1. GENERAL INTRODUCTION

*Cladosporium fulvum* (Cooke) - leaf mould - is reported to occur wherever the cultivated tomato, *Lycopersicon esculentum* (Mill.) is grown. Where atmospheric conditions are suitable, the fungus occurs in epidemic proportions and can result in complete loss of crop.

In temperate climates the tomato crop is frequently grown under glass and without proper control of watering and ventilation, leaf mould can be a serious limiting factor to tomato production.

In Trinidad in the wet season, the high humidity allows the fungus to spread rapidly and it may easily become epidemic. This is no doubt one of the reasons why the more common cultivated tomatoes are not grown entirely in the wet season. During the dry season the fungus is less likely to be serious although in periods of abnormal rainfall outbreaks may occur. Overhead watering may also lead to serious infection by the disease.

In temperate regions, where tomatoes are grown under glass, copper fungicides may give adequate control, but spraying operations must be undertaken frequently to be effective and this inevitably adds to the expense of producing the crop. In Trinidad, the efficacy of spraying as a means of control in the wet season is greatly reduced due to the frequency of showers which remove the fungicides shortly after application.

Resistance to the disease is found in other species of the genus *Lycopersicon* - notably in *L. pimpinellifolium* (Mill.) and *L. peruvianum* (Mill.). In general, the former has proved a more suitable parent for the production of disease resistant tomatoes and many crosses have been made with it.
made with *L. esculentum* varieties which have yielded useful resistant progeny.

Possibly some of these varieties might be suitable for growing in Trinidad but there are obvious advantages in breeding such varieties in the locality in which they will be grown. In the earlier generations from such a cross there will be a wide range of polygenic characters affecting yield etc., which, with appropriate selection should give a variety with a better adaptation to Trinidad conditions.

2. **REVIEW OF LITERATURE**

There are several records in the literature of the use of *L. pimpinellifolium* as a parent in crosses with *L. esculentum*. The usual aim of such a cross is to obtain a hybrid tomato with the disease resistant characters of the wild parent and the yield characters of the cultivated parent. In all cases the small fruited character of *L. pimpinellifolium* could not be eliminated by selection alone, and backcrossing to the *L. esculentum* parent was required. Thus Alexander (1936-1938) in producing the leaf mould resistant variety Globelle, from a cross between *L. pimpinellifolium* and the cultivated variety Globe, used four backcrosses to the large fruited parent. This was followed by six generations of selfing before the variety was released. He believed there was some evidence that resistance to leaf mould was linked with small fruit size, although Langford (1937) in a well-conducted trial showed this was not so.

The Annual Report of the Massachusetts Agricultural Experimental Station (1946 and 1947) mentions the release of four leaf mould resistant varieties with *L. pimpinellifolium* as the resistant parent. All four varieties were produced.