Sericulture has major role in the economic enlistment of rural poor people mainly in the developing countries like India. Since the dawn of civilization of human being the silkworm has been used as a source of silk producing dress materials. Sericulture needs low investment and employment opportunities are also more and results more profits. Mulberry silk accounts for 95% of the total silk produced while the remaining 5% is established by the silk from the wild silkworm silk, which accounts 2% of the global fabric production. Cotton is still called king of textiles while the silk is a queen of textiles. In India, Karnataka is the premier mulberry silk producing state and it accounts for 60% of national raw silk production (Chikkanna et al., 1993).

Studies have established (Lakshmanan et al., 1996; Raveendran et al., 1993) that sericulture offers income round the year to marginal and small farmers in the rural areas. It is well known that the cocoon crop of the silkworm, B. mori depends on the vigor of its breed, which in turn further influenced by the quality of leaf fed to silkworm (Venugopal et al., 1987). The raw silk production per hectare of land is about 52 Kg in China, 40 Kg in Japan and just 14 Kg in India (Bajpeyi et al., 1991). Since sericulture requires less investment than most of the agricultural crops and assures periodical return, it is very attracted.

It is well documented that sericulture has undergone sea change and has started wearing a new look (Krishnaswami et al., 1978). Many efforts have been done to increase the silk production by providing food supplemented with mineral
salts, vitamins, other chemicals and rearing of silkworm larvae on artificial diet (Ito, 1967). Application of plant growth regulators (Neumann, 1982) are useful modern technique for improvement of cocoon production, cocoon characters and their economic value. It has also been reported that the calcium, magnesium and iron when added to mulberry leaves increased the rearing rate and silk content in the cocoon (Bajpayi et al., 1991). The mineral salts like potassium iodide and cobalt chloride (Chakraborti and Medda, 1978 a,b) magnesium (Loknath et al., 1986), copper sulphate and nickel chloride (Magadum, 1987; Padaki, 1991), zinc and nickel (Chamundeshwari and Radharkishnaiah, 1994) ferrous and magnesium sulphates (Nirwani and Kaliwal, 1995) and nickel chloride (Hugar and Kaliwal, 1997) brought about an increase in the economic parameters. Zinc supplementation has also increased the length, width and weight of the cocoons (Chamundeshwari and Radhakrishnaiah, 1994). It has been suggested that supplementation with minerals changes the fat body protein, glycogen, haemolymph protein, trehalose and fat body total lipids of the silkworm, *B. mori* (Dasmahapatra et al., 1989; Goudar and Kaliwal, 2001).

The silkworm is completely dependent on the leaves of mulberry plant, as a source of food material. It has been demonstrated that, rearing of silkworm larvae on artificial feed (Ito, 1967), application of plant growth regulators (Neumann, 1982; Hugar and Kaliwal, 1997 a,b; Goudar and Kaliwal, 2001 a,b,c) are useful modern technique of improvement of cocoon production and their economic value. Research is being kept in continuation to find out various food
additives like phytohormones and minerals can effectively increase the various life processes of silkworms.

Therefore, the present investigation is to study the effect of different doses of potassium bromide, nickel sulphate and the mixture of potassium bromide and nickel sulphate and the plant growth regulators like salicylic acid, mixtures of salicylic acid and 2,4-dichlorophenoxy acetic acid and also the mixture of salicylic acid and naphthoxy acetic acid on economic parameters and biochemical constituents like glycogen, protein and lipids contents of haemolymph and fat body. Each chapter has its own introduction, materials and methods and results obtained in the present study were discussed under the discussion with the help of research work reported by earlier workers. Tables and graphs were placed at the end of each discussions.