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First Record of *Leveillula alhagi* on Camelthorn (*Alhagi maurorum*) in Syria

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Camelthorn (*Alhagi maurorum*) is a legume which is used medicinally (Al-Snafi 2015) and has potential as a biopesticide against plant pathogens (Alrabaea 2018). In late July from 2019 to 2025, wild-growing camelthorn on the campus of Homs University in Syria exhibited symptoms of powdery mildew, in the form of thin, white fungal threads on upper and lower leaf surfaces which usually extended to the whole leaf (Figure 1A). The infected leaves curled upwards and became pale and yellowed, then dried out and turned brown (Figure 1B). At the end of autumn, the fungal mycelium emerged to the outer surface of the leaf and grew very densely on all parts of the plant, including the thorns, after which the sexual stage of the fungus developed (Figure 1C).

Infected leaves were gently rubbed onto sterile distilled water-moistened leaves of healthy camelthorn plants and were then covered with plastic bags for 48 h. Typical symptoms were produced on inoculated plants after 10 days. Morphological observations were made on these artificially inoculated plants. Microscopic examination ($n = 50$) revealed that the fungal conidiophores emerged from leaf stomata singly or in clusters. Conidiophores (100–160 µm in length), consisted of a cylindrical basal foot cell (Figure 2A), bearing a single conidium or short chains of two to three conidia (Figure 2B). Primary conidia were lanceolate and apically pointed, measuring (24) 37.5–57.5 (65) × (10) 12.5–15 (17.5) µm. Secondary conidia were ellipsoid to cylindrical, measuring 37.5–55 × 12–15 µm. Primary and secondary conidia had a rough, wavy surface (Figure 2C). Germination occurred in the region below the conidial apex, where the germ tube was longer than the spore (Figure 2D). Chasmothecia had a distinctive shape, almost hemispherical. The lower half (the part attached to the plant surface) was spherical, and thick, and appendages were densely formed on this part. The upper half was slightly concave with raised edges. Chasmothecia were completely covered with fungal mycelium which filled even the upper concavity of the fruit, leaving only the raised edges visible (Figure 3A,B). Mature chasmothecia formed in enormous numbers and were reddish-brown to black in colour, occurring in clusters and sometimes scattered. Their diameter was 150–230 µm. The number of asci ranged from 22 to 30 in each chasmocarp, the ascus was clavate, broad in the middle and stalked (Figure 3C,D), and measured 75–105 × 30–42.5 µm. Inside each ascus, ascospores ranged from (1-) 2 (-4) and were ellipsoid-ovoid in shape measuring 30–37.5 × 15–22.5 µm (Figure 3C). Based on these specifications and measurements and those reported previously (Braun 1987; Braun and Cook 2012; Abkhoo 2015), the fungus was identified as *Leveillula alhagi*.

L. alhagi has been reported to infect camelthorn in Iran and Uzbekistan (Abkhoo 2015; Mustafaev et al. 2023). Based on our knowledge and published information, this is the first record of *L. alhagi* infecting camelthorn in Syria.

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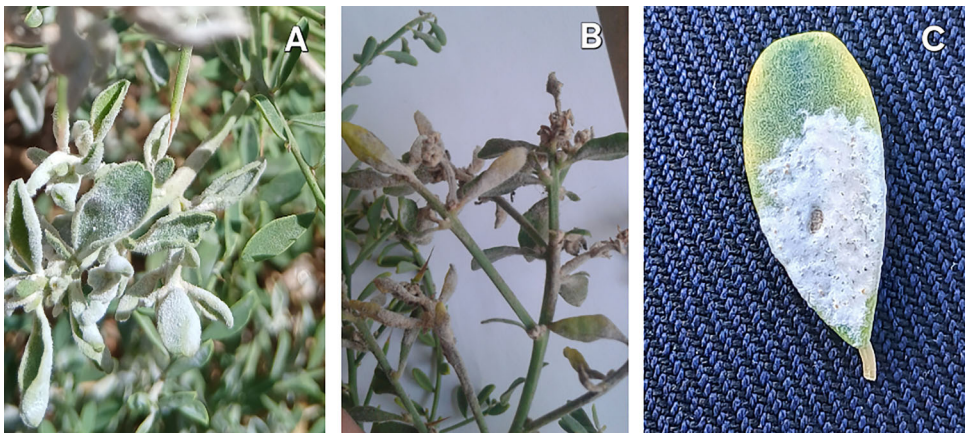


FIGURE 1 | Morphological characteristics of *Leveillula alhagi*: (A) symptoms of powdery mildew on the top of the plant, (B) yellowing and upward curling of infected leaves, and (C) the mycelium appears densely on the plant surface and the chasmothecia begin to form.



FIGURE 2 | (A) Conidiophore with basal foot cell (×1000); (B) conidiophores and conidia (×400); (C) secondary conidia with rough, wavy surface (×400); and (D) primary conidium germination (×400).

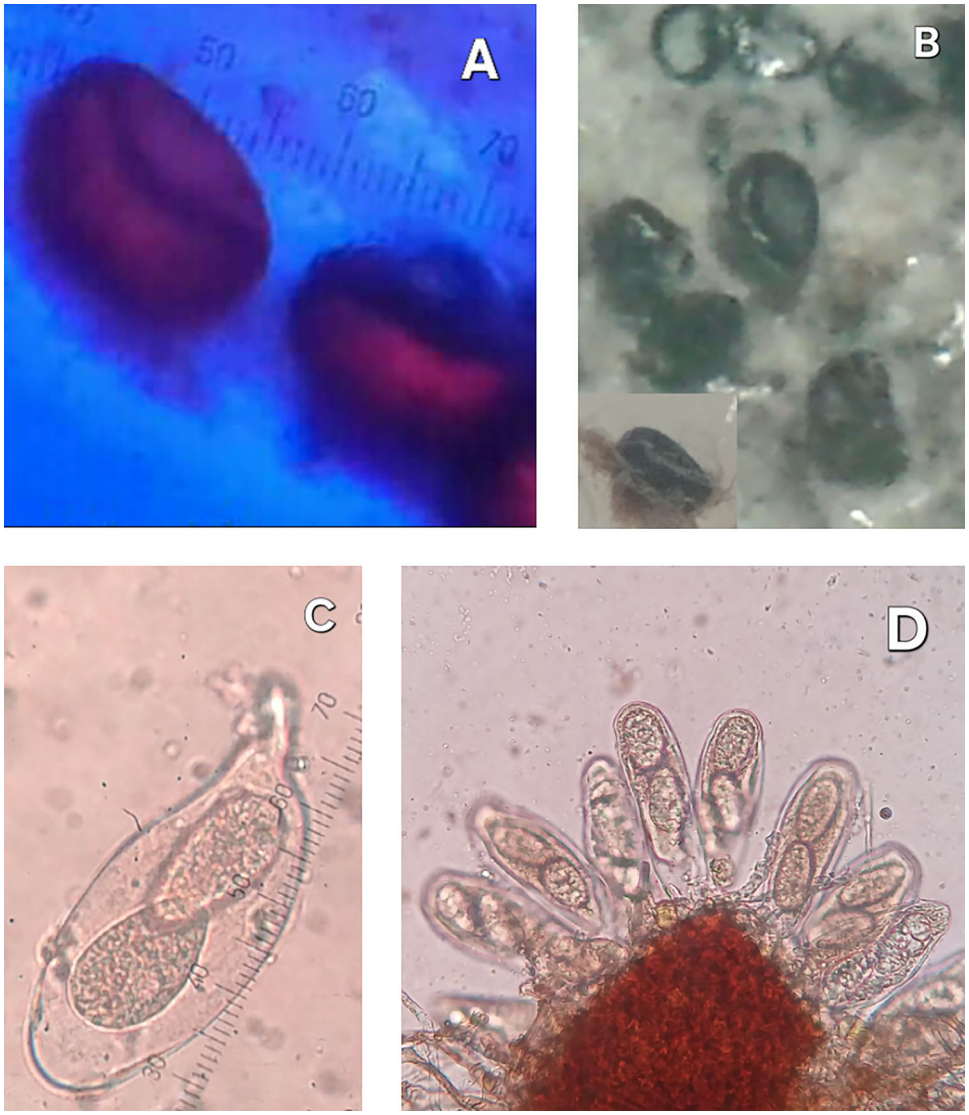


FIGURE 3 | (A) Chasmothecia (×100), (B) chasmothecia covered with fungal mycelium on the leaf surface, (C) ascus and ascospores (×400), and (D) opened chasmothecium and asci (×400).

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