Bael (Aegle marmelos (L.) Correa) is an important indigenous fruit of India and has been known from prehistoric times. The leaves of the tree are traditionally used as sacred offering to 'Lord Shiva' according to Hindu custom. In epic ages, such as those of the 'Ramayana' bael fruit was known. Mention of bael was found in Vedas and also in early Buddhist and Jain literatures (Om Prakash 1961). It grows throughout the Indian peninsula as well as in Sri Lanka, Pakistan, Bangladesh, Burma and also found in tropical regions of Africa, South-east Asia and Australia.

According to Johnson and Stevenson (1979), it was introduced into Europe from India in the year 1979. Unfortunately, no data on production and acreage are available in our country because of the reason that no organised orcharding of this fruit is done and fruit trees of bael are found sporadic but in plenty in wild state in U.P., Orissa, Bihar, Madhya Pradesh and West Bengal etc. In the recent years, little attention has been paid by advanced people to grow this fruit and efforts are being made for organised orcharding of this fruit.

Bael tree is very hardy and can thrive well in
swampy, alkaline and stony soils having pH 5 to 10 (Jauhari and Singh 1971). According to Davis (1930) bael tree grows even on poor clay soils where other trees fail. The bael trees are not damaged by temperature as low as -7°C.

The basic botanical classification of the bael fruit plant is as under.

Order  - Geraniales
Sub-order - Garaminea
family     - Rutaceae
Sub-family  - Aurantoideae
Genus      - Aegle
Species    - marmelos
Author     - Correa

Bael trees with tap root are often branched, stem erect, woody, branched and armed with thorns, solid, gland dotted aromatic leaves, exstipulated, petiolate, trifoliolate or ternate, alternate, venation reticulate, unicoate and deciduous in habit. Inflorescence monochasial cyme, auxillary or terminal few to many flowered branching cyme. Fruit is berry with hard rind green in colour and yellow when ripe. Seeds endospermic with testa density clothed with thick fibrous hairs.

The bael is usually propagated by seeds which are sown in June; seedlings are transplanted a year...
later. It can also be propagated successfully by budding on one or two year old root stock by patch budding, T-budding and chip budding at monthly intervals from July to October and from March to June. Budding in the month of June or July gave best results (Singh et al. 1976; Moti Dhar and Chaturvedi, 1976). Bael fruit can be grafted on to a number of related plants, such as Aegle fraeglegabonensis and Aeglopsis Chevalieri (Reuther et al. 1976). The old and uneconomic bael tree can be turned into economic and vigorous one by top working. In this method, the tree is headed back 1 to 1½ meters above the ground level during March and new shoots emerge from the stump. A few healthy shoots are retained and desired scions are budded on them in the month of June.

Though it is not much popular as commercial fruits like Mango, Banana, Guava, Citrus, Papaya etc., yet it is very important fruit because of its curative properties. It is one of the most important medicinal plants of India known from Vedic-era and its medicinal properties are very well dealt in 'Charak Sanhita' an important and oldest Ayurvedic book.

It is so important a fruit tree that all the parts of this plant including fruits at any stage of maturity have some use. Green bael fruits are used for preparing 'Murabba', a most palatable and curative fruit preserve, generally taken for stomach ailment.
The green bael fruit slices are often sun dried and stored for further use and cold drinks are also prepared at homes by mixing sugar and tamarind or curd. According to Kirtikar and Basu (1935) the ripe bael fruit is a tonic, a restorative, an astringent, a laxative and is good for heart and brain.

The bael fruit is one of the most nutritious fruits. According to Gopalan et al. (1971), it contains 61.5 gm water, 1.8 gm protein, 0.39 gm fat, 1.7 gm minerals, 3.1 gm carbohydrates, 55 mg carotene, 0.31 mg thiamine, 1.19 mg riboflavin, 1.1 mg niacin and 8 mg vit. C per 100 g. edible portion of the fruit. No other fruit has such high content of riboflavin. Mukherjee and Ahmad (1957) had also reported that the riboflavin content of the ripe bael fruit was very high. Chemical analysis of bael seeds revealed that the seed contained 62 per cent protein (2% water soluble and 60% water insoluble), 30% oil, 3% carbohydrates and 3% ash (Banerjee and Maiti 1980).

Various chemical constituents namely alkaloids, coumarins, steroids etc. have been isolated and identified from different parts of the bael tree. Dikshit and Dutt (1932) reported that marmelosin \((C_{13}H_{12}O_3)\) is probably the most therapeutically active component of the bael fruit. It was isolated as a colourless crystalline compound. It is found in the fruit and in no other part of the plant. The percentage
varies from 0.03 to 0.37 depending on the locality and cultivation.

Chaterjee and Bose (1952) isolated an alkaloid rutacin ($C_{14}H_{13}O_{4}N$) and a sterol, aegelin ($C_{18}H_{18}O_{4}$) from the leaves of Aegle marmelos Corr. The physical and chemical properties of rutacin are very similar to those of skimmianine ($C_{14}H_{13}O_{4}N$). Further studies on aegelin were done by Das Gupta and Chakravarty (1958) and similar results were reported. A tree sterol viz. $\gamma$-sistosterol ($C_{29}H_{50}O$) was isolated from the leaves of Aegle marmelos Correa by these workers (Das Gupta and Chakravarty 1958).

Chaterjee and Roy (1957) reported the presence of aegelenine ($C_{14}H_{12}O_{2}N_{2}$) an alkaloid in the leaves of bael plant. Chaterjee and Roy (1959) also isolated three other compounds from the heart wood of Aegle marmelos viz., marmesin ($C_{14}H_{14}O_{4}$), $\beta$-sistosterol ($C_{29}H_{50}O$) and dietammine ($C_{12}H_{9}NO_{2}$).

Parikh et al. (1958) hydrolysed the bael fruit mucilage and recorded the presence of three reducing sugars, viz. galactose, arabinose and rhamnose. As per report by Haksar and Kendurkar (1961), the bael fruit yielded two per cent of dried, water insoluble gum which was used to prepare adhesives, water proofing and oil emulsion coating.

Although it is very important from medicinal
and other points of view, yet no much work has been done on bael. Taking the above view, bael has been selected for the study under the proposed research programme.