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Short Communication

FIRST REPORTOF *Alternaria tenuissima* INCITING LEAF SPOT OF SORREL (*Rumex acetosa* L.) IN MAHARASHTRA, INDIA

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Rumex acetosa (L.) (sorrel) is belongs to family Polygonaceae. It is an indigenous English plant, common too in the greater part of Europe and in almost all soils and situations. The medicinal action of sorrel is refrigerant and diuretic, febrile disorders and in scurvy. In India it is cultivated as a medicinal and vegetable purpose throughout the year. Both the root and the seed were formerly esteemed for their astringent properties, and were employed to stem haemorrhage (Cooke, 1903). During October 2009 to January 2011 an extensive surveys was conducted in sorrel growing areas of Marathwada region of Maharashtra, India where diseased plants were found as a typical reddish spot on leaves, leaf spot variety in size for pinpoint up to 1 to 2 cm in diameter, typically lesions begin as small brown areas that enlarge to about 1 cm in diameter and dark colour spots with concentric rings were appeared. For the isolation of pure culture of fungal pathogen from infected leaf spot where surface sterilized with 1% $HgCl_2$ for 1 min and inoculated on Potato dextrose agar (PDA) and kept for incubation at 27 ± 2^0C in BOD incubator. After two to three days of inoculation, ash green colonies with whitish peripheral concentric rings are formed. Isolated fungus was identified as *Alternaria tenuissima* (Fries) Wiltshire (Simmons, 2007; Subramaniam, 1971). The initial microscopic observations revealed the conidiophores solitary or in groups, simple or branched, straight or flexuous, more or less cylindrical, septate pale or mid pale brown smooth with 1 or several scars upto 115 µm long 4-6 µm thick. Conidia solitary or in chains, straight obclavate, ellipsoidal tapering gradually to the beak, generally 4-7 transverse and 0-6 longitudinal septa. Total length of spores is 22-95 (54) µm, 8-19(13.8) µm thick in the broadest part and beak 2-4 µm (Fig., 1).

For pathogenicity test, isolates were grown on PDA for 7 days inoculation were done using detached surface sterilized on leaves of sorrel. A single drop (5µl) of spore suspension ($1x10^3$conidia/ml) was placed on each leaves. Leaves were incubated in humid growth chamber (80-90% relative humidity) for intensity with a photoperiod of 12h. After 8 days, leaf spots similar to the original symptoms were developed on all tested leaves and *A. tenuissima* was consistently re-isolated fulfilling Koch's postulates. Control leaves inoculated with sterilized distilled water remained symptomless. The fungal culture is deposited at CODON Life Sciences Goa and Department of Botany, Arts, Science and Commerce College with ASCNFC-34.

For correct identification of *A.tenuissima,* internal transcribed spacer (ITS) region of rDNA was detected and the original isolate used for inoculation & re-isolated culture recovered from leaves in the pathogenicity studies were amplified with polymerase chain reaction(PCR) using primer ITS1 and ITS4 (White et al., 1990).PCR amplicons of approximately 540 bp were obtained. Sequences of rDNA-ITS were obtained and comparisons with GeneBank showed 98% similarity with *A.tenuissima* (Accession No.AY751455). Sequences of amplicons were identical and the sequence was submitted to GenBank (Accesssion No.JQ417902).There are reports of *A.tenuissima* causing disease on blueberry & pepper in China, but there is no previous report of the pathogen on sorrel plants (Luan et al. 2007; Li et al. 2011). It is a first record on sorrel in Maharashtra, India.

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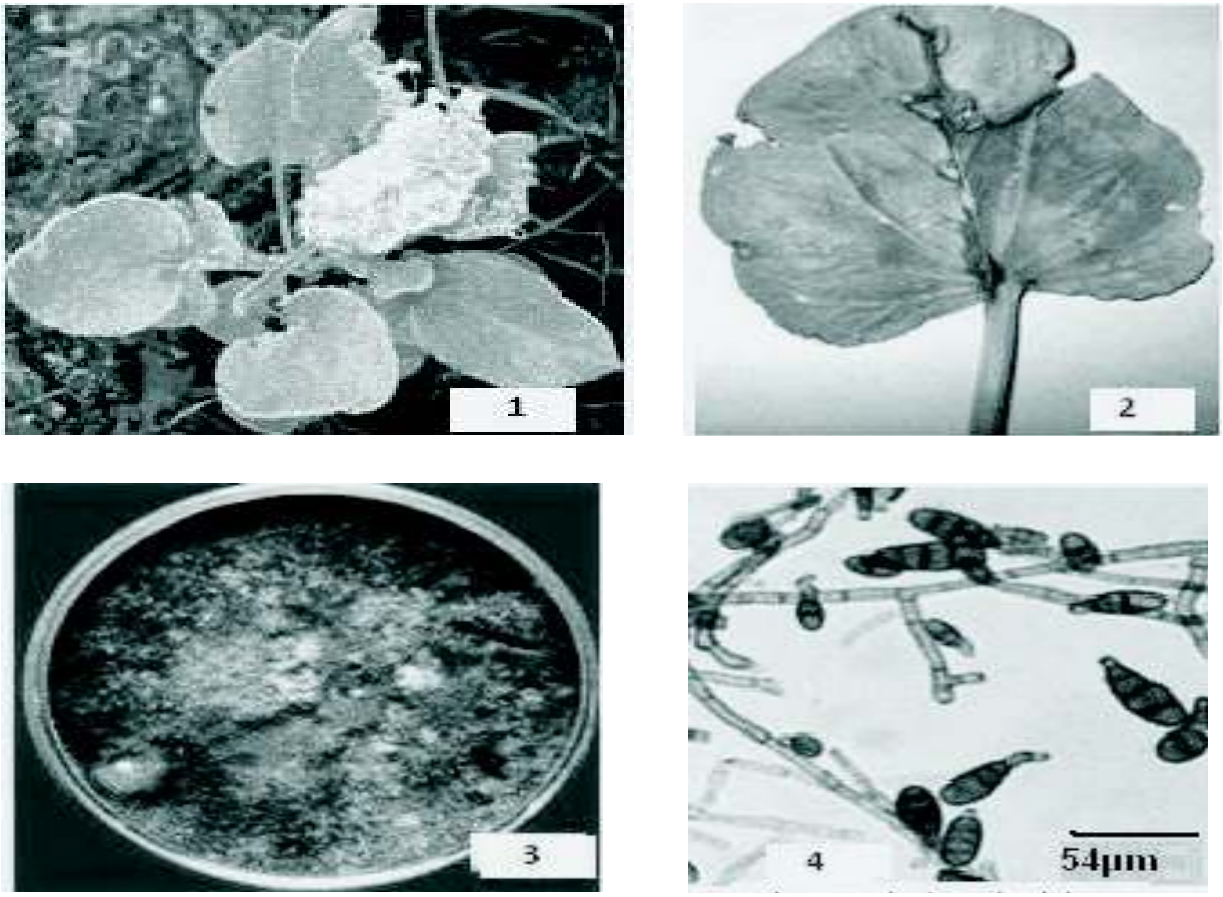
Figure 1: Symptoms of *Alternaria tenuissima* inciting sorrel, (1) Healthy leaves (2) infecetd leaf (3) Culture Plate (4) Microphotograph (Bar = µm)



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