Two new leaf spot Diseases of Economic plants from India

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The paper deals with two new leaf spot diseases of *Phaseolus mungo* L. and *Celosia cristata* L. from India.

(1) Leaf spot Disease of *Phaseolus mungo* L.

Phaseolus mungo L., locally known as *'Mung'* is an important pulse crop grown extensively in this country, which fetches good profit. During the monsoon months of 1961 and 1962, a wide-spread and severe leaf spot disease of this valuable crop was noticed in many agricultural farms at Poona (India) causing great damage. An examination of the diseased lesions revealed the presence of abundant pycnidia with filiform septate hyaline pycnidiospores, characteristic of the genus *Septoria* Sacc.

In early stages the symptoms are characterised by the appearance of numerous small, pale-brown, circular to angular spots (generally two to eight mm. in diameter), on both the surfaces of the leaves, Whit age, these spots increase in size and the colour changes to brick-red with a typical pale purple central zone. These areas later on develop minute, black, scattered, fruiting bodies of the causal fungus i. e., the pycnidial mass. In severe case of attack together with high humidity of the atmosphere, the leaves show innumerable spotting by the causal organism. As such, they shrivell and gradually dry up, resulting in reduced vigour and out-turn of the yield. In general, the crop exhibits a blighted appearance finally.

Hyphae light brown, branched, septate, slightly constricted at septa, measure 2.5—7 μ in thickness. Pycnidia typically dark, deep-seated in the host tissue, epiphyllous, scattered to gregarious, sub-erumpent, thick-walled, spherical to globose with a broad ostiole, ostiole being deeply marked with dark band of tissue, measure 88.2—151.2 μ in diameter. Pycnidiospores hyaline, 2—4 septate (mostly 4-septate), filiform, straight to slightly curved, flexous, rounded at both the ends, measure 19—54.6 μ in length and 2.2—3.2 μ in breadth.

On the basis of the above general morphological characters, dimensions of pycnidia and pycnidiospores including the host relationship (the present host being a legume plant), the fungus was identified as *Septoria leguminum* Desm. (Sacc. 1884). The disease herein reported constitutes a new record not previously described.

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(2) Leaf spot Disease of *Celosia cristata* L.

Celosia cristata L. popularly known as 'Cock's-comb' is a favourite garden plant for its brilliant-coloured feathery, delicate plumules and is commonly grown in many gardens of India. A severe leaf spot disease of this valuable horticultural plant was encountered by the writer during the monsoon months of 1962 and 1963 at Poona (India). The infection was noticed mostly on the lower leaves compared to the upper ones. Laboratory examination of such diseased lesions revealed the presence of abundant black acervuli with long setae and sickle-shaped conidia, which determined the pathogen to be a sp. of *Colletotrichum* Corda. The infection was subsequently found passing on to a number of valuable horticultural varieties.

The disease starts in the form of small, brown, circular to irregular necrotic areas on any part of the leaf lamina, more commonly on its margins or tips. The spots gradually increase in size and cover an appreciable area of the leaves. These spots later on turn dark brown with a slight ash-coloured centre, bearing few minute black dot-like fruiting bodies of the fungus i. e., the acervuli. Sometimes, spotted areas at later stage drop off leaving perforations or shot-holes.

Hyphae slender, cream-coloured, branched, septate, both inter and intra-cellular, measure 3.2—6 μ in width. Acervuli sub-erumpent, dark-brown, circular to globoid, scattered or gregarious over the surface, covered with few setae, measure 50.6—184 μ in width. Setae pale-brown, thick-walled, unbranched, septate (2—4), slightly pointed at the tips, few gently curved, measure 42—190 μ in length and 5.3—7.4 μ in breadth. Conidiophores short, simple, cylindrical, hyaline, packed in rows. Conidia falcate, hyaline, pointed at both ends, granular, non-septate, produced abundantly in gelatinous mass, measure 16.5—27.3 × 4—5.4 μ.

The fungus under study was identified as *Colletotrichum capsici* (Syd.) Butler & Bisby, on the basis of gross morphological characters, dimensions of acervuli, setae and conidia. The disease appears to be a new one.

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Reference

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