First report of *Rhizoctonia solani* AG 1-IB causing root and stem rot of kale (*Brassica oleracea* var. *acephala*) in Turkey

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Kale (*Brassica oleracea* L. var. *acephala*) has been commonly cultivated in the Ordu province, which is located in Turkey's Middle Black Sea Region. In a survey carried out in Çaybaşı district of the province in 2018, symptoms of damping-off and stem rot were observed in approximately 7% of the plants in only one of the 10 commercial fields examined. Infected plant tissues were superficially disinfected for 1 min in 1% NaOCl and transferred to Petri dishes containing Potato Dextrose Agar (PDA) amended with streptomycin sulfate. After 2 days of incubation at 25 °C in the dark, the growing fungal colonies were morphologically similar to *Rhizoctonia*-like fungi. The young hyphae of Rs-16 isolate from pure culture were 8.90 µm (7.5–10.25 µm) wide with 7.9 nuclei (3–11) per cell. The colony of the three-week PDA culture of the isolate was grayish-orange in colour and produced sclerotia, 0.65 mm (0.21–1.10 mm) in diameter, superficially dispersing on the culture. The identification of anastomosis group (AG) of the isolate was performed by sequencing of the internal transcribed spacer (ITS) region. The ITS sequence of the isolate (GenBank accession No. MT568768) was 100% identical to *R. solani* AG 1-IB sequence (AB122139) deposited in the GenBank. The isolate Rs-16 was deposited in culture collection of the Plant Protection Department, Faculty of Agriculture, Ordu University (Accession No:

ODU-ZRT 2020–0078). For pathogenicity assay, the roots of three-week-old seedlings of local kale cv. Karadeniz (six replicates) were inoculated with *R. solani* AG 1-IB-infested wheat kernels (Türkkkan et al. 2020). Seven days after inoculation, the seedlings infected with *R. solani* AG 1-IB showed symptoms of root and stem rot, while no symptoms were observed in non-infected control seedlings. The pathogen was re-isolated to fulfill Koch's postulates. To our knowledge, this is the first report of *R. solani* AG 1-IB causing root and stem rot of kale plants in Turkey (Farr and Rossman 2020).

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Research involving human participants and/or animals The authors declare that no human participants and animals were involved in this study.

Informed consent This manuscript is new and not being considered elsewhere. All authors have approved the submission of this manuscript.

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