

Studies on *Elsinoë* and *Sphaeceloma* Diseases of Plants in Maharashtra State (India) — VII.

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Previous studies by the authors on species of *Elsinoë* and *Sphaeceloma* in India revealed that these fungi are well represented in Maharashtra. Several new species and new records were described, some of them being on important economic hosts. In the present studies *Sphaeceloma* species on members of the Sapotaceae in Maharashtra are recorded, which include two new species, and one new record for India. *Elsinoë lepagei* which parasitises leaves and young fruits of *Achras sapota* was previously known only from South America. Types of the new species have been deposited in the mycological collections of the Bureau of Plant Industry, Beltsville, Maryland (B. P. I.), and in Instituto Biologico Sao Paulo, Brazil (S. P. B. I.). The authors wish to record their deep gratitude to Dr. Anna E. Jenkins, and Dr. A. A. Bitancourt for help in writing the paper and valuable suggestions.

1. Anthracnose disease of *Achras sapota*.

Achras sapota L., is extensively cultivated for its fruits all over the state of Maharashtra and Gujarat. Plants are generally propagated by seedlings, raised from seeds or cuttings in nurseries. Most of the varieties in the State are imported ones. Plants, as well as the seedlings from several localities were observed to be severely infected by spotted anthracnose disease. In the type symptoms produced and other morphological characters the pathogen appears to be identical with *Elsinoë lepagei* Bitanc. & Jenkins, described from South America on the same host. However during investigations only the conidial stage of the pathogen was observed and is recorded for the first time for India, the description of the follows:

Elsinoë lepagei Bitanc. & Jenkins.

Infection spots foliiculous, numerous, small, isolated, scattered all over the lamina, very often form larger patches by coalescing with one another in the areas of aggregation, 0.5—3 mm in diameter. Individual spots raised, epiphyllous, leaving a dark contour on the back

surface of the leaf, circular to irregular with dark brown margin and yellowish-white depressed centre. Acervuli numerous, scattered all over the areas of aggregation as also in the individual spots, microscopically intraepidermal, to subcuticular, erumpent, ovate to pyriform, $24\ \mu$ to $37\ \mu$ high and $32\ \mu$ to $69\ \mu$ broad, basally lined with pale yellow pseudoparenchyma, producing large number of conidiophores. Conidiophores compactly grouped in heaped up form, light brown, septate, $4.5\ \mu$ to $12\ \mu$ long and $3\ \mu$ to $4.5\ \mu$ broad. Conidia not seen in the specimen material.

Habit: On leaves of *Achras sapota* L. Manmad 15th September, 1963, Leg. D. D. Wani.

2. Spotted anthracnose disease of *Madhuca indica*.

Madhuca indica Gmel. is widely distributed all over South India. It is of great economic importance, since it yields many useful products. Anthracnose spotting of the host was discovered in many different localities. The pathogen in association with the leaf rust *Scopella echinulata* (Nissel) Mains, incite a severe damage to the host. This spotted anthracnose, the first to have been recorded on *Madhuca* has not been reported heretofore. The description of the pathogen as a new species of *Sphaceloma* follows:

Sphaceloma madhucae Wani and Thirum. Sp. nov.

Maculae in foliis plures, griseo-roseae, dispersae, coalescentes, epiphyllae, areas fuscas in pagina inferiore efficientes, 0.5—3 mm diam, in surculis crustas formantes, circulares vel irregulariter angulares, paulum excavatae. Acervuli fusco-brunnei, ovoidei vel ellipsoidei, subcuticulares erumpentes, 33—70 μ diam., 17—42 μ crassi. Conidiophora cylindrica, aggregata, 2—3 septata paulum convergentia, apice obtusa, conidia unicellularia, hyalina, globosa vel ovoidea, 1.5—3 \times 3—4.5 μ .

In foliis et surculis *Madhucae indicae* Gmel. — Law College hill 10 January, 1958 (Typus) Leg. D. D. Wani Katraj ghat 24 February, 1959; Jalagon 17 March, 1959, Khandala 24 October, 1962. Leg. D. D. Wani. B. P. I. No. 91572 S. P. I. B. No. 10129

Anthracnose spots on leaves and tender shoots. On leaves the spots are numerous, small, scattered all over the lamina, very often coalescing with one another in the areas of grouping forming larger spots, epiphyllous leaving a dark mark on the back surface of the leaf, 0.5—3 mm. in diameter. Individual spots circular to polygonal, wax white centre surrounded by a deep brown margin, 0.5—2 mm in diameter. On young shoots the spots are prominent, raised, closely grouped forming hard crusts. Acervuli prominently seen in the areas of aggregation, deep brown, intraepidermal, erumpent, elliptic to spreaded, 33—70 μ broad and 17—42 μ high. Conidiophores erect, cylindrical,

compactly grouped in palisade, septate with 2—3 transverse septa, 6—12 μ long and 3—6 μ broad. Conidia unicellular; oval to elliptic, 1.5—3 \times 3—4.5 μ .

3. Scab disease of *Sideroxylon tomentosum*.

Sideroxylon tomentosum Roxb. is commonly found in moist deciduous and evergreen forests of South India. Species of *Sphaceloma* causing leaf spotting of host was first discovered from Koyana Valley. From subsequent dates of collection of the pathogen it was apparent that the infection is abundant in months of November—December and remains upto April. This disease on a new suscept for *Elsinoë* or *Sphaceloma* has not been reported previously. Under circumstances just mentioned, it seems in order to recognise the pathogen *Sphaceloma*, of the disease under discussion, as a new species, the description follows:

***Sphaceloma sideroxylonis* Wani and Thirum. Sp. nov.**

Maculae raras, foliicolae, plerumque secus nervum medium vel dispersae, epiphyllae, areas fuscas in inferiore foliorum pagina, paulum elevatas, circulares vel oblongas, margine incrassatas fusco brunneas, 1 to 4 mm. diam formantes. Acervuli plures punctiformes, intraepidermales, erumpentes, pallide brunnei, 10—21 μ crassi, 27—39 μ lati. Conidiophora e basi pallide lutea orta, aggregata, antice obtusa, 4,5—6 \times 3—4.5 μ . Conidia non visa.

In foliis *Sideroxylonis tomentososi* Roxb. Koyana Valley 12 April, 1958 (Typus) Leg. D. D. Wani, 18 March, 1959; 24 November, 1960; 29 January 1962. Leg. D. D. Wani. B. P. I. 91551 S. P. I. B. No. 10108.

Infection spots few foliicolous, blackish-brown, mostly restricted along veins and veinlets, epiphyllous leaving dark area on the back surface of the leaf. Individual spots slightly raised, circular to oblong with thick blackish-brown margin and small "wood ash" centre measuring 1 to 4 mm. in diameter. Acervuli numerous, appearing macroscopically as dark raised blunt heads in the centre of the individual spots; mostly intraepidermal but appear subcuticular after erumpence; dark brown, 10—21 μ long and 27 to 39 μ broad. Conidiophores produced from basal stroma, crowded in heaped up form with blunt apices, 4.5 to 6 μ long and 3 to 4.5 μ broad. Conidia not detected in the specimen material.

References

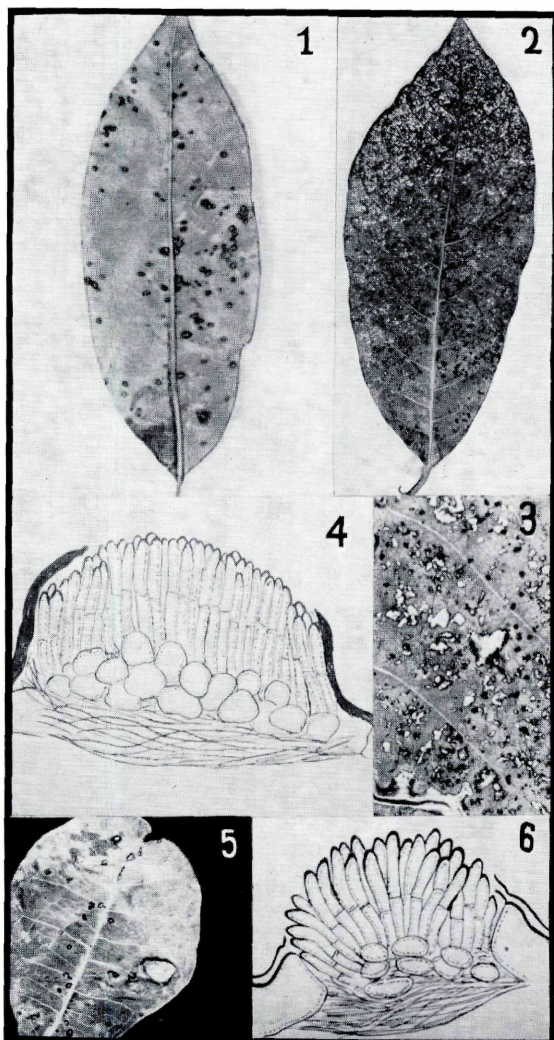
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*) (Colours as per Dictionary of colour by Maerz and Paul).

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Explanation of Plate I.

Fig. 1. Showing infection of *Sphaceloma lepagei* on *Achras sapota* × nat. size. — Fig. 2. *Sphaceloma madhucae* on *Madhuca indica* × nat size. — Fig. 3. Enlarged view of infection spots on *M. indica* × 10. — Fig. 4. Acervulus of *S. madhucae* × 500. — Fig. 5. *Sideroxylon tomentosum* with *Sphaceloma* infection × nat. size. — Fig. 6. Acervulus of *Sphaceloma sideroxylonis* × 600.



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