NEW RECORDS

Fusarium wilt of bitter gourd

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During September 2001, bitter gourd plants showed yellowing, wilting of the roots and brownish vascular discolorations. Isolation from infected roots showed the presence of *Fusarium oxysporum*. Pathogenicity of the fungus was proved by Koch postulates and the culture has been deposited at IARI as ITCC No.5544-03.

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Colletotrichum blight- a new disease of bitter gourd

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Bitter gourd (*Momordica charantia* L.) is one of the most popular cucurbitaceous vegetables grown extensively all over the country. The crop was found to be severely infected with a blight disease during 1998-1999 and 1999-2000 around Ranchi, Jharkhand. Disease intensity varied from 37-75% in different areas. Symptoms appeared on leaves as circular to irregular lesions from the margin or top. These lesions gradually increased. Some times these lesions coalesced and became dark brown in colour. Severely infected leaves withered and defoliated. The mature fruits showed small irregular pale yellow lesions and caused rotting of fruits. Light brown to black necrotic lesions were formed on petioles. The fungus was identified as *Colletotrichum capsici* (Syd.) Butler and Bisby on bitter gourd as a new host record.

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Root rot of Isabgol

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Severe root rot disease of isabgol was observed during October to December 2002 in Saurashtra region of Gujarat. Whitish fungal growth was observed on infected plant roots and severely infected plant died. The fungus was isolated. The pathogenecity was proved on healthy plants and the fungus was identified as *Sclerotium rolfsii* (ITCC No. 5543/03). The occurrence of root rot (*Sclerotium rolfsii*) on isabgol is a new record.

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Verticillium albo-atrum – a new pathogen associated with guava wilt

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Guava (*Psidium guajava* L.) is widely acclaimed as a major fruit crop of India. The wilt disease of guava was first reported as early as in 1952 from Allahabad. This disease is spreading fast in the area and resulting in rapid decline in guava cultivation. An extensive survey was conducted during 2001-2003 covering all the major guava growing areas of Allahabad and Kaushambi district of Uttar Pradesh. Two fungi, *Fusarium oxysporum* f.sp. *psidii* and *Verticillium* sp. were
found associated with the wilted trees. While the association of former with guava wilt has been reported earlier but the involvement of *Verticillium* sp. with guava wilt appears new. Pathogenicity tests with *Verticillium* sp. were conducted by inoculating the fungus on healthy guava plants by stem hole inoculation technique, in nursery. The inoculated plants showed typical wilt symptoms within 30-90 days of inoculation. The fungus was re-isolated and identified (ITCC No. 5471) as *Verticillium albo-atrum*.

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**Structure of a replication initiator protein of *Tomato leaf curl virus***

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The complete nucleotide sequence of the replication initiator gene of a white fly transmitted *Tomato leaf curl virus* (IARI, New Delhi isolate) (ToLCNDV-IARI) was determined. The 1086 nucleotide ORF encodes a 361 amino acid polypeptide (Rep), having three functional domains responsible for DNA-binding (residues 1-181), cleavage (residues 1-120), and oligomerization (residues 121-181). Extended alignment of the ToLCNDV-IARI Rep amino acid sequence with those of other viruses causing the disease revealed the conservation of sequence within two α helices involved in catalytic activity of the protein, three motifs (also found in other rolling circle replication initiators) and the P loop involved in ATP-binding (found in all ATP/GTP-binding proteins). The 3D structure of N-terminal DNA-binding domain of the Rep of ToLCNDV-IARI has been modeled. The secondary structure of this domain is composed of six β sheets and two α helices joined by loop regions. The modeled tertiary structure reveals the presence of a cleft which contains the active site and the residues involved in specificity determination of the Rep for its cognate DNA.

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