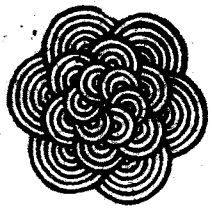

INTRODUCTION

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The family convolvulaceae are a large alliance of Sympetalous dicotyledons and are widely distributed over both tropical and temperate regions of the world. The family convolvulaceae consists of approximately 55 genera and 1650 species (Van Ooststroom 1953). In South India, the species occur much wide spread in the plains as well as in the hills.

Ipomoea L. a polytypic genus of family convolvulaceae having 500 species, mostly a large genus of twining, creeping, floating or erect herbs, rarely shrubs or trees, widely distributed throughout the tropical and warm temperate regions of the world. It is also recognised for the various purposes. The most important crop plant is Ipomoea batata commonly known as sweet potato, is used for daily consumption by humen being. The I. batata (Sweet potato), hundreds of varieties of which , some known (incorrectly) as yams, are cultivated throughout tropical regions, Japan being a major producer. However, many species of this family have local uses as foods and medicines.

From the early days, the showy flowers and leaves of Ipomoea attracted the attention of horticulturists and attempts of introduction of ornamental have been made.

Probably the best known ornamental climbers in the family are Ipomoea purpurea and I. tricolor, from the tropical America and cultivated as annuals. Ipomoea carnea a large diffuse or straggling shrub, native of south America and introduced into India as an ornamental plant. It is cultivated in garden in many parts of India, and sometimes grown as a hedge plant.

About 50 species of Ipomoea are found in India. Out of which number of species have been introduced for ornamental purpose; while some are of medicinal value. The Ipomoea digitata, I. turpethum, I. leptophyla and I. violacea are used as medicines. However ergine as an active alkaloid and ergot like alkaloids are recorded in Ipomoea species. Active principles from some species of Ipomoea are toxic to live-stock (Ventura, 1946).

Ipomoea fistulosa Mart. ex. choisy is a south American vine which has become established in waste soils of the coastal plain from Texas to south Carolina, including peninsular Florida. Experiments performed in Brazil (Tokarnia et. al.,1960) have shown that prolonged ingestion of this plant results in wasting, depression and other ill-defined pathology in sheep, cattle and goats. Other species of Ipomoea and of Convolvulus may contain purgative principles which, according to Gates (1930), have caused mild distress in hogs.

The present work deals with the genus Ipomoea fistulosa Mart. ex. choisy a large diffuse of straggling, shrub with milky juice, native of south America and introduced into India as an ornamental plant. It is also found that it is native to Brazil but now naturalized in Mexico and in the southern United States. In certain catalogues this species is listed as Ipomoea arborea. Also in some of the Indian floras this species goes under the Ipomoea carnea Jacq. which is a distinct species. Ipomoea fistulosa is cultivated in gardens and near houses in villages in many parts of India; usually planted near the houses in villages as an ornamental plant and also used for fencing; naturalised at the edges of the ponds and also rarely in village shrubberies. The plant is easily propagated by cuttings. It produces dense foliage and flowers practically throughout the year except during the cold months. It is a rapidly spreading gregarious plant. It is drought resistant and can be raised both under rain-fed and irrigated conditions. It is used as a green manure crop in Madras (Wealth of India, 1959).

The available literature indicates that the very little cytological work has been done in the genus Ipomoea and especially in I. fistulosa. Some of the species of Ipomoea are studied for chromosome number (Sampathkumar, 1979). Also there is voluminous work on the self-incompatibility in I. fistulosa, I. carica, I. pandurata and I. batata. Also some work has been done

on the embryology, palynology, anatomy, physiology, pharmacology and agronomic studies in some edible species such as I. batata and others.

However, detailed investigation regarding cytology such as karyotypic analysis and also meiotic screening in the genus Ipomoea fistulosa is lacking. Therefore it was proposed worthwhile to investigate the karyotypic pattern and meiotic behaviour and incompatibility studies in I. fistulosa to fulfil the missing gaps in the current literature, which has a bearing on other aspects too.

The available relevant literature on the subject has been reviewed under the title "Review of the Literature" at the begining and followed by morphological discription of the studied taxa under heading "Taxonomy of Ipomoea fistulosa Mart. ex Choisy".