SHORT COMMUNICATION

Occurrence of Leaf blight of Roselle (*Hibiscus sabdariffa* L.) in West Bengal

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Occurrence of Leaf blight of Roselle (*Hibiscus sabdariffa* L.) in West Bengal

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Incidence of Leaf blight of Roselle (*Hibiscus sabdariffa* L.) caused by *Phyllosticta hibiscini* has been recorded in alarming proportion at Barrackpore, West Bengal, India during September, 2014. The pathogen mostly infect the plant from the margin of the leaf and progress towards vain and petiole causing blighting of leaf which is favoured by high humid/rainfall condition. Under dry condition, the symptom restricted and black pin head like pycnidia developed on the infected surface. The pathogen was isolated in PDA media which produce highly branched hyaline mycelia with black dot like pycnidia hearing profuse hyaline, single celled, elliptical conidia. Chlamydospore are also produced in the culture media. Using the same culture bit, pathogenicity test by detached leaf technique was proved.

Key words: *Hibiscus sabdariffa*, roselle, leaf blight, *Phyllosticta hibiscina*

Roselle is an important bast fibre crop commercially grown in Andhra Pradesh, Odisha and West Bengal. It is also used as vegetable (young leaves), medicinal purpose (leaves and fruits), preparation of jellies (calyces), beverage, preservatives in various parts of the country (Singh, 1997). In many African countries it is used as diet (Wilson and Menzel, 1964; Amusa *et al.* 2001). Literature revealed that studies are mostly confined to the important diseases like foot and stem rot (FSR) (*Phytophthora parasitica* var. *sabdariffae)* and Sclerotinia stem rot (*Sclerotinia sclerotiorum*) (Sarkar and Gawande, 2016). Being a minor disease, very little information are available on leaf blight of roselle (P*hylosticta hibiscini*). But in present day condition occurrence of leaf blight is a regular phenomenon in mesta growing areas of West Bengal. Although the disease is not affecting the fibre productivity but other leaf-based uses such as vegetable and medicinal purpose are greatly affected. Under this background studies on the disease are conducted at research farm of Central Research Institute for Jute and Allied Fibres, Barrackpore, Kolkata.

The roselle (cv. HS 7910) was sown on last week of May, 2014 at Central Research Institute for Jute and Allied Fibres, Barrackpore (88.43^{0}E and 22.75^{0}N) and grown with normal package of practice and observed for appearance of disease. The pathogen was isolated aseptically from the margin of the infected leaf (2 mm bit) on PDA media incubated at 28±1^{0}C and observation was recorded at 24 h interval. On 4th day the isolated culture was observed under compound microscope, characteristics structures were recorded and measured by calibrated oculometer. Pathogenicity test was conducted by 'detached leaf techniques' using the 5 day old culture bit (2mm diameter) of isolated pathogen. The healthy leaf was surface sterilized and placed water soaked blotting paper kept on petriplate (14 cm diameter). The culture bit was placed on pin punctured leaf surface and incubated in BOD at 28±1^{o}C. For comparison, control plate was maintained where only the bits of PDA media was used. Observation was made at 24 h intervals.

The crop symptom of the disease starts as discoloured water soaked area mostly from the margin of leaf which increased towards inward direction and infect the petiole, through which it moves towards the stem (Fig.1 F,G). The infected

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leaf and petiole started yellowing and finally fall off (Fig.1E). The infection spread very fast under high humid and rainfall and plants become defoliated. Under dry condition the infection become restricted and dark /black coloured dot like pycnidia developed on the leaf (Fig.1 H).

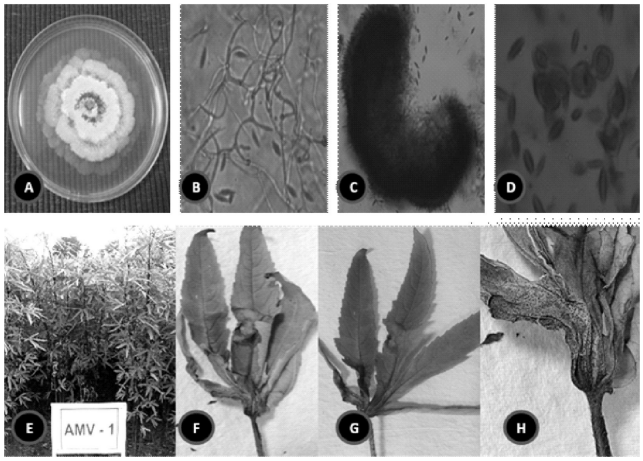

Fig. 1 : A Plate culture of *Phylosticta* (72h), B= mycelium, C= pycnidia with conidia, D= chlamydospore and conidia, E= field view of symptom, F and G = closer view of infected leaf ,H= dot like black pycnidia on infected leaf (magnification-40x)

The pathogen (*Phyllosticta hibiscina*) was isolated from the infected leaf in PDA medium using standard protocol of isolation. White coloured colony with distinguished ring like zones was developed with formation of black coloured dot like pycnidia within 72 hours at 28±1°C (Fig.1 A). Microscopic study revealed profuse hyaline highly branched (mostly dicotonomous) mycelia of 4-6µ (Fig.1 B). Numerous dark/black coloured pycnidia (A) was noticed in the PDA media that produced hyaline elliptical, mostly single celled conidia measuring about 8-12 µ (Fig.1 C), circular thick walled chlamydospores were also notice under the microscope (Fig.1 D).

The appearance of the symptom started after 36h of incubation, progressed rapidly and within 120 hours, 50% of the leaf area is infected with identical symptoms as observed in the field. No symptoms was observed in control plate. The plate with dry blotting paper produce no symptoms at all. Re-isolated pathogen from the artificially infected leaf was found identical with culture isolated from diseased part.

Literature revealed that the disease was first reported from Nigeria (Amusa, 2004). The above observations are in conformity with Amusa *et al.* 2001 and Amusa, 2004.

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