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Booklets

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Title: Pathogenic characterization of epiphytic fungi of apple cv. 'Golden Delicious'

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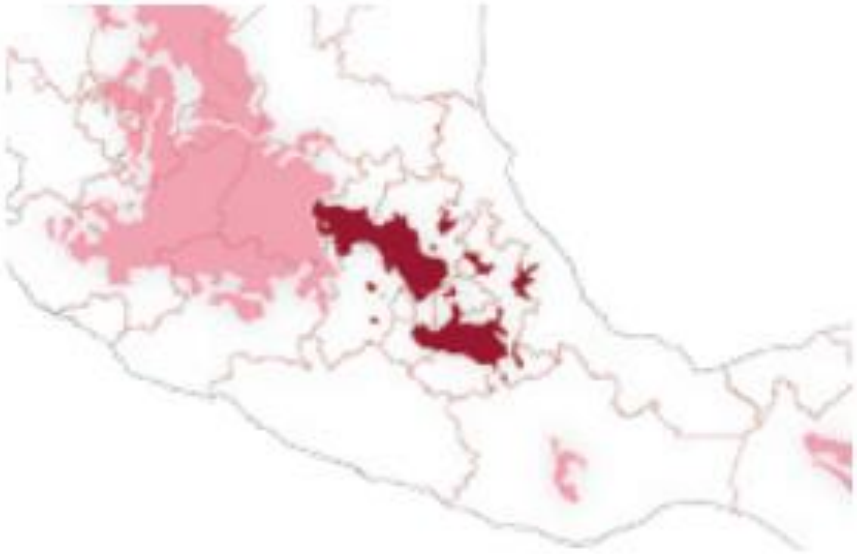
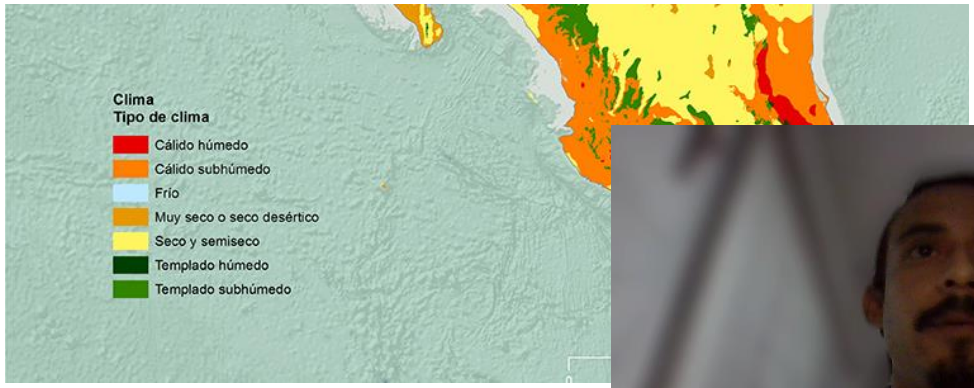
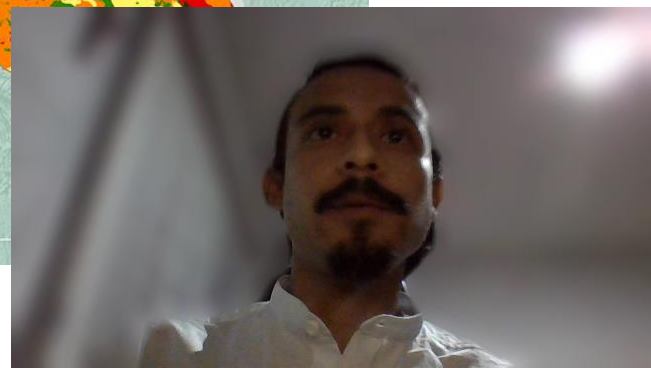
Apple in Mexico

Fuente: Elaboración propia con datos del SIAP y el SIAVI, 2017.



Historically apple-producing regions and with development potential in Mexico





Methodology

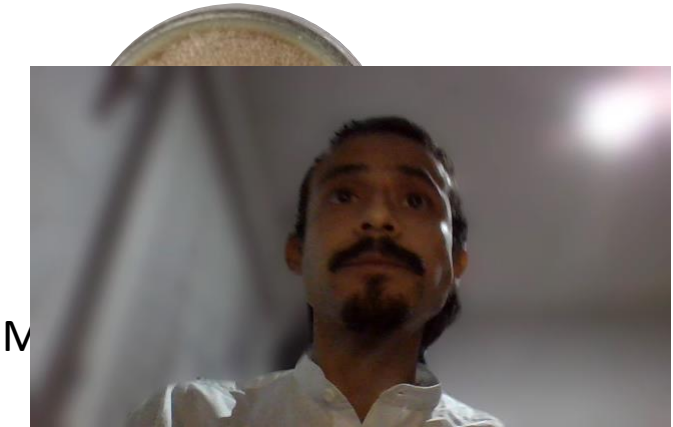
Bioligical material and isolation

Experimental garden in Amealco, Qro.
Trees of the variety 'Golden Delicious'.

3 ripe fruits per tree in one cycle.

Wash with epiphyte buffer and sonication

Inoculation in NYDA



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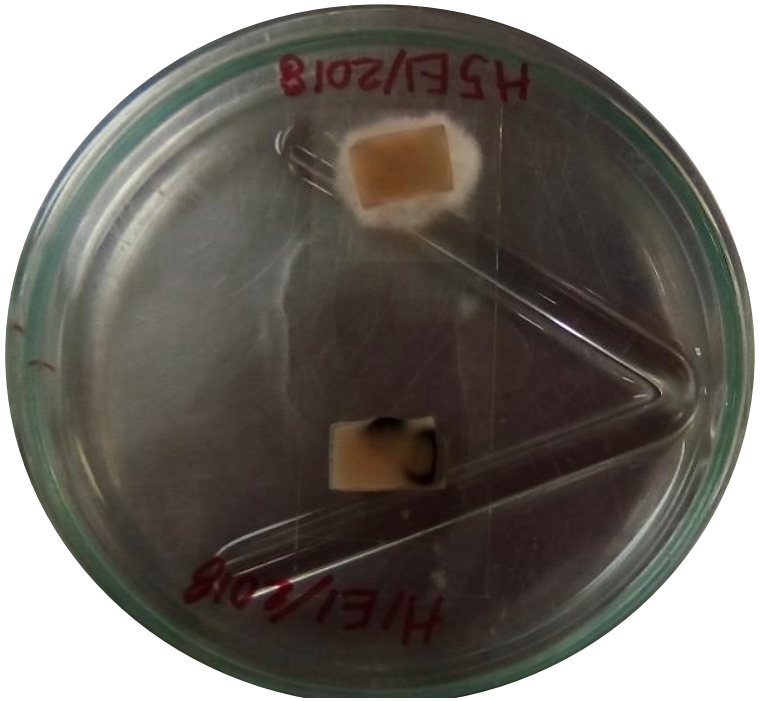
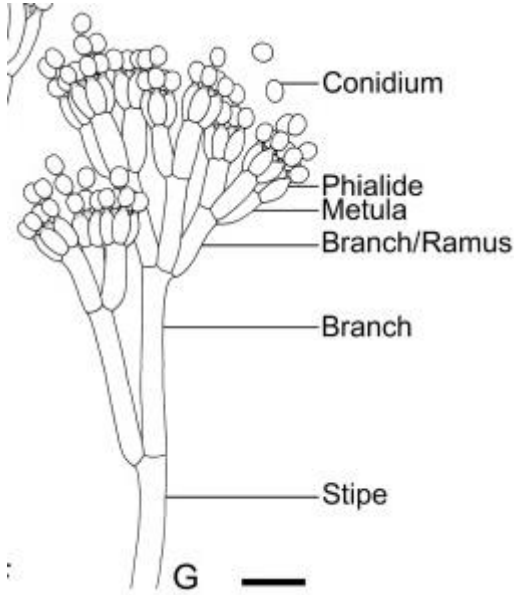
Methodology

Genus level identification

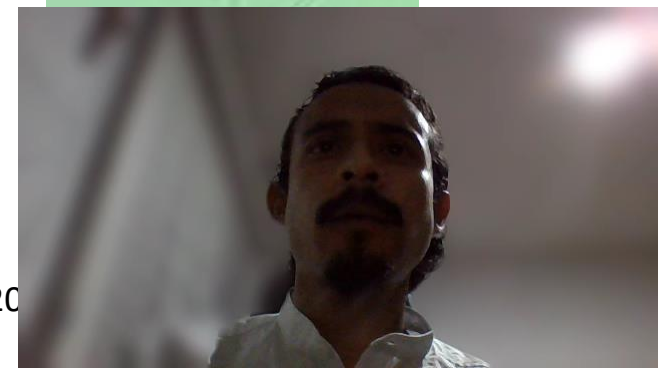
Preparation of samples for microscope observation.



Comparison using taxonomic keys



(Klich, 1988; Pitt, 1991; Denman et al., 2003; Domsch, 20



Methodology

Determination of phytopathogenic activity.

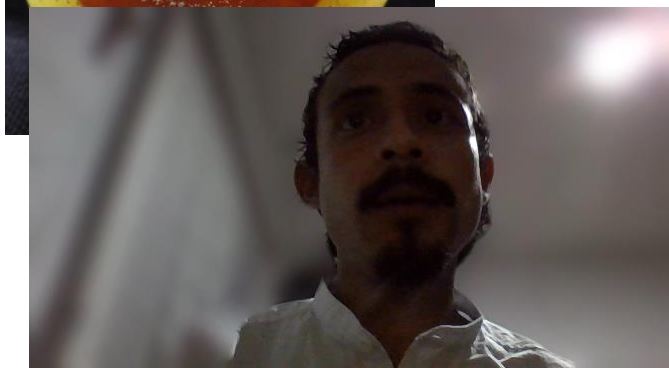
Disinfection of fruit and perforation.

Inoculation of active mycelium (5 x 5 mm).

Positive control:

Penicillium expansum.

Evaluation of damage in fruit 10 dai.



Results

Isolation and nomenclature

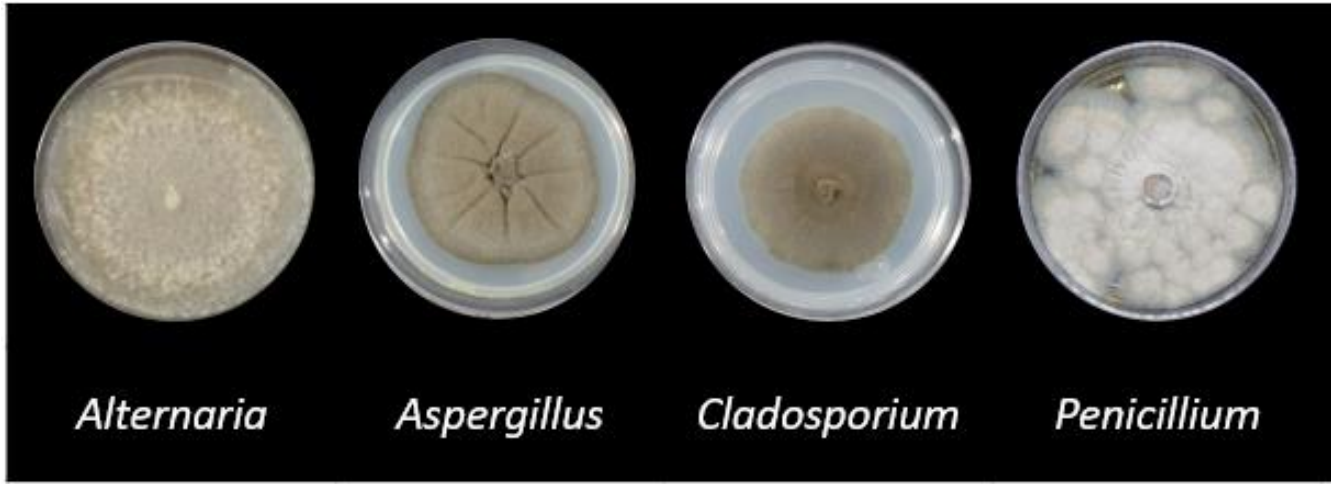
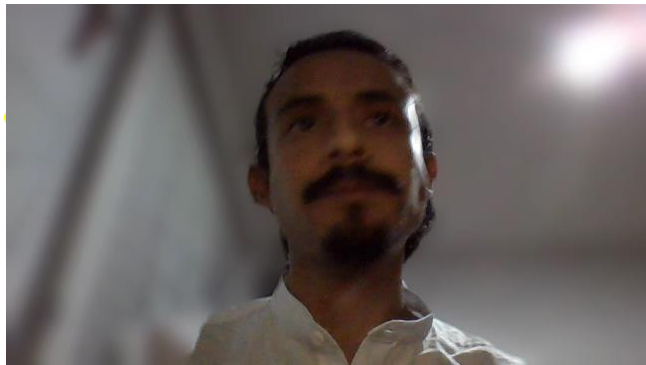


Figure 1. Examples of fungal morphotypes founded

	Number	Stage
Fungi	H5GDE3	2018

'Golden Delicious'



Results

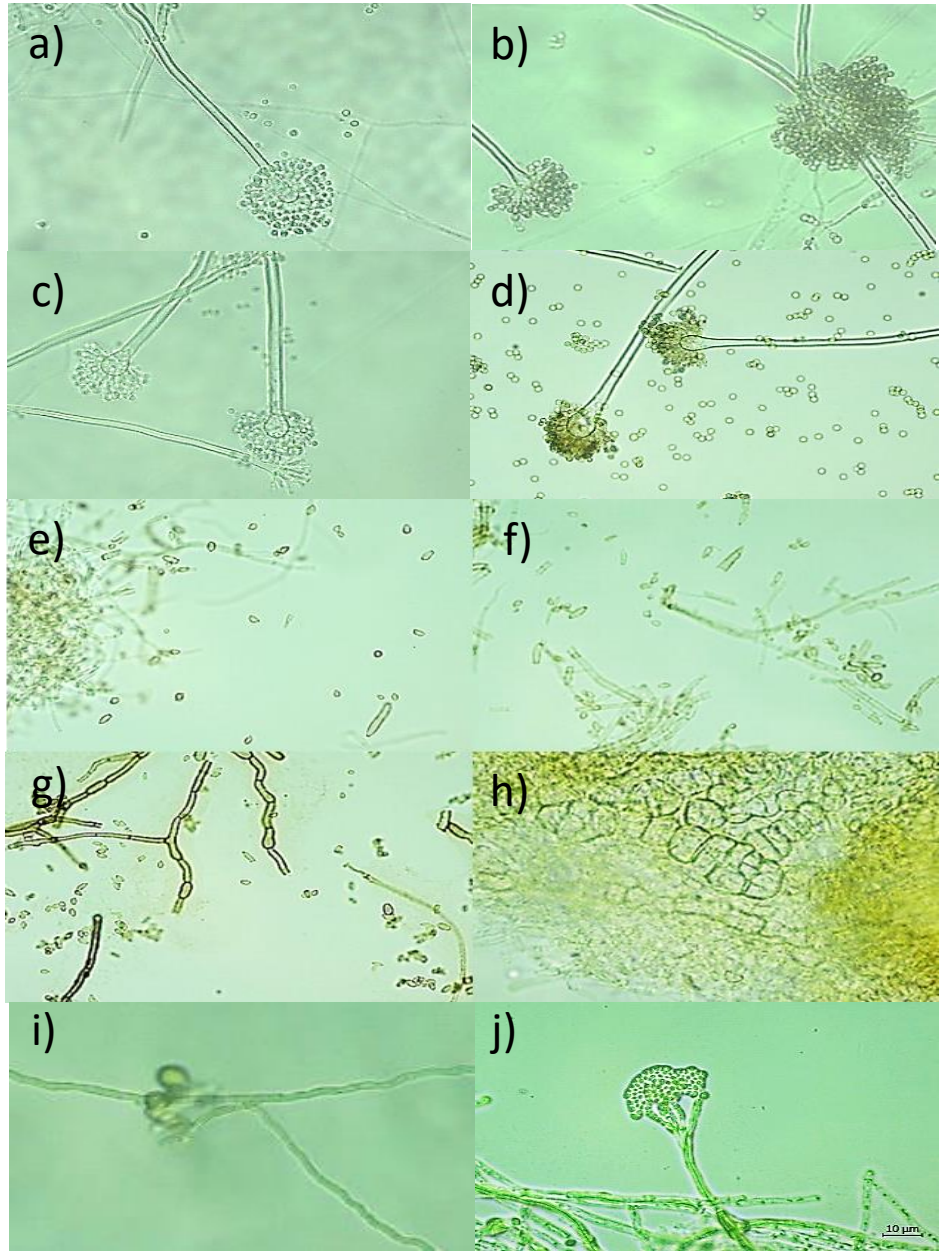


Figure 2. Fungal structures at 40x.

a) H4DGE3 2018 / *Aspergillus*,
b) H9DGE3 2018 / *Aspergillus*,
c) H10DGE3 2018 / *Aspergillus*,
d) H11DGE3 2018 / *Aspergillus*,
e) H2DGE3 2018 / *Cladosporium*,
f) H5DGE3 2018 / *Cladosporium*,
g) H7DGE3 2018 / *Cladosporium*,
h) H8DGE3 2018 / *Alternaria*,
i) H3DGE3 2018 / *Penicillium*,
j) H6DGE3 2018 / *Penicillium*.

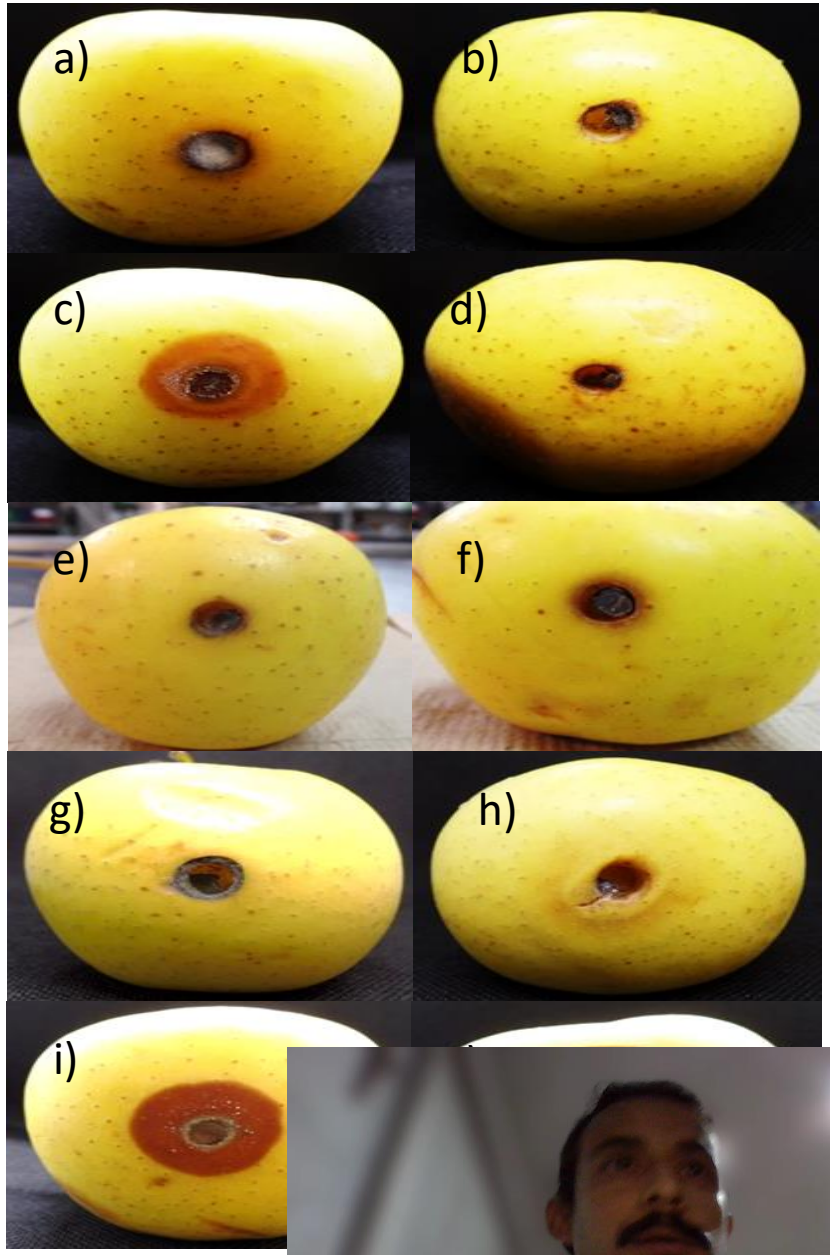
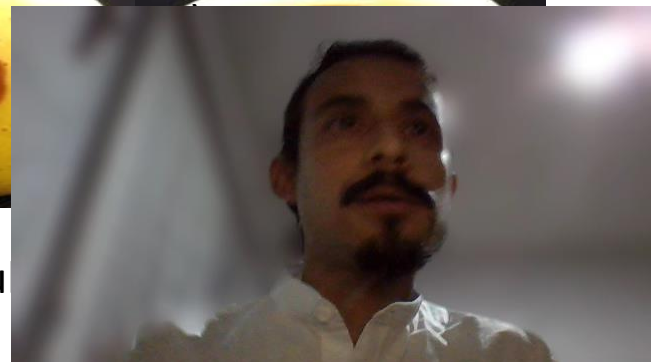
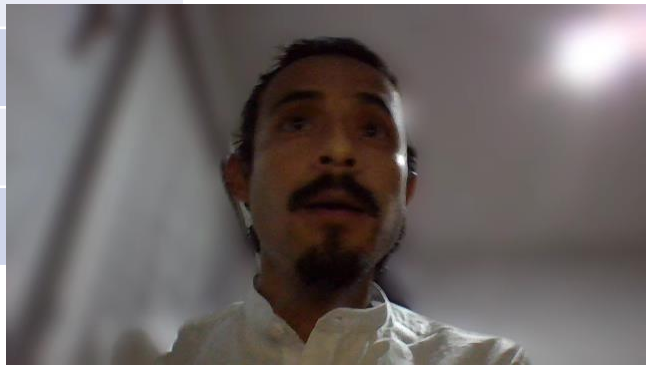


Figure 3. Inocu



Results

Isolate	Genus	Damage compared to control (%)
Positive control	Penicillium expansum	100
H8GDE3 2018	Alternaria	67.27
H4GDE3 2018	Aspergillus	29.22
H9GDE3 2018	Aspergillus	35.45
H10GDE3 2018	Aspergillus	48.06
H11GDE3 2018	Aspergillus	33.49
H2GDE3 2018	Cladosporium	22.63
H5GDE3 2018	Cladosporium	12.33
H7GDE3 2018	Cladosporium	60.48
H3GDE3 2018	Penicillium	59.13
H6GDE3 2018	Penicillium	100.95



Conclusion

- It was determined that various genera (Aspergillus, Alternaria, Cladosporium and Penicillium), ecologically associated with apple trees in the state of Querétaro, manage to cause considerable damage with respect to a common pathogen of the fruit (Penicillium expansum), which is also identified in the present isolates. In conclusion, the genera identified are considered as potential phytopathogens.

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