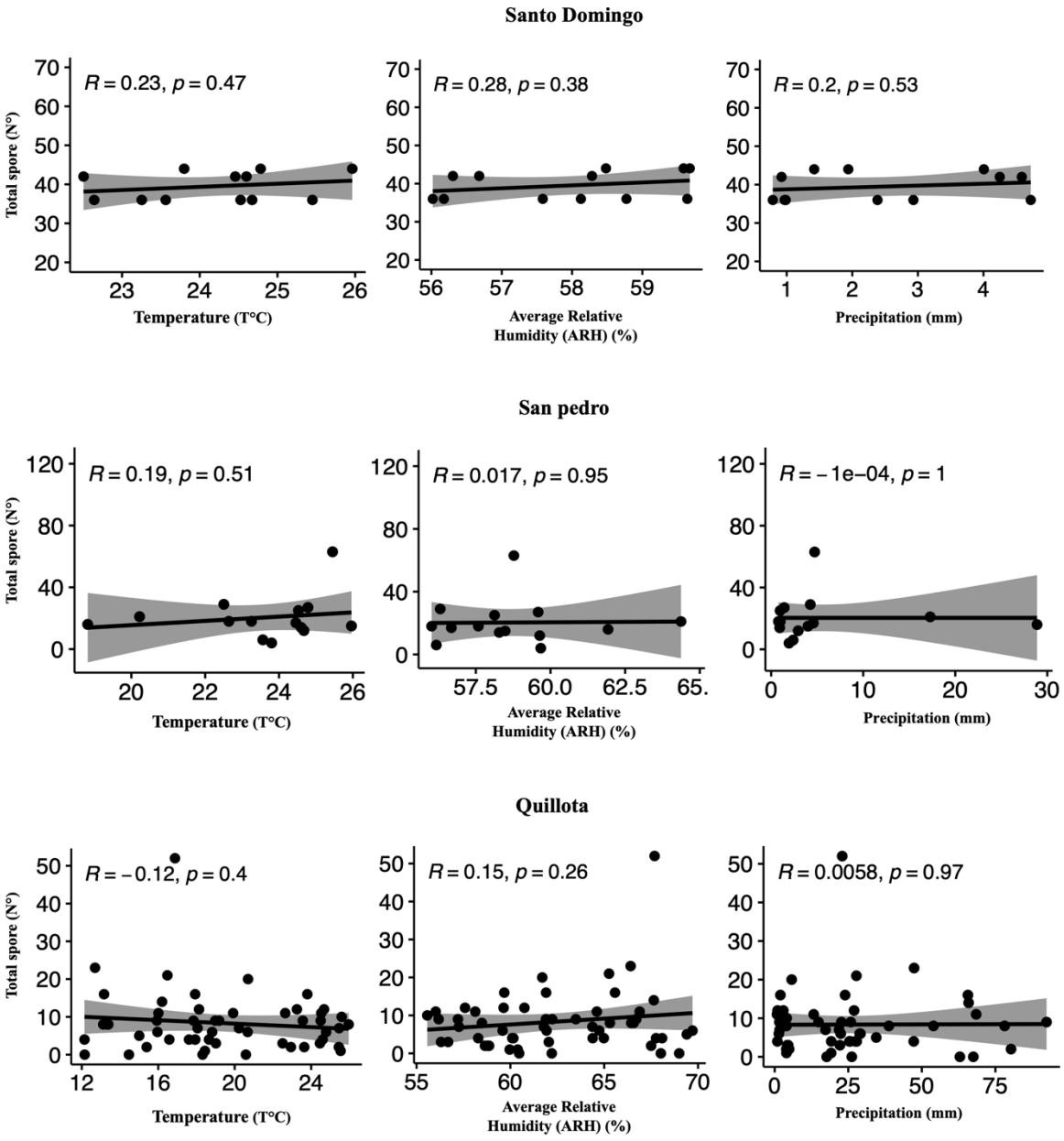


Figure S1. Pearson correlation analysis between total weekly spore counts (*Botryosphaeriaceae* + *Glomerellaceae*) and climatic variables—temperature (°C), average relative humidity (ARH, %), and precipitation (mm)—in three avocado orchards in central Chile: Santo Domingo, San Pedro, and Quillota Each panel shows a scatterplot with a fitted linear regression line (solid line) and a 95% confidence interval (gray shading). The Pearson correlation coefficient (R) and the associated p-value are shown in the upper left of each panel. In **Santo Domingo**, weak positive correlations were observed with temperature ($R = 0.23$, $p = 0.47$), relative humidity ($R = 0.28$, $p = 0.38$), and precipitation ($R = 0.20$, $p = 0.53$), although none of these were statistically significant. In **San Pedro**, no meaningful

linear relationships were found between spore counts and temperature (R = 0.19, p = 0.51), humidity (R = 0.017, p = 0.95), or precipitation (R = –0.0001, p = 1.00). In **Quillota**, correlations were also weak and non-significant: temperature (R = –0.12, p = 0.40), humidity (R = 0.15, p = 0.26), and precipitation (R = 0.006, p = 0.97).

Table S1: The average values of dry matter (%), disease incidence (%), and severity index (%) in avocado fruits collected from three orchards in the Valparaíso Region: Santo Domingo, San Pedro, and Quillota.

Orchards	**Dry matter***	***Glomerellaceae***		***Botryosphaeriaceae***	
		Incidence (%)	**Severity (ID)%**	**Incidence (%)**	**Severity (ID)%**
Santo Domingo	19.1±2.72	23	12.25	44	17.25
San Pedro	26.2±1.90	19	7.5	19	5
Quillota	34.8±1.83	12	5	22	7.25

*Dry matter: average of 15 samples ± standard deviation

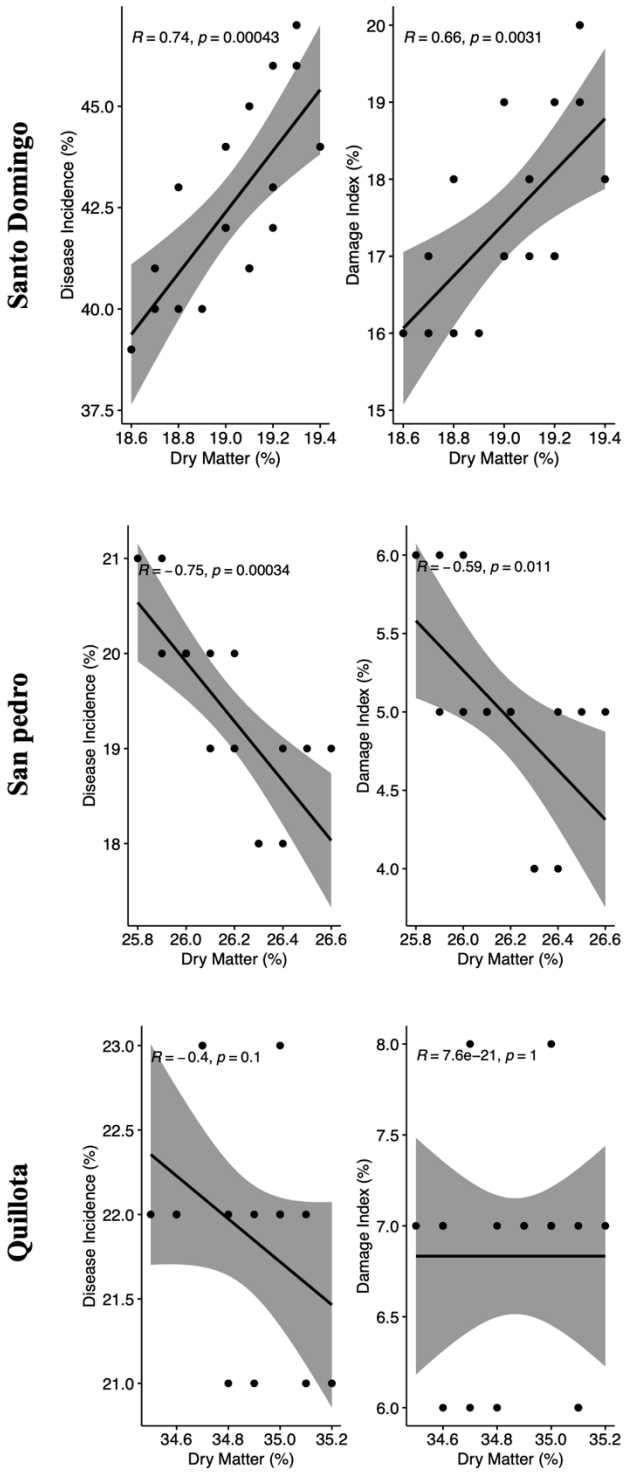


Figure S2. The figure displays six scatterplots representing Pearson correlation analyses between the percentage of dry matter in avocado fruits and two postharvest disease variables: disease incidence (left column) and damage index (DI) (right column). These relationships are evaluated separately for three orchards: Santo Domingo, San Pedro, and Quillota. **Santo Domingo**: *Dry Matter vs Disease Incidence*: A strong and significant positive correlation is observed (r = 0.74, p = 0.00043), indicating

that higher dry matter content is associated with increased disease incidence. *Dry Matter vs Damage Index*: A moderate positive correlation is also present (r = 0.66, p = 0.0031), suggesting that more mature fruits are more susceptible to damage in this coastal orchard. **San Pedro**: *Dry Matter vs Disease Incidence*: A strong and significant negative correlation is observed (r = –0.75, p = 0.00034), suggesting that higher dry matter is associated with reduced incidence. *Dry Matter vs Damage Index*: A moderate negative correlation is also detected (r = –0.59, p = 0.011), implying that less mature fruits may be more susceptible to damage in this temperate-climate orchard. **Quillota**: *Dry Matter vs Disease Incidence*: A weak, non-significant negative correlation is observed (r = –0.4, p = 0.1). *Dry Matter vs Damage Index*: No correlation is evident (r ≈ 0, p = 1), which may be due to lower climatic variability or drier growing conditions.

This figure highlights that the relationship between fruit physiological status (dry matter) and postharvest disease susceptibility varies by orchard, likely influenced by microclimatic factors. In Santo Domingo, more mature fruits appear more vulnerable to disease, whereas in San Pedro, the opposite trend is observed. In Quillota, no clear pattern is detected.

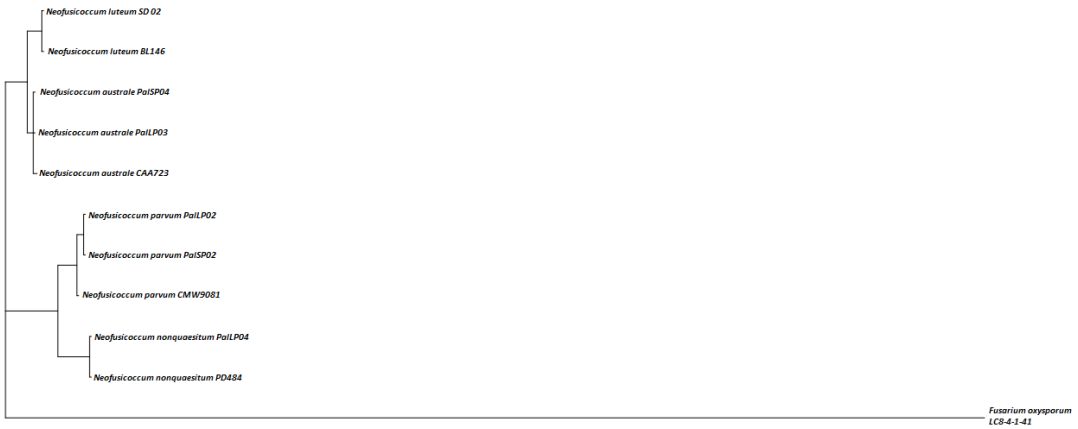


Figure S3. Bayesian inference phylogenetic tree based on concatenated ITS and EF1-α gene sequences of *Botryosphaeriaceae* isolates obtained from avocado fruits in Chile, along with reference strains retrieved from GenBank. The analysis was conducted using MrBayes v3.2.7 under the GTR + gamma substitution model. Posterior probabilities (>0.5) are shown at the nodes. *Fusarium oxysporum* was used as the outgroup. The tree confirms the identification of isolates into four well-supported clades: *Neofusicoccum luteum*, *N. australe*, *N. parvum*, and *N. nonquaesitum*, consistent with morphological and MP-based classifications.