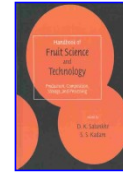


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**FIG**

**U. T. Desai and P. M. Kotecha**

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## I. INTRODUCTION

Fig is one of the oldest cultivated fruits. It has a symbiotic relationship with insects for fruit setting. The fleshy fruit is consumed fresh or in processed form, the dried form being the most popular. It can also be canned or used for candy or jam making. It is delicious, wholesome, and nutritious fruit. Figs are a good source of carbohydrates, including fiber. The fruits are rich in calcium, iron, and vitamins A and C. Fresh or dried, they are valued for laxative properties. Medicinal uses such as applications against boils and other skin infections have also been attributed to this fruit (1,2). Fig helps to maintain the acid-alkali balance of the body by very effectively neutralizing excess acid (3,4). Steam distillate of the fruit contains benzaldehyde, which has shown considerable antitumor activity (5). Leaves contain fluro-cumarins of medicinal use (6), and leaf oil contains germarene-D, an insect attractant (7). Fig latex is also useful to coagulate milk (8). Figs are grown commercially in most of the countries bordering the Mediterranean Sea. They are also grown in the United States, although Greece, Algeria, Morocco, and Syria have become the largest producers, with 110,000, 77,000, 74,000, and 56,000 metric tonnes production, respectively (9).

## II. BOTANY

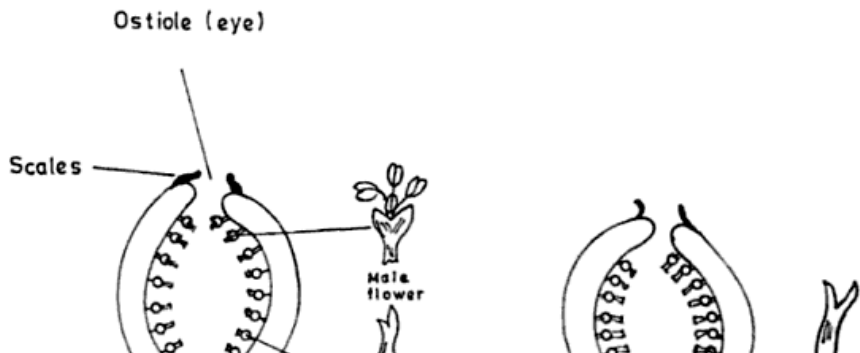
Fig (*Ficus carica* L.) belongs to the family Moraceae and has chromosome number  $2n = 26$ . The tree is deciduous, medium sized, and irregularly branched. The fruit is a syconium (multiple accessory fruit) type—a round, fleshy, hollow, and edible receptacle which bears numerous tiny unisexual flowers on its inner surface. An individual flower matures into a drupelet. The syconium has an opening at the distal end, the ostiole or orifice (Fig. 1). Each of the many flowers borne inside the syconium has four-parted sepals, no petals, and simple, long-styled, pistillate flowers in the edible figs. The synconium of the Capri fig contains many small pistillate or female flowers but with short styles. In addition, the Capri fig produces a number of staminate flowers

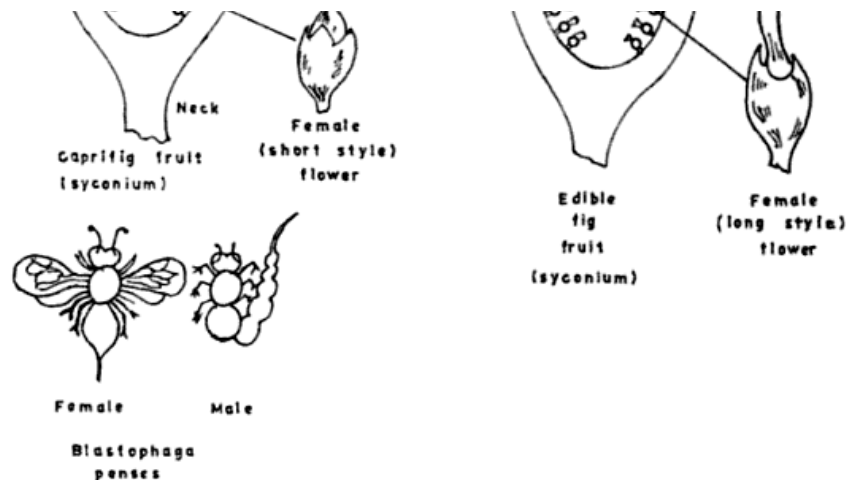
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Desai and Kotecha





**Fig. 1** Caprifig and edible fig fruits showing flowers and fig wasp (*Blastophaga penses*).

which are located around the ostiolum on the inner surface of the syconium. The staminate flowers have four anthers, each with two oval pollen sacs. Thus all edible figs produce only long-styled pistillate or female flowers. Only the Capri fig produces both staminate and pistillate flowers in the same receptacle, and these pistillate flowers have only short styles. The cultivated figs (cultivars) differ in their mode of pollination and fruit setting and are classified into different pomological groups. Capri fig is thought to be the originator of other cultivated figs (10).

### A. Cultivars

Capri fig, Smyrna fig, common or Adriatic fig, and San Pedro fig are the four pomological groups of fig cultivars. Capri figs are inedible because they harbor blastophaga insects. They produce short-styled pistillate flowers (gall flowers), adopted for oviposition by the blastophaga, and functional male flowers located at the ostiole end with abundant pollen. When the insect emerges through the ostiole of the syconium, after oviposition in gall flowers, it carries several pollen grains from staminate flowers located near the ostiole. In this group (Capri fig), there are

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