INTRODUCTION

Cotton, a major fibre crop is universal in distribution and occupies a vast acreage both in tropical and sub-tropical parts of the world. It has been in cultivation in India since historic times and today India stands first in area under cultivation and claims commercial cultivation of all the four species of cotton, namely *Gossypium arboreum*, *G. hirsutum*, *G. barbadense* and *G. herbaceum*. The crop is attacked by several seed borne pathogens. Wilt (*F. oxysporum*) root rot (*R. bataticola*) and angular leaf spot (*X. malvacearum*) pose a major threat to the yield and impair quality of the produce. Profitability of cotton cultivation depends, to a large extent on the control of diseases. The soil and air-borne pathogens of cotton have been extensively studied however, seed-borne pathogens have not received much attention. A systematic study of seed health testing in cotton was therefore undertaken selecting varieties common under cultivation in this area.

Systematic studies on seed-health testing are of recent origin in India and mainly concerned with surveys of externally or internally seed-borne pathogens. Most of the studies have been devoted to cereals and
legumes. With a few reports on seed-borne pathogens of oil-seeds. India occupies first position in the World in respect of area under oilseeds. The oilseeds which have important role in national economy are groundnut, safflower, sunflower, linseed, castor, mustard and cotton. These occupy an area over 6 million hectares and yield production worth 7.5 million tonnes. Maharashtra stands third in oilseed production in India.

Systematic studies of oilseeds cultivated in the State have been recently completed in this laboratory (Kulkarni, 1979, Quadri, 1982). Selecting cotton as a test crop for seed-health test, studies were undertaken to study the nature of the interactions between the seed and the pathogens, nature of damage caused by the pathogen and factors governing dominance of pathogens.

Using standard techniques the pathogens on seeds of 34 cultivars were isolated. Viability of seeds was studied in relation to associations on seed surface and succession.

Effect of inoculum load on seed surface was studied to assess possible damage by pathogens to viability and seedling vigour. Similarly effect of host exudates and leachates was studied in detail to explain relative dominance of individual pathogens and nature of resistance in the host.