A study of seed morphology of fruit plants of valsad district in Gujarat state, India

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ABSTRACT

The ability to recognize seeds a re always important in farming. It has become even more essential in modern scientific agriculture, without it there would be little merit in perfecting methods of growing useful plants. Ability to identify the seed is of particular importance to the agriculturist, biologist, forester, horticulturist, ethno botanist, pharmacist and others interested in land-use programs to identify the seeds in their particular ecological fields of interest. Though seeds are physiologically important for they provide fairly reliable attribute, seed characters are largely ignored except for a few cursory references in classic as well as contemporary floras (Cook, 1901-1903; Shah, 1978).

Key words : Seed. Fruit plant

INTRODUCTION

Valsad is a district town situated south of Tapi River on 72° 50' E and 20° 35'N in the southern part of the Gujarat state about 194 KM. North of Mumbai on Ahmedabad-Mumbai broad gauge railway line. About 3 KM. west of Valsad town is an Arabian Sea and in the east there is Ahmedabad-Mumbai national Highway. Geographically Valsad belongs the western coastland of the Deccan peninsula. The area is traversed by Daman Ganga, Purna, Auranga, Kaveri and Ambica rivers and several small tributaries. The area consists of hills and plain lands. The area is a plain land about 12km above minimum sea level.

The soil is several feet deep and rich in organic matter. In the plains where black cotton soil is noticed, the drainage is poor and the soil deeply cracks in the dry seasons. The average depth of water from ground level is about 20-30 feet. The climate of this area is of subtropical type. The average annual rainfall of last five years in the area is 1785.4mm. The pH of the soil range between 7.10 – 8.30.

Some notable workers on the seed are Scurti (1948), Berggern (1974), Brisson and Peterson (1976), Corner (1976), Gavit (1990), Cooke (1908), Kigel and Galili (1995), Shah (1978), Martin and Barkley (1961) ande Bailey (1949).

MATERIALS AND METHODS

Seed is a small embryonic plant enclosed in a covering called seed coat and usually with some stored food. It is the product of the ripened ovule of gymnosperm and angiosperm plants occurring after the process of fertilization within the mother plant.

During the tenure of this work the author had visited different villages of the area. The specimens of fruit plants were collected to prepare herbarium specimens along with the seed. Seeds were collected, dried and were stored for further study. Some of the seeds were mounted in different position over a card slide with the help of domestic adhesive – like Fevicol. The seed slides were then subjected to detailed observation. Each and every collection was supported with the voucher specimen of the herbarium. Collected seed were either dried in sun or were dried by using incubator / oven at a temperature of 28°C - 30 °C.

The most useful cluses for recognition of seed are usually the seed shape, coloring, hilum shape, seed/fruit, seed weight etc. Colour of the seeds were compared with standard colour shade charts of RHS (Royal Horticultural Society, London).Seeds weight of individual seed or a unit of 10 seeds were made with the help of analytic balance and also Monopan balance.

RESULTS AND DISCUSSION

This paper presents 31 fruit plants and its seed morphology from the study area.

An earnest attempt has been made here to exploit the seed characters for taxonomic purpose. The descriptive accounts are rather lengthy. Much of the critical observation such as an attempt to mention nearer to the correct colour shade using RHS colour charts and the seed weight determination are more of academic interest rather than their particular utility to be used as a tool for the indentification of taxa under investigation. This is the limitation. Above morphological characters of seeds are used for plant indentification from seeds.