



# First report of ashwagandha damping-off caused by *Rhizoctonia solani* Kühn AG - 2- 2 in Uttar Pradesh, India

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Ashwagandha (*Withania somnifera*) is cultivated commercially for glycowithanolides rich roots in India. In January 2016, symptoms of damping-off such as water-soaked, necrotic lesions on the basal stem were observed on ashwagandha seedlings, approximately 30%. Isolation was carried out from infected parts, cut into small pieces, surface sterilized with 1% sodium hypochlorite for 1 min, rinsed thrice with sterile distilled water, placed on potato dextrose agar (PDA) plates and incubated at 28 °C for five days. Pure fungal colonies were dark brown with abundant sclerotia, hyphae branch at right angles, with distinct constriction at the origin of branching, a septum near the originating point of the hyphal branch, and hyphae were multinucleate. The fungus was morphologically identified as *Rhizoctonia solani* Kühn (Sneh et al. 1991). The isolate showed a C2 type anastomosis reaction with tester strain *R. solani* Kühn AG 2 provided by Dr. Kuninga, Hokkaido, Japan (Carling 1996). The internal transcribed spacer (ITS) region was sequenced using universal primers ITS1/ITS4 (White et al. 1990). The sequence was deposited in GenBank with accession No. KX397678, blast analysis revealed 100% identity with a *R. solani* AG 2–2 strain (KF907728). Ashwagandha seedlings were grown in small earthen pots using autoclaved soil, 15 sclerotia were added/pot, while pots without inoculum served as a control. Both inoculated and

non-inoculated seedlings were kept in a glasshouse at 28 ± 2 °C with 80% relative humidity. The same symptoms as observed in field appeared within 2 days. Identification of the re-isolated pathogen using molecular technique and anastomosis reaction with tester strain as well as isolated pathogen fulfilled the Koch's postulates. The *R. solani* was earlier reported as epiphyte on ashwagandha (Krishnamurthy et al. 2008). To the best of our knowledge, this is the first report of damping-off caused by *R. solani* Kühn AG 2–2 on ashwagandha in Uttar Pradesh, India.

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