# Pollen Morphology of Some Invasive Plants in and around Bardoli, South Gujarat, India.

VIBHAVARI K. VYAS [1]* AND DR. T. G. GOHIL [2]

[1] Part time Lecturer, Biology Department, The P. G. Science College, Bardoli-394601 D: Surat, Gujarat, India.
[2] Associate professor & Vice Principle, The B. K. M. Science College, Valsad, Gujarat, India.
[1]vibahavarivyas_1993@yahoo.com

*Abstract* - Invasive plants are those that spread rapidly and cause harm to other species, communities or entire ecosystem. Some invasive plants selected for present investigation are belongs to series Calyciflorae and order Rosales. These are *Acacia auriculiformis* A. Cunn., *Acacia farnaciana* L., *Prosopis Juliflora* (Sw.) DC, *Cassia alata* L., and *Cassia tora* L. Plants were identified with help of taxonomical markers and investigated for characterization Palynological studies were carried out by acetolysis method and examined microscopically. In Mimosaceae Pollen grains are mostly tetrad or polyads, 4 - 16 celled and oval or in oblong shape. Caesalpinaceae is eurypalynous subfamilies of Leguminosae. The pollen grains of these plants are generally radially symmetrical, isopolar, tricolporate and triangular – trilobed. The tectum is commonly reticulate – regulate or fossulate – foveolate and often striate. The pollen morphology of this family is significantly useful at the generic and specific levels on the basis of apocolpium, mesocolpium and tectum features.

*Keywords* - Palynomorph, Acetolysis, Symmetrical, Polyad, Colporate, Aperture, Ornamentation.

## I. INTRODUCTION

In ancient Indian literatures, it is written that every plant on this earth is useful for human beings, animals and also for other plants. Thus, every plant on the planet is a treasure for the entire living race. But some plants also show negative impacts on the environment and the global bio-diversity such plants has been the focus of environmentalists due to their un desired impact on the ecosystem. One group of plants under this category is the invasive plants (Insidious plants). 'Insidious' is a word with several interpreted meanings. There has also been considerable confusion and misuse of multiple terminologies. The word Insidious is synonymous with Invasive. 'Invasion' refers to concepts like aggression, assault, attack, encroachment, incursion, in fringement, intrusion, on slough, the combination of both the species characteristics and the ecological characters [1]. Insidious plants are those that spread rapidly and cause harm to other species, communities or entire ecosystem.

Invasive alien species (IAP) are species those were earlier present in other place, but due to intentionally or unintentionally they are introduced in to any new ecosystem and may causes sound effects on that ecosystem [2]. These plants in their new ecosystem are referred to as 'alien' or 'exotic' plants, which homogenize the world biota [3]. These plants can widely distribute among the all habitat as well as diverse ecosystem throughout the world [4]. Therefore alien plants are considered as one of the severe threat to the biodiversity after the habitat destruction [5]. Many of them are noxious and cause negative impact on ecosystem, environment, habitats, and native biodiversity and even on human health [6]. The purpose of introduction of species which have become invasive is in decreasing order of importance: amenity; forestry; agriculture; landscape; and botanic gardens [7]. Some of the species were also introduced for ornamentation, enhanced economic status and as a medicinal plant, but after a period few of them become invasive on local ecosystem, replace the native vegetation and hampered the ecological structure of native one.

The morphological structure of pollen grains exhibit wonderful criterion in identification of plants and has revolutionized the study of pollen and spores (i.e. palynology). Pollen morphology is conducted as an aid to the morphological study and a significant tool for modern taxonomist for the delimitation of species. Pollen characters are useful in solving complicated problems of interrelationship between various taxa and assessment of their status in the classification, particularly with reference to the families, sub families, tribes, genera, species and sub species. Mature pollen grain size, exine sculpturing, and number of pores are the most distinctive features. Palynological data is useful for further research work in the field of allergic disease, forestry, agriculture, horticulture, archaeology, and plant geography. Palynological data has been useful at generic and specific level [8].