



STATUS OF KENAF (*HIBISCUS CANNABINUS* L) DISEASES IN THE DISTRICTS OF NORTH EASTERN PLAIN ZONE OF UTTAR PRADESH

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Abstract

The incidence and survey of different diseases were worked out during 2009-10 and 2010-11 under natural disease pressure and observed that leaf mosaic (*Begomovirus*) was more severe followed by foot and stem rot (*Phytophthora parasitica*). The results indicated that over all incidence of leaf mosaic ranged from 65.66% (Bahraich) to 68.72% (Balrampur) whereas foot and stem rot ranged from 13.60% (Shravasti) to 16.36% (Gonda).

Key words: *Hibiscus cannabinus*, diseases, foot and stem rot, leaf mosaic.

Introduction

Kenaf (*Hibiscus cannabinus*) a herbaceous annual plant similar to jute is quite popular in the western world because of its eco-friendly nature. It has high biological efficacy and ecological adaptability and can absorb CO₂ and NO₂ 3-5 times faster than forests and its deep roots can improve the soil. The plant has an ideal blend of long and short fibers for many paper and paperboard products (Grower, 1989). It has been cultivated and used as cordage crop to produce twine, rope, gunny bags and sackcloth for six millennia (Charles, 2002) *Cannabinus* bark (bast) and core fibers each have desirable qualities. Bast fibers are used for specialty papers, tea bags, and grass mats (biodegradable mats impregnated with grass and/or flower seeds). The bast fibers may also be used as a fiberglass substitute, blended with plastic, or blended with cotton for fabrics. Core fibers are currently being marketed for animal bedding, cat litter, poultry litter, as an extrusion aid in plastics, an industrial absorbent (oil spill cleanup), a filter medium for fruit juices, as an additive in drilling mud and in "lite" bread dough, and for manufacture of particleboard (acoustic tiles) (Ramaswamy and Boyd 1994; Sellers et al., 1993; Taylor, 1992).

It is grown in north eastern plain zone in U.P. as mixed crop with pigeon pea, maize, sesamum, urd, paddy and sugarcane crop or as border and its area gradually increased due to increased frequency of droughts. The area is mostly under local varieties and it is approximately 10,000 hectare each in Bahraich and Gonda, approximately 5,000 each in Shravasti and Balrampur but there is no report of its cultivation in statistical record of the State Government.

Kenaf suffers from a number of constraints in north eastern districts of U.P. Among these constraints, availability of quality seed and plant diseases plays a major role in poor productivity of the crop. However, due to change in cropping system and different agro-climatic conditions, the status of disease scenario in kenaf is also changing. The diseases from which crops suffers are Anthracnose (*Colletotrichum hibisci*), tip rot (*Phoma* spp.), root rot/color rot (*Rhizoctonia bataticola* alone or in combination with *Fusarium oxysporum*), eye spot (*Myrothecium roridum*), foot and stem rot (*Phytophthora parasitica*) and yellow vein mosaic disease (*Begomovirus*). The pathogens can damaged the crops and shrivel seeds within the pods or kill the pod stalk before seed formation. Incidence and severity of different diseases were worked out under natural disease pressure in different districts of North Eastern Plain Zone of U.P.

Materials and Methods

The study on diseases of mesta was conducted in north-eastern tarai zone of Uttar Pradesh, mainly in Bahraich, Shravasti, Balrampur and Gonda district during the cropping season of 2009-10 and 2010-11. In each district three blocks and at each block three villages were selected under study. At each site three fields were randomly selected and in each field data were recorded in 2m x 2m and overall district wise per cent disease incidence (PDI) were calculated. The diseases under study were anthracnose, tip rot, root rot, collar rot, foot and stem rot and yellow vein mosaic disease.

Results and Discussions

The incidence and survey of different diseases were worked out under natural disease pressure and was observed (Table 1) that leaf mosaic (*Begomovirus*) was more severe and its incidence (percent of plants showing symptoms over total number of plants screened) was higher (68.72%) in Balrampur followed by Shravasti (67.79%) and lower incidence 65.66% was in Bahraich. Similar finding was also observed by Ghosh *et al.*, 2007. It was also observed that foot and stem rot ranged from 13.60% (Shravasti) to 16.36% (Gonda), root rot 18.31% (Bahraich) to 22.26 % (Gonda), collar rot 11.62% (Bahraich) to 22.33% (Balrampur), Tip rot 12.01% (Bahraich) to 13.06% (Gonda) and Anthracnose 0.68% (Shravasti) to 0.85% (Gonda). Similar studies were done by Vawdrey and Petersone (1990).

A fairly wide distribution of diseases was attributed to continuous cultivation of *H. cannabinus*. The climatic condition of north eastern plain zone of Uttar Pradesh also favoured the disease incidence. The preliminary random survey provides base line data about the disease distribution on kenaf crop.

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Annexure

Table 1: Percent disease incidence in mesta in different mesta growing areas of Bahraich, Shrawasti, Gonda and Balrampur

District	% incidence of diseases (mean of two years)					
	Anthracnose	Tip rot	Root rot	Collor rot	Foot and stem rot	YVMD
Bahraich	0.75	12.01	18.31	11.62	14.72	65.66
Shrawasti	0.68	12.73	20.23	11.77	13.6	67.79
Gonda	0.85	13.06	22.26	12.01	16.36	66.76
Balrampur	0.78	12.26	19.39	12.33	14.48	68.72