



**Studies on the die back disease of passion fruit in major
production areas in Kenya
(PROPOSED GRADUATE RESEARCH PROJECT)**

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ABSTRACT

Passion fruit is an important horticultural crop in Kenya where it is grown widely by small scale farmers primarily as a source of income. The fruits are supplied to the local and export markets where they are consumed as fresh fruit for its nutritive value or utilized for commercial processing purposes. Passion fruit is a good source of flavanoids that have important medicinal value. Presently, demand for the fruit greatly exceeds supply; and this trend is project to persist in future, especially due to the emergence of new large scale producers of beverages using locally available fruits, among the passion fruit. The downward trend of passion fruit production which has brought the industry to a near collapse is mainly attributed to pests and diseases. A number of fungal diseases have been identified as the major constraints to production. These include Fusarium wilt and a recently emerged but highly severe disease attributed to a complex involving *Phytophthora* species. Compared to Fusarium wilt, the die back disease is rather poorly understood. Since the disease is fairly new in the major passion fruit production areas in Kenya, no effective management strategies have been developed as yet. Preliminary research is yet to conclusively determine whether the disease is caused by a single or multiple organisms, though some reports suggest it is a complex caused by several pathological organisms, possibly involving viruses I and



fungi. This proposed research will aim to generate data to fill the existing knowledge gaps and thus contribute to the development of effective control methods. Field studies will be carried out in the major passion fruit growing areas in Central and Eastern provinces of Kenya in Meru, Embu and Thika districts. Disease incidence and severity will be recorded and infected plant samples will be collected for isolation and identification of the causal organism(s) in the laboratory. Several trials will be carried out under controlled environment to establish pathogenicity of the isolated organisms on healthy passion fruit plants. A combination of disease control methods will be investigated. The data generated will contribute to improved understanding and more effective management of the dieback and other diseases threatening the Kenyan passion fruit industry.

Key words: Die back disease, production, passion fruits