**Figure captions**

**Fig 1**. Lenticel damage for avocado cv. Hass fruits collected from the La Escondida and El Sinai farms between 2019 and 2021 at harvest time (0 days post-harvest, 0dph). Bars and error bars represent mean and standard deviation for the severity (A) and incidence (B) of the damage observed in the farms for each harvest at 0 dph. The points show the severity and incidence means for the fruits collected from the different plots, and the letter after the year denotes main (m) and traviesa (t) harvest..

**Fig 2**. Lenticel damage for avocado cv. Hass fruits collected from the La Escondida and El Sinai farms between 2019 and 2021 at harvest time (0 days post-harvest, 0 dph) and after 21 days of storage at 6⁰C (21 days post-harvest, 21 dph). Shown are the means and standard deviations for the severity (A) and incidence (B) of the damage for the two evaluatin points (0 dph and 21 dph). The points show the severity and incidence means for the fruits collected in the four harvest, and the letter after the year denotes main (m) and traviesa (t) harvest.

**Fig 3**. Alfa diversity for the fungal communities of the avocado cv. Hass fruits with different severities of lenticel damage (Mild and Severe) collected from the La Escondida and El Sinai farms during the traviesa harvest of 2020. Bars and error bars represent mean and standard deviation for the alfa diversity index richness (A), Shannon (B), and Faith pd (C) alpha-diversity (n: 6). The points show the alfa diversity metrics the fruits and the asterisk denote statistic differences at the 95.0 % confidence level (\*) according to the t test.

**Fig 4**. Fungal communities’ structure for fruits of avocado cv. Hass fruits with different severities of lenticel damage (Mild and Severe) collected from the La Escondida and El Sinai farms during the traviesa harvest of 2020. Cumulative sum scaling (CSS) transformed reads were used to calculate weighted unifrac distance. Shown are the bidimensional planes of the principal coordinates analysis (PCoA) (72.6 % of the overall variance) (A) and canonical analysis of principal coordinates (CAP) constrained by the farm (La Escondida and El Sinai) (68.8 % of the overall variance; p-value: 0.001) (B). Each point represents the fungal community of a fruit, and the colors show the origin (La Escondida o El Sinai) and damage severity (Severe or Mild) of the fruit. The ellipsis are the 95 % confidence level ellipses.

**Fig 5.** Taxonomic composition of the fungal communities of the avocado cv. Hass fruits with different severities of lenticel damage (Mild and Severe) collected from the La Escondida and El Sinai during the traviesa harvest of 2020. Shown are the relative abundances of the fungal families of the entire communities (A) and the genus for the communities of Ascomycota (B) and Basidiomycota (C).

**Fig 6.** Taxonomy and relative abundance of the amplicon sequence variants (ASVs) enriched (p-value < 0.05) in the fungal communities of avocado cv. Hass fruits with different severities of lenticel damage (Mild and Severe) collected from the La Escondida during the traviesa harvest of 2020. Shown are the taxonomic relation (A) and the relative abundances (B) of the ASVs group by color according to the clade (Supplementary Table 5).

**Fig 7.** Taxonomy and relative abundance of the amplicon sequence variants (ASVs) enriched (p- value < 0.05) in the fungal communities of avocado cv. Hass fruits with different severities of lenticel damage (Mild and Severe) collected from the La Sinai during the traviesa harvest of 2020. Shown are the taxonomic relation (A) and the relative abundances (B) of the ASVs group by color according to the clade (Supplementary Table 6).

**Table 1.** Fungal isolates originated from healthy and necrotic lenticels of avocado cv. Hass fruits collected from the La Escondida and El Sinai during the main harvest of 2019 and traviesa harvest of 2021.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Isolates** | **La Escondida** | | **El Sinai** | | **Total** |
| **Necrotic** | **Healthy** | **Necrotic** | **Healthy** |
| *Alternaria* sp. | 1 | 1 | 0 | 0 | 2 |
| *Colletotrichum* sp. | 6 | 5 | 7 | 1 | 19 |
| *Cytospora* sp. | 6 | 1 | 0 | 3 | 10 |
| *Diaporthe* sp. | 0 | 0 | 1 | 1 | 2 |
| *Neofusicoccum* sp. | 0 | 1 | 0 | 0 | 1 |
| *Neurospora* sp. | 2 | 0 | 0 | 0 | 2 |
| *Phyllosticta* sp. | 0 | 0 | 3 | 0 | 3 |
| **Total** | 15 | 8 | 11 | 5 | 39 |

**~~Supplementary Figure S1~~**~~. Lenticel damage for avocado cv. Hass fruits collected from the different plots of the La Escondida farm between 2019 and 2021 at harvest time (0 days post-harvest). Shown are the means and standard deviations for the severity (A) and incidence (B) of the damage (n: 300). The letter after the year denotes principal (\_p) and traviesa (\_t) harvest.~~

**~~Supplementary Figure 2~~**~~. Lenticel damage for avocado cv. Hass fruits collected from the different plots of the El Sinai farm between 2019 and 2021 at harvest time (0 days post-harvest). Shown are the means and standard deviations for the severity (A) and incidence (B) of the damage (n: 300). The letter after the year denotes principal (\_p) and traviesa (\_t) harvest.~~

**Supplementary figure 1.** Lenticel damage for avocado cv. Hass fruits used for the microbial-community analysis. Fruits were collected from the La Escondida and El Sinai farms during the traviesa harvest of 2020. Shown are the means and standard deviations for the severity (A) and incidence (B) of the damage for the fruits with deferent levels of affection. The points show the severity and incidence for the fruits and the asterisk denote statistic differences at the 99.0% (\*\*) and 99.9% (\*\*\*) confidence level according to the t test (n: 6).

**Supplementary Table 1**. Geographic location and climatic characteristics of the La Escondida and El Sinai farms. Shown are the average daily precipitation, lowest and highest temperatures, and relative humidity. Climatic variables were measured in situ using a Davis Vantage Pro2 weather station.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **La Escondida** | | | | | |
| **Location** | Rionegro, Antioquia (Latitud: 6° 5’58.27”N; Longitude:75°26’ 30.8”O) | | | | |
| **AMSLa** | 2200 | | | | |
| **Harvest** | **Weatherb** | | | |
| **Precipitation (mm)** | **lowest temperature (⁰C)** | **Highest temperature (⁰C)** | **Maximun relative humidity (%)** | |
| 2019\_mc | 4.9 ± 2.0 | 12.6 ± 0.2 | 22.5 ± 0.3 | 82.2 ± 5.9 | |
| 2020\_t | 7.2 ± 2.3 | 12.9 ± 0.1 | 22.1 ± 0.2 | 88.4 ± 3.9 | |
| 2020\_m | 3.9 ± 2.0 | 12.9 ± 0.2 | 22.5 ± 0.2 | 86.4 ± 7.7 | |
| 2021\_t | 7.4 ± 3.9 | 15.8± 1.8 | 20.8 ± 1.4 | 75.2 ± 6.3 | |
| **El Sinai** | | | | | |
| **Location** | Anserma, Caldas (Latitud: 5°16’57.12"N; Longitude:75°47’59.23"O) | | | | |
| **AMSL** | 2000 | | | | |
| **Harvest weather** | **Precipitation (mm)** | **lowest temperature (⁰C)** | **Highest temperatura (⁰C)** | **Maximun relative humidity (%)** | |
| 2019\_m | 5.9 ± 3.7 | 15.0 ± 1.1 | 22.5 ± 1.4 | 81.6 ± 7.8 | |
| 2020\_t | 8.6 ± 2.9 | 13.9 ± 0.12 | 21.6 ± 0.7 | 90.9 ± 3.8 | |
| 2020\_m | 4.7 ± 1.7 | 14.2 ± 0.52 | 22.6 ± 0.8 | 83.5 ± 5.6 | |
| 2021\_t | 10.0 ± 8.2 | 14.6 ± 0.83 | 22.5 ± 0.6 | 86.2 ± 9.4 | |

aAMSL: Hight above mean see level

b Shown are the means and standard deviation for the climatic variables measured during the six-month period comprising each harvest

c The letter after the year denotes main (m) and traviesa (t) harvest

**Supplementary Table 2**. Plots, trees, and fruits of avocado cv. Hass use for the lenticel damage assessment for each farm during the study.

|  |  |  |  |
| --- | --- | --- | --- |
| **La Escondida** | **Plot** | Trees | Fruits |
|  | 1 | 5 | 50 |
|  | 3 | 5 | 50 |
|  | 4 | 2 | 20 |
|  | 5 | 9 | 90 |
|  | 6 | 9 | 90 |
| **Total** | 5 | n = 30 | n = 300 |
| **El Sinai** | **Plot** | Trees | Fruits |
|  | Bosque | 7 | 70 |
|  | Tanque | 2 | 20 |
|  | Eucalipto | 7 | 70 |
|  | Costa Rica | 3 | 30 |
|  | Fuego Verde | 2 | 20 |
|  | Topacio | 5 | 50 |
|  | Entre Carreteras | 1 | 10 |
|  | Frijolera | 3 | 30 |
| **Total** | 8 | 30 | 300 |

**Supplementary Table 3.** Estimates for the linear mixed model and general linear mixed model evaluating the differences between the severity and incidences of the lenticel damage for fruits of avocado cv. Hass collected from La Escondida and El Siani farm between 2019 and 2021 at harvest time (0 days post-harvest). The letter after the year denotes main (m) and traviesa (t) harvest.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Analysis of the lenticel damage severity** | | | | |
| **Model** | Lineal mixed model (lmer) | | | |
| **Equation** | log (severity+1) ~ Farm \* Harvest + (1 | plot) + (1| pt) | | | |
|  |  | **Estimate** | **SE** | **T-val** |
| **Fixed effects** | Intercept | 0.13 | 0.04 | 3.53 |
|  | Sinai | 0.23 | 0.05 | 4.60 |
|  | 2020\_t | 0.47 | 0.02 | 19.20 |
|  | 2020\_m | 0.13 | 0.02 | 5.23 |
|  | 2021\_t | 0.06 | 0.04 | 1.34 |
|  | Sinai\*2020\_t | 0.09 | 0.03 | 2.57 |
|  | Sinai\*2020\_m | -0.32 | 0.03 | -9.48 |
|  | Sinai\*2021\_t | 0.40 | 0.05 | 8.06 |
|  |  |  | **Variance** | **SD** |
| **Random effects\*** | 1 | pt | Intercept | 0.006 | 0.074 |
|  | 1 | plot | Intercept | 0.004 | 0.064 |
|  | Residual |  | 0.076 | 0.276 |
| **Analysis of the lenticel damage incidence** | | | | |
| **Model** | Generalized lineal mixed model (glmer), family: poisson (log) | | | |
| **Equation** | Incidence ~ Farm \* Harvest + (1 | plot) + (1| pt) | | | |
|  |  | **Estimate** | **SE** | **Z-val** |
| **Fixed effects** | Intercept | 2.94 | 0.09 | 32.75 |
|  | Sinai | 1.30 | 0.12 | 10.98 |
|  | 2020\_t | 1.37 | 0.02 | 88.07 |
|  | 2020\_m | 0.60 | 0.02 | 35.12 |
|  | 2021\_t | 0.43 | 0.03 | 15.40 |
|  | Sinai\*2020\_t | -0.81 | 0.02 | -45.19 |
|  | Sinai\*2020\_m | -1.33 | 0.02 | -65.51 |
|  | Sinai\*2021\_t | -0.13 | 0.03 | -4.31 |
|  |  |  | **Variance** | **SD** |
| **Random effects** | 1 | pt | Intercept | 0.062 | 0.250 |
|  | 1 | plot | Intercept | 0.029 | 0.170 |

* 1|pt: Nested effect of tree in plot

**Supplementary Table 4.** Estimates for the linear mixed model and general linear mixed model evaluating the difference between the severity and incidences of the lenticel damage at harvest time (0 days post-harvest) and 21 days of cold store at 6⁰C (21 dph) for fruits of avocado cv. Hass collected from La Escondida and El Siani farm between 2019 and 2021.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Analysis of the lenticel damage severity** | | | | | |
| **Model** | | Lineal mixed model (lmer) | | | |
| **Equation** | | log (severity+1) ~ measurement \* Farm + (1 | harvest) + (1| fruit) | | | |
|  | |  | **Estimate** | **SE** | **T-val** |
| **Fixed effects** | | Intercept | 0.36 | 0.10 | 3.59 |
|  | | 21dph | 0.40 | 0.02 | 20.89 |
|  | | Siani | 0.20 | 0.02 | 9.28 |
|  | | 21dph \* Siani | 0.48 | 0.03 | 18.07 |
|  | |  |  | **Variance** | **SD** |
| **Random effects\*** | | 1 | harvest | Intercept | 0.039 | 0.198 |
|  | | 1 | fruit | Intercept | 0.031 | 0.177 |
|  | | Residual |  | 0.132 | 0.363 |
| **Analysis of the lenticel damage incidence** | | | | | |
| **Model** | Generalized lineal mixed model (glmer), family: poisson (log) | | | | |
| **Equation** | | Incidence ~ measurement \* Farm + (1 | harvest) + (1| fruit) | | | |
|  | |  | **Estimate** | **SE** | **Z-val** |
| **Fixed effects** | | Intercept | 3.58 | 0.13 | 28.25 |
|  | | 21dph | 0.80 | 0.01 | 118.85 |
|  | | Siani | 0.69 | 0.03 | 21.45 |
|  | | 21dph \* Siani | 0.14 | 0.01 | 18.05 |
|  | |  |  | **Variance** | **SD** |
| **Random effects** | | 1 | harvest | Intercept | 0.336 | 0.580 |
|  | | 1 | fruit | Intercept | 0.062 | 0.250 |

**Supplementary Table 5.** Taxonomy and relative abundance of the amplicon sequence variants (ASVs) enriched (p-value < 0.05) in the fungal communities of avocado cv. Hass fruits with different severities of lenticel damage (Mild and Severe) collected from the La Escondida during the traviesa harvest of 2020. In Black are the ASVs enriched in fruits with severe lenticel damage and Clade refers to the phylogeny shown in Fig 6.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Sequence variant** | **Relative abundance (%)** | | **Taxonomy** | | | | **Clade** |
| **Mild damage** | **Severe damage** | **Class** | **Order** | **Family** | **Genus** |
| ASV\_80 | 0.30 | 0.10 | Unidentified | Unidentified | Unidentified | Unidentified | X |
| ASV\_22 | 1.60 | 1.30 | Unidentified | Unidentified | Unidentified | Unidentified |
| ASV\_76 | 0.40 | 0.10 | Unidentified | Unidentified | Unidentified | Unidentified |
| ASV\_150 | 0.15 | 0.01 | Unidentified | Unidentified | Unidentified | Unidentified |
| ***Basidiomycota*** | | | | | | | |
| ASV\_87 | 0.26 | 0.18 | Unidentified | Unidentified | Unidentified | Unidentified | IX |
| ASV\_184 | 0.08 | 0.03 | Unidentified | Unidentified | Unidentified | Unidentified | XIII |
| ASV\_57 | 0.86 | 0.10 | *Cystobasidiomycetes* | *Erythrobasidiales* | *Erythrobasidiaceae* | *Erythrobasidium* |
| **ASV\_31** | **0.64** | **0.70** | ***Cystobasidiomycetes*** | **Unidentified** | **Unidentified** | **Unidentified** |
| ASV\_250 | 0.07 | 0.01 | *Cystobasidiomycetes* | *Cystobasidiales* | *Cystobasidiaceae* | *Cystobasidium* |
| **ASV\_30** | **0.97** | **1.10** | ***Cystobasidiomycetes*** | ***Cystobasidiales*** | ***Cystobasidiaceae*** | ***Cystobasidium*** |
| ASV\_177 | 0.06 | 0.01 | Unidentified | Unidentified | Unidentified | Unidentified |
| ASV\_95 | 0.31 | 0.08 | *Exobasidiomycetes* | *Golubeviales* | *Golubeviaceae* | *Golubevia* |
| ASV\_53 | 0.86 | 0.17 | *Exobasidiomycetes* | *Golubeviales* | *Golubeviaceae* | *Golubevia* |
| ASV\_194 | 0.09 | 0.00 | *Exobasidiomycetes* | *Golubeviales* | *Golubeviaceae* | *Golubevia* |
| ASV\_25 | 1.50 | 0.90 | *Exobasidiomycetes* | *Exobasidiales* | *Brachybasidiaceae* | *Meira* |
| ASV\_75 | 0.62 | 0.02 | *Tremellomycetes* | *Tremellales* | *Bulleribasidiaceae* | *Vishniacozyma* | XII |
| ASV\_156 | 0.14 | 0.01 | *Tremellomycetes* | *Tremellales* | *Bulleribasidiaceae* | *Vishniacozyma* |
| ASV\_11 | 5.40 | 0.72 | *Tremellomycetes* | *Tremellales* | *Bulleribasidiaceae* | *Vishniacozyma* |
| ASV\_15 | 4.50 | 0.91 | *Tremellomycetes* | *Tremellales* | *Bulleribasidiaceae* | *Vishniacozyma* |
| ***Ascomycota*** | | | | | | | |
| **ASV\_24** | **0.02** | **2.60** | ***Dothideomycetes*** | ***Pleosporales*** | ***Phaeosphaeriaceae*** | ***Setophoma*** | VI |
| ASV\_34 | 1.00 | 0.62 | *Lecanoromycetes* | *Lecanorales* | *Ramalinaceae* | *Bacidina* | V |
| **ASV\_18** | **1.60** | **2.30** | ***Lecanoromycetes*** | ***Lecanorales*** | ***Ramalinaceae*** | ***Bacidina*** |
| ASV\_6 | 4.90 | 2.60 | *Leotiomycetes* | *Thelebolales* | *Pseudeurotiaceae* | *Hyphozyma* |
| **ASV\_243** | **0.01** | **0.07** | ***Sordariomycetes*** | ***Xylariales*** | ***Sporocadaceae*** | ***Neopestalotiopsis*** |
| **ASV\_146** | **0.00** | **0.16** | **Unidentified** | **Unidentified** | **Unidentified** | **Unidentified** | IV |
| ASV\_106 | 0.18 | 0.11 | *Dothideomycetes* | *Capnodiales* | *Mycosphaerellaceae* | *Zasmidium* | III |
| ASV\_4 | 4.60 | 3.00 | *Dothideomycetes* | *Capnodiales* | *Cladosporiaceae* | *Cladosporium* |
| **ASV\_1** | **17.00** | **18.00** | **Unidentified** | **Unidentified** | **Unidentified** | **Unidentified** |
| ASV\_2 | 3.60 | 1.20 | Unidentified | Unidentified | Unidentified | Unidentified |
| ASV\_51 | 0.29 | 0.05 | Unidentified | Unidentified | Unidentified | Unidentified |
| ASV\_12 | 0.80 | 0.47 | Unidentified | Unidentified | Unidentified | Unidentified |
| ASV\_3 | 6.20 | 2.90 | Unidentified | Unidentified | Unidentified | Unidentified |
| ASV\_7 | 2.10 | 0.94 | Unidentified | Unidentified | Unidentified | Unidentified |
| **ASV\_42** | **0.64** | **0.81** | **Unidentified** | **Unidentified** | **Unidentified** | **Unidentified** |
| **ASV\_41** | **0.72** | **0.74** | **Unidentified** | **Unidentified** | **Unidentified** | **Unidentified** |
| ASV\_122 | 0.12 | 0.10 | Unidentified | Unidentified | Unidentified | Unidentified |
| ASV\_60 | 0.51 | 0.35 | *Dothideomycetes* | *Capnodiales* | *Neodevriesiaceae* | *Neodevriesia* |
| ASV\_221 | 0.06 | 0.03 | Unidentified | Unidentified | Unidentified | Unidentified | II |
| ASV\_190 | 0.05 | 0.02 | Unidentified | Unidentified | Unidentified | Unidentified |
| ASV\_9 | 0.65 | 0.37 | Unidentified | Unidentified | Unidentified | Unidentified |
| ASV\_260 | 0.05 | 0.02 | Unidentified | Unidentified | Unidentified | Unidentified |
| ASV\_10 | 3.90 | 2.10 | *Eurotiomycetes* | *Chaetothyriales* | Unidentified | Unidentified | I |
| ASV\_13 | 3.40 | 2.30 | Unidentified | Unidentified | Unidentified | Unidentified |

**Supplementary Table 6.** Taxonomy and relative abundance of the amplicon sequence variants (ASVs) enriched (p-value < 0.05) in the fungal communities of avocado cv. Hass fruits with different severities of lenticel damage (Mild and Severe) collected from the La Sinai during the traviesa harvest of 2020. In Black are the ASVs enriched in fruits with severe lenticel damage and Clade refers to the phylogeny shown in Fig 7.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Sequence variant** | **Relative abundance (%)** | | **Taxonomy** | | | | **Clade** |
| **Mild damage** | **Severe damage** | **Class** | **Order** | **Family** | **Genus** |
| ASV\_270 | 0.12 | 0.00 | Unidentified | Unidentified | Unidentified | Unidentified | **X** |
| ASV\_37 | 2.00 | 0.73 | Unidentified | Unidentified | Unidentified | Unidentified |
| **ASV\_96** | **0.09** | **0.57** | **Unidentified** | **Unidentified** | **Unidentified** | **Unidentified** |
| ***Basidiomycota*** | | | | | | | |
| ASV\_351 | 0.06 | 0.00 | *Microbotryomycetes* | *Sporidiobolales* | *Sporidiobolaceae* | *Sporobolomyces* | **IX** |
| ASV\_281 | 0.10 | 0.00 | *Microbotryomycetes* | *Sporidiobolales* | *Sporidiobolaceae* | *Sporobolomyces* |
| ASV\_202 | 0.18 | 0.00 | *Microbotryomycetes* | *Sporidiobolales* | *Sporidiobolaceae* | *Sporobolomyces* |
| ASV\_201 | 0.16 | 0.02 | *Cystobasidiomycetes* | *Erythrobasidiales* | *Erythrobasidiaceae* | *Erythrobasidium* |
| ASV\_140 | 0.27 | 0.06 | *Cystobasidiomycetes* | *Erythrobasidiales* | *Erythrobasidiaceae* | *Erythrobasidium* |
| ASV\_117 | 0.32 | 0.02 | *Cystobasidiomycetes* | *Erythrobasidiales* | *Erythrobasidiaceae* | *Erythrobasidium* |
| ASV\_380 | 0.06 | 0.00 | *Cystobasidiomycetes* | *Cystobasidiomycetes* | *Symmetrosporaceae* | *Symmetrospora* |
| ASV\_33 | 2.30 | 0.03 | *Cystobasidiomycetes* | *Cystobasidiomycetes* | *Symmetrosporaceae* | *Symmetrospora* |
| ASV\_20 | 5.80 | 0.60 | *Cystobasidiomycetes* | *Cystobasidiomycetes* | *Symmetrosporaceae* | *Symmetrospora* |
| ASV\_32 | 0.30 | 0.01 | *Cystobasidiomycetes* | *Cystobasidiomycetes* | *Symmetrosporaceae* | *Symmetrospora* |
| ASV\_31 | 1.30 | 0.05 | *Cystobasidiomycetes* | Unidentified | Unidentified | Unidentified |
| ASV\_174 | 0.07 | 0.01 | *Cystobasidiomycetes* | Unidentified | Unidentified | Unidentified |
| ASV\_54 | 1.10 | 0.01 | *Cystobasidiomycetes* | Unidentified | Unidentified | Unidentified |
| ASV\_280 | 0.06 | 0.00 | *Cystobasidiomycetes* | Unidentified | Unidentified | Unidentified |
| ASV\_123 | 0.31 | 0.09 | *Spiculogloeomycetes* | *Spiculogloeales* | *Spiculogloeaceae* | *Phyllozyma* |
| ASV\_182 | 0.21 | 0.01 | *Agaricomycetes* | Unidentified | Unidentified | Unidentified |
| ASV\_242 | 0.12 | 0.02 | *Exobasidiomycetes* | *Microstromatales* | *Microstromataceae* | *Microstroma* |
| **ASV\_343** | **0.00** | **0.08** | **Unidentified** | **Unidentified** | **Unidentified** | **Unidentified** |
| **ASV\_179** | **0.01** | **0.21** | **Unidentified** | **Unidentified** | **Unidentified** | **Unidentified** |
| **ASV\_145** | **0.02** | **0.30** | **Unidentified** | **Unidentified** | **Unidentified** | **Unidentified** |
| **ASV\_177** | **0.00** | **0.11** | **Unidentified** | **Unidentified** | **Unidentified** | **Unidentified** |
| **ASV\_292** | **0.00** | **0.11** | **Unidentified** | **Unidentified** | **Unidentified** | **Unidentified** |
| **ASV\_344** | **0.01** | **0.08** | ***Agaricomycetes*** | **Unidentified** | **Unidentified** | **Unidentified** |
| **ASV\_398** | **0.00** | **0.06** | ***Agaricomycetes*** | **Unidentified** | **Unidentified** | **Unidentified** |
| ASV\_136 | 0.18 | 0.05 | *Tremellomycetes* | *Tremellales* | *Bulleribasidiaceae* | *Vishniacozyma* | **VIII** |
| ASV\_11 | 1.70 | 0.57 | *Tremellomycetes* | *Tremellales* | *Bulleribasidiaceae* | *Vishniacozyma* |
| ***Ascomycota*** | | | | | | | |
| ASV\_384 | 0.06 | 0.00 | Unidentified | Unidentified | Unidentified | Unidentified | **VII** |
| ASV\_38 | 0.23 | 0.04 | *Dothideomycetes* | *Pleosporales* | *Didymellaceae* | Unidentified | **VI** |
| ASV\_164 | 0.08 | 0.02 | *Dothideomycetes* | *Pleosporales* | *Didymellaceae* | Unidentified |
| ASV\_52 | 0.07 | 0.01 | *Dothideomycetes* | *Pleosporales* | *Didymellaceae* | *Epicoccum* |
| ASV\_134 | 0.14 | 0.03 | *Dothideomycetes* | *Pleosporales* | *Didymellaceae* | *Epicoccum* |
| ASV\_67 | 0.13 | 0.02 | *Dothideomycetes* | *Pleosporales* | *Didymellaceae* | *Epicoccum* |
| ASV\_115 | 0.25 | 0.05 | *Dothideomycetes* | *Pleosporales* | *Pleosporaceae* | *Stemphylium* |
| ASV\_157 | 0.14 | 0.05 | *Dothideomycetes* | *Pleosporales* | *Periconiaceae* | *Periconia* |
| **ASV\_124** | **0.02** | **0.26** | ***Sordariomycetes*** | ***Glomerellales*** | ***Glomerellaceae*** | ***Colletotrichum*** | **V** |
| **ASV\_65** | **0.06** | **0.69** | ***Sordariomycetes*** | ***Glomerellales*** | ***Glomerellaceae*** | ***Colletotrichum*** |
| **ASV\_114** | **0.06** | **0.39** | ***Sordariomycetes*** | ***Glomerellales*** | ***Glomerellaceae*** | ***Colletotrichum*** |
| **ASV\_235** | **0.02** | **0.11** | ***Sordariomycetes*** | ***Glomerellales*** | ***Glomerellaceae*** | ***Colletotrichum*** |
| ASV\_28 | 0.41 | 0.02 | *Leotiomycetes* | *Thelebolales* | *Pseudeurotiaceae* | Unidentified | **IV** |
| ASV\_340 | 0.07 | 0.01 | *Eurotiomycetes* | *Eurotiales* | *Aspergillaceae* | *Aspergillus* |
| ASV\_297 | 0.09 | 0.01 | *Eurotiomycetes* | *Eurotiales* | *Aspergillaceae* | *Aspergillus* |
| **ASV\_241** | **0.00** | **0.15** | **Unidentified** | **Unidentified** | **Unidentified** | **Unidentified** |
| **ASV\_358** | **0.00** | **0.08** | ***Dothideomycetes*** | ***Capnodiales*** | ***Mycosphaerellaceae*** | ***Geastrumia*** |
| **ASV\_40** | **0.27** | **2.60** | ***Dothideomycetes*** | ***Capnodiales*** | ***Mycosphaerellaceae*** | ***Geastrumia*** |
| **ASV\_112** | **0.07** | **0.44** | ***Dothideomycetes*** | **Unidentified** | **Unidentified** | **Unidentified** |
| **ASV\_345** | **0.00** | **0.08** | ***Dothideomycetes*** | **Unidentified** | **Unidentified** | **Unidentified** |
| **ASV\_166** | **0.01** | **0.11** | ***Dothideomycetes*** | ***Capnodiales*** | ***Mycosphaerellaceae*** | ***Pseudocercospora*** | **III** |
| **ASV\_223** | **0.00** | **0.11** | ***Dothideomycetes*** | ***Capnodiales*** | ***Mycosphaerellaceae*** | ***Pseudocercospora*** |
| **ASV\_14** | **0.50** | **9.70** | ***Dothideomycetes*** | ***Capnodiales*** | ***Mycosphaerellaceae*** | ***Pseudocercospora*** |
| **ASV\_314** | **0.01** | **0.08** | ***Dothideomycetes*** | ***Capnodiales*** | ***Mycosphaerellaceae*** | **Unidentified** |
| **ASV\_151** | **0.06** | **0.24** | ***Dothideomycetes*** | ***Capnodiales*** | ***Mycosphaerellaceae*** | **Unidentified** |
| **ASV\_342** | **0.01** | **0.07** | ***Dothideomycetes*** | ***Capnodiales*** | ***Mycosphaerellaceae*** | **Unidentified** |
| **ASV\_125** | **0.06** | **0.34** | ***Dothideomycetes*** | ***Capnodiales*** | ***Mycosphaerellaceae*** | **Unidentified** |
| ASV\_4 | 5.10 | 1.50 | *Dothideomycetes* | *Capnodiales* | *Cladosporiaceae* | *Cladosporium* |
| ASV\_63 | 0.18 | 0.03 | *Dothideomycetes* | *Capnodiales* | *Cladosporiaceae* | *Cladosporium* |
| ASV\_2 | 21.00 | 2.30 | Unidentified | Unidentified | Unidentified | Unidentified |
| ASV\_186 | 0.20 | 0.00 | Unidentified | Unidentified | Unidentified | Unidentified |
| **ASV\_175** | **0.03** | **0.22** | **Unidentified** | **Unidentified** | **Unidentified** | **Unidentified** |
| **ASV\_3** | **2.40** | **8.40** | **Unidentified** | **Unidentified** | **Unidentified** | **Unidentified** |
| **ASV\_7** | **2.40** | **7.90** | **Unidentified** | **Unidentified** | **Unidentified** | **Unidentified** |
| **ASV\_70** | **0.08** | **1.20** | **Unidentified** | **Unidentified** | **Unidentified** | **Unidentified** |
| **ASV\_320** | **0.00** | **0.09** | **Unidentified** | **Unidentified** | **Unidentified** | **Unidentified** |
| **ASV\_261** | **0.00** | **0.13** | **Unidentified** | **Unidentified** | **Unidentified** | **Unidentified** |
| **ASV\_237** | **0.01** | **0.15** | **Unidentified** | **Unidentified** | **Unidentified** | **Unidentified** |
| **ASV\_390** | **0.01** | **0.06** | ***Dothideomycetes*** | ***Capnodiales*** | ***Capnodiales*** | ***Microcyclospora*** |
| **ASV\_308** | **0.01** | **0.09** | ***Dothideomycetes*** | ***Capnodiales*** | ***Capnodiales*** | ***Microcyclospora*** |
| **ASV\_396** | **0.00** | **0.06** | ***Dothideomycetes*** | ***Capnodiales*** | **Unidentified** | **Unidentified** |
| **ASV\_109** | **0.02** | **0.44** | ***Eurotiomycetes*** | ***Chaetothyriales*** | **Unidentified** | **Unidentified** | **II** |
| **ASV\_129** | **0.03** | **0.32** | ***Eurotiomycetes*** | ***Chaetothyriales*** | ***Trichomeriaceae*** | ***Trichomerium*** |
| **ASV\_92** | **0.04** | **0.41** | ***Eurotiomycetes*** | ***Chaetothyriales*** | ***Trichomeriaceae*** | ***Trichomerium*** |
| **ASV\_110** | **0.04** | **0.33** | ***Eurotiomycetes*** | ***Chaetothyriales*** | ***Trichomeriaceae*** | ***Trichomerium*** |
| **ASV\_10** | **0.52** | **2.10** | ***Eurotiomycetes*** | ***Chaetothyriales*** | **Unidentified** | **Unidentified** |
| **ASV\_13** | **0.02** | **1.10** | **Unidentified** | **Unidentified** | **Unidentified** | **Unidentified** |
| ASV\_26 | 4.20 | 0.19 | *Dothideomycetes* | *Dothideales* | *Aureobasidiaceae* | *Aureobasidium* | **I** |
| ASV\_246 | 0.13 | 0.01 | *Dothideomycetes* | *Dothideales* | *Aureobasidiaceae* | *Aureobasidium* |

**Tabla Suplementaria 7.** Fungal and bacteria strains isolated from healthy and necrotic lenticels of avocado cv. Hass fruits collected from the La Escondida during the principal harvest of 2019 and traviesa Harvest 2021.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Strain | Origina | Harvest | Molecular identity | | |
| Closest sequence | GB ANc | HId |
| EAFIT-F0009 | SNL | 2019 | *Diaporthe* sp. | KR812224 | 100 |
| EAFIT-F0010 | SNL | 2019 | *Phyllosticta* sp. | MT729894 | 100 |
| EAFIT-F0011 | SNL | 2019 | *Phyllosticta* sp. | MT729894 | 100 |
| EAFIT-F0012 | SNL | 2019 | *Colletotrichum* sp. | MT568600 | 100 |
| EAFIT-F0013 | SNL | 2019 | *Phyllosticta* sp. | MT729894 | 100 |
| EAFIT-F0014 | SNL | 2019 | *Colletotrichum* sp. | MT568600 | 100 |
| EAFIT-F0015 | SNL | 2019 | ND | ND | ND |
| EAFIT-F0016 | SNL | 2019 | ND | ND | ND |
| EAFIT-F0017 | SNL | 2019 | *Colletotrichum siamense* | MN296058 | 99.8 |
| EAFIT-F0018 | SNL | 2019 | *Colletotrichum fructicola* | MN296075 | 100 |
| EAFIT-F0019 | SNL | 2019 | *Colletotrichum* sp. | MT611204 | 100 |
| EAFIT-F0020 | SNL | 2019 | *Colletotrichum* sp. | MT611204 | 100 |
| EAFIT-F0022 | SNL | 2019 | *Colletotrichum siamense* | MT769246 | 100 |
| EAFIT-F0031 | ENL | 2019 | *Colletotrichum* sp. | EF672318 | 100 |
| EAFIT-F0033 | ENL | 2019 | ND | ND | ND |
| EAFIT-F0034 | ENL | 2019 | *Colletotrichum siamense* | MN296061 | 99.8 |
| EAFIT-F0035 | ENL | 2019 | *Cytospora* sp. | KT777722 | 99.4 |
| EAFIT-F0037 | ENL | 2019 | *Colletotrichum* sp. | MN744302 | 100 |
| EAFIT-F0038 | ENL | 2019 | *Neurospora* sp. | MG664722 | 99.8 |
| EAFIT-F0040 | ENL | 2019 | ND | ND | ND |
| EAFIT-F0041 | ENL | 2019 | *Neurospora* sp. | MG664722 | 99.8 |
| EAFIT-F0042 | ENL | 2019 | *Cytospora* sp. | KP133193 | 99.5 |
| EAFIT-F0044 | ENL | 2019 | ND | ND | ND |
| EAFIT-F0046 | ENL | 2019 | *Cytospora* sp. | KP133193 | 99.8 |
| EAFIT-F0047 | ENL | 2019 | ND | ND | ND |
| EAFIT-F0049 | ENL | 2019 | *Colletotrichum scovillei* | MT645274 | 100 |
| EAFIT-F0050 | ENL | 2019 | *Colletotrichum siamense* | MT434661 | 100 |
| EAFIT-F0051 | ENL | 2019 | ND | ND | ND |
| EAFIT-F0052 | ENL | 2019 | *Cytospora* sp. | JN153082 | 99.6 |
| EAFIT-F0053 | ENL | 2019 | *Alternaria* sp. | MZ701972 | 100 |
| EAFIT-F0054 | SHL | 2021 | *Colletotrichum karsti* | MW995570 | 100 |
| EAFIT-F0055 | SHL | 2021 | *Cytospora* sp. | JN153082 | 99.1 |
| EAFIT-F0056 | SHL | 2021 | *Diaporthe phaseolorum* | MN997107 | 99.8 |
| EAFIT-F0057 | SHL | 2021 | *Cytospora* sp. | KT777722 | 99.7 |
| EAFIT-F0058 | SHL | 2021 | *Cytospora* sp. | KP133194 | 99.5 |
| EAFIT-F0059 | EHL | 2021 | *Alternaria argyroxiphii* | NR136074 | 100 |
| EAFIT-F0060 | EHL | 2021 | *Colletotrichum cordylinicola* | MZ725045 | 99.2 |
| EAFIT-F0061 | EHL | 2021 | ND | ND | ND |
| EAFIT-F0062 | EHL | 2021 | *Neofusicoccum algeriense* | MW391027 | 100 |
| EAFIT-F0063 | EHL | 2021 | *Colletotrichum fructicola* | MZ724774 | 99.5 |
| EAFIT-F0064 | EHL | 2021 | *Colletotrichum karsti* | MW995519 | 100 |
| EAFIT-F0065 | EHL | 2021 | *Cytospora* sp. | MT854330 | 99.3 |
| EAFIT-F0066 | EHL | 2021 | *Colletotrichum siamense* | MZ066745 | 99.1 |
| EAFIT-F0067 | EHL | 2021 | *Colletotrichum alienum* | MK379590 | 98.8 |
| EAFIT-F0068 | ENL | 2021 | ND | ND | ND |
| EAFIT-F0069 | ENL | 2021 | *Cytospora* sp. | MG253920 | 98.4 |
| EAFIT-F0070 | ENL | 2021 | *Cytospora* sp. | KP133193 | 99.8 |
| EAFIT-F0071 | ENL | 2021 | *Colletotrichum fructicola* | MZ724774 | 100 |
| EAFIT-F0072 | SNL | 2021 | ND | ND | ND |

aFarm and vegetal tissue from which strains originated. E La Escondida, S El Sinai, NL Necrotic lentic, HL Healthy lenticel.

b Fungal strain with the highest ITS sequence similarity according to BLAST. ND not defined.

c GeneBank accession number. ND not defined.

d Highest Identity, values between 0 and 100 %. ND not defined.