First report of *Fusarium falciforme* causing root rot and wilt on strawberry in Sinaloa, Mexico

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In Mexico strawberry production has great economic importance for the local and export markets as the country is the main strawberry supplier to the United States (SIAP, 2020). In 2022, strawberry plants with yellowing and wilting leaves, root rot and wilting, necrosis of vascular bundles and small fruits symptoms were observed in different commercial fields in the north-central Mexican state of Sinaloa, causing yield losses of about 10%. Typical *Fusarium* spp. colonies were recovered from all samples. They produced abundant white aerial mycelium with cream to orange pigment and branched septate hyphae (Fig. 1) (Leslie and Summerell, 2006). A total of 18 monosporic isolates were obtained by serial dilutions. The 18 isolates grown for 10 days on carnation leaf agar (CLA) produced hyaline microconidia with 0-2 septa, measuring 9.2 - 15.4 by 4.5 - 6. 5 µm (n = 40) and hyaline macroconidia with three septa that measured 28.4 - 53.5 by 4.5 - 9 µm (n = 40). Chlamydospores were not observed. A fragment of the translation elongation factor 1-alpha (EF1-α) gene was amplified by polymerase chain reaction (PCR) using the primer pair EF-1/EF-2 (O'Donnell et al. 1998) from two monosporic isolates. The sequences were registered in the NCBI GenBank under accession numbers OR878541 and OR878543 (FRESIN178 and FRESIN194). BLASTn queries of NCBI GenBank identified the sequences as *F. falciforme* with 98% and 100% similarity to accession numbers OQ262968 and DQ246941 respectively. Fusarium ID database also identified the sequences as *F. falciforme,* is a member of the *F. solani* species complex (FSSC). Phylogenetic analysis revealed the partial EF1 sequences grouped with *F. falciforme* (Fig. 2). A pathogenicity test was performed on thirty strawberry plants (cv. Cabrillo) grown in sterile vermiculite. The plants were inoculated by immersing roots in 20 mL of a conidial suspension (1×10^5 conidia/mL) of isolate FRESIN194. Twelve uninoculated plants served as the control. All plants were grown for 60 days under greenhouse conditions (28 to 35°C). The assay was repeated twice. After 50 days, symptoms of root rot and wilting leaves like those observed in the field were observed. Uninoculated control plants did not develop symptoms. The fungus was reisolated from necrotic tissues of the inoculated plants and identified as *F. falciforme* by sequencing the EF1-α gene and morphological characteristics, completing Koch's postulates. *Fusarium falciforme* has been reported as the causal agent of root rot, stem rot, and wilt of tomato, papaya, chickpea, onion, common bean, and maize in Mexico (Díaz-Najera et al. 2021, Douriet-Angulo et al. 2021, Felix et al 2022, Tirado-Ramírez et al 2018, Vega-Gutiérrez et al. 2019a, Vega-Gutiérrez et al. 2019b). To our knowledge this is the first report of *F. falciforme* causing root rot and wilt on strawberry in Sinaloa, Mexico. This result provides useful information for the development and implementation of disease control strategies to mitigate damage caused by *F. falciforme*.

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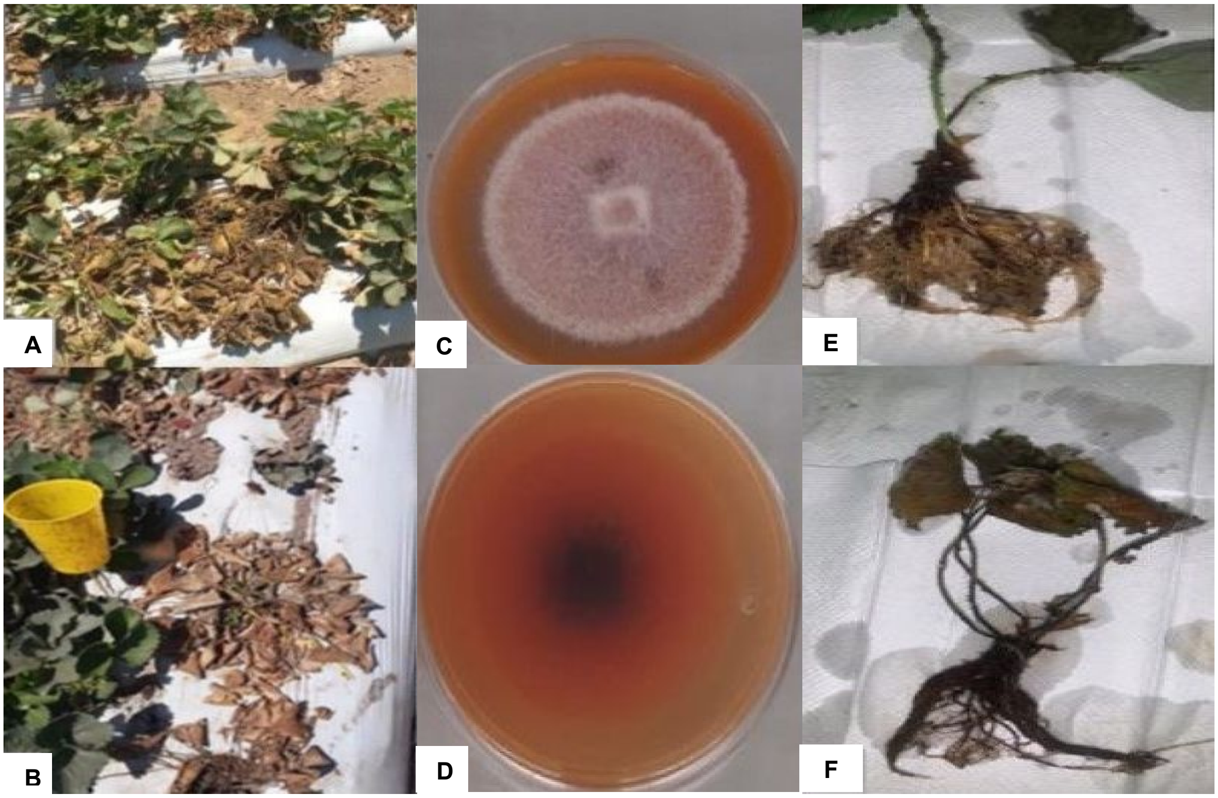

Figure S1. Strawberry disease symptoms caused by *Fusarium falciforme*. **A-B**, Drying and rotting of strawberry plants observed in the field. **C-D**, *F. falciforme* colonies grown on PDA culture medium. **E**, Control strawberry plant un inoculated. **F**, Strawberry plant inoculated with *F. falciforme* isolate FRESIN194 exhibiting necrosis and root rot.

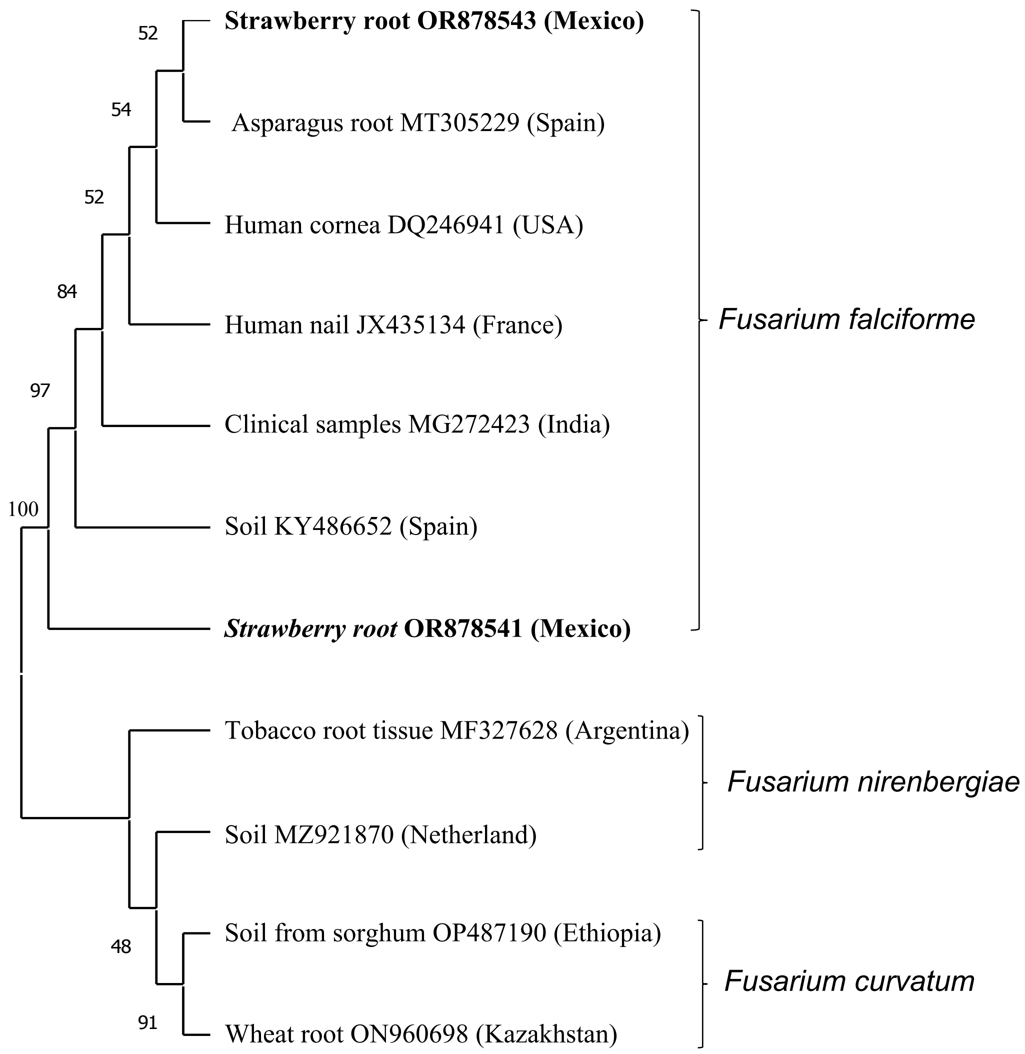

Figure S2. Phylogenetic tree inferred by Neighbor Joining of partial EF-1α sequences from *Fusarium* species. Values at the nodes represent the bootstrap support based on 1000 replicates. Sequences generated in this study shown in bold were aligned with those of three species in the *F. solani* species complex (FSSC) (**OR878541** and **OR878543**).