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Disease Scenario of Mango in Andhra Pradesh

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ABSTRACT

Mango, the king of fruits is one of the most popular fruit. A systematic survey of mango orchards in Krishna Godavari zone of Andhra Pradesh was conducted during the crop season from 1999-2000 to 2007-08. It was observed that mango is affected by a number of diseases at all stages of its growth right from leaf to the fruits in storage or transit. Major yield losses were due to fungal diseases viz., *Anthracnose* leaf spot, red rust, bacterial leaf spot, powdery mildew, fruit rot and *Diplodia* blight. Of all the diseases Anthracnose disease has major importance and manifest it self as leaf spot , blossom blight and fruit rot and the Per cent Disease Index (PDI) ranges from 1.4 to 37.56. Red rust and bacterial leaf spot diseases recorded in almost all years in moderate to severe form while the powdery mildew disease incidence was in traces only.

Key words : Disease scenario - Mango

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Mango crop in the tropics, adapted to wide range of soils, climate and altitudes, is relatively easy to cultivate. It plays a vital role in supplementing the diets of millions of people throughout the world. One medium mango (200 g) provides more than daily requirement of vitamin A of an adult and about three fourth requirement of Vitamin C (Annon.1992). India ranks first with an area of 16,00,000 ha and production of 1,80,00,00 tonnes (Annon. 2005) Mango alone occupies 22.05 per cent of the 55.68 lakh ha area under fruits in India (Varma, 1998). In India the mango marketing season is April - June, but it is produced round the year in other countries, especially Brazil, Mexico, Pakistan, South Africa, USA and so, these countries have emerged as strong competitors to India in the International trade of mango. The Indian export of mangoes is largely confined to cultivar Alphanso (about 90 per cent). Efforts are being made to export cultivars, Banganapalli, Suvarnarekha and Chausa.

In A P different varieties are growing and the main track for mango cultivation is under two areas. One of it is Nuzivedu and surrounding mandals of Krishna district and the other is Ulavapadu and surrounding mandals of Prakasam district.

Banganapalli, Peddarasam, Chinarasam, Jalal, Totapuri and cherukurasam are popular varieties grown in Krishna district of Nuzivedu area, where as Banganapalli, Suvarnarekha, Neelum, Dashehari etc are grown in Prakasam district of Ulavapadu area. It has been observed that orchardists are active in their orchards only when flowers or fruits are present on the trees and they are practicing indiscriminate use of pesticides for the management of insect pest and diseases. In order to avoid this situation, systematic survey of orchards was conducted during mango season from 1999 to 2008.

MATERIAL AND METHODS

During the crop season i.e. from July to May, monthly survey was conducted in both Krishna and Prakasam Districts. In Krishna district, 23 villages of nine mandals viz., Vissannapet, Yenamadala, Edara, Shobhanapurum, Agiripalli, Edulagudem, Nunna, Adivinekkalam, and Reddygudem were surveyed and in Prakasam district 15 villages of five mandals *viz.,* Kandukuru, Ongole rural, Ulavapadu, Singarayakonda and Maddipadu were surveyed every year.

During the season, roving survey and fixed plot survey were conducted. In roving survey simple random sampling technique was adopted to select the fields in each locality. For fixed plot survey, five gardens were selected in each mandal of mango growing areas in Krishna Godavari zone. In the sample garden 5 trees for each variety was selected. The incidence and intensity of various diseases was recorded. Foliar diseases were recorded by adopting1-9 scale whereas fruit rot diseases were recorded by counting the affected and healthy, starting from peanut stage to till harvest.

RESULTS AND DISCUSSION

The data on per cent disease index of different diseases occurring in mango is given in Table-1. It was observed that anthracnose as leaf spot, bacterial leaf spot, red rust and fruit rot diseases

Table 1. Per cent Disease Index of different diseases of mango from 1999-2000 to 2007-08

Disease	Percent Disease Index*								
	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Anthracnose	3.07-19.53	2.26-18.67	1.42-18.86	1.82-12.53	2.03-20.5	2.1-6.98	4.06-23.98	8.91-37.56	5.4-23
Bacterial leaf spot	1.31-18.23	1.07-12.31	2.94-6.64	0.12-0.59	1.04-3.41	0.81-7.91	1.1-17.82	2.52-16.53	0
Powdery mildew	0	3.79-5.86	0.01-0.5	0	0	0.03-0.97	1-5.4	0	0-1.5
Red rust	0	3.09-4.92	1.02-5.93	2.93-6.98	0.93-11.66	3.31-18.61	4.05-9.99	3.96-10.05	2-5.5
Fruit rot	4.12-5.8	0.57-6.9	0.78-7.5	4-7	1.54-7.4	0.09-2.91	1.08-8.21	0.07-7	2.9-8
Diploidia blight	0	0	0.25	15.16-20.18	0	0	0	0	0

* Disease intensity during crop season

appeared in almost all years continuously in moderate to severe form while powdery mildew incidence occurred from December to January in traces only. Of the several mango cultivars Neelum, Bangolora, Totapuri-Khard were found to be most tolerant to powdery mildew and this is in close conformity with the report of Gupta (1976).

Anthracnose disease mostly affected the tender parts of trees such as young shoots, leaves, panicles, flowers and fruits. The symptoms varied according to the plant part infected i.e dark brown necrotic areas on leaves, elongate black necrotic patches on the twigs, small dark spots on the main and secondary rachis of the panicle and black spots on the older fruits. Anthracnose disease incidence was increasing every year since the fungus has long saprophytic survival ability on dead twigs as reported by Singh (1996).

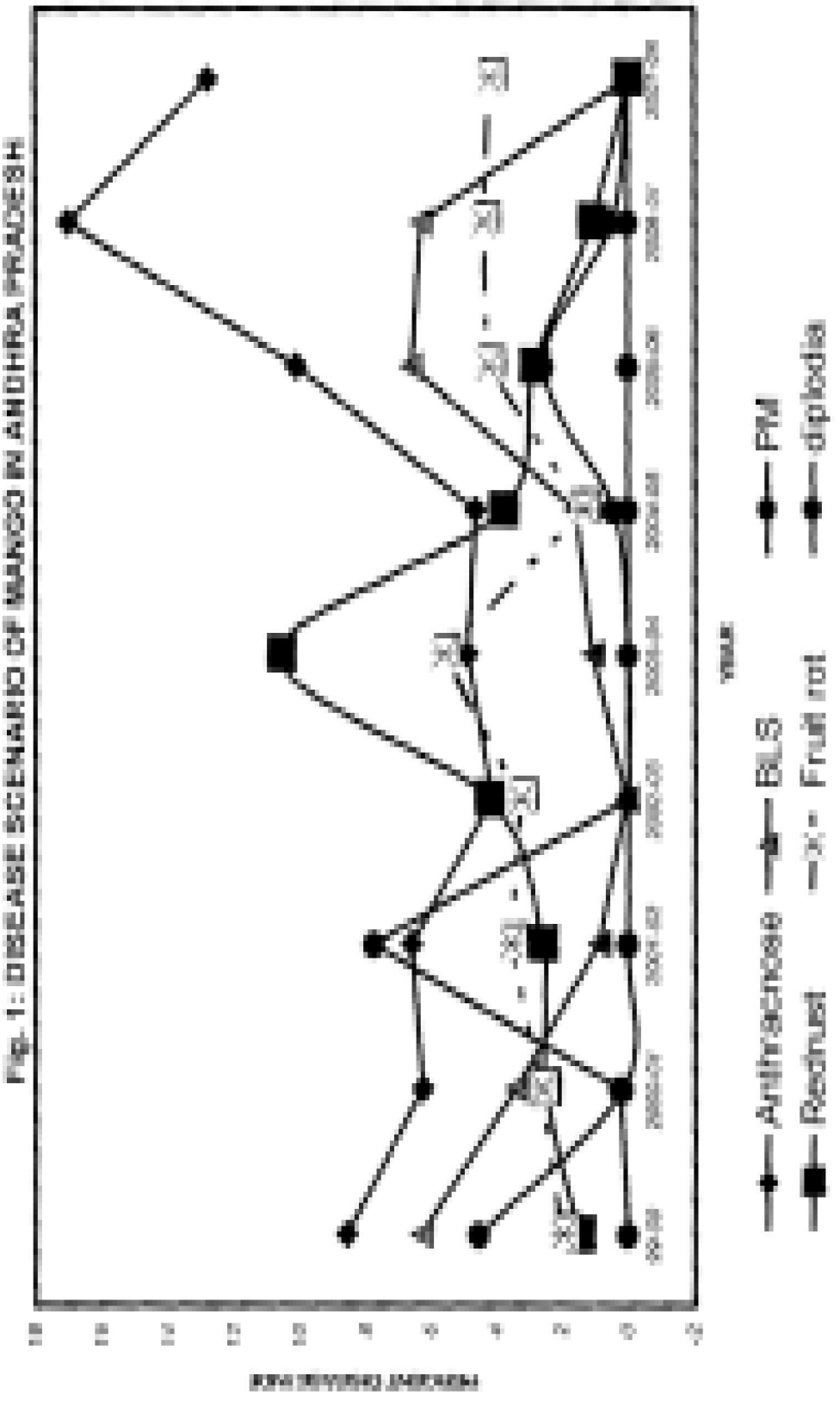
Bacterial leaf spot disease incidence was observed during rainy season and it became severe in July-August. It was observed that Totapuri and Bangolora were highly susceptible.

Diploidia blight was identified in 2001-02 and it was a serious problem during 2002-03. *Diploida* blight affected the shoot and fruit. During flowering season the disease appeared as grayish white powder on flower buds, fruit lets and rachis of the panicle. The infection spread through the vascular system of the pedicel (Srivastava & Durgapal, 1965) and thereafter the fruit pericarp darkened near the pedicel base. More portion of the fruit darkened gradually and turns black and soft.

Red rust disease incidence was recorded in almost all neglected gardens. The disease appeared as rusty red fructifications of the algae on the surface of infected leaves, veins, petioles and young twigs. Initially the spots were greenish grey in colour and velvety in texture and finally they turned reddish brown. Red rust disease incidence was moderate in all the years but the disease is not of economic concern.

Peak incidence of different diseases during the crop season was presented in Fig.2. The data revealed that anthracnose disease attained its maximum in the month of February 2006-07 while maximum fruit rot incidence recorded during May month.

Finally it was concluded that anthracnose as leaf spot and fruit caused damage to mango trees resulting in estimated yield loss of 2-39% which is in close conformity with the report of Prakash *et al* (1996). Based on the work done on mango diseases at Acharya N G Ranga Agricultural University it is recommended to take spray schedule to reap maximum profits from mango orchards.


Anthracnose
BLS
Fruit rot
PM
Red rust
diplodia

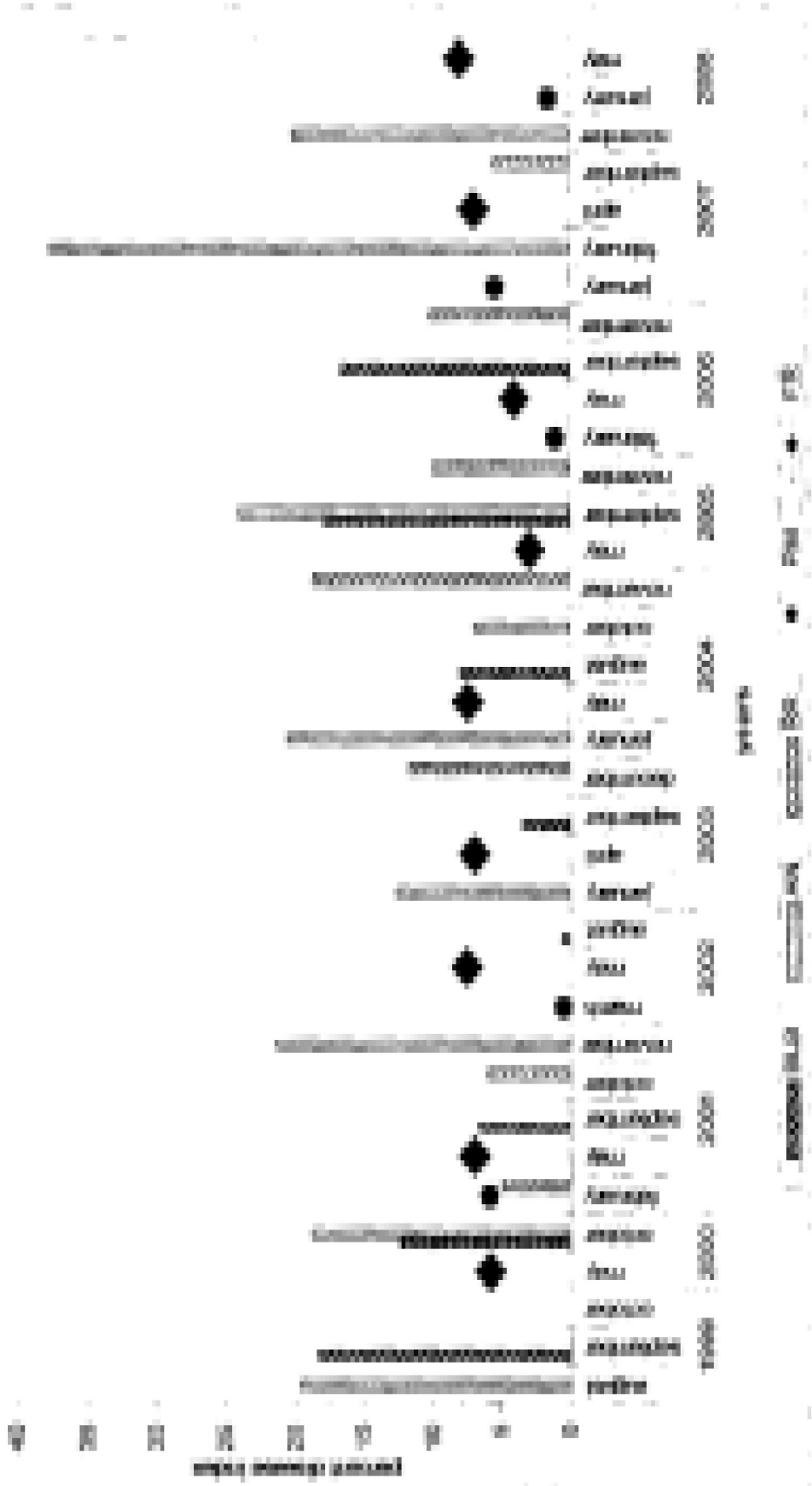


Fig. 2 Peak disease incidence of different diseases of mango in Andhra Pradesh (1999 - 2008)

LITERATURE CITED

Annonnymous 1992. Market News Service. Horticultural products report- Mangoes Intrnational trade Centre UNCTAD/GATT (ITC), Geneva, Switzerland.

Annonnymous 2005. Food and Agricultural Organization. Statistical citation, 2005.

Gupta J H 1976. Reaction of mango varieties Powdery mildew (*Oidium* *mangiferae* Berlhet) in UP.Progre. Hort. 8:63-64.

Mayee C D and Datar V V 1986. Phyto pathometry Tehnical Buletin I- Marthawada, Agricultural University, Parbhani, Maharashtra**,** PP: 95

Prakash Om, Misra A K and Padey B K 1996. Anthracnose diseases of tropical and subtropical fruits. In disease scenario in crop plants Vol.I Fruits and vegetables.

Prakash Om, Misra A K and Raoof M A 1994. Studies on mango bacterial canker disease. Biological memoirs 20:95-107.

Singh R N 1996. Mango. Important disease and Insect pests :75.

Srivastava D H and Durgapal J C 1965. Mode of infection and control of diploidia a stemend rot of mango (*Mangifera indica* L.) *India J. Hort*. 22:77.

Varma A 1998. Status of mango production and export in India:587-604.

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