INTRODUCTION

The genus *Cymbopogon* Spreng, a group of aromatic grasses, belongs to the tribe Andropogoneae of the natural family Gramineae. The essential oils found in different species of the genus have been known to be of economic importance from ancient times. They have been used in medicine, soap and perfumery industries for a considerable period of time. There are 102 species included in the genus as enumerated in *Index Humbertii* (1965), but only 6 of them are cultivated in various parts of the world for their essential oils. These are:

1) *Cymbopogon nardus* Hendie, yielding inferior quality of citronella oil referred as Ceylon type.

2) *Cymbopogon winterianus* Jowitt, yielding superior quality of citronella oil commonly called Java type.

3) *Cymbopogon flexuosus* (Nees ex. Stued) Wats., yielding East Indian lemongrass oil.
4) *Cymbopogon citratus* Stapf, yielding est Indian lemongrass oil.

5) *Cymbopogon martini* (Poxb.) Kats. var. *sotja*, yielding commercially important palmarosa oil.

6) *Cymbopogon martini* (Poxb.) Kats. var. *sofia*, yielding inferior quality of oil called ginger grass oil.

There are two types of commercially cultivated citronella grass, viz., *C. nardus* called "lenabatu" or Ceylon type, and *C. winterianus* called "mahapengiri" or Java type. Both the varieties have undoubtedly originated in Ceylon probably from the same parent, *Cymbopogon confertiflorus* Stapf, the so called "mana" grass which grows wild in Ceylon (Barber and Hall, 1950; Guenther, 1950).

Ceylon type of citronella grass originated about 1885 near Matara in Southern Ceylon as a hybrid of "mana" grass and "mahapengiri" according to Barber and Hall (1950). Until 1900, the world market was dependent almost entirely upon *C. nardus*.

In 1879, the "mahapengiri" was introduced in Java from Ceylon and was for the first time planted in Buitenzorg. This newly introduced grass was selected for commercial production because it fetched better price for its oil. By 1919, Java surpassed
Ceylon in the production of citronella oil (Guenther, 1950).

The citronella Java was first introduced in India from Indonesia at Bangalore in Karnataka in the year 1960 by Central Institute of Medicinal and Aromatic Plants (CIMAP). After a few years trial cultivation with Ceylon type, Java type and a hybrid, it was decided to build up material of the Java type because of the better quality of its oil and higher returns. Thus, CIMAP Southern Zonal Centre, Bangalore, released this variety for commercial cultivation in various parts of India. Consequently, the plant is being successfully cultivated on commercial scale in Uttar Pradesh, West Bengal, Karnataka, Maharashtra, Gujarat, Tamil Nadu, Himachal Pradesh, Arunanchal Pradesh, Manipur, Mizoram, Meghalaya, Nagaland, Tripura and Assam by many private parties, co-operative societies, government and semi-government undertakings and the production of citronella oil rose in India by 300 tonnes, annually.

According to Indian Standards Institution, Ceylon type contains 55 to 65 per cent of total alcohols, calculated as geraniol and 7 to 15 per cent of total aldehydes, calculated as citronellal, whereas, the corresponding gradients for Java type are 85 to 97 per cent and 35 to 45 per cent, respectively.
Citronella oil is widely used in soaps, perfumes and cosmetics and it is estimated that in India the industry requires about 400 tonnes of citronella oil annually. The Ceylon type of citronella oil is used mainly in perfuming of sprays, disinfectants, and polishes etc. It is also used in mosquito-repellent creams. Whereas, Java type of citronella oil is chiefly used in the manufacture of perfumery products such as citronellal, hydroxycitronellol, synthetic menthol and esters of geraniol and citronellal.

In addition, citronella oil has been reported to have antispasmodic, diaphoretic, sudorific, rubefacient and sedative properties (Chopra et al., 1956; Kokate et al., 1971). The residue from distillation contains 2 per cent of nitrogen and can serve as a fertilizer (de Jong and Seclaire, 1922). The citronella grass contains about 32 per cent of cellulose and can be used for making paper board and good quality papers when mixed with rags and banana fibres (Kokate and Varma, 1971).

Considering the importance of citronella oil, it is desirable that citronella grass should receive greater attention of the agronomists, plant breeders and plant pathologists thus, for its records. Since there is enough scope for increasing the average
production, efforts have to be made to boost up the production of citronella oil.

The citronella grass is affected by a number of diseases caused by fungi, viruses and nematodes. Among these, diseases caused by fungi are of paramount importance. Numerous fungi have been proved pathogenic on citronella causing different types of leaf spot, leaf blotch and leaf blight (Rodge, 1942; Sloof et al., 1947; chieber, 1963; eg, 1972). A severe leaf blight of citronella Java, limiting citronella oil production, was observed in commercial plantations of CIPH Regional Centres, at Haldwani (U.P.), Bangalore (Karnataka) and other parts of U.P., Karnataka and Assam during the rainy seasons of 1974 and 1975. Very little work has been done so far on this disease of citronella in India and abroad. Considering the importance of the disease, the present investigations were undertaken to study in detail the etiology of the disease, physiology of the pathogen and disease control.